The Future of Nursing

LEADING CHANGE, ADVANCING HEALTH

Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, at the Institute of Medicine

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“Knowing is not enough; we must apply. Willing is not enough; we must do.”

—Goethe
Part III

A Blueprint for Action
Recommendations and Research Priorities

Reflecting the charge to the committee, the purpose of this report is to consider reconceptualized roles for nurses, ways in which nursing education system can be designed to educate nurses who can meet evolving health care demands, the role of nurses in creating innovative solutions for health care delivery, and ways to attract and retain well-prepared nurses in a variety of settings. The report comes at a time of opportunity in health care resulting from the passage of the Affordable Care Act (ACA), which will provide access to care for an additional 32 million Americans. In the preceding chapters, the committee has described both barriers and opportunities in nursing practice, education, and leadership. It has also discussed the workforce data needed to guide policy and workforce planning with respect to the numbers, types, and mix of professionals that will be required in an evolving health care environment.

The primary objective of the committee in fulfilling its charge was to define a blueprint for action that includes recommendations for changes in public and institutional policies at the national, state, and local levels. This concluding chapter presents the results of that effort. The committee’s recommendations are focused on maximizing the full potential and vital role of nurses in designing and implementing a more effective and efficient health care system, as envisioned by the committee in Chapter 1. The changes recommended by the committee are intended to advance the nursing profession in ways that will ensure that nurses are educated and prepared to meet the current and future demands of the health care system and those it serves.

This chapter first provides some context for the development of the committee’s recommendations. It details what the committee considered to be its scope and focus, the nature of the evidence that supports its recommendations,
cost considerations associated with the recommendations, and how the recommendations might be implemented. The chapter then presents recommendations for nursing practice, education, and leadership, as well as improved collection and analysis of interprofessional health care workforce data, that resulted from the committee’s review of the evidence.

CONSIDERATIONS THAT INFORMED THE COMMITTEE’S RECOMMENDATIONS

As discussed throughout this report, the challenges facing the health care system and the nursing profession are complex and numerous. Challenges to nursing practice include regulatory barriers, professional resistance to expanded scopes of practice, health system fragmentation, insurance company policies, high turnover among nurses, and a lack of diversity in the nursing workforce. With regard to nursing education, there is a need for greater numbers, better preparation, and more diversity in the student body and faculty, the workforce, and the cadre of researchers. Also needed are new and relevant competencies, lifelong learning, and interprofessional education. Challenges with regard to nursing leadership include the need for leadership competencies among nurses, collaborative environments in which nurses can learn and practice, and engagement of nurses at all levels—from students to front-line nurses to nursing executives and researchers—in leadership roles. Finally, comprehensive, sufficiently granular workforce data are needed to ascertain the necessary balance of skills among nurses, physicians, and other health professionals for a transformed health care system and practice environment.

Solutions to some of these challenges are well within the purview of the nursing profession, while solutions to others are not. A number of constraints affect the profession and the health care system more broadly. While legal and regulatory constraints affect scopes of practice for advanced practice registered nurses, the major cross-cutting constraints originate in limitations of available resources—both financial and human. These constraints are not new, nor are they unique to the nursing profession. The current economic landscape has magnified some of the challenges associated with these constraints while also reinforcing the need for change. To overcome these challenges, the nursing workforce needs to be well educated, team oriented, adaptable, and able to apply competencies such as those highlighted throughout this report, especially those relevant to leadership.

The nursing workforce may never have the optimum numbers to meet the needs of patients, nursing students, and the health care system. To maximize the available resources in care environments, providers need to work effectively and efficiently with a team approach. Teams need to include patients and their families, as well as a variety of health professionals, including nurses, physicians, pharmacists, physical and occupational therapists, medical assistants, and social
workers, among others. Care teams need to make the best use of each member’s education, skill, and expertise, and health professionals need to practice to the full extent of their license and education. Just as physicians delegate to registered nurses, then, registered nurses should delegate to front-line caregivers such as nursing assistants and community health workers. Moreover, technology needs to facilitate seamless care that is centered on the patient, rather than taking time away from patient care. In terms of education, efforts must be made to expand the number of nurses who are qualified to serve as faculty. Meanwhile, curricula need to be evaluated, and streamlined and technologies such as high-fidelity simulation and online education need to be utilized to maximize available faculty. Academic–practice partnerships should also be used to make efficient use of resources and expand clinical education sites.

In conducting its work and evaluating the challenges that face the nursing profession, the committee took into account a number of considerations that informed its recommendations and the content of this report. The committee carefully considered the scope and focus of the report in light of its charge (see Box P-1 in the preface to the report), the evidence that was available, costs associated with its recommendations, and implementation issues. Overall, the committee’s recommendations are geared toward advancing the nursing profession as a whole, and are focused on actions required to best meet long-term future needs rather than needs in the short term.

Scope and Focus of the Report

Many of the topics covered in this report could have been the focus of the entire report. As indicated in Chapter 4, for example, the report could have focused entirely on nursing education. Given the nature of the committee’s charge and the time allotted for the study, however, the committee had to cover each topic at a high level and formulate relatively broad recommendations. This report could not be an exhaustive compendium of the challenges faced by the nursing workforce, nor was it meant to serve as a step-by-step guide detailing solutions to all of those challenges.

Accordingly, the committee limited its recommendations to those it believed had the potential for greatest impact and could be accomplished within the next decade. Taken together, the recommendations are meant to provide a strong foundation for the development of a nursing workforce whose members are well educated and well prepared to practice to the full extent of their education, to meet the current and future health needs of patients, and to act as full partners in leading change and advancing health. Implementation of these recommendations will take time, resources, and a significant commitment from nurses and other health professionals; nurse educators; researchers; policy makers and government leaders at the federal, state, and local levels; foundations; and other key stakeholders.
An emphasis of the committee’s deliberations and this report is nurses’ role in advancing care in the community, with a particular focus on primary care. While the majority of nurses currently practice in acute care settings, and much of nursing education is directed toward those settings, the committee sees primary care and prevention as central drivers in a transformed health care system, and therefore chose to focus on opportunities for nurses across community settings. The committee believes nurses have the potential to play a vital role in improving the quality, accessibility, and value of health care, and ultimately health in the community, beyond their critical contributions to acute care. The current landscape also directed the committee’s focus on primary care; concern over an adequate supply of primary care providers has been expressed and demand for primary care is expected to grow as millions more Americans gain insurance coverage through implementation of the ACA (see Chapters 1 and 2). Additionally, many provisions of the ACA focus on improving access to primary care, offering further opportunities for nurses to play a role in transforming the health care system and improving patient care.

The committee recognizes that improved primary care is not a panacea and that acute care services will always be needed. However, the committee sees primary care in community settings as an opportunity to improve health by reaching people where they live, work, and play. Nurses serving in primary care roles could expand access to care, educate people about health risks, promote healthy lifestyles and behaviors to prevent disease, manage chronic diseases, and coordinate care.

The committee also focused on advanced practice registered nurses in its discussion of some topics, most notably scope of practice. Recognizing the importance of primary care as discussed above, the committee viewed the potential contributions of these nurses to meeting the great need for primary care services if they could practice uniformly to the full extent of their education and training.

Available Evidence

The charge to the committee called for the formulation of a set of bold national-level recommendations—a considerable task. To develop its recommendations, the committee examined the available published evidence, drew on committee members’ expert judgment and experience, consulted experts engaged in the Robert Wood Johnson Foundation Nursing Research Network, and commissioned the papers that appear in Appendixes F through J on the CD-ROM in the back of this report. The committee also called on foremost experts in nursing, nursing research, and health policy to provide input, perspective, and expertise during its public workshops and forums (described in Appendix C).

In addition to the peer-reviewed literature and newly commissioned research, the committee considered anecdotal evidence and self-evaluations for emerging models of care being implemented across the country. Evidence to support the
diffusion of a variety of promising innovative models informed the committee’s deliberations and recommendations. Many of these innovations are highlighted as case studies throughout the report, and others are discussed in the appendixes. These case studies offer real-life examples of successful innovations that were developed by nurses or feature nurses in a leadership role, and are meant to complement the peer-reviewed evidence presented in the text. The committee believes these case studies contribute to the evidence base on how nurses can serve in reconceptualized roles to directly affect the quality, accessibility, and value of care. Cumulatively, the case studies and nurse profiles demonstrate what is possible and what the future of nursing could look like under ideal circumstances in which nurses would be highly educated and well prepared by an education system that would promote seamless academic progression, in which nurses would be practicing to the full extent of their education and training, and in which they would be acting as full partners in efforts to redesign the health care system.

The committee drew on a wealth of sources of evidence to support its recommendations. The recommendations presented are based on the best evidence available. There is a need, however, to continue building the evidence base in a variety of areas. The committee identified several research priorities to build upon its recommendations. For example, data are lacking on the work of nurses and the nursing workforce in general, primarily because of a dearth of large and well-designed studies explicitly exploring these issues. Accordingly, the committee calls for research in a number of areas that would yield evidence related to the future of nursing to address some of the shortcomings in the data it encountered. Boxes 7-1 through 7-3 list research questions that are directly connected to the recommendations and the discussion in Chapters 3 through 5. The committee believes that answers to these research questions are needed to help advance the profession.

Costs Associated with the Recommendations

The current state of the U.S. economy and its effects on federal, state, and local budgets pose significant challenges to transforming the health care system. These fiscal challenges also will heavily influence the implementation of the committee’s recommendations. While providing cost estimates for each recommendation was beyond the scope of this study, the committee does not deny that there will be costs—in some cases sizable—associated with implementing its recommendations. These costs must be carefully weighed against the potential for long-term benefit. Expanding the roles and capacity of the nursing profession will require significant up-front financial resources, but this investment, in the committee’s view, will help secure a strong foundation for a future health care system that can provide high-quality, accessible, patient-centered care. Based on its expert opinion and the available evidence, the committee believes that, despite the fiscal challenges, implementation of its recommendations is necessary.
BOX 7-1
Research Priorities for Transforming Nursing Practice

Scope of Practice
- Comparison of costs, quality outcomes, and access associated with a range of primary care delivery models.
- Examination of the impact of expanding the range of providers allowed to certify patients for home health services and for admission to hospice or a skilled nursing facility.
- Examination of the impact of expanding the range of providers allowed to perform initial hospital admitting assessments.
- Capture of intended and unintended consequences of alternative reimbursement mechanisms for advanced practice registered nurses (APRNs), physicians, and other providers of primary care.
- Exploration of the impact of alternative payment reform policies on the organization and effectiveness of care teams and on the role played by registered nurses (RNs), physician assistants, and APRNs on care teams.
- Capture of the impact of health insurance exchanges on the role of APRNs in the provision of primary care in the United States.

Residencies
- Identification of the key features of residencies that result in nurses acquiring confidence and competency at a reasonable cost.
- Analysis of the possible unintended consequences of reallocating federal, state, and/or facility budgets to support residencies and other nurse training opportunities.

Implementation of the Recommendations

Each of the recommendations presented in this report is supported by a level of evidence necessary to warrant its implementation. This does not mean, however, that the evidence currently available to support the committee’s recommendations is sufficient to guide or motivate their implementation. The research priorities presented in Boxes 7-1 through 7-3 constitute key evidence gaps that need to be filled to convince key stakeholders that each recommendation is fundamental to the transformation of care delivered by nurses. For example, to be convinced to purchase equipment necessary to expand the number of nurses that can be educated using expensive new teaching technologies, such as high-fidelity
## Teamwork
- Identification of the main barriers to collaboration between nurses and other health care staff in a range of settings.
- Identification and testing of new or existing models of care teams that have the potential to add value to the health care system if widely implemented.
- Identification and testing of educational innovations that have the potential to increase health care professionals’ ability to serve as productive, collaborative care team members.

## Technology
- Identification and testing of new and existing technologies intended to support nurses’ decision making and care delivery.
- Capture of the costs and benefits of a range of care technologies intended to support nurses’ decision making and care delivery.
- Identification of the contributions of various health professionals to the design and development, purchase, implementation, and evaluation of devices and information technology products.
- Development of a measure of “meaningful use” of information technology by nurses.

## Value
- Capture of the impact of changes made to the system of care delivery on costs and quality over the next 5–10 years.
- Capture of the costs of implementing the recommendations in this report.
- Capture of the impact of implementing the recommendations in this report on the cost and quality of health care provided in the United States.
- Analysis of the intended and unintended effects of increasing payment for primary care provided by physicians and other providers.

Simulation, distance learning, and online education modalities, decision makers in nursing schools will likely need evidence for the impact of these technologies on increasing the capacity of the nursing education system, as well as assurance that these technologies are an effective way to educate students. Likewise, before agreeing to reorganize care and training in a way that supports nursing residencies, hospitals will likely want to understand the true costs of such programs, as well as the key ingredients for their success. And before state political leaders can be persuaded to enact legislation to expand and standardize the scope of practice for advanced practice registered nurses, they will need messages to convey to their constituents about what these changes will mean for acquiring timely access to high-quality primary care services.

The committee urges the health services research community to embark on research agendas that can produce the evidence needed to guide the implementation of its recommendations. At the same time, the committee recognizes, from
BOX 7-2
Research Priorities for Transforming Nursing Education

- Identification of the combination of salary, benefits, and job attributes that results in the most highly qualified nurses being recruited and retained in faculty positions.
- Analysis of how alternative nurse faculty/student ratios affect instruction and the acquisition of knowledge.
- Capture of how optimal nurse faculty/student ratios vary with the implementation of new or existing teaching technologies, including distance learning.
- Identification of the features of online, simulation, and telehealth nursing education that most cost-effectively expand nursing education capacity.
- Capture of the experience in nursing schools that include new curriculum related to expanded clinical settings, evidence-based practice, and interprofessional and patient-centered care.
- Identification and evaluation of new and existing models of nursing education implemented to ensure that nurses acquire fundamental competencies needed to lead and engage in continuous quality improvement initiatives.
- Identification or development of an assessment tool to ensure that nurses have acquired the full range of competence required to practice nursing in undergraduate, postgraduate, and continuing education.
- Analysis of the impact of a range of strategies for increasing the number of nurses with a doctorate on the supply of nurse faculty, scientists, and researchers.
- Identification of the staff and environmental characteristics that best support the success of diverse nurses working to acquire doctoral degrees.
- Identification and testing of new and existing models of education to support nurses’ engagement in team-based, patient-centered care to diverse populations, across the lifespan, in a range of settings.
- Development of workforce demand models that can predict regional faculty shortages.

the work of Mary Naylor and colleagues (2009), that a strong evidence base, even if supported by the results of multiple randomized clinical trials funded by the National Institutes of Health, will not be sufficient to propel a new model, policy, or practice to a position of widespread acceptance and implementation. “Health care is rich in evidence-based innovations, yet even when such innovations are implemented successfully in one location, they often disseminate slowly—if at all. Diffusion of innovations is a major challenge in all industries including health care” (Berwick, 2003).

Experience with the Transitional Care Model (TCM), described in Chapter 2, illustrates this point. In this case, barriers intrinsic to the way care is currently organized, regulated, reimbursed, and delivered have delayed the ability of a cost-effective, quality-enhancing model to improve the lives of the chronically
BOX 7-3
Research Priorities for Transforming Nursing Leadership

- Identification of the personal and professional characteristics most critical to leadership of health care organizations, such as accountable care organizations, health care homes, medical homes, and clinics.
- Identification of the skills and knowledge most critical to leaders of health care organizations, such as accountable care organizations, health care homes, medical homes, and clinics.
- Identification of the personal and professional characteristics most important to leaders of quality improvement initiatives in hospitals and other settings.
- Identification of the characteristics of mentors that have been (or could be) most successful in recruiting and training diverse nurses and nurse faculty.
- Identification of the influence of nursing on important health care decisions at all levels.
- Identification of the unique contributions of nurses to health care committees or boards.

ill. Learning from barriers to diffuse evidence-based health care interventions within health systems, Naylor and colleagues identified several ingredients crucial to successful diffusion. First, the model or innovation should be a good fit in response to a critical need, either within an organization or nationwide. Second, without strong champions, especially those with decision-making power, there is very little chance of widespread adoption. The researchers learned the hard way the cost of failure to engage all stakeholders in a project—early, continually, and throughout. Engagement with the media is especially important. An understanding of the landscape is necessary as well and should guide efforts to market the innovation to others. Milestones and measures of success are important to all team members and throughout the entire diffusion process. Finally, flexibility, or the willingness to adapt the model or innovation to meet environmental or organizational demands, increases the probability of success (Naylor et al., 2009).

Planning for the implementation of the committee’s recommendations is beyond the scope of this report. However, the committee urges health care providers, organizations, and policy makers to carry out the eight recommendations presented below to enable nurses to lead in the transformation of the health care system and advance the health of patients and communities throughout the nation.

CONCLUSION

The committee believes the implementation of its recommendations will help establish the needed groundwork in the nursing profession to further the
work of nurses in innovating and improving patient care. The committee sees its recommendations as the building blocks required to expand innovative models of care, as well as to improve the quality, accessibility, and value of care, through nursing. The committee emphasizes that the synergistic implementation of all of its recommendations as a whole will be necessary to truly transform the nursing profession into one that is capable of leading change to advance the nation’s health.

RECOMMENDATIONS

Recommendation 1: Remove scope-of-practice barriers. Advanced practice registered nurses should be able to practice to the full extent of their education and training. To achieve this goal, the committee recommends the following actions.

For the Congress:

- Expand the Medicare program to include coverage of advanced practice registered nurse services that are within the scope of practice under applicable state law, just as physician services are now covered.
- Amend the Medicare program to authorize advanced practice registered nurses to perform admission assessments, as well as certification of patients for home health care services and for admission to hospice and skilled nursing facilities.
- Extend the increase in Medicaid reimbursement rates for primary care physicians included in the ACA to advanced practice registered nurses providing similar primary care services.
- Limit federal funding for nursing education programs to only those programs in states that have adopted the National Council of State Boards of Nursing Model Nursing Practice Act and Model Nursing Administrative Rules (Article XVIII, Chapter 18).

For state legislatures:

- Reform scope-of-practice regulations to conform to the National Council of State Boards of Nursing Model Nursing Practice Act and Model Nursing Administrative Rules (Article XVIII, Chapter 18).
- Require third-party payers that participate in fee-for-service payment arrangements to provide direct reimbursement to advanced practice registered nurses who are practicing within their scope of practice under state law.
For the Centers for Medicare and Medicaid Services:

- Amend or clarify the requirements for hospital participation in the Medicare program to ensure that advanced practice registered nurses are eligible for clinical privileges, admitting privileges, and membership on medical staff.

For the Office of Personnel Management:

- Require insurers participating in the Federal Employees Health Benefits Program to include coverage of those services of advanced practice registered nurses that are within their scope of practice under applicable state law.

For the Federal Trade Commission and the Antitrust Division of the Department of Justice:

- Review existing and proposed state regulations concerning advanced practice registered nurses to identify those that have anticompetitive effects without contributing to the health and safety of the public. States with unduly restrictive regulations should be urged to amend them to allow advanced practice registered nurses to provide care to patients in all circumstances in which they are qualified to do so.

**Recommendation 2: Expand opportunities for nurses to lead and diffuse collaborative improvement efforts.** Private and public funders, health care organizations, nursing education programs, and nursing associations should expand opportunities for nurses to lead and manage collaborative efforts with physicians and other members of the health care team to conduct research and to redesign and improve practice environments and health systems. These entities should also provide opportunities for nurses to diffuse successful practices.

To this end:

- The Center for Medicare and Medicaid Innovation should support the development and evaluation of models of payment and care delivery that use nurses in an expanded and leadership capacity to improve health outcomes and reduce costs. Performance measures should be developed and implemented expeditiously where best practices are evident to reflect the contributions of nurses and ensure better-quality care.
- Private and public funders should collaborate, and when possible pool funds, to advance research on models of care and innovative solutions,
including technology, that will enable nurses to contribute to improved health and health care.

- Health care organizations should support and help nurses in taking the lead in developing and adopting innovative, patient-centered care models.
- Health care organizations should engage nurses and other front-line staff to work with developers and manufacturers in the design, development, purchase, implementation, and evaluation of medical and health devices and health information technology products.
- Nursing education programs and nursing associations should provide entrepreneurial professional development that will enable nurses to initiate programs and businesses that will contribute to improved health and health care.

**Recommendation 3: Implement nurse residency programs.** State boards of nursing, accrediting bodies, the federal government, and health care organizations should take actions to support nurses’ completion of a transition-to-practice program (nurse residency) after they have completed a prelicensure or advanced practice degree program or when they are transitioning into new clinical practice areas.

The following actions should be taken to implement and support nurse residency programs:

- State boards of nursing, in collaboration with accrediting bodies such as the Joint Commission and the Community Health Accreditation Program, should support nurses’ completion of a residency program after they have completed a prelicensure or advanced practice degree program or when they are transitioning into new clinical practice areas.
- The Secretary of Health and Human Services should redirect all graduate medical education funding from diploma nursing programs to support the implementation of nurse residency programs in rural and critical access areas.
- Health care organizations, the Health Resources and Services Administration and Centers for Medicare and Medicaid Services, and philanthropic organizations should fund the development and implementation of nurse residency programs across all practice settings.
- Health care organizations that offer nurse residency programs and foundations should evaluate the effectiveness of the residency programs in improving the retention of nurses, expanding competencies, and improving patient outcomes.
Recommendation 4: Increase the proportion of nurses with a baccalaureate degree to 80 percent by 2020. Academic nurse leaders across all schools of nursing should work together to increase the proportion of nurses with a baccalaureate degree from 50 to 80 percent by 2020. These leaders should partner with education accrediting bodies, private and public funders, and employers to ensure funding, monitor progress, and increase the diversity of students to create a workforce prepared to meet the demands of diverse populations across the lifespan.

- The Commission on Collegiate Nursing Education, working in collaboration with the National League for Nursing Accrediting Commission, should require all nursing schools to offer defined academic pathways, beyond articulation agreements, that promote seamless access for nurses to higher levels of education.
- Health care organizations should encourage nurses with associate’s and diploma degrees to enter baccalaureate nursing programs within 5 years of graduation by offering tuition reimbursement, creating a culture that fosters continuing education, and providing a salary differential and promotion.
- Private and public funders should collaborate, and when possible pool funds, to expand baccalaureate programs to enroll more students by offering scholarships and loan forgiveness, hiring more faculty, expanding clinical instruction through new clinical partnerships, and using technology to augment instruction. These efforts should take into consideration strategies to increase the diversity of the nursing workforce in terms of race/ethnicity, gender, and geographic distribution.
- The U.S. Secretary of Education, other federal agencies including the Health Resources and Services Administration, and state and private funders should expand loans and grants for second-degree nursing students.
- Schools of nursing, in collaboration with other health professional schools, should design and implement early and continuous interprofessional collaboration through joint classroom and clinical training opportunities.
- Academic nurse leaders should partner with health care organizations, leaders from primary and secondary school systems, and other community organizations to recruit and advance diverse nursing students.

Recommendation 5: Double the number of nurses with a doctorate by 2020. Schools of nursing, with support from private and public funders, academic administrators and university trustees, and accrediting bodies, should double the number of nurses with a doctorate by 2020 to add to the cadre of nurse faculty and researchers, with attention to increasing diversity.
• The Commission on Collegiate Nursing Education and the National
League for Nursing Accrediting Commission should monitor the prog-
ress of each accredited nursing school to ensure that at least 10 percent
of all baccalaureate graduates matriculate into a master’s or doctoral
program within 5 years of graduation.
• Private and public funders, including the Health Resources and Services
Administration and the Department of Labor, should expand funding for
programs offering accelerated graduate degrees for nurses to increase
the production of master’s and doctoral nurse graduates and to increase
the diversity of nurse faculty and researchers.
• Academic administrators and university trustees should create salary and
benefit packages that are market competitive to recruit and retain highly
qualified academic and clinical nurse faculty.

Recommendation 6: Ensure that nurses engage in lifelong learning. Accredit-
ing bodies, schools of nursing, health care organizations, and continuing com-
petency educators from multiple health professions should collaborate to ensure
that nurses and nursing students and faculty continue their education and engage
in lifelong learning to gain the competencies needed to provide care for diverse
populations across the lifespan.

• Faculty should partner with health care organizations to develop and
prioritize competencies so curricula can be updated regularly to ensure
that graduates at all levels are prepared to meet the current and future
health needs of the population.
• The Commission on Collegiate Nursing Education and the National
League for Nursing Accrediting Commission should require that all
nursing students demonstrate a comprehensive set of clinical perfor-
manance competencies that encompass the knowledge and skills needed
to provide care across settings and the lifespan.
• Academic administrators should require all faculty to participate in
continuing professional development and to perform with cutting-edge
competence in practice, teaching, and research.
• All health care organizations and schools of nursing should foster a
culture of lifelong learning and provide resources for interprofessional
continuing competency programs.
• Health care organizations and other organizations that offer continu-
ing competency programs should regularly evaluate their programs for
adaptability, flexibility, accessibility, and impact on clinical outcomes
and update the programs accordingly.

Recommendation 7: Prepare and enable nurses to lead change to advance
health. Nurses, nursing education programs, and nursing associations should
prepare the nursing workforce to assume leadership positions across all levels, while public, private, and governmental health care decision makers should ensure that leadership positions are available to and filled by nurses.

- Nurses should take responsibility for their personal and professional growth by continuing their education and seeking opportunities to develop and exercise their leadership skills.
- Nursing associations should provide leadership development, mentoring programs, and opportunities to lead for all their members.
- Nursing education programs should integrate leadership theory and business practices across the curriculum, including clinical practice.
- Public, private, and governmental health care decision makers at every level should include representation from nursing on boards, on executive management teams, and in other key leadership positions.

Recommendation 8: Build an infrastructure for the collection and analysis of interprofessional health care workforce data. The National Health Care Workforce Commission, with oversight from the Government Accountability Office and the Health Resources and Services Administration, should lead a collaborative effort to improve research and the collection and analysis of data on health care workforce requirements. The Workforce Commission and the Health Resources and Services Administration should collaborate with state licensing boards, state nursing workforce centers, and the Department of Labor in this effort to ensure that the data are timely and publicly accessible.

- The Workforce Commission and the Health Resources and Services Administration should coordinate with state licensing boards, including those for nursing, medicine, dentistry, and pharmacy, to develop and promulgate a standardized minimum data set across states and professions that can be used to assess health care workforce needs by demographics, numbers, skill mix, and geographic distribution.
- The Workforce Commission and the Health Resources and Services Administration should set standards for the collection of the minimum data set by state licensing boards; oversee, coordinate, and house the data; and make the data publicly accessible.
- The Workforce Commission and the Health Resources and Services Administration should retain, but bolster, the Health Resources and Services Administration’s registered nurse sample survey by increasing the sample size, fielding the survey every other year, expanding the data collected on advanced practice registered nurses, and releasing survey results more quickly.
- The Workforce Commission and the Health Resources and Services Administration should establish a monitoring system that uses the most
current analytic approaches and data from the minimum data set to systematically measure and project nursing workforce requirements by role, skill mix, region, and demographics.

- The Workforce Commission and the Health Resources and Services Administration should coordinate workforce research efforts with the Department of Labor, state and regional educators, employers, and state nursing workforce centers to identify regional health care workforce needs, and establish regional targets and plans for appropriately increasing the supply of health professionals.

- The Government Accountability Office should ensure that the Workforce Commission membership includes adequate nursing expertise.

REFERENCES


The Committee on the Robert Wood Johnson Foundation (RWJF) Initiative on the Future of Nursing, at the Institute of Medicine (IOM) was asked to produce a report providing recommendations for an action-oriented blueprint for the future of nursing. The broad scope of this 13-month study included an examination of public and private policies at the national, state, and local levels. The recommendations presented in this report identify vital roles for nurses in designing and implementing a transformed health care system that provides Americans with high-quality care that is accessible, affordable, patient centered, and evidence based. To provide a comprehensive response to its charge, the committee tapped the wide-ranging expertise of its members and reviewed data from a variety of sources, including recent literature; data and reports from the Nursing Research Network, supported by RWJF; public and stakeholder input gathered through a series of technical workshops and public forums; site visits to a variety of health care settings where nurses do their work; and commissioned papers on selected topics.

EXPERTISE

The committee was composed of 18 members with expertise and experience in diverse areas, including nursing, federal and state administration and regulations, hospital and health plan administration, business administration, health information and technology, public health, health services research, health policy, workforce research and policy, and economics. On occasion, the committee identified areas related to its charge that required specialized knowledge and expertise not available within its membership, such as specific areas of law, scope-of-prac-
tice regulations, nursing research methods and data analysis, and health policy. In such cases, the committee called upon the foremost experts in those fields to serve as consultants and advisors during its deliberations (see the acknowledgments section of the report for a list of these individuals). In addition, the committee benefited from resources made available through the unique partnership between the IOM and RWJF, which allowed for borrowed-staff agreements that provided the committee with additional expertise from RWJF on nursing, nursing research, and communications. This partnership also facilitated the availability of additional information resources that were provided through AARP’s Center for Championing Nursing in America and AcademyHealth.

**LITERATURE REVIEW**

Over the course of the study, the committee received and reviewed a wide range of literature from a variety of sources that was relevant to all aspects of its charge. Staff monitored key developments related to nursing, including newly published literature and legislative activity on both the federal and state levels, with input from the Center to Champion Nursing in America, the NRN (described below), and GYMR public relations. Each committee meeting and public forum provided an opportunity for distinguished experts to submit articles and reports relevant to their presentations. Finally, committee members and the public were invited to submit articles and reports that would further support the committee’s work. In total, the committee’s database of relevant documents included almost 400 articles and reports.

Nursing is a frequently studied profession. Since the 1923 release of the Goldmark Report, funded by the Rockefeller Foundation, hundreds of public and private commissions and task forces have examined many facets of the profession, including its education system, diversity, scope of practice, workforce capacity, and relationship to other health professions and the public (Goldmark, 1923). The primary driver for this interest in the profession is nurses’ essential role in caring for the sick and supporting the well. A number of factors affect the implementation of recommendations contained in previous reports, such as the exclusion of nurses from their production; the failure of the profession itself, through a lack of either resources or political will, to act on the recommendations; or the failure to redirect the focus from nurses to what is necessary to improve patient care. Additional factors, such as context, time, and place, also influence the success of a study and the implementation of its recommendations.

Since 1997, the IOM has produced at least 20 reports or workshop summaries related directly or indirectly to the nursing profession. They all share at least four common themes: nurses are a critical factor in health care because they are the closest to and spend the most time with patients; nurses need the skills and knowledge to keep patients safe and help them stay healthy or recover from illness; new models of care should be developed to better utilize nurses’ skills
and knowledge while improving patient care and decreasing costs; and patients receive better care when nurses and other health professionals work together effectively. The last broad-based study of the nursing profession published by the IOM was *Nursing and Nursing Education: Public Policies and Private Actions* (IOM, 1983). More recently, the IOM published *Keeping Patients Safe: Transforming the Work Environment of Nurses* (IOM, 2004). This report describes strategies for improving nurses’ work environments and responding to the overwhelming demands they often face, with the ultimate goal of improving the safety and quality of care.

As the committee was conducting this study, a number of additional reports about nursing and nursing education, in particular, were released. Four months prior to the launch of the study, Prime Minister Gordon Brown charged a commission in England to examine the future of nursing and midwifery. The commission’s report, *Front Line Care: The Future of Nursing and Midwifery in England* (Prime Minister’s Commission on the Future of Nursing and Midwifery in England, 2010) states that nurses and midwives have great potential to influence health and must renew their pledge to society to deliver high-quality, compassionate care, and that they must be well supported to do so. A report released by the Josiah Macy, Jr. Foundation, *Who Will Provide Primary Care and How Will They Be Trained?* (Cronenwett and Dzau, 2010), likewise suggests that nurses are well positioned to improve health and recommends that any barriers preventing nurse practitioners from serving as primary care providers or leading models of primary care delivery be removed.

Several reports emphasize that continuing education is crucial if nurses, and other health professionals, are to deliver high-quality and safe care throughout their careers. They include *Continuing Education in the Health Professions: Improving Healthcare Through Lifelong Learning* (Hager et al., 2008), another report from the Macy Foundation; the IOM’s *Redesigning Continuing Education in the Health Professions* (IOM, 2009); and *Lifelong Learning in Medicine and Nursing* (AACN and AAMC, 2010), which was cosponsored by the American Association of Colleges of Nursing and the Association of American Medical Colleges. A report specifically addressing the initial education of nurses, published by Dr. Patricia Benner and her team at the Carnegie Foundation, *Educating Nurses: A Call for Radical Transformation* (Benner et al., 2009), calls for a more highly educated nursing workforce, recommending that all entry-level registered nurses (RNs) be prepared at the baccalaureate level and that all RNs earn at least a master’s degree within 10 years of initial licensure.

**RWJF NURSING RESEARCH NETWORK**

To increase the amount, relevance, and accessibility of research available to the committee, RWJF launched a parallel project called the Nursing Research Network (NRN) that generated, synthesized, and disseminated a broad range of
research findings. These products both anticipated the committee’s information needs and were responsive to requests made by committee members throughout the study process. Many of these products informed the committee’s discussions of the present and future of nursing.

Lori Melichar served as research director for the NRN initiative. She supervised the NRN and led efforts to prioritize a research agenda that would meet the committee’s information needs. The majority of the NRN’s research activities were led and conducted by four research managers from across the country who served as consultants to the committee: Linda Aiken, University of Pennsylvania; Peter Buerhaus, Vanderbilt University; Christine Kovner, New York University; and Joanne Spetz, University of California, San Francisco. Additional researchers and experts were engaged to fill gaps as needed. The production and delivery of NRN products, including reports, research briefs, charts, tables, and commentaries, were coordinated by Patricia (Polly) Pittman, of AcademyHealth and subsequently The George Washington University, and her staff.

The NRN began by providing the committee with a foundational set of 20 articles in the following areas of nursing policy: chronic and long-term care, education policy, expansion of access to primary care, foreign-educated nurses, human resource management (including nurse turnover rates), improvement of quality and safety (including workforce environment and staffing issues), prevention and wellness, promotion of health information technology, cost containment, and workforce estimations. To date, the NRN has produced 6 reports, 48 charts and tables, and 13 research briefs. A broad range of topics has been covered, including estimates of supply and demand, scope of practice, faculty shortages, career ladders, payment systems, health information technology, and physician and patient perceptions of nursing care. All of these products will be available to the public through either RWJF’s website or peer-reviewed publications.

COMMITTEE MEETINGS

The committee convened for five meetings and participated in several conference calls throughout the study to deliberate on the content of this report and its recommendations. To obtain additional information on specific aspects of the study charge, the committee included in three of its meetings technical workshops that were open to the public and held three public forums on the future of nursing and the role of nurses across various settings. Subject matter experts were invited to these public sessions to present information and recommendations for the committee’s consideration, answer the committee’s questions, and participate in subsequent discussions.

The three technical workshops were held in conjunction with the committee’s July, September, and November 2009 meetings. The purpose of these workshops was to gather information on specified topics. The committee determined the topics and speakers based on its information needs. The first meeting included
APPENDIX A

a review and discussion of the committee’s charge with the study’s sponsor, RWJF; an overview and description of the current nursing workforce and future workforce needs; and an introduction to the NRN and the resources that would be made available to the committee through the network. The second workshop was intended to provide an overview of the Prime Minister’s Commission on the Future of Nursing and Midwifery and the efforts in England to transform the nursing profession; a discussion of possible ways for the nursing profession to fulfill its promise; and a review of ongoing health care reform efforts in the United States. The third workshop looked at nurses’ role in addressing disparities; ways to ensure quality, access, and value in health care; and reimbursement and financing of care delivered by nurses. The agendas for these three workshops are provided in Boxes A-1 through A-3 at the end of this appendix.

The three public forums were held in locations across the United States to engage a broader range of stakeholders and the public. The first, held in October 2009 at Cedars-Sinai Medical Center in Los Angeles, focused on quality and safety, technology, and interdisciplinary collaboration in acute care settings. The second, held in December 2009 at the Community College of Philadelphia, featured presentations and discussion of achievements and challenges in care in the community and focused on community health, public health, primary care, and long-term care. The final forum, held in February 2010 at the University of Texas M. D. Anderson Cancer Center, featured discussion of three topics in nursing education: what to teach, how to teach, and where to teach. Summaries of each of these forums were published separately and are available on the CD-ROM in the back of this report. The agendas for these forums are provided in Boxes A-4 through A-6 at the end of this appendix, and highlights from the forums appear in Appendix C.

In preparation for each of the forums and to augment the information gathered from presenters and discussants, the committee solicited written testimony through an online questionnaire (see Boxes A-7 through A-9 at the end of this appendix for the specific questions that were asked). The public and key stakeholders were invited to provide information on innovations, models, barriers, and opportunities for each of the topics covered at the forums, as well as their vision for the future of nursing overall. The committee received more than 200 submissions of testimony during the course of the study; many of the individuals who submitted this testimony also presented it at the forums. Each forum also included an open microphone session for ad hoc testimony and input from participants on a variety of topics relevant to the forum discussions.

SITE VISITS

In conjunction with each forum, small groups of committee members participated in a series of site visits. These visits highlighted a wide range of settings in which nurses work, as well as their various roles. The sites visited included acute

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care units in Cedars-Sinai Medical Center—ranging from critical care units to the emergency department and surgical units to child and maternal health and obstetrics units; community health settings in Philadelphia—ranging from a school-based health center to public health clinics and nurse-managed health centers; and education settings in Houston, where committee members saw demonstrations of high-fidelity simulation laboratories and participated in discussions of interprofessional education and educating for quality control. Committee members also talked with nurses, other care providers, and administrators about the challenges nurses encounter daily in their work in these varied settings. Observations made during these site visits informed some of the questions committee members asked speakers at the forums and provided real-world perspectives of seasoned professionals.

**COMMISSIONED PAPERS**

The committee commissioned a series of papers from experts in subject areas relevant to its statement of task. These papers, included as Appendixes E–I on the CD-ROM in the back of this report, were intended to provide in-depth information on five selected topics:

- A paper written by Barbara L. Nichols, Catherine R. Davis, and Donna R. Richardson from CGFNS International reviews the ways in which other countries educate, regulate, and utilize nurses. This paper also addresses the migration and globalization of the nursing workforce and implications for education, service delivery, and health policy in the United States.
- A paper by Barbara J. Safriet describes federal options for maximizing the value of advanced practice registered nurses (APRNs) in providing quality and cost-effective health care. It includes a review of current mechanisms of payment and financing of services and impediments in the regulatory environment for APRNs, and offers an assessment of policy initiatives that could improve the value of APRNs.
- A paper written by Julie Sochalski of the University of Pennsylvania and Jonathan Weiner of The Johns Hopkins University examines the nursing workforce and possible shortages in the context of a reformed health care system. It examines trends and projections for the workforce, drawbacks of current approaches to assessing the workforce, opportunities and challenges of new workforce approaches, and implications for policy.
- One paper was presented as a series of briefs that provides examples of transformative models of nursing across a variety of settings and locales. This paper was compiled and edited by Linda Norlander of the University of California, San Francisco, and features collaborative
briefs written by 27 fellows of the RWJF Executive Nurse Leadership Program. The briefs cover topics in education, acute care, chronic disease management, palliative and end-of-life care, community health, school-based health, and public–private partnerships.

- A collection of seven papers was written by Linda Aiken of the University of Pennsylvania; Donald Berwick of the Institute for Healthcare Improvement; Linda Cronenwett of the University of North Carolina at Chapel Hill; Kathleen Dracup of the University of California, San Francisco; Catherine Gilliss of Duke University; Chris Tanner of Oregon Health and Science University; and Virginia Tilden of the University of Nebraska. This series of papers describes the most important initiatives required to ensure that future nursing education efforts contribute to improving the health of the population, enhancing the patient’s experience of care (including quality, access, and reliability), and reducing or controlling the per capita cost of care.

**REFERENCES**


## BOX A-1

### Technical Workshop #1

**July 14, 2009**

**National Academy of Sciences**
Lecture Room
2100 C Street, NW, Washington, DC 20037

### Public Agenda

<table>
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<th>Time</th>
<th>Event</th>
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| 11:00 AM   | **Delivery of Charge to the Committee**
              *John Lumpkin, Robert Wood Johnson Foundation* |
| 12:00 PM   | **Lunch Available**                                                   |
| 12:30−1:00 PM | **Outlook for the Nursing Workforce in the United States:**
                      *Can Nursing Win the Game?*
                      *Peter Buerhaus, Vanderbilt University* |
| 1:00−2:30 PM | **Robert Wood Johnson Foundation Nursing Research Network**          |
|             |   • Introduction to the Research Network                              |
|             |       - *Susan Hassmiller, Robert Wood Johnson Foundation*            |
|             |       - *Lori Melichar, Robert Wood Johnson Foundation*              |
|             |   • Panel discussion with members of the Nursing Research Network    |
|             |       - *Peter Buerhaus, Vanderbilt University*                      |
|             |       - *Christine Kovner, New York University*                      |
|             |       - *Arnold Milstein, Mercer Consulting*                         |
|             |       - *Mark Pauly, University of Pennsylvania*                     |
| 2:30 PM    | **Open Session Adjourns**                                            |
BOX A-2
Technical Workshop #2

September 14, 2009
Kaiser Family Foundation
Barbara Jordan Conference Center
1330 G Street, NW, Washington, DC

Public Agenda

9:00–10:00 AM  Overview of the Prime Minister’s Commission on the Future of Nursing and Midwifery
Ann Keen, Chair, and Parliamentary Under Secretary for Health Services
Anne Marie Rafferty, Commissioner (via videoconference)
Jane Salvage, Joint Lead, Support Office

10:00–11:30 AM  Fulfilling the Potential of the Nursing Workforce
Ann Hendrich, Ascension Health
Mary Naylor, University of Pennsylvania
Ed O’Neil, University of California, San Francisco (via videoconference)

11:30–11:45 AM  Break

11:45 AM–1:00 PM  Overview of the Status of Health Care Reform
Chris Jennings, Jennings Policy Strategies, Inc.
Dean Rosen, Mehlman Vogel Castagnetti, Inc.
Peter Reinecke, Reinecke Strategic Solutions, Inc.
BOX A-3
Technical Workshop #3

November 2, 2009
National Academy of Sciences
Lecture Room
2100 C Street, NW, Washington, DC

Public Agenda

8:00–9:00 AM The Role of Nurses in Addressing Health Disparities
Linda Burnes Bolton, Facilitator
David R. Williams, Harvard University
Nilda Peragallo, University of Miami School of Nursing
Antonia M. Villarruel, University of Michigan School of Nursing
Alicia Georges, Lehman College Department of Nursing

9:00–10:30 AM Reimbursement and Financing for Nursing Care
David Goodman and Jennie Chin Hansen, Facilitators
Mark McClellan, Brookings Institute
Gail Wilensky, Project HOPE
Ellen Kurtzman, The George Washington University
Meredith Rosenthal, Harvard University

10:30–10:45 AM Break

10:45–11:45 AM Quality, Access, and Value: Nursing Roles for the 21st Century
Donna Shalala, Facilitator
• Prevention/Wellness
  Susan Cooper, Tennessee Department of Health
• Chronic Disease Management
  Mary Mundinger, Dean and Professor in Health Policy, Columbia University School of Nursing
• End-of-Life Care
  Judy Lentz, CEO, Hospice and Palliative Nurses Association

11:45 AM Adjourn
BOX A-4
Forum on the Future of Nursing: Acute Care

October 19, 2009
Harvey Morse Auditorium
Cedars-Sinai Medical Center
8700 Beverly Boulevard, Los Angeles, CA 90048

Public Agenda

12:30 PM  Welcome and Introductions
Linda Burnes Bolton, Cedars-Sinai Medical Center
Tom Priselac, Cedars-Sinai Medical Center

1:00 PM  Acute Care: Current and Future State
Marilyn Chow, Kaiser Permanente

1:30 PM  Panel on Quality and Safety
Maureen Bisognano, Institute for Healthcare Improvement
Tami Minnier, University of Pittsburgh Medical Center

Reactor Panel
Bernice Coleman, Cedars-Sinai Medical Center
Nancy Chiang, California Student Nurses Association
Kurt Swartout, Kaiser Permanente
Joseph Guglielmo, University of California, San Francisco
Julia Hallisy, The Empowered Patient Coalition

Committee Q&A and Discussion

2:15 PM  Break

2:30 PM  Panel on Technology
Steve DeMello, Public Health Institute
Pam Cipriano, University of Virginia Health System

Reactor Panel
Committee Q&A and Discussion

3:15 PM  Panel on Interdisciplinary Collaboration
Alan Rosenstein, VHA West Coast
Pamela Mitchell, University of Washington

Reactor Panel
Committee Q&A and Discussion

4:00 PM  Presentation of Testimony
[A limited number of preselected individuals will be given the opportunity to present testimony.]

5:25 PM  Closing Remarks
Josef Reum, The George Washington University

5:30 PM  Adjourn
BOX A-5
Forum on the Future of Nursing: Care in the Community

December 3, 2009

Community College of Philadelphia
Great Hall (S2.19), Winnet Student Life Building
1700 Spring Garden, Philadelphia, PA 19130

Public Agenda

12:30 PM  Welcome and Introductions
Donna E. Shalala, University of Miami
Josef Reum, The George Washington University

12:45 PM  Notes on Prescription for Pennsylvania
Governor Ed Rendell

1:15 PM   Committee Q&A and Discussion

1:30 PM   Keynote Presentation
Mary Selecky, Washington State Department of Health

2:00 PM   Panel on Community and Public Health
Carol Raphael, Visiting Nurse Service of New York
Eileen Sullivan-Marx, University of Pennsylvania School of Nursing

Committee Q&A and Discussion
Preselected Testimony
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>3:00 PM</td>
<td><strong>Break</strong></td>
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<tr>
<td>3:15 PM</td>
<td><strong>Panel on Primary Care</strong>&lt;br&gt;<em>Tine Hansen-Turton, National Nursing Centers Consortium</em>&lt;br&gt;<em>Sandra Haldane, Indian Health Service</em>&lt;br&gt;<strong>Committee Q&amp;A and Discussion</strong>&lt;br&gt;<strong>Preselected Testimony</strong></td>
</tr>
<tr>
<td>4:15 PM</td>
<td><strong>Panel on Chronic and Long-Term Services and Supports</strong>&lt;br&gt;<em>Claudia Beverly, University of Arkansas for Medical Sciences School of Nursing</em>&lt;br&gt;<em>Lynda Hedstrom, Ovations-Evercare by UnitedHealthcare® Medicare Solutions</em>&lt;br&gt;<strong>Committee Q&amp;A and Discussion</strong>&lt;br&gt;<strong>Preselected Testimony</strong></td>
</tr>
<tr>
<td>5:10 PM</td>
<td><strong>Open Microphone Listening Session: Visions for the Future of Nursing</strong></td>
</tr>
<tr>
<td>5:30 PM</td>
<td><strong>Closing Remarks</strong>&lt;br&gt;<em>Josef Reum, The George Washington University</em></td>
</tr>
<tr>
<td>5:35 PM</td>
<td><strong>Adjourn</strong></td>
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BOX A-6
Forum on the Future of Nursing: Education

February 22, 2010
University of Texas, MD Anderson Cancer Center
Cancer Prevention Building (CPB), 8th floor
1155 Pressler Street, Houston, TX 77030

Public Agenda

8:00 AM  Welcomes and Introductions
Donna E. Shalala, University of Miami
John Lumpkin, The Robert Wood Johnson Foundation
John Mendelsohn, University of Texas, MD Anderson Cancer Center

8:15 AM  What We Should Teach: Arm Chair Discussion #1
Michael Bleich, Oregon Health and Science University, Moderator
Linda Cronenwett, University of North Carolina at Chapel Hill, School of Nursing
M. Elaine Tagliareni, National League for Nursing, formerly Community College of Philadelphia
Terry Fulmer, College of Nursing, New York University
Marla Salmon, University of Washington School of Nursing

9:15 AM  Preselected Testimony
Donna E. Shalala, Facilitator

9:30 AM  How We Should Teach: Arm Chair Discussion #2
Linda Burns Bolton, Cedars-Sinai Medical Center, Moderator
Pamela Jeffries, The Johns Hopkins University
Divina Grossman, Florida International University
John Rock, Florida International University
Bob Mendenhall, Western Governors University
Cathleen Krsek, University HealthSystem Consortium, UHC/AACN Nurse Residency Program™
<table>
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<tr>
<th>Time</th>
<th>Event</th>
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</table>
| 10:30 AM | Preselected Testimony  
  *Donna E. Shalala, Facilitator* |
| 10:45 AM | Break                                                               |
| 11:00 AM | Where We Should Teach: Arm Chair Discussion #3  
  *Jennie Chin Hansen, AARP, Moderator  
  Rose Yuhos, AHEC of Southern Nevada  
  Cathy Rick, Department of Veterans Affairs Nursing Academy  
  Christine Tanner, Oregon Health and Science University  
  Willis N. Holcombe, The Florida College System* |
| 12:00 PM | Preselected Testimony  
  *Donna E. Shalala, Facilitator* |
| 12:15 PM | Open Microphone Listening Session: Visions for the Future of Nursing  
  *Donna E. Shalala, Facilitator* |
| 12:35 PM | Closing Remarks  
  *Donna E. Shalala* |
| 12:40 PM | Adjourn                                                              |
BOX A-7
Testimony Questions for the Forum on
the Future of Nursing: Acute Care

Question 1: Quality and Safety
Please describe any or all of the following:
• innovative models in which nurses have been used to improve quality and/or safety in acute care settings
• barriers that acute care nurses face in maximizing quality and safety
• how nurses could be further engaged or effectively used to improve acute care quality and safety

Question 2: Technology
Please describe any or all of the following:
• how innovative technologies have been used in acute care settings to improve nurse-led patient care (include information on the measurement of the improvements)
• barriers to the adoption and use of innovative technology in acute care settings
• opportunities in acute care settings for further improvements in the delivery of care through the use of technology

Question 3: Interdisciplinary Collaboration
Please describe any or all of the following:
• innovations in acute care settings that have successfully advanced interdisciplinary collaboration or have been used to resolve limitations related to scope of practice
• limitations to interdisciplinary collaboration in acute care settings
• how interdisciplinary collaboration could be advanced to improve delivery of acute care and what the role of nurses should be in advancing this collaboration

Question 4: Additional Comments
If you have additional thoughts about nursing in acute care settings or if you would like to share information on innovations or models of care that does not fit within the categories listed above, please use the space provided below.

Question 5: Presentation of Testimony
If you are interested in presenting your testimony in person at the forum on October 19th in Los Angeles, please check the box below. (Please note that there are only a limited number of 2-minute slots available, and there is no funding available to cover travel expenses to the forum.)
Question 3: Interdisciplinary Collaboration
Please describe any or all of the following:
- innovations in acute care settings that have successfully advanced interdisciplinary collaboration or have been used to resolve limitations related to scope of practice
- limitations to interdisciplinary collaboration in acute care settings
- how interdisciplinary collaboration could be advanced to improve delivery of acute care and what the role of nurses should be in advancing this collaboration

Question 4: Additional Comments
If you have additional thoughts about nursing in acute care settings or if you would like to share information on innovations or models of care that does not fit within the categories listed above, please use the space provided below.

Question 5: Presentation of Testimony
If you are interested in presenting your testimony in person at the forum on October 19th in Los Angeles, please check the box below. (Please note that there are only a limited number of 2-minute slots available, and there is no funding available to cover travel expenses to the forum.)
BOX A-8  
Testimony Questions for the Forum on the 
Future of Nursing: Care in the Community

Question 1a: Community Health
Please describe any or all of the following:
• innovative models or initiatives in community health settings in which nurses have played a major role in the design, implementation, or evaluation (include information on improvement measures and outcomes)
• barriers in community health settings that nurses face in providing services or improving community health
• suggestions for how nurses could be further engaged or effectively used to improve care provided at the community level

Question 1b: Presentation of Testimony on Community Health
If you are interested in presenting your testimony on community health in person at the forum on December 3 in Philadelphia, please check the box below. (Please note that there are only a limited number of 2-minute slots available, and there is no funding available to cover travel expenses to the forum.)

Question 2a: Public Health
Please describe any or all of the following:
• innovative models or initiatives in public health in which nurses have played a major role in the design, implementation, or evaluation (include information on improvement measures and outcomes)
• barriers in public health that nurses face in providing services or improving the health of the public
• suggestions for how nurses could be further engaged or effectively used to improve public health

Question 2b: Presentation of Testimony on Public Health
If you are interested in presenting your testimony on public health in person at the forum on December 3 in Philadelphia, please check the box below. (Please note that there are only a limited number of 2-minute slots available, and there is no funding available to cover travel expenses to the forum.)

Question 3a: Primary Care
Please describe any or all of the following:
• innovative models or initiatives in primary care settings in which nurses have
played a major role in the design, implementation, or evaluation (include information on improvement measures and outcomes)

- barriers in primary care settings that nurses face in providing services or improving health outcomes
- suggestions for how nurses could be further engaged or effectively used to improve primary care

**Question 3b: Presentation of Testimony on Primary Care**
If you are interested in presenting your testimony on primary care in person at the forum on December 3 in Philadelphia, please check the box below. (Please note that there are only a limited number of 2-minute slots available, and there is no funding available to cover travel expenses to the forum.)

**Question 4a: Long-Term Care**
Please describe any or all of the following:

- innovative models or initiatives in long term care settings in which nurses have played a major role in the design, implementation, or evaluation (include information on improvement measures and outcomes)
- barriers in long-term care settings that nurses face in providing services or improving health outcomes
- suggestions for how nurses could be further engaged or effectively used to improve long-term care

**Question 4b: Presentation of Testimony on Long-Term Care**
If you are interested in presenting your testimony on long-term care in person at the forum on December 3 in Philadelphia, please check the box below. (Please note that there are only a limited number of 2-minute slots available, and there is no funding available to cover travel expenses to the forum.)

**Question 5a: Your Vision of the Future of Nursing**
Please describe your vision of the future of nursing across care settings. Your vision could include thoughts on the type of care nurses will provide, the types of settings they will be working in, how nurses will be educated and trained, how they will be paid and reimbursed, and some of the challenges nurses will be faced with.

**Question 5b: Additional Comments**
If you have additional thoughts about nursing in community health, public health, primary care, or long-term care settings or if you would like to share information on innovations or models of care that does not fit within the categories listed above, please use the space provided below. You may also e-mail documents or articles to support your testimony to nursing@nas.edu.
BOX A-9
Testimony Questions for the Forum on the Future of Nursing: Education

Question 1a: What We Should Teach
What we should teach encompasses issues and recommendations related to the ideal future state of nursing curricula.
Please describe any or all of the following:
- innovative models or initiatives within nursing curricula that are being employed to better prepare and educate nurses for future challenges in a variety of care settings
- innovative funding strategies and financial incentives for both students and institutions that could be used to advance what we should teach
- barriers to implementing expanded or new curricula
- suggestions for how the nursing curricula should change to better meet the future health needs of the population

Question 1b: Presentation of Testimony on What We Should Teach
If you are interested in presenting your testimony on what we should teach in person at the forum on February 22 in Houston, please check the box below. (Please note that there are only a limited number of 2-minute slots available, and there is no funding available to cover travel expenses to the forum.)

Question 2a: How We Should Teach
How we should teach encompasses issues and strategies, as well as partnerships or collaboratives, that should be used for educating and training nurses in an ideal future.
Please describe any or all of the following:
- innovative models or initiatives in nursing education that are being employed to advance the way in which nurses are educated and prepared
- innovative funding strategies and financial incentives for both students and institutions that could be used to advance how we should teach
- barriers to the implementation of innovative methodologies of education and training for nurses.
- suggestions for how current education methodologies can be advanced to better meet the future health needs of the population
Question 2b: Presentation of Testimony on How We Should Teach
If you are interested in presenting your testimony on how we should teach in person at the forum on February 22 in Houston, please check the box below. (Please note that there are only a limited number of 2-minute slots available, and there is no funding available to cover travel expenses to the forum.)

Question 3a: Where We Should Teach
Where we should teach encompasses issues and recommendations related to various venues and locations where nurses should be educated and trained, as well as partnerships or collaboratives that could be used in nursing education in an ideal future. Please describe any or all of the following:
- innovative models or initiatives in nursing education that take advantage of a variety of venues and locations for nursing education and training/continued education
- innovative funding strategies and financial incentives for both students and institutions that could be used to advance where we should teach
- barriers to expanding nursing education beyond traditional classroom settings
- suggestions for how current education can be expanded beyond traditional classroom settings to better meet the future health needs of the population

Question 3b: Presentation of Testimony on Where We Should Teach
If you are interested in presenting your testimony on where we should teach in person at the forum on February 22 in Houston, please check the box below. (Please note that there are only a limited number of 2-minute slots available, and there is no funding available to cover travel expenses to the forum.)

Question 4a: Your Vision of the Future of Nursing
Please describe your vision of the future of nursing across care settings. Your vision could include thoughts on the type of care nurses will provide, the types of settings they will be working in, how nurses will be educated and trained, how they will be paid and reimbursed, and some of the challenges nurses will be faced with.

Question 4b: Additional Comments
If you have additional thoughts about the future of nursing education, or if you would like to share information on innovations or models of care that does not fit within the categories listed above, please use the space provided below. You may also e-mail documents or articles to support your testimony to nursing@nas.edu. However, please note that only the first 250 words submitted in each section of this online form will be considered for presentation of oral testimony at the Houston forum.
Committee Biographical Sketches

Donna E. Shalala, Ph.D., FAAN, is chair, Robert Wood Johnson Foundation (RWJF) Initiative on the Future of Nursing, at the Institute of Medicine (IOM). She is president of the University of Miami and professor of political science. Dr. Shalala has more than 30 years of experience as an accomplished scholar, teacher, and administrator in government and universities. She has also held tenured professorships in political science at Columbia University, the City University of New York (CUNY), and the University of Wisconsin-Madison. She served as president of Hunter College of CUNY from 1980 to 1987 and as chancellor of the University of Wisconsin-Madison from 1987 to 1993. In 1993, President Clinton appointed her secretary of the Department of Health and Human Services (HHS), where she served for 8 years, becoming the longest-serving HHS secretary in U.S. history. She received the Presidential Medal of Freedom, the nation’s highest civilian award, in 2008, and is a member of the IOM.

Linda Burnes Bolton, Dr.P.H., R.N., FAAN, is vice chair, RWJF Initiative on the Future of Nursing, at the IOM. She serves as vice president for nursing, chief nursing officer, and director of nursing research at Cedars-Sinai Medical Center in Los Angeles, California. Dr. Burnes Bolton is a principal investigator at the Cedars-Sinai Burns and Allen Research Institute. Her research, teaching, and clinical expertise includes nursing and patient care outcomes research, performance improvement, and improvement of quality of care and cultural diversity within the health professions. Dr. Burnes Bolton served as national advisory chair for Transforming Care at the Bedside, an initiative of the Robert Wood Johnson Foundation to improve the nursing practice environment. She is a past president of the American Academy of Nursing and the National Black Nurses Association.
Michael R. Bleich, R.N., Ph.D., M.P.H., FAAN, is dean and Dr. Carol A. Lindeman Distinguished Professor for the School of Nursing and vice provost for inter-professional education and development at Oregon Health & Science University. His areas of expertise and scholarship focus on interprofessional leadership development, academic-service workforce development, strategic alignment of academic clinical enterprises, and analytics related to quality improvement to enhance practice and academic outcomes. Dr. Bleich began his health care career in 1970 and has progressed to hold administrative, education, and consultative roles in both academic and service settings. He arrived in Portland, Oregon, in August 2008, concluding a distinguished career at the University of Kansas. There, Dr. Bleich was professor and associate dean for clinical and community affairs in the School of Nursing, and concurrently served as chief executive officer of the school’s faculty practice plan, KU HealthPartners, Inc. In 2006, he was appointed chair of the Department of Health Policy and Management in the School of Medicine, the first nurse to hold the role of chair.

Troyen A. Brennan, M.D., J.D., M.P.H., is executive vice president and chief medical officer of CVS Caremark Corporation, serving in these roles since November 2008. Previously, Dr. Brennan served as executive vice president and chief medical officer of Aetna, Inc., from 2006 through 2008. From 2000 through 2006, he was president and chief executive officer of Brigham and Women’s Physicians Organization. He also served as professor of medicine at Harvard Medical School and as professor of law and public health at Harvard School of Public Health from 1991 to 2006. Dr. Brennan is a member of the IOM.

Robert E. Campbell, M.B.A., served as chairman of the board of trustees of the Robert Wood Johnson Foundation from July 1999 until March 2005 and was a board member until January 2009. Mr. Campbell is retired vice chairman of the board of directors of Johnson & Johnson (J&J), where he also was chairman of the Professional Sector. He joined J&J in 1955 and later served as an Air Force officer for 3 years, rejoining the company in 1959. During his career, he held numerous positions in financial and general management, including treasurer, vice president finance, and executive committee member. Mr. Campbell is chairman of the advisory board of the Cancer Institute of New Jersey and is past chairman and current trustee emeritus of the board of trustees of Fordham University. He is a member of the advisory council for the College of Science of the University of Notre Dame and an overseer of the Robert Wood Johnson Medical School.

Leah Devlin, D.D.S., M.P.H., received her dental degree and master’s degree in public health administration at the University of North Carolina’s (UNC) Chapel Hill campus. At UNC, she was inducted into Phi Beta Kappa and the School of Public Health’s honor society. In 2008, she was recognized with the UNC Distinguished Alumni Award. Dr. Devlin began her professional career at the Wake
County Department of Health, where she served as director for 10 years. She joined the North Carolina Department of Health and Human Services in 1996 and served as state health director from 2001 to 2009. Beginning in September 2009, Dr. Devlin became Gillings Visiting Professor at the UNC Gillings School of Global Public Health. She is also past president of the North Carolina Association of Local Health Directors, past president of the North Carolina Public Health Association, and past president of the Association of State and Territorial Health Officials.

Catherine Dower, J.D., is associate director for research at the University of California, San Francisco, Center for the Health Professions. At the center, she codirects the Health Workforce Tracking Collaborative, which assesses health care workforce challenges such as maldistribution, shortages, language access, and scope-of-practice issues. For 5 years she directed the California Workforce Initiative, a comprehensive research and policy program that included studies on physician supply and distribution, nursing and allied health shortages, and safety net workforce challenges. As staff to the Pew Health Professions Commission, Ms. Dower codirected the commission’s national Taskforce on Health Care Workforce Regulation and was a principal author of the commission’s reports on health professions regulation. Her published work targets health professions regulation, practice models, and workforce analysis. Ms. Dower serves or has served on several boards and committees, including the National Commission for Certifying Agencies, the National Certification Commission for Acupuncture and Oriental Medicine, and the Foreign Credentialing Commission for Physical Therapy. She received her undergraduate and law degrees from the University of California at Berkeley and is licensed to practice law in the state of California.

Rosa Gonzalez-Guarda, Ph.D., M.S.N., M.P.H., R.N., CPH, is currently an assistant professor at the University of Miami School of Nursing and Health Studies. Throughout her academic and professional career, she has focused on improving the behavioral health and public health of minorities and other at-risk communities throughout the world. In the past, she has worked on various community health nursing projects, public health programs, and research targeting African Americans; Hispanic Americans; and other vulnerable populations in Europe, Latin America, and the Caribbean. Dr. Gonzalez-Guarda has been a funded fellow of the Substance Abuse and Mental Health Services Administration’s Minority Fellowship Program at the American Nurses Association, the National Hispanic Science Network on Drug Abuse, and the University of Miami Graduate School. She is currently a co-investigator for two studies within a research center funded by the National Center on Minority Health and Health Disparities/National Institutes of Health referred to as El Centro (Center of Excellence for Hispanic Health Disparities Research). One of these studies explores the experiences of Hispanic men with substance abuse, violence, and risky sexual
behaviors (Project VIDA—Violence, Intimate Relationships, and Drug Abuse among Latinos), while the other evaluates the effectiveness of an HIV prevention program targeting Hispanic women in the community (Project SEPA—Salud, Prevención y Auto cuidado).

David C. Goodman, M.D., M.S., is professor of pediatrics and of health policy at the Dartmouth Institute for Health Policy and Clinical Practice in Hanover, New Hampshire; director of the Center for Health Policy Research; and co–principal investigator, Dartmouth Atlas of Health Care. Dr. Goodman’s primary research interest is geographic and hospital variation in the health workforce and its relationship to health outcomes. His research papers and editorials on this topic have been published in the New England Journal of Medicine, the Journal of the American Medical Association, Health Affairs, Pediatrics, and The New York Times. Dr. Goodman is also a charter member of the Dartmouth Atlas of Health Care working group. He currently leads Atlas projects examining variation in end-of-life cancer care, post–hospital discharge care, and regional hospital and physician capacity. Dr. Goodman is a member and recent member, respectively, of the editorial boards of the journals Health Services Research and Pediatrics. After joining the Dartmouth faculty in 1988, he undertook allergy and clinical immunology training. He recently stepped down as chief of the Section of Allergy and Clinical Immunology, a position he held for a number of years.

Jennie Chin Hansen, R.N., M.S., FAAN, was elected by the AARP board to serve as president for the 2008–2010 biennium. She previously chaired the board of the AARP Foundation. Ms. Hansen currently holds an appointment as senior fellow at the University of California, San Francisco’s Center for the Health Professions and consults with various foundations. She transitioned to teaching in 2005 after nearly 25 years at On Lok, where she served as executive director for 11 years. On Lok, Inc., is a nonprofit family of organizations providing integrated and comprehensive community-based primary and long-term care services in San Francisco. Ms. Hansen serves in various leadership roles that include commissioner of the Medicare Payment Advisory Commission (MedPAC) and board officer of the National Academy of Social Insurance, the SCAN Foundation, and the Robert Wood Johnson Executive Nurse Fellows Program. She is also a past president of the American Society on Aging. In April 2010, she became chief executive officer of the American Geriatrics Society.

C. Martin Harris, M.D., M.B.A., is chief information officer and chairman of the Information Technology Division of Cleveland Clinic in Cleveland, Ohio. Additionally, he is executive director of eCleveland Clinic, a series of secure, Internet-based information technology–enabled clinical and connectivity programs offered to patients and medical professionals. Dr. Harris’s expertise in the innovative application of health information technology to improve the contemporary medical
practice model is reflected in his service for numerous national organizations, including the President’s Commission on Caring for America’s Returning Wounded Warriors, the Board of Regents of the National Library of Medicine, and the Board of the Healthcare Information Management Systems Society. He received his undergraduate and medical degrees from the University of Pennsylvania in Philadelphia. He completed his residency training in general internal medicine at The Hospital of the University of Pennsylvania, a Robert Wood Johnson Clinical Scholar fellowship in general internal medicine at the University of Pennsylvania School of Medicine, and a master’s in business administration in healthcare management at the Wharton School of the University of Pennsylvania.

Anjli Aurora Hinman, C.N.M., F.N.P.-B.C., M.P.H., is a certified nurse midwife and family nurse practitioner, providing antepartum, intrapartum, postpartum, and gynecological services to women. She is also a volunteer at Community Advanced Practice Nurses, Inc., an organization that provides free physical, mental, and preventive health care to homeless and medically underserved women and families in the Atlanta metropolitan area. An alumna of the Emory University School of Nursing, she is past president and current alumni chair of Health Students Taking Action Together, a Georgia nonprofit run by health professional students whose mission is to create a statewide community of health professional students and engage them in education, activism, and service. Ms. Hinman is also past president of the Emory Student Nurses Association and Breakthrough to Nursing director for the Georgia Association of Nursing Students.

William D. Novelli, M.A., is a distinguished professor at the McDonough School of Business at Georgetown University. He is the former chief executive officer of AARP, whose mission is to enhance the quality of life for all as we age. Prior to joining AARP, Mr. Novelli was president of the Campaign for Tobacco-Free Kids, whose mandate is to change public policies and the social environment, limit tobacco companies’ marketing and sales to children, and counter the industry and its special interests. He now serves as chairman of the board for that organization. Mr. Novelli was also executive vice president of CARE, the world’s largest private relief and development organization. Earlier, he cofounded and was president of Porter Novelli, now part of the Omnicom Group, an international marketing communications corporation. Porter Novelli was founded to apply marketing to social and health issues and now is one of the world’s largest public relations agencies. Mr. Novelli is a recognized leader in social marketing and social change, and has managed programs in cancer control, diet and nutrition, cardiovascular health, reproductive health, infant survival, and other areas in the United States and the developing world. His book 50+: Give Meaning and Purpose to the Best Time of Your Life was updated in 2008. A second book (with Peter Cappelli of the Wharton School at the University of Pennsylvania), Managing the Older Workforce, will be published in 2010.
Liana Orsolini-Hain, Ph.D., R.N., CCRN, with almost 20 years of experience in associate degree nursing education, is a tenured instructor at City College of San Francisco. In addition, she coordinates a community college chancellor’s grant developing ADN-to-BSN and ADN-to-MSN educational collaboration models. Her research and scholarly work address issues in nursing education including the factors that influence educational progression of associate degree nurses. Dr. Orsolini-Hain serves on the advisory committee to members of the board of California Institute for Nursing & Health Care (CINHC). She also co-chaired CINHC’s White Paper on Nursing Education Redesign for California’s committee on nursing collaborative education models. She is also an Assistant Clinical Professor (volunteer) at the University of California San Francisco department of physiological nursing, and a per diem staff nurse at the San Francisco Veterans Administration Medical Center. She is the immediate past president of California League for Nursing and has served on several professional nursing organization committees including the Association of Critical-Care Nurses.

Yolanda Partida, M.S.W., D.P.A., is director of Hablamos Juntos and assistant adjunct professor at the University of California, San Francisco, Fresno Center for Medical and Education Research in California. Hablamos Juntos (We Speak Together) is a national initiative of the Robert Wood Johnson Foundation created in 2001 to work with ten demonstrations and to develop practical solutions to language barriers in health care. Hablamos Juntos has produced a set of Universal Health Care symbols for health care signage and the More Than Words Toolkit, containing practical tools for commissioning and assessing the quality of translated materials. The Translation Quality Assessment Tool was found to have high interrater reliability in quality evaluations of materials translated from English into Spanish and Chinese. Dr. Partida has extensive experience in public/teaching and private hospital administration, public health administration, and private consulting. In these settings, she has been responsible for overseeing a variety of health care and public health programs, forming public−private partnerships, developing multiagency strategic plans, conducting feasibility studies, and preparing business case analyses.

Robert D. Reischauer, Ph.D., is president of the Urban Institute. A former director of the Congressional Budget Office (CBO) and a nationally known expert on the federal budget, Medicare, and Social Security, he began his tenure as the second president of the Urban Institute in February 2000. He had been a senior fellow of economic studies at the Brookings Institution since 1995. From 1989 to 1995, he was director of the nonpartisan CBO. Mr. Reischauer served as the Urban Institute’s senior vice president from 1981 to 1986. He was the CBO’s assistant director for human resources and its deputy director between 1977 and 1981. Mr. Reischauer serves on the boards of several educational and nonprofit
organizations. He was a member of MedPAC from 2000 to 2009 and its vice chair from 2001 to 2008. He is a member of the IOM.

**John W. Rowe, M.D.,** is professor in the Department of Health Policy and Management at the Columbia University Mailman School of Public Health. From 2000 until late 2006, he served as chairman and CEO of Aetna, Inc., one of the nation’s leading health care and related benefits organizations. Before his tenure at Aetna, from 1998 to 2000, Dr. Rowe served as president and CEO of Mount Sinai NYU Health, one of the nation’s largest academic health care organizations. From 1988 to 1998, prior to the Mount Sinai–NYU Health merger, he was president of the Mount Sinai Hospital and the Mount Sinai School of Medicine in New York City. Before joining Mount Sinai, Dr. Rowe was a professor of medicine and founding director of the Division on Aging at Harvard Medical School, as well as chief of gerontology at Boston’s Beth Israel Hospital. He has authored more than 200 scientific publications, mainly on the physiology of the aging process, including a leading textbook of geriatric medicine, in addition to more recent publications on health care policy. Dr. Rowe has received many honors and awards for his research and health policy efforts regarding care of the elderly. He was director of the MacArthur Foundation Research Network on Successful Aging and is coauthor, with Robert Kahn, Ph.D., of *Successful Aging* (Pantheon, 1998). Currently, Dr. Rowe leads the MacArthur Foundation’s Network on an Aging Society. In addition, he is a former member of MedPAC, has served as president of the Gerontological Society of America, and chaired the IOM’s Committee on the Future Health Care Workforce for Older Americans. He is a member of the IOM.

**Bruce C. Vladeck, Ph.D.,** is senior advisor to Nexera Consulting. He is also chairman of the board of the Medicare Rights Center, a member of the New York City Board of Health, and a director of the March of Dimes and Independence Care Systems. Dr. Vladeck is a nationally recognized expert on health care policy, health care financing, and long-term care. From 1993 through 1997, he was administrator of the Health Care Financing Administration (HCFA) within HHS. Subsequently, he was appointed by President Clinton to the National Bipartisan Commission on the Future of Medicare. Dr. Vladeck’s career in health care has included 10 years as president of the United Hospital Fund of New York and senior positions at Columbia University, the New Jersey State Department of Health, the Robert Wood Johnson Foundation, and Mount Sinai Medical Center. In 2006–2007, he served as interim president of the University of Medicine and Dentistry of New Jersey. He previously chaired the IOM’s Committee on Health Care for the Homeless (1991–1992). He is a member of the IOM.
C

Highlights from the Forums on the Future of Nursing

Throughout course of the Robert Wood Johnson Initiative on the Future of Nursing, at the Institute of Medicine (IOM), the Initiative hosted three public forums on the future of nursing. These forums were designed to inform the committee about the critical and varied roles that nurses play across settings and were part of a much broader information-gathering effort by the IOM committee and staff, which is discussed in greater detail in Appendix A. The forums provided an opportunity for members of the committee to hear from a range of experts, stakeholders, and members of the public and to see, first-hand, the challenges and innovations in settings where nurses provide care and are educated. The three forums were held in Los Angeles, Philadelphia, and Houston and focused on acute care, care in the community, and education, respectively.

Prior to the forums a variety of stakeholders and the public were invited to submit written testimony to the committee in areas relevant to the forums. Those submitting written testimony were asked to share their insight and describe innovative models in these areas; barriers that nurses face in delivering care or advancing the profession; how nurses could be further involved in advancing these areas; and their vision for the future of nursing. Each of the forums was webcasted live to a much larger national audience. Additionally, participants at the forum were encouraged to share their thoughts and reactions to the discussion through open microphone sessions, as well as social media tools such Facebook and Twitter.

Each of the three forums was planned with the guidance of a subgroup of the committee, which was led by a planning-group chair; Robert Reischauer chaired the planning group for the acute care forum in Los Angeles, Jennie Chin Hansen led the planning group for the care in the community forum in Philadelphia, and
Michael Bleich served as chair for the planning group for the education forum in Houston. The half-day forums were not meant to be an exhaustive examination of all settings in which nurses practice nor an exhaustive examination of the complexity of the nursing profession as a whole. Given the limited amount of time for each of the three forums, a comprehensive review of all facets and all players of each of the main forum themes was not possible. Rather, the forums were meant to inform the committee on important topics within the nursing profession and to highlight some of the key challenges, barriers, opportunities, and innovations that nurses are confronted with while working in an evolving health care system. Many of the critical challenges, barriers, opportunities, and innovations discussed at the forums overlap across settings and throughout the nursing profession and also are applicable to other health providers and individuals who work with nurses.

The following sections of this appendix offer brief summaries and highlights from each of the three forums on the future of nursing: acute care, care in the community, and education. Appendix A of this report includes the agendas for the forums, and the full text of the forum summaries are available at www.iom.edu/nursing and are also included on the CD-ROM in the back cover of this report.

**ACUTE CARE**

The Initiative on the Future of Nursing held its first forum on October 19, 2009, at Cedars-Sinai Medical Center in Los Angeles. This forum was designed to explore the challenges and opportunities for nurses in acute care settings and the changes needed to improve the quality, efficiency, and effectiveness of patient care. The forum focused on three topics within the context of acute care: quality and safety, technology, and interdisciplinary collaboration. Acute care settings were particularly important for the committee to examine, because well over half of all nurses work in acute care settings, where they are patients’ primary, professional caregivers and the individuals most likely to intercept medical errors. However, because hospital systems and acute care settings are often complex and chaotic, many nurses spend unnecessary time hunting for supplies, filling out paperwork, and coordinating staff time and patient care, reducing the time they are able to spend with patients and delivering care.

Nearly 300 people attended the acute care forum and heard presentations and discussions with 30 experts, including welcoming remarks from Thomas Priselac, president and chief executive officer of the Cedars-Sinai Health System and chair of the Board of Directors for the American Hospital Association, and a keynote presentation from Dr. Marilyn Chow, vice president of National Patient Care Services at Kaiser Permanente in Oakland, California. During the forum, 19 individuals offered testimony for the committee’s consideration. These individuals provided organizational and personal perspectives on the future of nursing in acute care settings.
Key Themes

The presentations offered the committee with insight into the important role that frontline nurses play across acute care settings, as well as the challenges and barriers that these frontline nurses face in their daily work. It was apparent from the presentations that there are a number of successful and promising innovative models being used in acute care settings across the country. However, these models are infrequently transferred widely. The discussion at the forum provided the committee with an opportunity to consider how rapidly advancing technology, interdisciplinary relationships, and changes in the way acute care is delivered will affect the nursing profession and how nurses will need to be educated to be adequately prepared for their varying roles and responsibilities.

A number of important points emerged at the forum:

- The knowledge of frontline nurses that they gather from their interactions with patients is critical to reducing medical errors and improving patient outcomes.
- Involving nurses at a variety of levels across the acute care setting in decision making and leadership benefits the patient, improves the organizations in which nurses practice, and strengthens the health care system in general.
- Increasing the time that nurses can spend at the bedside is an essential component of achieving the goal of patient-centered care.
- High-quality acute care settings require integrated systems that use technology effectively while increasing the efficiency of nurses and affording them increased time to spend with patients.
- Multidisciplinary care teams characterized by extensive and respectful collaboration among team members improve the quality, safety, and effectiveness of care.
- Many of the innovations that need to be implemented in the health care system already exist somewhere in the United States, but barriers to their dissemination keep them from being adopted more widely. As Dr. Marilyn Chow observed, “the future is here, it just isn’t everywhere.”

Site Visits and Solutions Session

In the morning before the forum began, individual committee members participated in a series of site visits to a variety of acute care units within Cedars-Sinai Medical Center. They spoke with nurses, other care providers, and administrators about the challenges nurses encounter in their work in acute care settings. The units that were visited within the Medical Center ranged from critical care, emergency department, and surgical units to child and maternal health and obstetrics units. Following the site visits and the forum, a group of Robert Wood
Johnson Foundation (RWJF) scholars and fellows,¹ who had attended the forum and participated in the site visits, met to consider solutions and the most promising future roles for nurses in acute care settings with respect to the subthemes of quality and safety, technology, and interdisciplinary collaboration. A summary of this session was provided to the committee for its review and consideration at the committee’s subsequent meeting in November 2009.

CARE IN THE COMMUNITY

On December 3, 2009, the Initiative on the Future of Nursing held its second forum at the Community College of Philadelphia. This forum examined the challenges facing the nursing profession with regard to care in the community, including aspects of community health, public health, primary care, and long-term care. Members of the committee planning group for this forum believed that these topics were especially important to the committee’s work overall; as the health care system evolves, the provision of care is increasingly occurring in nonacute settings and is increasingly focused on disease prevention, health promotion, and management of chronic illnesses. Nurses who practice in community settings are vital to ensuring access to quality care.

More than 200 forum attendees heard a series of presentations from leaders in the field, including opening remarks from Pennsylvania Governor Edward Rendell and a keynote from Mary C. Selecky, Secretary of Washington State’s Department of Health (an agenda for this forum can be found in Appendix A). During the forum, committee members also heard testimony from 15 individuals representing a wide variety of organizations and personal viewpoints, as well as remarks made by a number of forum participants as part of an open-microphone session.

Key Themes

The forum presenters described a segment of best practices in the community that shed light on what is currently available and what will be required to meet the changing health needs of the diverse populations of this country. As a result of this forum, the committee was given an opportunity to consider how changing health needs in the community will affect the future of the nursing profession in terms of the way care is delivered, the settings in which care is provided, and

¹ RWJF works to build human capital by supporting individuals who seek to advance health and health care in America. RWJF invited alumni of 17 of its scholar, fellow, and leader programs to participate in the Forum on the Future of Nursing. The alumni came from a variety of backgrounds and disciplines, including academia, service delivery, research, policy, and health plan administration. Many of the participants were alumni of the RWJF Executive Nurse Fellows Program and the RWJF Nurse Faculty Scholars Program. Non-nurse participants included alumni of the Investigator Award Program, the RWJF Health Policy Fellows Program, and the RWJF Clinical Scholar Program.
the education requirements for the necessary skills and competencies to provide quality care.

Many important messages emerged from the presentations, discussions, and site visits, including the following:

- Budgets for public health and community health programs are being cut at a time when these programs are needed most to care for aging populations and when greater emphasis is being placed on prevention, wellness, chronic disease management, and moving care into the community.
- Nursing in the community occurs through partnerships with many other individuals and organizations, and nurses need to take a leadership role in establishing these vital partnerships. Fostering this type of collaboration could improve the continuum of care between acute and community care settings.
- Technology has the potential to transform the lives of nurses providing care in the community, as well as their patients, just as it is transforming commerce, education, communications, and entertainment for the public.
- Varying scopes of practice across states have, in some cases, prevented nurses from providing care to the fullest extent possible at the community level.
- Nurse-managed health clinics offer opportunities to expand access; provide quality, evidence-based care; and improve outcomes for individuals who may not otherwise receive needed care. These clinics also provide the necessary support to engage individuals in wellness and prevention activities.
- Nursing students need to have greater exposure to principles of community care, leadership, and care provision through changes in nursing school curricula and increased opportunities to gain experience in community care settings.
- The delivery of quality nursing care has the potential to provide value across community settings and can be achieved through effective leadership, policy, and accountability.

**Site Visits and Solutions Session**

Prior to the forum, several members of the IOM committee visited a number of community-based health centers across Philadelphia. The six Philadelphia sites visited by committee members and the RWJF fellows and scholars were the Living Independently for Elders (LIFE) program at the University of Pennsylvania School of Nursing, the Sayre High School School-Based Health Clinic, Community Health Center #3 of the Philadelphia Department of Health, Health
Annex, Health Connections, and the 11th Street Family Health Services of Drexel University. Concluding the day’s events, RWJF fellows and scholars reviewed what they had heard at the forum and seen during the site visits to develop a set of recommendations for the committee’s consideration that were relevant to the delivery of nursing care in the community; highlights from the solutions session were provided to the committee at its January 2010 meeting.

EDUCATION

On February 22, 2010, the Initiative held its final forum on the future of nursing at the University of Texas M.D. Anderson Cancer Center in Houston. This forum was designed to examine challenges and opportunities associated with nursing education. The nursing education system consists of multifaceted educational pathways with a mixture of starting points and opportunities for advancement to higher levels. This complex system is responsible for educating and training future generations of nurses that are prepared and able to meet the needs of diverse populations across the lifespan in a health care system that is constantly evolving.

This forum on the future of nursing featured welcoming remarks from Dr. John Lumpkin of RWJF and Dr. John Mendelsohn of the University of Texas M.D. Anderson Cancer Center and included three armchair discussions that were each led by a moderator from the committee. The armchair discussions focused on three broad, overlapping subjects: what to teach, how to teach, and where to teach (an agenda for this forum can be found in Appendix A). More than 300 people assembled in Houston to listen to the discussion and participate in the forum, and an additional 330 registered for the forum’s live webcast. During the forum 12 participants presented formal testimony to the committee, while several more participants offered ad hoc remarks and insight during an open-microphone session that concluded the discussion at the forum.

Key Themes

The armchair discussions clearly illustrated the challenges of educating and developing a nursing workforce that can achieve the delicate balance among advancing science, translating and applying research, caring for individuals and families across all settings, and providing leadership. The committee heard about the shortcomings of the educational pipeline and infrastructure that have resulted in a deficiency in the number of nurses completing advanced degrees and moving into faculty positions, which in turn contributes to the limited the capacity of the system. Armchair discussants offered a glimpse of the future of nursing education as they described strategies, innovative models, and technologies that are being implemented across the country to expand the capacity of the education system and to better prepare nursing graduates with the competencies and
skills required to confront the challenges they will encounter in practice settings throughout their careers.

Several important points emerged from the forum:

- Collaboration, communication, and systems thinking should be the new basics in nursing education.
- Nurses, particularly nurse educators, need to keep up with a rapidly changing knowledge base and new technologies throughout their careers to ensure a well-educated workforce.
- Care for older adults, increasingly occurring outside of acute care settings, will be a large and growing component of nursing in the future, and the nursing education system needs to prepare educators and practitioners for that reality.
- The nation will face serious consequences if there are inadequate numbers of nursing educators to develop a nursing workforce adequate in both number and competencies to meet the needs of diverse populations.
- Technology—such as that used in high-fidelity simulations—that fosters problem-solving and critical thinking skills in nurses will be essential for nursing education to produce sufficient numbers of competent, well-trained nurses.
- Nursing education needs to make use of resources and partnerships available in the community to prepare nurses who can serve their communities.
- Articulation agreements and education consortiums among different kinds of institutions can provide multiple entry points and continued opportunities for progression through an educational and career ladder.
- In addition to necessary skill sets, nursing education needs to provide students with the ability to mature as professionals and to continue learning throughout their careers.

Site Visits and Solutions Session

Following the forum, committee members participated in visits to one of three sites in Houston: the University of Texas Health Science Center at Houston School of Nursing, the Texas Woman’s University, or the National Aeronautics and Space Administration (NASA). During the site visits, committee members had the opportunity to converse with nursing students, educators, administrators, and experts in training for quality, safety, and collaboration about some of the innovative strategies that are being used to better educate nurses. Some of the models described included use of: distance learning and accelerated doctoral programs; advanced technology in educational settings and interdisciplinary education programs; and training for quality and safety, collaboration in a team environment, and continuing education. The site visits also offered a number
of demonstrations such as a physical assessment lab using retired physicians as educators, students working in high-fidelity simulation labs, and a nurse-managed clinic.

After the completion of the forum and the site visits, a group of RWJF scholars and fellows, who had attended both activities, met to discuss possible solutions and the most promising directions for the future nursing education with respect to what should be taught, how it should be taught, and where it should be taught. A summary of this session and the solutions suggested was provided to the committee for its review and consideration at the committee’s subsequent meeting in April 2010.
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APRN Consensus Model

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Consensus Model for APRN Regulation: Licensure, Accreditation, Certification & Education

July 7, 2008

Completed through the work of the APRN Consensus Work Group & the National Council of State Boards of Nursing APRN Advisory Committee

The APRN Consensus Work Group and the APRN Joint Dialogue Group members would like to recognize the significant contribution to the development of this report made by Jean Johnson, PhD, RN-C, FAAN, Senior Associate Dean, Health Sciences, George Washington School of Medicine and Health Sciences. Consensus could not have been reached without her experienced and dedicated facilitation of these two national, multi-organizational groups.
LIST OF ENDORSING ORGANIZATIONS

This Final Report of the APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee has been disseminated to participating organizations. The names of endorsing organizations will be added periodically.

The following organizations have endorsed the Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, and Education (July 2008).

(Posted December 2010)
N = 48

Academy of Medical-Surgical Nurses (AMSN)
Accreditation Commission for Midwifery Education (ACME)
American Academy of Nurse Practitioners (AANP)
American Academy of Nurse Practitioners Certification Program
American Association of Colleges of Nursing (AACN)
American Association of Critical-Care Nurses (AACN)
American Association of Critical-Care Nurses Certification Corporation
American Association of Legal Nurse Consultants (AALNC)
American Association of Nurse Anesthetists (AANA)
American Board of Nursing Specialties (ABNS)
American College of Nurse-Midwives (ACNM)
American College of Nurse Practitioners (ACNP)
American Holistic Nurses Association (AHNA)
American Midwifery Certification Board (AMCB)
American Nurses Association (ANA)
American Nurses Credentialing Center (ANCC)
American Psychiatric Nurses Association (APNA)
Arkansas State Board of Nursing
Association of Faculties of Pediatric Nurse Practitioners (AFPNP)
Association of Women’s Health, Obstetric, and Neonatal Nurses (AWHONN)
Commission on Collegiate Nursing Education (CCNE)
Council on Accreditation of Nurse Anesthesia Educational Programs (COA)
Dermatology Nurses Association (DNA)
Dermatology Nursing Certification Board (DNCB)
Emergency Nurses Association (ENA)
Gerontological Advanced Practice Nurses Association (GAPNA)
Hospice and Palliative Nurses Association (HPNA)
The International Society of Psychiatric Nurses (ISPN)
National Association of Clinical Nurse Specialists (NACNS)
National Association of Neonatal Nurses (NANN)
National Association of Orthopedic Nurses (NAON)
National Association of Pediatric Nurse Practitioners (NAPNAP)
National Board for Certification of Hospice and Palliative Nurses (NBCHPN)
National Board on Certification & Recertification of Nurse Anesthetists (NBCRNA)
National Certification Corporation (NCC)
National Council of State Boards of Nursing (NCSBN)
National Gerontological Nursing Association (NGNA)
National League for Nursing (NLN)
National League for Nursing Accrediting Commission, Inc. (NLNAC)
National Organization of Nurse Practitioner Faculties (NONPF)
Nurse Practitioners in Women’s Health (NPWH)
Nurses Organization of Veterans Affairs (NOVA)
Oncology Nursing Certification Corporation (ONCC)
Oncology Nursing Society (ONS)
Orthopedic Nurses Certification Board (ONCB)
Pediatric Nursing Certification Board (PNCB)
Wound, Ostomy and Continence Nurses Society (WOCN)
Wound, Ostomy and Continence Nursing Certification Board (WOCNCB)
INTRODUCTION

Advanced Practice Registered Nurses (APRNs) have expanded in numbers and capabilities over the past several decades with APRNs being highly valued and an integral part of the health care system. Because of the importance of APRNs in caring for the current and future health needs of patients, the education, accreditation, certification and licensure of APRNs need to be effectively aligned in order to continue to ensure patient safety while expanding patient access to APRNs.

APRNs include certified registered nurse anesthetists, certified nurse-midwives, clinical nurse specialists and certified nurse practitioners. Each has a unique history and context, but shares the commonality of being APRNs. While education, accreditation, and certification are necessary components of an overall approach to preparing an APRN for practice, the licensing boards—governed by state regulations and statutes—are the final arbiters of who is recognized to practice within a given state. Currently, there is no uniform model of regulation of APRNs across the states. Each state independently determines the APRN legal scope of practice, the roles that are recognized, the criteria for entry-into advanced practice and the certification examinations accepted for entry-level competence assessment. This has created a significant barrier for APRNs to easily move from state to state and has decreased access to care for patients.

Many nurses with advanced graduate nursing preparation practice in roles and specialties (e.g., informatics, public health, education, or administration) that are essential to advance the health of the public but do not focus on direct care to individuals and, therefore, their practice does not require regulatory recognition beyond the Registered Nurse license granted by state boards of nursing. Like the four current APRN roles, practice in these other advanced specialty nursing roles requires specialized knowledge and skills acquired through graduate-level education. Although extremely important to the nursing profession and to the delivery of safe, high quality patient care, these other advanced, graduate nursing roles, which do not focus on direct patient care, are not roles for Advanced Practice Registered Nurses (APRN) and are not the subject or focus of the Regulatory Model presented in this paper.

The model for APRN regulation is the product of substantial work conducted by the Advanced Practice Nursing Consensus Work Group and the National Council of State Boards of Nursing (NCSBN) APRN Committee. While these groups began work independent of each other, they came together through representatives of each group participating in what was labeled the APRN Joint Dialogue Group. The outcome of this work has been unanimous agreement on most of the recommendations included in this document. In a few instances, when agreement was not unanimous a 66 percent majority was used to determine the final recommendation. However, extensive dialogue and transparency in the decision-making process is reflected in each recommendation. The background
of each group can be found on pages 13-16 and individual and organizational participants in each group in Appendices C-H.

This document defines APRN practice, describes the APRN regulatory model, identifies the titles to be used, defines specialty, describes the emergence of new roles and population foci, and presents strategies for implementation.

**Overview of APRN Model of Regulation**

The APRN Model of Regulation described will be the model of the future. It is recognized that current regulation of APRNs does not reflect all of the components described in this paper and will evolve incrementally over time. A proposed timeline for implementation is presented at the end of the paper.

In this APRN model of regulation there are four roles: certified registered nurse anesthetist (CRNA), certified nurse-midwife (CNM), clinical nurse specialist (CNS), and certified nurse practitioner (CNP). These four roles are given the title of advanced practice registered nurse (APRN). APRNs are educated in one of the four roles and in at least one of six population foci: family/individual across the lifespan, adult-gerontology, pediatrics, neonatal, women’s health/gender-related or psych/mental health. APRN education programs, including degree-granting and post-graduate education programs, are accredited. APRN education consists of a broad-based education, including three separate graduate-level courses in advanced physiology/pathophysiology, health assessment and pharmacology as well as appropriate clinical experiences. All developing APRN education programs or tracks go through a pre-approval, pre-accreditation, or accreditation process prior to admitting students. APRN education programs must be housed within graduate programs that are nationally accredited and their graduates must be eligible for national certification used for state licensure.

Individuals who have the appropriate education will sit for a certification examination to assess national competencies of the APRN core, role and at least one population focus area of practice for regulatory purposes. APRN certification programs will be accredited by a national certification accrediting body. APRN certification programs will require a continued competency mechanism.

Individuals will be licensed as independent practitioners for practice at

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2 Degree granting programs include master’s and doctoral programs. Post-graduate programs include both post-master’s and post-doctoral certificate education programs.

3 APRN education programs must be accredited by a nursing accrediting organization that is recognized by the U.S. Department of Education (USDE) and/or the Council for Higher Education Accreditation (CHEA), including the Commission on Collegiate Nursing Education (CCNE), National League for Nursing Accrediting Commission (NLNAC), Council on Accreditation of Nurse Anesthesiology Educational Programs (COA), Accreditation Commission for Midwifery Education (ACME), and the National Association of Nurse Practitioners in Women’s Health Council on Accreditation.

4 The certification program should be nationally accredited by the American Board of Nursing Specialties (ABNS) or the National Commission for Certifying Agencies (NCCA).
the level of one of the four APRN roles within at least one of the six identified population foci. Education, certification, and licensure of an individual must be congruent in terms of role and population foci. APRNs may specialize but they cannot be licensed solely within a specialty area. In addition, specialties can provide depth in one’s practice within the established population foci. Education and assessment strategies for specialty areas will be developed by the nursing profession, i.e., nursing organizations and special interest groups. Education for a specialty can occur concurrently with APRN education required for licensure or through post-graduate education. Competence at the specialty level will not be assessed or regulated by boards of nursing but rather by the professional organizations.

In addition, a mechanism that enhances the communication and transparency among APRN licensure, accreditation, certification and education bodies (LACE) will be developed and supported.

**APRN REGULATORY MODEL**

APRN Regulation includes the essential elements: licensure, accreditation, certification and education (LACE).

- Licensure is the granting of authority to practice.
- Accreditation is the formal review and approval by a recognized agency of educational degree or certification programs in nursing or nursing-related programs.
- Certification is the formal recognition of the knowledge, skills, and experience demonstrated by the achievement of standards identified by the profession.
- Education is the formal preparation of APRNs in graduate degree-granting or post-graduate certificate programs.

The APRN Regulatory Model applies to all elements of LACE. Each of these elements plays an essential part in the implementation of the model.

**Definition of Advanced Practice Registered Nurse**

Characteristics of the advanced practice registered nurse (APRN) were identified and several definitions of an APRN were considered, including the NCSBN and the American Nurses Association (ANA) definitions, as well as others. The characteristics identified aligned closely with these existing definitions. The definition of an APRN, delineated in this document, includes language that addresses responsibility and accountability for health promotion and the assessment, diagnosis, and management of patient problems, which includes the use and prescription of pharmacologic and non-pharmacologic interventions.
The definition of an Advanced Practice Registered Nurse (APRN) is a nurse:

1. who has completed an accredited graduate-level education program preparing him/her for one of the four recognized APRN roles;
2. who has passed a national certification examination that measures APRN, role and population-focused competencies and who maintains continued competence as evidenced by recertification in the role and population through the national certification program;
3. who has acquired advanced clinical knowledge and skills preparing him/her to provide direct care to patients, as well as a component of indirect care; however, the defining factor for all APRNs is that a significant component of the education and practice focuses on direct care of individuals;
4. whose practice builds on the competencies of registered nurses (RNs) by demonstrating a greater depth and breadth of knowledge, a greater synthesis of data, increased complexity of skills and interventions, and greater role autonomy;
5. who is educationally prepared to assume responsibility and accountability for health promotion and/or maintenance as well as the assessment, diagnosis, and management of patient problems, which includes the use and prescription of pharmacologic and non-pharmacologic interventions;
6. who has clinical experience of sufficient depth and breadth to reflect the intended license; and
7. who has obtained a license to practice as an APRN in one of the four APRN roles: certified registered nurse anesthetist (CRNA), certified nurse-midwife (CNM), clinical nurse specialist (CNS), or certified nurse practitioner (CNP).

Advanced practice registered nurses are licensed independent practitioners who are expected to practice within standards established or recognized by a licensing body. Each APRN is accountable to patients, the nursing profession, and the licensing board to comply with the requirements of the state nurse practice act and the quality of advanced nursing care rendered; for recognizing limits of knowledge and experience, planning for the management of situations beyond the APRN’s expertise; and for consulting with or referring patients to other health care providers as appropriate.

All APRNs are educationally prepared to provide a scope of services across the health wellness-illness continuum to at least one population focus as defined by nationally recognized role and population-focused competencies; however, the emphasis and implementation within each APRN role varies. The services or care provided by APRNs is not defined or limited by setting but rather by patient care...
needs. The continuum encompasses the range of health states from homeostasis (or wellness) to a disruption in the state of health in which basic needs are not met or maintained (illness), with health problems of varying acuity occurring along the continuum that must be prevented or resolved to maintain wellness or an optimal level of functioning (WHO, 2006). Although all APRNs are educationally prepared to provide care to patients across the health wellness-illness continuum, the emphasis and how implemented within each APRN role varies.

The Certified Registered Nurse Anesthetist

The Certified Registered Nurse Anesthetist is prepared to provide the full spectrum of patients' anesthesia care and anesthesia-related care for individuals across the lifespan, whose health status may range from healthy through all recognized levels of acuity, including persons with immediate, severe, or life-threatening illnesses or injury. This care is provided in diverse settings, including hospital surgical suites and obstetrical delivery rooms; critical access hospitals; acute care; pain management centers; ambulatory surgical centers; and the offices of dentists, podiatrists, ophthalmologists, and plastic surgeons.

The Certified Nurse-Midwife

The certified nurse-midwife provides a full range of primary health care services to women throughout the lifespan, including gynecologic care, family planning services, preconception care, prenatal and postpartum care, childbirth, and care of the newborn. The practice includes treating the male partner of their female clients for sexually transmitted disease and reproductive health. This care is provided in diverse settings, which may include home, hospital, birth center, and a variety of ambulatory care settings including private offices and community and public health clinics.

The Clinical Nurse Specialist

The CNS has a unique APRN role to integrate care across the continuum and through three spheres of influence: patient, nurse, system. The three spheres are overlapping and interrelated but each sphere possesses a distinctive focus. In each of the spheres of influence, the primary goal of the CNS is continuous improvement of patient outcomes and nursing care. Key elements of CNS practice are to create environments through mentoring and system changes that empower nurses to develop caring, evidence-based practices to alleviate patient distress, facilitate ethical decision-making, and respond to diversity. The CNS is responsible and accountable for diagnosis and treatment of health/illness states, disease management, health promotion, and prevention of illness and risk behaviors among individuals, families, groups, and communities.
The Certified Nurse Practitioner

For the certified nurse practitioner (CNP), care along the wellness-illness continuum is a dynamic process in which direct primary and acute care is provided across settings. CNPs are members of the health delivery system, practicing autonomously in areas as diverse as family practice, pediatrics, internal medicine, geriatrics, and women’s health care. CNPs are prepared to diagnose and treat patients with undifferentiated symptoms as well as those with established diagnoses. Both primary and acute care CNPs provide initial, ongoing, and comprehensive care, includes taking comprehensive histories, providing physical examinations and other health assessment and screening activities, and diagnosing, treating, and managing patients with acute and chronic illnesses and diseases. This includes ordering, performing, supervising, and interpreting laboratory and imaging studies; prescribing medication and durable medical equipment; and making appropriate referrals for patients and families. Clinical CNP care includes health promotion, disease prevention, health education, and counseling as well as the diagnosis and management of acute and chronic diseases. Certified nurse practitioners are prepared to practice as primary care CNPs and acute care CNPs, which have separate national consensus-based competencies and separate certification processes.

Titling

The title Advanced Practice Registered Nurse (APRN) is the licensing title to be used for the subset of nurses prepared with advanced, graduate-level nursing knowledge to provide direct patient care in four roles: certified registered nurse anesthetist, certified nurse-midwife, clinical nurse specialist, and certified nurse practitioner. This title, APRN, is a legally protected title. Licensure and scope of practice are based on graduate education in one of the four roles and in a defined population.

Verification of licensure, whether hard copy or electronic, will indicate the role and population for which the APRN has been licensed.

At a minimum, an individual must legally represent themselves, including in a legal signature, as an APRN and by the role. He/she may indicate the population as well. No one, except those who are licensed to practice as an APRN, may use the APRN title or any of the APRN role titles. An individual also may add the specialty title in which they are professionally recognized in addition to the legal title of APRN and role.

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5 Nurses with advanced graduate nursing preparation practicing in roles and specialties that do not provide direct care to individuals and, therefore, whose practice does not require regulatory recognition beyond the Registered Nurse license granted by state boards of nursing may not use any term or title which may confuse the public, including advanced practice nurse or advanced practice registered nurse. The term “advanced public health nursing” however, may be used to identify nurses practicing in this advanced specialty area of nursing.
FIGURE D-1  APRN Regulatory Model
Under this APRN Regulatory Model, there are four roles: certified registered nurse anesthetist (CRNA), certified nurse-midwife (CNM), clinical nurse specialist (CNS), and certified nurse practitioner (CNP). These four roles are given the title of advanced practice registered nurse (APRN). APRNs are educated in one of the four roles and in at least one of six population foci: family/individual across the lifespan, adult-gerontology, neonatal, pediatrics, women’s health/gender-related or psych/mental health. Individuals will be licensed as independent practitioners for practice at the level of one of the four APRN roles within at least one of the six identified population foci. Education, certification, and licensure of an individual must be congruent in terms of role and population foci. APRNs may specialize but they can not be licensed solely within a specialty area. Specialties can provide depth in one’s practice within the established population foci.

NOTES:
* The population focus, adult-gerontology, encompasses the young adult to the older adult, including the frail elderly. APRNs educated and certified in the adult-gerontology population are educated and certified across both areas of practice and will be titled Adult-Gerontology CNP or CNS. In addition, all APRNs in any of the four roles providing care to the adult population, e.g., family or gender specific, must be prepared to meet the growing needs of the older adult population. Therefore, the education program should include didactic and clinical education experiences necessary to prepare APRNs with these enhanced skills and knowledge.
** The population focus, psychiatric/mental health, encompasses education and practice across the lifespan.
+The certified nurse practitioner (CNP) is prepared with the acute care CNP competencies and/or the primary care CNP competencies. At this point in time the acute care and
primary care CNP delineation applies only to the pediatric and adult-gerontology CNP population foci. Scope of practice of the primary care or acute care CNP is not setting specific but is based on patient care needs. Programs may prepare individuals across both the primary care and acute care CNP competencies. If programs prepare graduates across both sets of roles, the graduate must be prepared with the consensus-based competencies for both roles and must successfully obtain certification in both the acute and the primary care CNP roles. CNP certification in the acute care or primary care roles must match the educational preparation for CNPs in these roles.

++ The Clinical Nurse Specialist (CNS) is educated and assessed through national certification processes across the continuum from wellness through acute care.

**Broad-Based APRN Education**

For entry into APRN practice and for regulatory purposes, APRN education must:

- be formal education with a graduate degree or post-graduate certificate (either post-master’s or post-doctoral) that is awarded by an academic institution and accredited by a nursing or nursing-related accrediting organization recognized by the U.S. Department of Education (USDE) and/or the Council for Higher Education Accreditation (CHEA);
- be awarded pre-approval, pre-accreditation, or accreditation status prior to admitting students;
- be comprehensive and at the graduate level;
- prepare the graduate to practice in one of the four identified APRN roles;
- prepare the graduate with the core competencies for one of the APRN roles across at least one of the six population foci;
- include at a minimum, three separate comprehensive graduate-level courses (the APRN Core) in:
  - Advanced physiology/pathophysiology, including general principles that apply across the lifespan;
  - Advanced health assessment, which includes assessment of all human systems, advanced assessment techniques, concepts and approaches; and
  - Advanced pharmacology, which includes pharmacodynamics, pharmacokinetics and pharmacotherapeutics of all broad categories of agents.
- Additional content, specific to the role and population, in these three APRN core areas should be integrated throughout the other role and population didactic and clinical courses;
- Provide a basic understanding of the principles for decision making in the identified role;
• Prepare the graduate to assume responsibility and accountability for health promotion and/or maintenance as well as the assessment, diagnosis, and management of patient problems, which includes the use and prescription of pharmacologic and non-pharmacologic interventions; and

• Ensure clinical and didactic coursework is comprehensive and sufficient to prepare the graduate to practice in the APRN role and population focus.

Preparation in a specialty area of practice is optional but if included must build on the APRN role/population-focus competencies. Clinical and didactic coursework must be comprehensive and sufficient to prepare the graduate to obtain certification for licensure in and to practice in the APRN role and population focus.

As part of the accreditation process, all APRN education programs must undergo a pre-approval, pre-accreditation, or accreditation process prior to admitting students. The purpose of the pre-approval process is twofold: 1) to ensure that students graduating from the program will be able to meet the education criteria necessary for national certification in the role and population-focus and if successfully certified, are eligible for licensure to practice in the APRN role/population-focus; and 2) to ensure that programs will meet all educational standards prior to starting the program. The pre-approval, pre-accreditation or accreditation processes may vary across APRN roles.

**APRN Specialties**

Preparation in a specialty area of practice is optional, but if included must build on the APRN role/population-focused competencies. Specialty practice represents a much more focused area of preparation and practice than does the APRN role/population-focus level. Specialty practice may focus on specific patient populations beyond those identified or health care needs such as oncology, palliative care, substance abuse, or nephrology. The criteria for defining an APRN specialty is built upon the ANA (2004) Criteria for Recognition as a Nursing Specialty (see Appendix B). APRN specialty education and practice build upon and are in addition to the education and practice of the APRN role and population focus. For example, a family CNP could specialize in elder care or nephrology; an Adult-Gerontology CNS could specialize in palliative care; a CRNA could specialize in pain management; or a CNM could specialize in care of the post-menopausal woman. State licensing boards will not regulate the APRN at the level of specialties in this APRN Regulatory Model. Professional certification in the specialty area of practice is strongly recommended.
An APRN specialty

- preparation cannot replace educational preparation in the role or one of the six population foci;
- preparation can not expand one’s scope of practice beyond the role or population focus
- addresses a subset of the population-focus;
- title may not be used in lieu of the licensing title, which includes the role or role/population; and
- is developed, recognized, and monitored by the profession.

New specialties emerge based on health needs of the population. APRN specialties develop to provide added value to the role practice as well as providing flexibility within the profession to meet these emerging needs of patients. Specialties also may cross several or all APRN roles. A specialty evolves out of an APRN role/population focus and indicates that an APRN has additional knowledge and expertise in a more discrete area of specialty practice. Competency in the specialty areas could be acquired either by educational preparation or experience and assessed in a variety of ways through professional credentialing mechanisms (e.g., portfolios, examinations, etc.).

Education programs may concurrently prepare individuals in a specialty providing they meet all of the other requirements for APRN education programs, including preparation in the APRN core, role, and population core competencies. In addition, for licensure purposes, one exam must assess the APRN core, role, and population-focused competencies. For example, a nurse anesthetist would write one certification examination, which tests the APRN core, CRNA role, and population-focused competencies, administered by the Council on Certification for Nurse Anesthetist; or a primary care family nurse practitioner would write one certification examination, which tests the APRN core, CNP role, and family population-focused competencies, administered by ANCC or AANP. Specialty competencies must be assessed separately. In summary, education programs preparing individuals with this additional knowledge in a specialty, if used for entry into advanced practice registered nursing and for regulatory purposes, must also prepare individuals in one of the four nationally recognized APRN roles and in one of the six population foci. Individuals must be recognized and credentialed in one of the four APRN roles within at least one population foci. APRNs are licensed at the role/population focus level and not at the specialty level. However, if not intended for entry-level preparation in one of the four roles/population foci and not for regulatory purposes, education programs, using a variety of formats and methodologies, may provide licensed APRNs with the additional knowledge, skills, and abilities, to become professionally certified in the specialty area of APRN practice.
Emergence of New APRN Roles and Population-Foci

As nursing practice evolves and health care needs of the population change, new APRN roles or population-foci may evolve over time. An APRN role would encompass a unique or significantly differentiated set of competencies from any of the other APRN roles. In addition, the scope of practice within the role or population focus is not entirely subsumed within one of the other roles. Careful consideration of new APRN roles or population-foci is in the best interest of the profession.

For licensure, there must be clear guidance for national recognition of a new APRN role or population-focus. A new role or population focus should be discussed and vetted through the national licensure, accreditation, certification, education communication structure: LACE. An essential part of being recognized as a role or population-focus is that educational standards and practice competencies must exist, be consistent, and must be nationally recognized by the profession. Characteristics of the process to be used to develop nationally recognized core competencies, and education and practice standards for a newly emerging role or population-focus are:

1. national in scope
2. inclusive
3. transparent
4. accountable
5. initiated by nursing
6. consistent with national standards for licensure, accreditation, certification and education
7. evidence-based
8. consistent with regulatory principles.

To be recognized, an APRN role must meet the following criteria:

- nationally recognized education standards and core competencies for programs preparing individuals in the role;
- education programs, including graduate degree granting (master’s, doctoral) and post-graduate certificate programs, are accredited by a nursing or nursing-related accrediting organization that is recognized by the U.S. Department of Education (USDE) and/or the Council for Higher Education Accreditation (CHEA); and
- professional nursing certification program that is psychometrically sound, legally defensible, and which meets nationally recognized accreditation standards for certification programs.6

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6The professional certification program should be nationally accredited by the American Board of Nursing Specialties (ABNS) or the National Commission for Certifying Agencies (NCCA).
IMPLEMENTATION STRATEGIES FOR APRN REGULATORY MODEL

In order to accomplish the above model, the four prongs of regulation: licensure, accreditation, certification, and education (LACE) must work together. Expectations for licensure, accreditation, certification, and education are listed below:

**Foundational Requirements for Licensure**

Boards of nursing will:

1. license APRNs in the categories of Certified Registered Nurse Anesthetist, Certified Nurse-Midwife, Clinical Nurse Specialist or Certified Nurse Practitioner within a specific population focus;
2. be solely responsible for licensing Advanced Practice Registered Nurses;
3. only license graduates of accredited graduate programs that prepare graduates with the APRN core, role and population competencies;
4. require successful completion of a national certification examination that assesses APRN core, role and population competencies for APRN licensure.
5. not issue a temporary license;
6. only license an APRN when education and certification are congruent;
7. license APRNs as independent practitioners with no regulatory requirements for collaboration, direction or supervision;
8. allow for mutual recognition of advanced practice registered nursing through the APRN Compact;
9. have at least one APRN representative position on the board and utilize an APRN advisory committee that includes representatives of all four APRN roles; and,
10. institute a grandfathering clause that will exempt those APRNs already practicing in the state from new eligibility requirements.

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7 Except in states where state boards of nurse-midwifery or midwifery regulate nurse-midwives or nurse-midwives and midwives jointly.

8 Grandfathering is a provision in a new law exempting those already in or a part of the existing system that is being regulated. When states adopt new eligibility requirements for APRNs, currently practicing APRNs will be permitted to continue practicing within the state(s) of their current licensure.

However, if an APRN applies for licensure by endorsement in another state, the APRN would be eligible for licensure if s/he demonstrates that the following criteria have been met:

- current, active practice in the advanced role and population focus area,
- current active, national certification or recertification, as applicable, in the advanced role and population focus area,
FIGURE D-2 Relationship Among Educational Competencies, Licensure, & Certification in the Role/Population Foci and Education and Credentialing in a Specialty

NOTES:
*Certification for specialty may include exam, portfolio, peer review, etc.
**Certification for licensure will be psychometrically sound and legally defensible examination by an accredited certifying program.

Foundational Requirements for Accreditation of Education Programs

Accreditors will:

1. be responsible for evaluating APRN education programs including graduate degree-granting and post-graduate certificate programs;\(^9\)
2. through their established accreditation standards and process, assess APRN education programs in light of the APRN core, role core, and population core competencies;
3. assess developing APRN education programs and tracks by reviewing them using established accreditation standards and granting pre-approval, pre-accreditation, or accreditation prior to student enrollment;

- compliance with the APRN educational requirements of the state in which the APRN is applying for licensure that were in effect at the time the APRN completed his/her APRN education program, and
- compliance with all other criteria set forth by the state in which the APRN is applying for licensure (e.g. recent CE, RN licensure).

Once the model has been adopted and implemented (date to be determined by the state boards of nursing. See proposed timeline on page 14-15.) all new graduates applying for APRN licensure must meet the requirements outlined in this regulatory model.

\(^9\) Degree-granting programs include both master’s and doctoral programs. Post-graduate certificate programs include post-master’s and post-doctoral education programs.
4. include an APRN on the visiting team when an APRN program/track is being reviewed; and
5. monitor APRN educational programs throughout the accreditation period by reviewing them using established accreditation standards and processes.

**Foundational Requirements for Certification**

Certification programs providing APRN certification used for licensure will:

1. follow established certification testing and psychometrically sound, legally defensible standards for APRN examinations for licensure (see appendix A for the NCSBN Criteria for APRN Certification Programs);
2. assess the APRN core and role competencies across at least one population focus of practice;
3. assess specialty competencies, if appropriate, separately from the APRN core, role and population-focused competencies;
4. be accredited by a national certification accreditation body;\(^\text{10}\)
5. enforce congruence (role and population focus) between the education program and the type of certification examination;
6. provide a mechanism to ensure ongoing competence and maintenance of certification;
7. participate in ongoing relationships which make their processes transparent to boards of nursing;
8. participate in a mutually agreeable mechanism to ensure communication with boards of nursing and schools of nursing.

**Foundational Requirements for Education**

APRN education programs/tracks leading to APRN licensure, including graduate degree-granting and post-graduate certificate programs will:

1. follow established educational standards and ensure attainment of the APRN core, role core and population core competencies;\(^\text{11,12}\)

\(^{10}\)The certification program should be nationally accredited by the American Board of Nursing Specialties (ABNS) or the National Commission for Certifying Agencies (NCCA).

\(^{11}\)The APRN core competencies for all APRN nursing education programs located in schools of nursing are delineated in the American Association of Colleges of Nursing (1996) *The Essentials of Master’s Education for Advanced Practice Nursing Education* or the AACN (2006) *The Essentials of Doctoral Education for Advanced Nursing Practice*. The APRN core competencies for nurse anesthesia and nurse-midwifery education programs located outside of a school of nursing are delineated by the accrediting organizations for their respective roles i.e., Council on Accreditation of Nurse Anesthesiology Educational Programs (COA), Accreditation Commission for Midwifery Education (ACME).

\(^{12}\)APRN programs outside of schools of nursing must prepare graduates with the APRN core which includes three separate graduate-level courses in pathophysiology/physiology, health assessment, and pharmacology.
2. be accredited by a nursing accrediting organization that is recognized by the U.S. Department of Education (USDE) and/or the Council for Higher Education Accreditation (CHEA);\textsuperscript{13}
3. be pre-approved, pre-accredited, or accredited prior to the acceptance of students, including all developing APRN education programs and tracks;
4. ensure that graduates of the program are eligible for national certification and state licensure; and
5. ensure that official documentation (e.g., transcript) specifies the role and population focus of the graduate.

Communication Strategies

A formal communication mechanism, LACE, which includes those regulatory organizations that represent APRN licensure, accreditation, certification, and education entities would be created. The purpose of LACE would be to provide a formal, ongoing communication mechanism that provides for transparent and aligned communication among the identified entities. The collaborative efforts between the APRN Consensus Group and the NCSBN APRN Advisory Panel, through the APRN Joint Dialogue Group have illustrated the ongoing level of communication necessary among these groups to ensure that all APRN stakeholders are involved. Several strategies including equal representation on an integrated board with face-to-face meetings, audio and teleconferencing, pass-protected access to agency web sites, and regular reporting mechanisms have been recommended. These strategies will build trust and enhance information sharing. Examples of issues to be addressed by the group would be: guaranteeing appropriate representation of APRN roles among accreditation site visitors, documentation of program completion by education institutions, notification of examination outcomes to educators and regulators, notification of disciplinary action toward licensees by boards of nursing.

Creating the LACE Structure and Processes

Several principles should guide the formulation of a structure including: 1) all four entities of LACE should have representation; 2) the total should allow effective discussion of and response to issues and; 3) the structure should not be duplicative of existing structures such as the Alliance for APRN Credentialing. Consideration should be given to evolving the existing Alliance structure to meet the needs of LACE. Guidance from an organizational consultant will be useful in

\textsuperscript{13} APRN education programs must be accredited by a nursing accrediting organization that is recognized by the U.S. Department of Education (USDE) and/or the Council for Higher Education Accreditation (CHEA), including the Commission on Collegiate Nursing Education (CCNE), National League for Nursing Accrediting Commission (NLNAC), Council on Accreditation of Nurse Anesthesia Educational Programs (COA), Accreditation Commission for Midwifery Education (ACME), and the National Association of Nurse Practitioners in Women’s Health Council on Accreditation.
forming a permanent structure that will endure and support the work that needs to continue. The new structure will support fair decision-making among all relevant stakeholders. In addition, the new structure will be in place as soon as possible.

The LACE organizational structure should include representation of:

- State licensing boards, including at least one compact and one non-compact state;
- Accrediting bodies that accredit education programs of the four APRN roles;
- Certifying bodies that offer APRN certification used for regulatory purposes; and,
- Education organizations that set standards for APRN education.

**Timeline for Implementation of Regulatory Model**

Implementation of the recommendations for an APRN Regulatory Model will occur incrementally. Due to the interdependence of licensure, accreditation, certification, and education, certain recommendations will be implemented sequentially. However, recognizing that this model was developed through a consensus process with participation of APRN certifiers, accreditors, public regulators, educators, and employers, it is expected that the recommendations and model delineated will inform decisions made by each of these entities as the APRN community moves to fully implement the APRN Regulatory Model. A target date for full implementation of the Regulatory Model and all embedded recommendations is the Year 2015.

**HISTORICAL BACKGROUND**

**NCSBN APRN Committee (previously APRN Advisory Panel)**

NCSBN became involved with advanced practice nursing when boards of nursing began using the results of APRN certification examinations as one of the requirements for APRN licensure. During the 1993 NCSBN annual meeting, delegates adopted a position paper on the licensure of advanced nursing practice which included model legislation language and model administrative rules for advanced nursing practice. NCSBN core competencies for certified nurse practitioners were adopted the following year.

In 1995, NCSBN was directed by the Delegate Assembly to work with APRN certifiers to make certification examinations suitable for regulatory purposes. Since then, much effort has been made toward that purpose. During the mid and late 90’s, the APRN certifiers agreed to undergo accreditation and provide additional information to boards of nursing to ensure that their examinations were psychometrically sound and legally defensible (NCSBN, 1998).
During the early 2000s, the APRN Advisory Panel developed criteria for ARPN certification programs and for accreditations agencies. In January 2002, the board of directors approved the criteria and process for a new review process for APRN certification programs. The criteria represented required elements of certification programs that would result in a legally defensible examination suitable for the regulation of advanced practice nurses. Subsequently, the APRN Advisory Panel has worked with certification programs to improve the legal defensibility of APRN certification examinations and to promote communication with all APRN stakeholders regarding APRN regulatory issues such as with the establishment of the annual NCSBN APRN Roundtable in the mid 1990’s. In 2002, the Advisory Panel also developed a position paper describing APRN regulatory issues of concern.

In 2003, the APRN Advisory Panel began a draft APRN vision paper in an attempt to resolve APRN regulatory concerns such as the proliferation of APRN subspecialty areas. The purpose of the APRN Vision Paper was to provide direction to boards of nursing regarding APRN regulation for the next 8-10 years by identifying an ideal future APRN regulatory model. Eight recommendations were made. The draft vision paper was completed in 2006. After reviewing the draft APRN vision paper at their February 2006 board meeting, the board of directors directed that the paper be disseminated to boards of nursing and APRN stakeholders for feedback. The Vision paper also was discussed during the 2006 APRN Roundtable. The large response from boards of nursing and APRN stakeholders was varied. The APRN Advisory Panel spent the remaining part of 2006, reviewing and discussing the feedback with APRN stakeholders. (See Appendix C for the list of APRN Advisory Panel members who worked on the draft APRN Vision Paper and Appendix D for the list of organizations represented at the 2006 APRN Roundtable where the draft vision paper was presented.)

**APRN Consensus Group**

In March 2004, the American Association of Colleges of Nursing (AACN) and the National Organization of Nurse Practitioner Faculties (NONPF) submitted a proposal to the Alliance for Nursing Accreditation, now named Alliance for APRN Credentialing14 (hereafter referred to as “the APRN Alliance”) to establish a process to develop a consensus15 statement on the credentialing of advanced practice nurses. At its March 2006 meeting, the Alliance for Nursing Accreditation voted to change its name to the Alliance for APRN Credentialing which more accurately reflects its membership. The goal of the APRN Work Group was unanimous agreement on all issues and recommendations. However, this was recognized as an unrealistic expectation and may delay the process; therefore, consensus was defined as a two thirds majority agreement by those members of the Work Group present at the table as organizational representatives with each participating organization having one vote.
practice nurses (APNs). The APRN Alliance, created in 1997, was convened by AACN to regularly discuss issues related to nursing education, practice, and credentialing. A number of differing views on how APN practice is defined, what constitutes specialization versus subspecialization, and the appropriate credentialing requirements that would authorize practice had emerged over the past several years.

An invitation to participate in a national APN consensus process was sent to 50 organizations that were identified as having an interest in advanced practice nursing (see Appendix F). Thirty-two organizations participated in the APN Consensus Conference in Washington, D.C. June 2004. The focus of the one-day meeting was to initiate an in-depth examination of issues related to APN definition, specialization, sub-specialization, and regulation, which includes accreditation, education, certification, and licensure. Based on recommendations generated in the June 2004 APN Consensus Conference, the Alliance formed a smaller work group made up of designees from 23 organizations with broad representation of APN certification, licensure, education, accreditation, and practice. The charge to the work group was to develop a statement that addresses the issues, delineated during the APN Consensus Conference with the goal of envisioning a future model for APNs. The Alliance APN Consensus Work Group (hereafter referred to as “the Work Group”) convened for 16 days of intensive discussion between October 2004 and July 2007 (see Appendix H for a list of organizations represented on the APN Work Group).

In December 2004, the American Nurses Association (ANA) and AACN co-hosted an APN stakeholder meeting to address those issues identified at the June 2004 APN Consensus meeting. Attendees agreed to ask the APN Work Group to continue to craft a consensus statement that would include recommendations regarding APN regulation, specialization, and subspecialization. It also was agreed that organizations in attendance who had not participated in the June 2004 APN Consensus meeting would be included in the APN Consensus Group and that this

16 The term advanced practice nurse (APN) was initially used by the Work Group and is used in this section of the report to accurately reflect the background discussion. However, the Work group reached consensus that the term advanced practice registered nurse (APRN) should be adopted for use in subsequent discussions and documents.


18 The term regulation refers to the four prongs of regulation: licensure, accreditation, certification and education.
larger group would reconvene at a future date to discuss the recommendations of the APN Work Group.

Following the December 2004 APN Consensus meeting, the Work Group continued to work diligently to reach consensus on the issues surrounding APRN education, practice, accreditation, certification, and licensure, and to create a future consensus-based model for APRN regulation. Subsequent APRN Consensus Group meetings were held in September 2005 and June 2006. All organizations who participated in the APRN Consensus Group are listed in Appendix G.

APRN Joint Dialogue Group

In April, 2006, the APRN Advisory Panel met with the APRN Consensus Work Group to discuss APRN issues described in the NCSBN draft vision paper. The APRN Consensus Work Group requested and was provided with feedback from the APRN Advisory Panel regarding the APRN Consensus Group Report. Both groups agreed to continue to dialogue.

As the APRN Advisory Panel and APRN Consensus Work Group continued their work in parallel fashion, concerns regarding the need for each group’s work not to conflict with the other were expressed. A subgroup of seven people from the APRN Consensus Work Group and seven individuals from the APRN Advisory Panel were convened in January, 2007. The group called itself the APRN Joint Dialogue Group (see Appendix E) and the agenda consisted of discussing areas of agreement and disagreement between the two groups. The goal of the subgroup meetings was anticipated to be two papers that did not conflict, but rather complemented each other. However, as the APRN Joint Dialogue Group continued to meet, much progress was made regarding areas of agreement; it was determined that rather than two papers being disseminated, one joint paper would be developed, which reflected the work of both groups. This document is the product of the work of the APRN Joint Dialogue Group and through the consensus-based work of the APRN Consensus Work Group and the NCSBN APRN Advisory Committee.

Assumptions Underlying the Work of the Joint Dialogue Group

The consensus-based recommendations that have emerged from the extensive dialogue and consensus-based processes delineated in this report are based on the following assumptions:

- Recommendations must address current issues facing the advanced practice registered nurse (APRN) community but should be future oriented.
- The ultimate goal of licensure, accreditation, certification, and education is to promote patient safety and public protection.
• The recognition that this document was developed with the participation of APRN certifiers, accreditors, public regulators, educators, and employers. The intention is that the document will allow for informed decisions made by each of these entities as they address APRN issues.

CONCLUSION

The recommendations offered in this paper present an APRN regulatory model as a collaborative effort among APRN educators, accreditors, certifiers, and licensure bodies. The essential elements of APRN regulation are identified as licensure, accreditation, certification, and education. The recommendations reflect a need and desire to collaborate among regulatory bodies to achieve a sound model and continued communication with the goal of increasing the clarity and uniformity of APRN regulation.

The goals of the consensus processes were to:

• strive for harmony and common understanding in the APRN regulatory community that would continue to promote quality APRN education and practice;
• develop a vision for APRN regulation, including education, accreditation, certification, and licensure;
• establish a set of standards that protect the public, improve mobility, and improve access to safe, quality APRN care; and
• produce a written statement that reflects consensus on APRN regulatory issues.

In summary, this report includes: a definition of the APRN Regulatory Model, including a definition of the Advanced Practice Registered Nurse; a definition of broad-based APRN education; a model for regulation that ensures APRN education and certification as a valid and reliable process, that is based on nationally recognized and accepted standards; uniform recommendations for licensing bodies across states; a process and characteristics for recognizing a new APRN role; and a definition of an APRN specialty that allows for the profession to meet future patient and nursing needs.

The work of the Joint Dialogue Group in conjunction with all organizations representing APRN licensure, accreditation, certification, and education to advance a regulatory model is an ongoing collaborative process that is fluid and dynamic. As health care evolves and new standards and needs emerge, the APRN Regulatory Model will advance accordingly to allow APRNs to care for patients in a safe environment to the full potential of their nursing knowledge and skill.
REFERENCES


The Future of Nursing: Leading Change, Advancing Health

348

THE FUTURE OF NURSING


### NCSBN Criteria for Evaluating Certification Programs

<table>
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<th>Criteria</th>
<th>Elaboration</th>
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| I. The program is national in the scope of its credentialing. | A. The advanced nursing practice category and standards of practice have been identified by national organizations.  
B. Credentialing services are available to nurses throughout the United States and its territories.  
C. There is a provision for public representation on the certification board.  
D. A nursing specialty organization that establishes standards for the nursing specialty exists.  
E. A tested body of knowledge related to the advanced practice nursing specialty exists.  
F. The certification board is an entity with organizational autonomy. |
| II. Conditions for taking the examination are consistent with acceptable standards of the testing community. | A. Applicants do not have to belong to an affiliated professional organization in order to apply for certification offered by the certification program.  
B. Eligibility criteria rationally related to competence to practice safely.  
C. Published criteria are enforced.  
D. In compliance with the American Disabilities Act.  
E. Sample application(s) are available.  
1) Certification requirements included  
2) Application procedures include:  
   • procedures for ensuring match between education and clinical experience, and APRN specialty being certified,  
   • procedures for validating information provided by candidate,  
   • procedures for handling omissions and discrepancies  
3) Professional staff responsible for credential review and admission decisions.  
4) Examination should be administered frequently enough to be accessible but not so frequently as to over-expose items.  
F. Periodic review of eligibility criteria and application procedures to ensure that they are fair and equitable. |
III. Educational requirements are consistent with the requirements of the advanced practice specialty.

A. Current U.S. registered nurse licensure is required.

B. Graduation from a graduate advanced practice education program meets the following requirements:
   1) Education program offered by an accredited college or university offers a graduate degree with a concentration in the advanced nursing practice specialty the individual is seeking.
   2) If post-masters certificate programs are offered, they must be offered through institutions meeting criteria B.1.
   3) Both direct and indirect clinical supervision must be congruent with current national specialty organizations and nursing accreditation guidelines.
   4) The curriculum includes, but is not limited to:
      • biological, behavioral, medical, and nursing sciences relevant to practice as an APRN in the specified category;
      • legal, ethical, and professional responsibilities of the APRN; and
      • supervised clinical practice relevant to the specialty of APRN.
   1) The curriculum meets the following criteria:
      • Instructional track/major has a minimum of 500 supervised clinical hours overall.
      • The supervised clinical experience is directly related to the knowledge and role of the specialty and category.

C. All individuals, without exception, seeking a national certification must complete a formal didactic and clinical advanced practice program meeting the above criteria.

IV. The standard methodologies used are acceptable to the testing community such as incumbent job analysis study, logical job analysis studies.

A. Exam content based on a job/task analysis.

B. Job analysis studies are conducted at least every five years.

C. The results of the job analysis study are published and available to the public.

D. There is evidence of the content validity of the job analysis study.

V. The examination represents entry-level practice in the advanced nursing practice category.

A. Entry-level practice in the advanced practice specialty is described including the following:
   1) Process
   2) Frequency
   3) Qualifications of the group making the determination
   4) Geographic representation
   5) Professional or regulatory organizations involved in the reviews.
<table>
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<th>Criteria</th>
<th>Elaboration</th>
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<tr>
<td>VI. The examination represents the knowledge, skills, and abilities essential for the delivery of safe and effective advanced nursing care to the clients.</td>
<td>A. The job analysis includes activities representing knowledge, skills, and abilities necessary for competent performance.</td>
</tr>
<tr>
<td></td>
<td>B. The examination reflects the results of the job analysis study.</td>
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<td>C. Knowledge, skills, and abilities, which are critical to public safety, are identified.</td>
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<td></td>
<td>D. The examination content is oriented to educational curriculum practice requirements and accepted standards of care.</td>
</tr>
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<td>VII. Examination items are reviewed for content validity, cultural bias, and correct scoring using an established mechanism, both before use and periodically.</td>
<td>A. Each item is associated with a single cell of the test plan.</td>
</tr>
<tr>
<td></td>
<td>B. Items are reviewed for currency before each use at least every three years.</td>
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<td>C. Items are reviewed by members of under-represented gender and ethnicities who are active in the field being certified. Reviewers have been trained to distinguish irrelevant cultural dependencies from knowledge necessary to safe and effective practice. Process for identifying and processing flagged items is identified.</td>
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<td>D. A statistical bias analysis is performed on all items.</td>
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<td>E. All items are subjected to an “unscored” use for data collection purposes before their first use as a “scored” item.</td>
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<td>F. A process to detect and eliminate bias from the test is in place.</td>
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<td>G. Reuse guidelines for items on an exam form are identified.</td>
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<td>H. Item writing and review is done by qualified individuals who represent specialties, population subgroups, etc.</td>
</tr>
<tr>
<td>VIII. Examinations are evaluated for psychometric performance.</td>
<td>A. Reference groups used for comparative analysis are defined.</td>
</tr>
<tr>
<td>IX. The passing standard is established using acceptable psychometric methods, and is re-evaluated periodically.</td>
<td>A. Passing standard is criterion-referenced.</td>
</tr>
<tr>
<td>X. Examination security is maintained through established procedures.</td>
<td>A. Protocols are established to maintain security related to:</td>
</tr>
<tr>
<td></td>
<td>1) Item development (e.g., item writers and confidentiality, how often items are re-used)</td>
</tr>
<tr>
<td></td>
<td>2) Maintenance of question pool</td>
</tr>
<tr>
<td></td>
<td>3) Printing and production process</td>
</tr>
<tr>
<td></td>
<td>4) Storage and transportation of examination is secure</td>
</tr>
<tr>
<td></td>
<td>5) Administration of examination (e.g., who administers, who checks administrators)</td>
</tr>
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<td>6) Ancillary materials (e.g., test keys, scrap materials)</td>
</tr>
<tr>
<td></td>
<td>7) Scoring of examination</td>
</tr>
<tr>
<td></td>
<td>8) Occurrence of a crisis (e.g., exam is compromised, etc.)</td>
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Criteria

XI. Certification is issued based upon passing the examination and meeting all other certification requirements.

A. Certification process is described, including the following:
   1) Criteria for certification decisions are identified
   2) The verification that passing exam results and all other requirements are met
   3) Procedures are in place for appealing decisions

B. There is due process for situations such as nurses denied access to the examination or nurses who have had their certification revoked.

C. A mechanism is in place for communicating with candidate.

D. Confidentiality of nonpublic candidate data is maintained.

XII. A retake policy is in place.

A. Failing candidates permitted to be reexamined at a future date.

B. Failing candidates informed of procedures for retakes.

C. Test for repeating examinees should be equivalent to the test for first time candidates.

D. Repeating examinees should be expected to meet the same test performance standards as first time examinees.

E. Failing candidates are given information on content areas of deficiency.

F. Repeating examinees are not exposed to the same items when taking the exam previously.

XIII. Certification maintenance program, which includes review of qualifications and continued competence, is in place.

A. Certification maintenance requirements are specified (e.g., continuing education, practice, examination, etc.).

B. Certification maintenance procedures include:
   1) Procedures for ensuring match between continued competency measures and APRN specialty
   2) Procedures for validating information provided by candidates
   3) Procedures for issuing re-certification

C. Professional staff oversee credential review.

D. Certification maintenance is required a minimum of every 5 years.

XIV. Mechanisms are in place for communication to boards of nursing for timely verification of an individual’s certification status, changes in certification status, and changes in the certification program, including qualifications, test plan and scope of practice.

A. Communication mechanisms address:
   1) Permission obtained from candidates to share information regarding the certification process
   2) Procedures to provide verification of certification to Boards of Nursing
   3) Procedures for notifying Boards of Nursing regarding changes of certification status
   4) Procedures for notification of changes in certification programs (qualifications, test plan or scope of practice) to Boards of Nursing
### APPENDIX D

<table>
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<th>Criteria</th>
<th>Elaboration</th>
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| XV. An evaluation process is in place to provide quality assurance in its certification program. | A. Internal review panels are used to establish quality assurance procedures.  
1) Composition of these groups (by title or area of expertise) is described  
2) Procedures are reviewed  
3) Frequency of review  
B. Procedures are in place to ensure adherence to established QA policy and procedures. |

Revised 11-6-01
APPENDIX B

American Nurses Association
Congress on Nursing Practice and Economics
2004
Recognition as a Nursing Specialty

The process of recognizing an area of practice as a nursing specialty allows the profession to formally identify subset areas of focused practice. A clear description of that nursing practice assists the larger community of nurses, health-care consumers, and others to gain familiarity and understanding of the nursing specialty. Therefore, the document requesting ANA recognition must clearly and fully address each of the fourteen specialty recognition criteria. The inclusion of additional materials to support the discussion and promote understanding of the criteria is acceptable. A scope of practice statement must accompany the submission requesting recognition as a nursing specialty.

Criteria for Recognition as a Nursing Specialty

The following criteria are used by the Congress on Nursing Practice and Economics in the review and decision-making processes to recognize an area of practice as a nursing specialty:

A nursing specialty:

1. Defines itself as nursing.
2. Adheres to the overall licensure requirements of the profession.
3. Subscribes to the overall purposes and functions of nursing.
4. Is clearly defined.
5. Is practiced nationally or internationally.
6. Includes a substantial number of nurses who devote most of their practice to the specialty.
7. Can identify a need and demand for itself.
8. Has a well derived knowledge base particular to the practice of the nursing specialty.
9. Is concerned with phenomena of the discipline of nursing.
10. Defines competencies for the area of nursing specialty practice.
11. Has existing mechanisms for supporting, reviewing and disseminating research to support its knowledge base.
12. Has defined educational criteria for specialty preparation or graduate degree.
13. Has continuing education programs or continuing competence mechanisms for nurses in the specialty.
14. Is organized and represented by a national specialty association or branch of a parent organization.
APPENDIX C

NCSBN APRN Committee Members, 2003 -2008

2003

- Katherine Thomas, Executive Director, Texas Board of Nurse Examiners
- Patty Brown, Board Staff, Kansas State Board of Nursing
- Kim Powell, Board President, Montana Board of Nursing
- Charlene Hanson, Consultant
- Georgia Manning, Arkansas State Board of Nursing
- Deborah Bohannon-Johnson, Board President, North Dakota Board of Nursing
- Jane Garvin, Board President, Maryland Board of Nursing
- Janet Younger, Board President, Virginia Board of Nursing
- Nancy Chornick, NCSBN

2004

- Katherine Thomas, Executive Director, Texas Board of Nurse Examiners
- Patty Brown, Board Staff, Kansas State Board of Nursing
- Kim Powell, Board President, Montana Board of Nursing
- Charlene Hanson, Consultant
- Janet Younger, Board President, Virginia Board of Nursing
- Polly Johnson, Board Representative, North Carolina Board of Nursing
- Laura Poe, Member, Utah State Board of Nursing
- Georgia Manning, Arkansas State Board of Nursing
- Jane Garvin RN, Board President, Maryland Board of Nursing
- Ann Forbes, Board Staff, North Carolina Board of Nursing
- Nancy Chornick, NCSBN

2005

- Katherine Thomas, Executive Director, Texas Board of Nurse Examiners
- Patty Brown, Board Staff, Kansas State Board of Nursing
- Charlene Hanson, Consultant
- Janet Younger, Board President, Virginia Board of Nursing
- Polly Johnson, Board Representative, North Carolina Board of Nursing
- Laura Poe, Member, Utah State Board of Nursing
- Marcia Hobbs, Board Member, Kentucky Board of Nursing
- Randall Hudspeth, Board Member, Idaho Board of Nursing
- Ann Forbes, Board Staff, North Carolina Board of Nursing
THE FUTURE OF NURSING

- Cristiana Rosa, Board Member, Rhode Island Board of Nurse
- Kim Powell, Board President, Montana Board of Nursing
- Nancy Chornick, NCSBN

2006
- Katherine Thomas, Executive Director, Texas Board of Nurse Examiners
- Patty Brown, Board Staff, Kansas State Board of Nursing
- Charlene Hanson, Consultant
- Janet Younger, Board President, Virginia Board of Nursing
- Laura Poe, Member, Utah State Board of Nursing
- Marcia Hobbs, Board Member, Kentucky Board of Nursing
- Randall Hudspeth, Board Member, Idaho Board of Nursing
- Cristiana Rosa, Board Member, Rhode Island Board of Nurse
- James Luther Raper, Board Member, Alabama Board of Nursing
- Linda Rice, Board Member, Vermont Board of Nursing
- Cathy Williamson, Board Member, Mississippi Board of Nursing
- Ann Forbes, Board Staff, North Carolina Board of Nursing
- Polly Johnson, Board Representative, North Carolina Board of Nursing
- Sheila N. Kaiser, Board Vice-Chair, Massachusetts Board of Registration in Nursing
- Nancy Chornick, NCSBN

2007
- Faith Fields, Board Liaison, Arkansas State Board of Nursing
- Katherine Thomas, Executive Director, Texas Board of Nurse Examiners
- Ann L. O’Sullivan, Board Member, Pennsylvania Board of Nursing
- Patty Brown, Board Staff, Kansas State Board of Nursing
- Charlene Hanson, Consultant
- Laura Poe, Member, Utah State Board of Nursing
- John C. Preston, Board Member, Tennessee Board of Nursing
- Randall Hudspeth, Board Member, Idaho Board of Nursing
- Cristiana Rosa, Board Member, Rhode Island Board of Nurse
- James Luther Raper, Board Member, Alabama Board of Nursing
- Linda Rice, Board Member, Vermont Board of Nursing
- Cathy Williamson, Board Member, Mississippi Board of Nursing
- Janet Younger, Board President, Virginia Board of Nursing
- Marcia Hobbs, Board Member, Kentucky Board of Nursing
- Nancy Chornick, NCSBN
2008

- Doreen K. Begley, Board Member, Nevada State Board of Nursing
- Ann L. O’Sullivan, Board Member, Pennsylvania Board of Nursing
- Patty Brown, Board Staff, Kansas State Board of Nursing
- Charlene Hanson, Consultant
- Laura Poe, Member, Utah State Board of Nursing
- John C. Preston, Board Member, Tennessee Board of Nursing
- Randall Hudspeth, Board Member, Idaho Board of Nursing
- Cristiana Rosa, Board Member, Rhode Island Board of Nurse
- James Luther Raper, Board Member, Alabama Board of Nursing
- Linda Rice, Board Member, Vermont Board of Nursing
- Cathy Williamson, Board Member, Mississippi Board of Nursing
- Tracy Klein, Member Staff, Oregon State Board of Nursing
- Darlene Byrd, Board Member, Arkansas State Board of Nursing
- Nancy Chornick, NCSBN
### APPENDIX D

#### 2006 NCSBN APRN Roundtable Organization Attendance List

Alabama Board of Nursing  
American Academy of Nurse Practitioners  
American Academy of Nurse Practitioners National Certification Program, Inc  
American Association of Colleges of Nursing  
American Association of Critical-Care Nurses  
American Association of Nurse Anesthetists  
American Association of Psychiatric Nurses  
American Board of Nursing Specialties  
American College of Nurse-Midwives  
American College of Nurse Practitioners  
American Holistic Nurses’ Certification Corporation  
American Midwifery Certification Board  
American Nurses Association  
American Nurses Credentialing Center  
American Organization of Nurses Executives  
Association of Women’s Health, Obstetric and Neonatal Nurses  
Board of Certification for Emergency Nursing  
Council on Accreditation of Nurse Anesthesia Educational Programs  
Emergency Nurses Association  
George Washington School of Medicine  
Idaho Board of Nursing  
Kansas Board of Nursing  
Kentucky Board of Nursing  
Massachusetts Board of Nursing  
Mississippi Board of Nursing  
National Association of Clinical Nurse Specialists  
National Association of Nurse Practitioners in Women’s Health  
National Association of Pediatric Nurse Practitioners  
National Board for Certification of Hospice & Palliative Nurses  
National Certification Corporation for the Obstetric, Gynecologic and Neonatal Nursing Specialties  
National League for Nursing Accrediting Commission  
North Carolina Board of Nursing  
Oncology Nursing Certification Corporation  
Pediatric Nursing Certification Board  
Rhode Island Board of Nursing  
Texas Board of Nurse Examiners  
Utah Board of Nursing
APPENDIX D

Vermont Board of Nursing
Wound, Ostomy and Continence Nursing Certification Board

2007 APRN Roundtable Attendance List

ABNS Accreditation Council
Alabama Board of Nursing
American Academy of Nurse Practitioners
American Academy of Nurse Practitioners National Certification Program, Inc
American Association of Colleges of Nursing
American Association of Critical-Care Nurses
American Association of Nurse Anesthetists
American College of Nurse-Midwives
American College of Nurse Practitioners
American Midwifery Certification Board
American Nurses Credentialing Center - Certification Services
American Organization of Nurse Executives
Arkansas State Board of Nursing
Association of Women’s Health, Obstetric and Neonatal Nurses
Board of Certification for Emergency Nursing
Colorado Board of Nursing
Commission on Collegiate Nursing Education
Council on Accreditation of Nurse Anesthesia Educational Programs
Council on Certification of Nurse Anesthetists and Council on Recertification of Nurse Anesthetists
Emergency Nurses Association
Idaho Board of Nursing
Illinois State Board of Nursing
Kansas Board of Nursing
Kentucky Board of Nursing
Loyola University Chicago Niehoff School of Nursing
Minnesota Board of Nursing
Mississippi Board of Nursing
National Association of Clinical Nurse Specialists
National Association of Pediatric Nurse Practitioners
National Certification Corporation for the Obstetric, Gynecologic and Neonatal Nursing Specialties
National League for Nursing Accrediting Commission
National Organization of Nurse Practitioner Faculties
Oncology Nursing Certification Corporation
Pediatric Nursing Certification Board
Pennsylvania Board of Nursing
Rhode Island Board of Nursing
Rush University College of Nursing
South Dakota Board of Nursing
Tennessee Board of Nursing
Texas Board of Nurse Examiners
Vermont Board of Nursing
APPENDIX E

APRN Joint Dialogue Group
Organizations represented at the Joint Dialogue Group Meetings

American Academy of Nurse Practitioners Certification Program
American Association of Colleges of Nursing
American Association of Nurse Anesthetists
American College of Nurse-Midwives
American Nurses Association
American Organization of Nurse Executives
Compact Administrators
National Association of Clinical Nurse Specialists
National Council of State Boards of Nursing
National League for Nursing Accrediting Commission
National Organization of Nurse Practitioner Faculties
NCSBN APRN Advisory Committee Representatives (5)
APPENDIX F

Organizations invited to APN Consensus Conference
June 2004

Accreditation Commission for Midwifery Education
American Academy of Nurse Practitioners
American Academy of Nurse Practitioners Certification Program
American Academy of Nursing
American Association of Critical Care Nurses
American Association of Critical Care Nurses Certification Program
American Association of Nurse Anesthetists
American Association of Occupational Health Nurses
American Board of Nursing Specialties
American College of Nurse-Midwives
American College of Nurse Practitioners
American Nurses Association
American Nurses Credentialing Center
American Organization of Nurse Executives
American Psychiatric Nurses Association
Association of Faculties of Pediatric Nurse Practitioners
Association of Rehabilitation Nurses
Association of Women’s Health, Obstetric and Neonatal Nurses
Certification Board Perioperative Nursing
Commission on Collegiate Nursing Education
Council on Accreditation of Nurse Anesthesia Educational Programs
Division of Nursing, DHHS, HRSA
Emergency Nurses Association
Hospice and Palliative Nurses Association
International Nurses Society on Addictions
International Society of Psychiatric-Mental Health Nurses
NANDA International
National Association of Clinical Nurse Specialists
National Association of Neonatal Nurses
National Association of Nurse Practitioners in Women’s Health
National Association of Nurse Practitioners in Women’s Health, Council on Accreditation
National Association of Pediatric Nurse Practitioners
National Association of School Nurses
National Board for Certification of Hospice and Palliative Nurses
National Certification Corporation for the Obstetric, Gynecologic and Neonatal Nursing Specialties
National Conference of Gerontological Nurse Practitioners
APPENDIX D

National Council of State Boards of Nursing
National Gerontological Nursing Association
National League for Nursing
National League for Nursing Accrediting Commission
National Organization of Nurse Practitioner Faculties
Nurse Licensure Compact Administrators/State of Utah Department of Commerce/Division of Occupational & Professional Licensing
Nurses Organization of Veterans Affairs
Oncology Nursing Certification Corporation
Oncology Nursing Society
Pediatric Nursing Certification Board
Sigma Theta Tau, International
Society of Pediatric Nurses
Wound Ostomy & Continence Nurses Society
Wound Ostomy Continence Nursing Certification Board
APPENDIX G

Organizations participating in APRN consensus process

Academy of Medical-Surgical Nurses
Accreditation Commission for Midwifery Education
American Academy of Nurse Practitioners
American Academy of Nurse Practitioners Certification Program
American Association of Colleges of Nursing
American Association of Critical Care Nurses Certification
American Association of Neuroscience Nurses
American Association of Nurse Anesthetists
American Association of Occupational Health Nurses
American Board for Occupational Health Nurses
American Board of Nursing Specialties
American College of Nurse-Midwives
American College of Nurse-Midwives Division of Accreditation
American College of Nurse Practitioners
American Holistic Nurses Association
American Nephrology Nurses Association
American Nurses Association
American Nurses Credentialing Center
American Organization of Nurse Executives
American Psychiatric Nurses Association
American Society for Pain Management Nursing
American Society of PeriAnesthesia Nurses
Association of Community Health Nursing Educators
Association of Faculties of Pediatric Nurse Practitioners
Association of Nurses in AIDS Care
Association of PeriOperative Registered Nurses
Association of Rehabilitation Nurses
Association of State and Territorial Directors of nursing
Association of Women’s Health, Obstetric and Neonatal Nurses
Board of Certification for Emergency Nursing
Commission on Collegiate Nursing Education
Commission on Graduates of Foreign Nursing Schools
Council on Accreditation of Nurse Anesthesia Educational Programs
Department of Health
Dermatology Nurses Association
District of Columbia Board of Nursing
Division of Nursing, DHHS, HRSA
Emergency Nurses Association
George Washington University
Health Resources and Services Administration
Infusion Nurses Society
International Nurses Society on Addictions
International Society of Psychiatric-Mental Health Nurses
Kentucky Board of Nursing
National Association of Clinical Nurse Specialists
National Association of Neonatal Nurses
National Association of Nurse Practitioners in Women’s Health, Council on Accreditation
National Association of Orthopedic Nurses
National Association of Pediatric Nurse Practitioners
National Association of School of Nurses
National Certification Corporation for the Obstetric, Gynecologic, and Neonatal Nursing Specialties
National Conference of Gerontological Nurse Practitioners
National Council of State Boards of Nursing
National League for Nursing
National League for Nursing Accrediting Commission
National Organization of Nurse Practitioner Faculties
Nephrology Nursing Certification Commission
North American Nursing Diagnosis Association International
Nurses Organization of Veterans Affairs
Oncology Nursing Certification Corporation
Oncology Nursing Society
Pediatric Nursing Certification Board
Pennsylvania State Board of Nursing
Public Health Nursing Section of the American Public Health Association.
Rehabilitation Nursing Certification Board
Society for Vascular Nursing
Texas Nurses Association
Texas State Board of Nursing
Utah State Board of Nursing
Women’s Health, Obstetric & Neonatal Nurses
Wound, Ostomy, & Continence Nurses Society
Wound, Ostomy, & Continence Nursing Certification
APPENDIX H

APRN Consensus Process Work Group
Organizations Represented at the Work Group Meetings

Jan Towers, American Academy of Nurse Practitioners Certification Program
Joan Stanley, American Association of Colleges of Nursing
Carol Hartigan, American Association of Critical Care Nurses Certification Corporation
Leo LeBel, American Association of Nurse Anesthetists
Bonnie Niebuhr, American Board of Nursing Specialties
Peter Johnson & Elaine Germano, American College of Nurse-Midwives
Mary Jean Schumann, American Nurses Association
Mary Smolenski, American Nurses Credentialing Center
M.T. Meadows, American Organization of Nurse Executives
Edna Hamer & Sandra Talley, American Psychiatric Nurses Association
Elizabeth Hawkins-Walsh, Association of Faculties of Pediatric Nurse Practitioners
Jennifer Butlin, Commission on Collegiate Nursing Education
Laura Poe, APRN Compact Administrators
Betty Horton, Council on Accreditation of Nurse Anesthesia Educational Programs
Kelly Goudreau, National Association of Clinical Nurse Specialists
Fran Way, National Association of Nurse Practitioners in Women’s Health, Council on Accreditation
Mimi Bennett, National Certification Corporation for the Obstetric, Gynecologic, and Neonatal Nursing Specialties
Kathy Apple, National Council of State Boards of Nursing
Grace Newsome & Sharon Tanner, National League for Nursing Accrediting Commission
Kitty Werner & Ann O’Sullivan, National Organization of Nurse Practitioner Faculties
Cyndi Miller-Murphy, Oncology Nursing Certification Corporation
Janet Wyatt, Pediatric Nursing Certification Board
Carol Calianno, Wound, Ostomy and Continence Nursing Certification Board
Irene Sandvold, DHHS, HRSA, Division of Nursing (observer)
ADDENDUM

Example of a National Consensus-Building Process to Develop Nationally Recognized Education Standards and Role/Specialty Competencies

The national consensus-based process described here was originally designed, with funding by the Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Division of Nursing, to develop and validate national consensus-based primary care nurse practitioner competencies in five specialty areas. The process was developed with consultation from a nationally recognized expert in higher education assessment. The process subsequently has been used and validated for the development of similar sets of competencies for other areas of nursing practice, including competencies for mass casualty education for all nurses and competencies for acute care nurse practitioners and psych/mental health nurse practitioners.

This process for developing nationally recognized educational standards, nationally recognized role competencies and nationally recognized specialty competencies is an iterative, step-wise process. The steps are:

Step 1: At the request of the organization(s) representing the role or specialty, a neutral group or groups convenes and facilitates a national panel of all stakeholder organizations as defined in step 2.

Step 2: To ensure broad representation, invitations to participate should be extended to one representative of each of the recognized nursing accrediting organizations, certifiers within the role and specialty, groups whose primary mission is graduate education and who have established educational criteria for the identified role and specialty, and groups with competencies and standards for education programs that prepare individuals in the role and specialty.

Step 3: Organizational representatives serving on the national consensus panel bring and share role delineation studies, competencies for practice and education, scopes and standards of practice, and standards for education programs.

Step 4: Agreement is reached among the panel members

Step 5: Panel members take the draft to their individual boards for feedback.

Step 6: That feedback is returned to the panel. This is an iterative process until agreement is reached.

Step 7: Validation is sought from a larger group of stakeholders including organizations and individuals. This is known as the Validation Panel.

Step 8: Feedback from the Validation Panel is returned to National Panel to prepare the final document.

Step 9: Final document is sent to boards represented on the National Panel and the Validation Panel for endorsement.

The final document demonstrates national consensus through consideration of broad input from key stakeholders. The document is then widely disseminated.
Undergraduate Nursing Education

According to the findings of the 2008 National Sample Survey of registered nurses (RNs), just over 3 million licensed RNs live in the United States; nearly 85 percent of these women and men are actively working in the nursing profession. Nearly 450,000 RNs are estimated to have received their first U.S. license between 2004 and 2008 (HRSA, 2010). The current nursing workforce includes a high proportion of nurses working in the later years of their careers, soon to retire, and a high proportion of nurses at the onset of their careers. Midcareer nurses, the group most needed to fill the roles of those leaving the workforce, are the lowest in number. Therefore, the knowledge, experience, and mentoring that senior nurses can provide could potentially be lost (Bleich et al., 2009). Table E-1 shows the demographic and educational distribution of the current nursing workforce.

Nursing is unique among the health care professions in the United States in that it offers multiple educational pathways leading to an entry-level license to practice. For the past four decades, nursing students have been able to pursue three different educational paths: the diploma in nursing, the associate’s degree in nursing (ADN), and the bachelor’s of science in nursing (BSN). More recently, an accelerated, second-degree bachelor’s program for students who possess a baccalaureate degree in another field has become a popular option.

DIPLOMA IN NURSING

For many years, the most common choice of nursing students was the diploma program at a hospital-based school. Generally lasting 3 years and providing limited liberal arts content, diploma programs trace their origin to the work of Florence Nightingale and her colleagues in the 19th century. In many ways,
diploma programs are similar to apprenticeship programs for physicians in the 1800s before the widespread development of medical schools (Gebbie, 2009). As nursing gained a stronger theoretical foundation and other types of nursing programs increased in number, the number of diploma programs declined remarkably throughout the 20th century except in a few states, such as New Jersey, Ohio, and Pennsylvania. One advantage of the diploma program is that there are guaranteed clinical spaces for those accepted into the program, something ADN and BSN programs cannot offer. The number of all working nurses who began their nursing education in diploma schools fell from 63.7 percent in 1980 to 20.4 percent in 2008; the number of new diploma graduates dropped to 3.1 percent of all graduates in the 2005–2008 graduation cohort (HRSA, 2010).

### ASSOCIATE’S DEGREE IN NURSING

At present, the most common way to become an RN is to pursue an ADN at a community college. The proportion of nurses in the United States whose initial education was an ADN increased from 42.9 percent in 2004 to 45.4 percent in 2008 (HRSA, 2010). ADN programs in nursing were launched in the mid–20th century in response to the nursing shortage that followed World War II (Lynaugh, 2008; Lynaugh and Brush, 1996). Generally speaking, the ADN remains less
expensive than a BSN because of the cost structure of the community college system and the shorter program duration. Once conceived as a 2-year program, the ADN is seen as taking less time than a BSN, but this situation has changed over the years (Orsolini-Hain, 2008). In most non–health care disciplines, the associate’s degree takes 2 years to complete. In nursing, however, surveys have found that it takes students 3–4 years to complete an ADN program because of the need to fulfill prerequisites and the lack of adequate faculty, which lead to long waiting lists for many programs and classes (Orsolini-Hain, 2008). The ADN curriculum often combines intense science and clinical coursework into a condensed time frame, posing additional challenges to completing the program in 2 years.

**BACHELOR’S OF SCIENCE IN NURSING**

The BSN is a 4-year degree, typically offered at a university; the first university-based schools of nursing were founded in the early 20th century (Lynaugh, 2008; Lynaugh and Brush, 1996). BSN programs emphasize liberal arts, advanced sciences, and nursing coursework across a wide range of settings, along with leadership development and exposure to community and public health competencies. As of 2008, 34.2 percent of RNs throughout the United States had started with a BSN, up from 31.5 percent in 2004 (HRSA, 2010). Beginning in the latter part of the 20th century, an accelerated option for a BSN or MSN became available to applicants who had already completed a bachelor’s degree in a different field. Also known as fast-track or second-degree programs, these programs have added substantially to the growing number of baccalaureate graduates (AACN, 2010).

Most BSN students complete their degrees in 4 years. Accelerated programs that offer the BSN to students who have already completed a bachelor’s degree are typically completed in 11–18 months, with intense coursework and professional formation accelerated based on previous collegiate and life experience (AACN, 2010).

For much of the 20th century, following the release of a significant 1965 position paper of the American Nurses Association, nursing leaders and educators tried to standardize nursing education and make the BSN the minimum entry-level requirement for nursing practice. Four states were targeted for early implementation (Smith, 2010). Only one of them—North Dakota—fully followed through on that recommendation by establishing the BSN as the minimum degree in nursing in 1987 (Smith, 2010). In 2003, however, the state legislature, at the urging of hospitals and long-term-care stakeholders, passed a law that allowed nurses with an ADN to practice (Boldt, 2003). Nationwide, market forces and the needs of individual employers generally determine whether a BSN is required for entry into practice.
LICENSED PRACTICAL NURSES

In addition to the RNs, who receive a diploma, associate, or baccalaureate degree in nursing, another undergraduate-level degree offered is the licensed practical/vocational degree in nursing. Licensed practical/vocational nurses (LPNs/LVNs) are especially important because of their contributions to care in long-term care facilities and nursing homes.

Historically, LPN/LVN programs have fluctuated based on need. The first training program for licensed practical/vocational nurses (LPNs/LVNs) dates back to the late 19th century. These programs increased in number following the nursing shortage of World War I, and the passage of the Smith Hughes Act, and again following the nursing shortage of World War II, when LPNs/LVNs were in demand to assist RNs in civilian hospitals (lpntraining.org, 2010), which were short-staffed as a result of war efforts. LPNs/LVNs also found employment in long-term-care facilities and nursing homes.

LPN/LVN receives a diploma after completion of a 12-month program. The LPN/LVN is not educated for independent decision making for complex care but obtains basic training in anatomy and physiology, nutrition, and nursing techniques. With additional study, these nurses can perform supplemental nursing tasks that are useful to patients and nursing home residents and can contribute to clinical documentation and team performance. Some LPNs/LVNs also supervise nursing attendants and direct care workers in long-term care settings.

CONCLUSION

The fact that each educational pathway (i.e., diploma, ADN, and BSN) leads to the same licensure exam (the NCLEX-RN; see Chapter 4) makes it difficult to argue that a graduate with a BSN is more competent to perform entry-level tasks than one who has a diploma or an ADN. Statistics from the National Council of State Boards of Nursing show little difference in the pass rates of BSN, ADN, and diploma graduates, which is to be expected because the exam tests the minimum standards for safe practice. In 2009, 89.49 percent of 52,241 BSN candidates passed the NCLEX-RN exam, compared with 87.61 percent of 78,665 ADN candidates and 90.75 percent of 3,677 diploma candidates (NCSBN, 2010).

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APPENDIX E


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Health Care System Reform and the Nursing Workforce: Matching Nursing Practice and Skills to Future Needs, Not Past Demands

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INTRODUCTION

The Robert Wood Johnson Foundation’s Initiative on the Future of Nursing is founded on a major study, undertaken in collaboration with the Institute of Medicine, that will “examine the capacity of the nursing workforce to meet the demands of a reformed health care and public health system.” A report pursuing such a goal is propitious, and path-breaking from the legion of nursing workforce reports produced over the past half-century by departing from “what is” and focusing on “what should be.” This paper seeks to aid that effort through a detailed examination of how health reform may alter the demand for the registered nurses (RN), and the degree to which the RN workforce measures up to this anticipated demand.

A thoughtful examination of the capacity of the RN workforce to support health reform is important for several reasons. The health reform legislation signed by President Obama on March 23, 2010, and the American Recovery and Reinvestment Act of 2009 which proceeded it, include a range of initiatives that seek to redesign the organization, financing, and delivery of health care. A number of these programs—for example, primary care medical homes and accountable care organizations (ACOs)—rely on interventions that fall squarely within the scope of practice of RNs (e.g., care coordination, transitional care). Furthermore, expanding the reach of insurance coverage will place greater demands on the primary care system, as witnessed in Massachusetts (Long, 2008; Long and

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1 The responsibility for the content of this article rests with the authors and does not necessarily represent the views of the Institute of Medicine or its committees and convening bodies.
Masi, 2009), and consequently on RNs and nurse practitioners to practice in these settings (Craven and Ober, 2009). In addition, investment in the expansion of interoperable health information technology (HIT) platforms that are critical to the implementation of these system reforms will spur the growth of community-wide information exchange that has the potential to change the distribution, skill-mix, and scope of practice of nurses in profound ways.

So what does a reformed health care delivery system foretell for the future nursing workforce? Will the demand for services provided by RNs change, as the provisions in the legislation suggest, and if so is the nursing workforce positioned to effectively respond? What role will the nursing workforce play in a post-reform environment? This paper examines these questions. We assess the composition, skill set, and scope of practice needed from a future RN workforce to support the health care delivery and coverage reforms that will emerge from the reform legislation and related initiatives. We describe the future demand for RNs under these reforms, how that demand comports with the current and anticipated future supply of RNs, the challenges in meeting the workforce demands of a reformed health care delivery system, and recommendations for future RN workforce planning.

THE IMPACT OF HEALTH CARE DELIVERY REFORMS ON DEMAND FOR HEALTH CARE SERVICES OF NURSES

What will be the demand for the health care services of RNs under the proposed health care delivery reforms? An examination of the health reform legislation and other related policy initiatives reveals a number of programs and provisions that call for reorganization of health care services and the workforce responsible for delivering them. Their implementation could have a significant effect on the future roles of and requirements for RNs.

Advancing Care Management Models

“Care management” comprises a broad and evolving range of strategies to effectively intervene and improve the care for primarily chronically ill individuals—those whose care spans multiple providers and requires continuous, long-term management. Disease management (DM) programs—diagnosis-specific programs targeting chronic illnesses responsible for the largest share of health care spending—have been the dominant form of care management programs for the past 15 years. DM programs target patients with specific chronic illnesses (e.g., heart failure, chronic obstructive pulmonary disease, diabetes), offer providers tools to improve their clinical management, promote outreach and support strategies to improve patient adherence to treatment plans, and provide feedback systems to monitor patient outcomes (Krumholz et al., 2006). Out of DM programs came case management and care coordination strategies that target persons with multimorbidity chronic illnesses and complex care needs in addition
to one or more significant chronic illnesses. These programs rely on rigorous care coordination and well-managed interdisciplinary clinical management to achieve quality outcomes (Anderson, 2005; Bodenheimer, 2008).

Provisions in the Medicare Prescription Drug Improvement Modernization Act of 2003 launched a series of population-based care coordination pilot programs to test the applicability of these strategies for Medicare beneficiaries and to assess the quality improvement outcomes and cost savings that could be achieved (Anderson, 2005; Foote, 2003). The evaluations revealed that while these programs yielded a variety of important quality outcomes, cost savings remained largely elusive (Ayanian, 2009; Peikes et al., 2009). These findings echoed those in an earlier report from the Congressional Budget Office for the U.S. Senate Budget Committee that noted the promise but lack of evidence of cost savings from these programs (CBO, 2004).

Further analyses, however, revealed that cost savings—principally by reducing avoidable hospital admissions—in addition to quality outcomes have been achieved by some care management programs (Bodenheimer and Berry-Millett, 2009; Bott et al., 2009; Sochalski et al., 2009). Programs that have been successful share several important features: care management strategies directed by nurses who were integral to the physician’s practice, who coordinated care and communication between the patient and all members of the interdisciplinary team serving the patient, and who directly provided health care services via in-person and telephonic/electronic methods. Increasing evidence is showing that enhanced and integral involvement of nurses in both the coordination and delivery of care, particularly for patients enduring multiple chronic illnesses and complex care regimens, and in care management is critical to achieving cost and quality targets (Fisher et al., 2009).

Several programs and initiatives included in the health reform legislation involve interdisciplinary and cross-setting care coordination and care management services of RNs.

**Patient-Centered Medical Homes (PCMH)**

Health reform raised the profile of strategies seeking to eliminate fragmentation in care and its costly and poor quality consequences. A recent report from the Institute of Medicine’s Roundtable on Evidence-Based Medicine (2009) estimated potential annual savings of $271 billion that could accrue by 2014 by facilitating care coordination which would reduce these discontinuities in care. One such strategy is the patient-centered medical home, an enhanced model of primary care through which care teams attend to the multifaceted needs of patients and provide whole person comprehensive and coordinated patient-centered care (Kaye and Takach, 2009).

Health reform’s version of the PCMH is an outgrowth of both structural and care delivery innovations over the past several decades. The structure derives from the pediatric medical home model developed to mainstream care for special
needs children, and expanded to embrace the consensus view of primary care as first-contact, comprehensive, continuous, coordinated care for all populations (IOM, 1996; Starfield and Shi, 2004). This model is joined by key elements of Wagner’s Chronic Care Model (Wagner et al., 1996), several system redesign features (e.g., interdisciplinary collaboration and fully integrated HIT), and a new payment structure that recognizes the broad set of services comprising the patient-centered medical home (Berenson et al., 2008). The PCMH is intended to address critical deficiencies in the current primary care system: (1) making the “patient” the focus of and place for care—redesigning practice so that it is truly “centered” on patient and caregivers; (2) meeting the growing challenge of managing chronic illnesses in primary care settings; and (3) providing necessary resources and payment for care management and coordination activities required for an effective PCMH (Berenson et al., 2008; Chokshi, 2009; Rittenhouse et al., 2009).

A fully functional PCMH is founded on patient and caregiver engagement in care that meets patient preferences; information and education that promotes self-management; care coordination that monitors, reviews, and follows up on all services needed and provided across settings; secure transitions across health care settings; and effective information flow across all providers and services to assure integrated care delivery (Davis et al., 2005; Gerteis et al., 1993). This PCMH model is envisioned to result in lower costs through reductions in emergency room visits and hospital admissions (Hussey et al., 2009; Eibner et al., 2009). Patient self-management, care coordination, and transitional care—services at the core of the PCMH and shown to result in lower hospital and ER use—are directed and provided by nurses.

The Guided Care Program offers an example of a successful PCMH model, one that has improved patient outcomes and quality and reduced health care costs through nursing services (Boult et al., 2008; Boyd et al., 2007, 2008; Leff et al., 2009; Sylvia et al., 2008). The Guided Care (GC) model is a PCMH program using an interdisciplinary team approach to coordinate care for older adults with complex chronic conditions. Based in primary care physician practices, GC nurses coordinate care among health care providers; complete standardized comprehensive home assessments; and collaborate with physicians, patients, and caregivers to create and execute evidence-based care guides and actions plans. GC nurses work on a long-term basis with clients, provide transitional care, and assist patients with self-management skills and accessing necessary community-based services (Boult et al., 2008). Early findings from a cluster randomized trial of this program reveal a 24 percent reduction in inpatient days, 15 percent reduction emergency room visits, and a net Medicare savings of $75,000 per GC nurse in the programs (Leff et al., 2009).

The Intermountain Healthcare Medical Group in Utah (Dorr et al., 2008) and the Geriatric Resources for Assessment and Care for Elders (GRACE) program in Indiana (Counsell et al., 2007) are PCMH models that have targeted high risk older adults for rigorously coordinated care provided by nurses embedded in
primary care practices, in the case of Intermountain, and nurse practitioner/social worker teams in the case of the GRACE program. Each have achieved a significant reduction of hospitalizations and lower costs. Similar gains were also found for high-risk children in PCMH programs. Community Care of North Carolina (McCarthy and Mueller, 2009; Steiner et al., 2008) had nurses provide case management and care coordination services to high-risk Medicaid and SCHIP enrollees, resulting in a 40 percent reduction in hospitalizations for asthma and a 16 percent reduction in emergency room visits and yielding total annual savings of $154–170 million.

The Tax Relief and Health Care Act of 2006 directed the Centers for Medicare and Medicaid Services (CMS) to undertake a demonstration program to test the effectiveness of PCMH models for Medicare enrollees and the capacity to achieve both quality outcomes and lower health care spending through such approaches to organize primary care. Provisions in the health reform legislation complement Medicare’s demonstration program, testing different PCMH models and creating a new CMS Innovation Center to support testing new approaches to organizing, delivering and paying for health care services (Chokshi, 2009). Their capacity to achieve real savings, some argue, will depend on the breadth of providers (e.g., primary care, specialists, hospitals) linked to the medical home and the depth of interdisciplinary collaboration and care coordination among them (Fisher, 2008), underscoring the focal role that nursing will play in achieving these outcomes.

Transitional Care

Other innovations in care management also call upon the scope of practice of RNs. Various current and proposed reforms would financially penalize hospitals whose Medicare readmission rates exceeded an established threshold. These provisions come on the heels of a recent study which found that one in five hospitalized Medicare beneficiaries are readmitted within 30 days of discharge, nearly half of whom return without having seen a physician or other health care practitioner in the intervening period (Jencks et al., 2009). Of the $103 billion spent by Medicare on hospital care in the study year, 17 percent was spent on readmissions that were unplanned and potentially avoidable. These findings raise serious questions about the coordination of care and hospital discharge protocols in place where these patients sought care (Epstein, 2009). The financial penalty is intended to serve as a significant incentive to hospitals to adopt evidence-based strategies that will reduce avoidable readmissions.

Co-incident with the release of the readmission study, CMS announced the 14 sites for its newly funded Care Transitions Project. This nationwide pilot program supports partnerships between Medicare’s Quality Improvement Organizations and local providers to develop and implement strategies to manage the transitions of Medicare patients from acute care to post-acute care settings, whether it’s the patient’s home or another health care setting. Transitions between
settings—e.g., hospital to home, hospital to nursing home—are points of great vulnerability for patients, and poorly managed transitions are a chief culprit in hospital readmissions (Coleman et al., 2006; Naylor et al., 1999, 2004). Two prominent evidence-based models of care for managing transitions between settings are founded on nursing services: Coleman’s Care Transitions Model and Naylor’s Transitional Care Model. The Coleman model employs advanced practice nurses as “transition coaches” to manage chronically ill patients and their care needs as they transition between settings and to encourage these patients and their caregivers to assume more active roles in managing their care. The Naylor model targets complex chronically ill patients—those with multiple chronic illnesses and other complicating conditions—and uses specially trained transitional care nurses to provide, manage, and coordinate the full complement of clinical care and transitional care services during, between, and after the hospital stay. Both the Coleman and Naylor models have demonstrated significant reductions in hospital readmissions and health care costs. The health reform legislation includes provisions for a startup program of transitional care that is modeled directly on these two evidence-based models.

Accountable Care Organizations (ACOs)

ACOs received noteworthy attention within influential legislative circles during the debate on health reform that led to their inclusion in the final legislation as a pilot program. ACOs, modeled in large part after successful integrated delivery systems like Kaiser Permanente and Geisinger Health System, have been advanced by the Dartmouth Institute for Health Policy and Clinical Practice and Engelberg Center for Health Reform at the Brookings Institution. Their structure grew out of the seminal work on the geographic patterns of health care use and spending from the Dartmouth Institute (Fisher et al., 2009; Goldsmith, 2009; McKethan and McClellan, 2009). Taking advantage of the natural clustering of health care services around hospitals which the analyses on regional patterns of service use revealed, ACOs are envisioned as locally integrated groups of hospitals, physicians, and other providers that are responsible for the health service needs of a defined population of patients (Crosson, 2009a). Their structure draws from the current Medicare Physician Group Practice demonstration program and the prior decade’s Physician Hospital Organization program (Crosson, 2009b). ACOs offer a pathway to cost control through payment reform, by establishing collaborations of providers that enter agreements with payers to be financially accountable for the provision of health care services to a defined population. These provider collaborations can take a variety of configurations to accommodate and build upon existing local relationships among providers. The payment methods that have been proposed embody a variety of provider incentives to meet cost targets including shared savings, shared risk, partial capitation, and beneficiary incentives such as differential co-pays. Performance measurement
is an integral component of ACOs to provide quality and cost benchmarks and progress, and to ensure that cost control is not achieved through by limiting necessary or appropriate care.

ACOs will depend on several structural and organizational features in order to meet their cost and quality targets. Fully integrated electronic health records (EHRs) and other types of HIT would be required for timely and meaningful information sharing across the entire range of providers. Regular feedback on performance and benchmarks will need to be shared with all providers, services and enrollees in the ACOs. Moreover, ACOs will be supported and strengthened by adopting rigorous, evidence-based care management practices that are the foundation of many complementary system reforms, e.g., PCMHs and transitional care, to manage and guide the care of fully functioning teams of providers and to coordinate communication within and across teams, organizations, and disciplinary lines.

The care management and coordination strategies adopted by ACOs and other types of integrated delivery systems require an RN workforce that is linked to the patient, can readily transition with the patient across time and care settings and is ultimately accountable for outcomes that transcend time and place. RNs working in this context would be employed by the ACO, one of its practices or contracting care coordination organizations and would be responsible for care management for the most complexly ill patients in the group and for their care transitions. These transitions would include from hospital to home or other post-acute setting, from home to hospital, or from ongoing primary care to intensive outpatient secondary care.

Expanding Primary Care Capacity

The demand to build the primary care nursing workforce—both RNs and advanced practice nurses—will grow as accessibility to coverage, service settings, and services increases. The Massachusetts experience provides evidence of this growth in demand: passage of health reform in 2006 led to a substantial increase in demand for primary care services only some of which could be met with the existing reservoir of primary care resources (Long, 2008; Long and Masi, 2009). Moreover, today the number of nurse practitioners (NPs) and physician assistants (PAs) rivals the number of family physicians delivering primary care; thus a substantial share of the growth in demand for primary care services that will follow the expansion in health coverage will by design fall on the shoulders of nurses (Green et al., 2004).

The growth in health centers during the prior decade provides some parameters for quantifying the growth in the demand for the primary care RN workforce. Between 2000 and 2006 the number of patients served by the nation’s health centers grew 67 percent, to 16 million. To meet the concomitant increase in demand for care, the number of primary care physicians at health centers grew by
57 percent, advanced practice clinicians (i.e., NPs, PAs, and certified nurse midwives [CNMs]) by 64 percent, and RNs by 38 percent. Yet despite that growth, according to the National Association for Community Health Centers (NACHC et al., 2008), health centers fell short by 1,843 primary care providers, including physicians, NPs, PAs, and CNMs, and by 1,384 RNs.

NACHC estimates that 56 million people lack access to a primary care medical provider (NACHC, 2007). For health centers to increase the number of patients served (for medical visits) from 16 million to 30 million, an additional 15,600 to 19,400 primary care providers are estimated to be needed. Using the current skill mix of clinicians, 36 percent of these additional providers—from 5,600 to 7,000—would be NPs/CNMs/PAs. In addition, health centers would require another 11,600–14,400 RNs. Assuming that 75 percent of the advanced practice clinicians would be NPs or CNMs, an additional 16,000−20,000 RNs would be required to meet this demand.

National statistics on the RN workforce in primary care suggest that nursing is not growing to meet this demand (Box F-1). The percent of RNs employed in ambulatory care, e.g., clinics, physicians’ offices, health centers remained virtually unchanged between 2004 and 2008, at just over 12 percent. This seemingly steady employment rate masks the gradual decline in the ambulatory care nursing workforce in a number of states. For example, the RN ambulatory care workforce in Florida grew an appreciably decelerating rate over this period: 25 percent from 2004–2006, 12 percent from 2006−2008, and virtually no change from 2008−2009. In 2007 ambulatory care settings employed 7.8 percent of RNs in Pennsylvania, down from 8.4 percent 2 years earlier. In 2006 6.3 percent of RNs in California worked in ambulatory care, down from 8.3 percent only 2 years earlier (UCSF School of Nursing and CHWS, 2007). Statistics from the 2004 National Sample Survey of Registered Nurses indicate that between 17,000 and 20,000 RNs were working in health center settings. Meeting the demand for primary care services at community health centers estimated by NACHC would require a doubling of the RN workforce in health centers today, an unlikely circumstance given the prevailing trends in ambulatory care employment of RNs. Furthermore, community health centers represent only one primary care setting that will demand additional RNs. Other services and settings offering access to primary care and preventive health services and receiving enhanced support from the health reform legislation and consequently will place additional demand on RNs include workplace wellness programs, home-based primary care (e.g., Independence at Home program), nurse home visitation services, nurse-managed health centers, and community health teams.

Adoption of Health Care Support Technologies

Within the first few months in office President Obama signed economic stimulus legislation that included a significant investment to expand the HIT
BOX F-1
RN Ambulatory Care Workforce

U.S. RN ambulatory care workforce:
• RNs were identified in the Occupational Employment Statistics (Bureau of Labor Statistics, U.S. Department of Labor by Standard Occupational Code (SOC) 29-1111. Ambulatory care RNs were the subset of RNs identified by the following North American Industry Classification System (NAICS) codes: offices of physicians (621100), offices of other health practitioners (621300), outpatient care centers (621400), and other ambulatory health care services (621900).
2004: 282,220 RNs were employed in ambulatory care out of 2,300,880 total RNs (282,220 ÷ 2,300,880 = 12.3%).
2008: 319,860 RNs were employed in ambulatory care out of 2,536,160 total RNs (319,860 ÷ 2,536,160 = 12.6%).

Florida RN ambulatory care workforce:
• Annual statewide RN employment are data assembled by the Florida Center for Nursing (http://www.flcenterfornursing.org/) using same SOC and NAICS codes to identify RNs employed in ambulatory care.
2004: 13,792 RNs were employed in ambulatory care out of 135,490 total RNs (13,792 ÷ 135,490 = 10.2%).
2006: 18,524 RNs were employed in ambulatory care out of 145,401 total RNs (18,524 ÷ 145,401 = 12.7%).
2008: 22,127 RNs were employed in ambulatory care out of 155,064 total RNs (22,127 ÷ 155,064 = 14.3%).
2009: 21,281 RNs were employed in ambulatory care out of 148,394 total RNs (21,281 ÷ 148,394 = 14.3%).

Pennsylvania RN ambulatory care workforce:
• Data on employment sector obtained from annual reports of RN workforce in Pennsylvania based on full census RN survey (at time of license renewal) provided in annual reports. Ambulatory care employment sector categories include: physician/dentist office, clinic, and independent practice.

California RN ambulatory care workforce:
• Data on employment sector obtained from a report on the 2006 Survey of Registered Nurses in California conducted for the California Board of Registered Nursing.
Table 3.27- Types of organizations in which registered nurses residing in California work the most hours each month, by survey year.
infrastructure for the nation (Blumenthal, 2009). This investment is intended to nourish the seeds of digital health care that are well rooted though not widespread. Today only 15–20 percent of hospital RNs practice within a minimally functional HIT infrastructure and well under 5 percent practice within a fully wired context (DesRoches et al., 2008). However, a full array of HIT is expected to diffuse rapidly over the coming decade, with significant implications for future training, staffing models, and workforce policies for RNs. HIT is anticipated to lead to (1) profound changes in the content and process of clinical practice; (2) a redesign of the roles and skill mix of the health care workforce and the ways in which multidisciplinary teams will work with one another; (3) new paradigms for how time and place will influence the delivery of care; and (4) increased care efficiency and better outcomes.

Changing Clinical Practice

HIT will fundamentally change the ways that RNs plan, deliver, document, and review clinical care. The process of obtaining and reviewing diagnostic information, making clinical decisions, communicating with patients and families, and carrying out clinical interventions will radically depart from how these activities occur today. Moreover, the relative proportion of time RNs spend on various tasks is likely to change appreciably over the coming decades. While arguably HIT will have its greatest influence over how RNs plan and document their care, all facets of care will be mediated increasingly by digital workflow, computerized knowledge management, and decision support.

In the future virtually every facet of nursing practice in each setting where it is rendered will have a significant digital dimension around a core electronic health record. Biometric data collection will increasingly be automated, and diagnostic tests, medications and some therapies will be computer generated, managed and delivered with computer support. Patient histories and examination data will increasing be collected by devices that interface directly with the patient and automatically stream into the EHR. Automated blood pressure cuffs, PDA-based functional status, and patient history surveys are examples of this.

In HIT supported organizations a broader array and higher proportion of services of all types will be provided within the context of computer templates and workflows. Care and its documentation will less frequently be “free-hand.” As routine aspects of care become digitally mediated and increasingly rote, RNs and other clinicians can be expected to shift and expand their focus to more complex and nuanced “high touch” tasks that these technologies can not readily or appropriately accomplish. This would include communication, guidance and support of the patient/consumer and their families. There will likely be greater opportunity for interventions such as counseling, behavior change, and social and emotional support—interventions that lie squarely within the province of nursing practice.
Redesigned Roles and Skill-Mix

The new practice milieu—where much of nursing and medical care is mediated and supported within an interoperable “digital commons”—will support and potentially even require a much more effective integration of multiple disciplines into a collaborative team focused on the patient’s unique set of needs. Furthermore, interoperable EHRs linked with personal health records and shared support systems will influence how these teams work and share clinical activities. It will increasingly be possible for providers to work on digitally linked teams who will collaborate with patients and their families no longer limited by “real-time” contact.

As the knowledge base and decision pathways that previously resided primarily in the clinicians’ brain are transferred to “clinical decision support” (CDSS) and computerized provider order entry (CPOE) modules of advanced HIT systems, some types of care most commonly provided by nurses can readily shift to personnel with less training or to the patient and their families. Similarly, many types of care previously provided by physicians and other highly trained personnel can be effectively provided by advanced practice and other specialty trained RNs. Furthermore, the performance of these fundamentally restructured teams will be monitored through the use of biometric, psychometric, and other types of process and outcomes “e-indicators” extracted from the HIT infrastructure.

Change in Time and Place of Care

Care supported by interoperable digital networks will shift in the importance of time and place. The patient/consumer will need not always be in the same location as the provider and the provider need not always interact with the patient in real time. As EHRs, CPOE systems, labs results, imaging systems, and pharmacies are all linked into the same network, many types of care can be provided without regard to location, as the “care grid” is available anywhere, anytime.

Remote patient monitoring is expanding exponentially. There is an ever-growing array of biometric devices (e.g., indwelling heart or blood sugar monitors) that can collect, monitor, and report information from the patient in real time, either in an institution or the home. Some of these devices can also provide direct digitally mediated care—the automated insulin pump and implantable defibrillators are two extreme examples.

The implications of this for nursing will be considerable and as of yet not fully understood (Abbott and Coenen, 2008). It is not clear how much of nursing care might be “geographically untethered” when HIT is fully implemented but it will likely be a significant subset of care, possibly in the range of 15−35 percent of what nurses do today. In words, for this proportion of care, nurses need not be in the same locale (or even the same nation) as their patients. As new technolo-
gies impact the hospital and other settings for nursing services this phenomenon may increase.

Efficiency and Outcomes

HIT adoption is expected to increase efficiency and effectiveness of clinician interactions with each patient and the target population. EHRs and other HIT should lower the cost per unit of service delivered and/or improve the quality of care as measured by outcomes or achievement of other end points, such as increased adherence to optimal guidelines. HIT will lead to greater efficiency if it takes less time for a clinician to provide the same unit of service or if a lower-cost clinician now practicing with extensive HIT support can now deliver the same type of care as a higher cost non-HIT supported provider. Controlled “time and motion” studies that have compared clinicians doing the same task with and without HIT support have produced mixed findings on time efficiencies gained across clinicians and settings. One area with emerging evidence is hospital nursing time saved in documentation, with studies showing a 23–24 percent reduction in documentation time (Poissant et al., 2005). These efficiency gains may be partially offset by the information demands of quality improvement initiatives and similar programs undertaken by a growing number of institutions (DesRoches et al., 2008).

CHALLENGES AND RECOMMENDATIONS

The composition and distribution of the current RN workforce is diverging increasingly from workforce need to support the implementation of health reform and related initiatives. Reversing a 15-year trend, a growing number of RNs are employed in hospital settings—62 percent of employed RNs in 2008 (U.S. Department of Health and Human Services, 2010) compared with 56 percent in 2004 (U.S. Department of Health and Human Services, 2006). Higher salaries in the acute care sector appear to have drawn RNs to hospitals from other health care settings as well as reentrants into the workforce. Furthermore, only 10–12 percent of RNs work in ambulatory care settings—settings where much of the system innovation is targeted yet where the evidence base for effective clinical nursing practice is underdeveloped. Moreover, current payment policy and employer behavior have produced a nursing practice model (i.e., staffing composition and scope of practice) that is largely setting-defined rather than patient-centered, so coordination of care and managing transitions across settings has not developed as an integral part of nursing care. The recent Carnegie Foundation report on the future of nursing education (Benner et al., 2009) noted that few schools nationwide have clinical curricula that allow students to follow patients and families across time and institutional settings; consequently students clinical experiences focus on acute inpatient care and episodic care in the health care settings. Finally
the RN workforce is reported to be in the grips of a decade-long nursing supply shortage that is poised to worsen with the impending exodus of a substantial number of retiring baby boomers. Looming large among these retirees are nursing faculty whose departure will impede the replenishment of the depleted RN ranks.

Historically, the U.S. health care system has been able to absorb the entire available supply of RNs. The wide geographic availability of nurses, their deep and nimble skill set, and lower wages relative to physicians and other health care professionals have contributed to their employment in every setting where health care services are delivered. Between 2001 and 2008, total RN FTEs rose roughly 25 percent (Buerhaus et al., 2009) while the general population grew only 7 percent, continuing a decades-long pattern of rising RN-to-population ratios (Figure F-1). The behavior of health care institutions—the main employers of nurses—influenced by government and health plan reimbursement policies, appear to be the main driver of RN demand, a demand that appears to be all but inexhaustible. The education sector has responded to that demand, producing nurses well prepared to deliver acute care services largely in acute care settings, with a shallow skill set and thin distribution in other areas such as ambulatory care, home-based and community-based care, and geriatrics and long-term-care services.

If the demand for RNs changes in response to the system changes and incentives embodied in the health reform legislation and related initiatives, what will

![Figure F-1](https://via.placeholder.com/150)

it take for the RN workforce respond in kind, and what are the implications for workforce planning? Viewing the future RN workforce through the lens of health reform would significantly recharacterize the supply shortage and thus redirect policy actions to build, skill, and distribute an RN workforce that can meet the demands of a reformed health care delivery system (Bovbjerg et al., 2009).

Increasing the presence of RNs in settings and positions that will assist the development of care management initiatives will require preparing RNs to direct team-based care management strategies and transitional care from ambulatory care practices, and reassessing the need for a growing share of the nurses to fill staffing vacancies in hospitals. Hospital vacancy rates derive from staffing levels that vary significantly across regions (Figure F-2), and across hospitals within regions, and are largely determined locally based on an estimate of the number of nurses needed to meet some predetermined ideal threshold (Goldfarb et al., 2008). Grumbach and colleagues (2001) remark on the absence of widely accepted standard for what constitutes adequate RN staffing levels in hospitals. A review of the evidence on the outcomes of RN staffing levels in hospitals does not produce a staffing rate or configuration that consistently yields positive outcomes, in spite of substantial cross-sectional associations between the number of RNs and hospital patient outcomes (Kane et al., 2007; Lankshear et al., 2005). Nonetheless, vacancy rates—which are widely accepted as evidence of supply shortages of RNs—continue to be used in workforce planning efforts to estimate the shortfall in hospital RNs and drive policy action and educational system re-

![FIGURE F-2](image_url)

**FIGURE F-2** Geographic variation in rates of hospital-based RNs per 1,000 population (2006).

sponses that support the diversion of RNs to hospitals and setting-specific models of nursing practice.

Growing RN primary care capacity in response to the anticipated rise in demand for care from increased coverage will require overcoming significant hurdles in the preparation and deploying of RNs to the full array of ambulatory care settings. Retooling nursing education and revamping working conditions and salaries in ambulatory care will be needed to stem the flow of nurses to hospitals, both RN as well as advanced practice nurses. The growing evidence of the influence of prolonged hours of interns and residents on medical errors and adverse events has led to the introduction of regulations limiting their hours. This “shortfall” in medical resident hours has stimulated a demand for, and a gradual migration of, NPs to acute care settings. And while the shortage of primary care capacity would be expected to engender greater demand for all primary care providers including NPs, barriers to practice interfere with their full employment in ambulatory care. Even in states where state practice acts allow NPs to practice fully and independently, the demand for NPs has been constrained by health plan practices (e.g., failure to be credentialed as primary care providers) and reimbursement policies.

Getting the RN workforce required to support health care delivery reform will require a wholesale paradigm shift in the framework and context used to prepare and deploy the RN workforce and to forecast future requirements. This shift will be predicated on the degree to which the implementation of the health reform legislation “recalibrates” the demand for RNs. Payment reform that rewards effective coordination of care over inefficient use of acute inpatient services will demand RNs with skills in care management particularly for the complexly chronically ill, transitional care and community-based services. Payment reform that promotes the creation of medical homes will demand the production of RNs who can provide and direct interdisciplinary teams in the provision of primary care services. Accountable care organizations that are responsible for the full range of health needs of defined populations will demand RNs whose skills span from primary care to end-of-life care and who practice follows the patient and family/caregivers across the full range of settings including the home. And all of these innovations will require fully integrated, interoperable HIT that will support health care teams in ways that are likely affect the effective use of all of their members.

The challenges to achieving this RN workforce in the future are grouped in three general categories. The first challenge lies in the health care marketplace. Currently nurses are hired by employers to fill vacant positions rather than to provide specific skills, perpetuating an employment pattern that is insensitive to different and potentially more efficient skill mix configurations. The health care marketplace, and payers in particular, have not offered sufficient incentives for health care employers to demand a nursing workforce that aligns the skills of RNs more effectively with needs of patients and the health care system. There
are few integrated delivery systems or ACO-type entities that are responsible for, and explicitly rewarded for, their overall performance across the settings that comprise their system of care rather than a single setting. In the main, financial performance is captured and rewarded at the level of the individual setting (e.g., hospitals) and not at the system level (e.g., ACO), so the behavior of each setting is independent and driven by its own goals. Consequently, hospitals lack the financial incentive to hire and deploy RNs to provide transitional care if the outcome is reduced income in the form of reduced admissions. ACO-type organizations lack the incentive to employ RNs to provide care coordination and team management services if these entities are not rewarded for improved financial performance and quality outcomes that these services produce.

The second challenge lies in the educational sector. As currently designed primary nursing education prepares nurses to function in discrete settings rather than across settings (Benner et al., 2009) and as individual clinical providers rather than team members. Team-based care and care coordination are not meaningfully integrated in primary nursing educational pedagogies. Reorienting nursing education to incorporate these themes will require significant redesign of both classroom and clinical education. Furthermore, primary nursing education is still largely focused on the acute care setting. Preparing RNs, in addition to advanced practice clinicians, to practice in ambulatory care settings where the demand for care is clearly growing will require a substantial shift in classroom education but even a greater shift in the clinical practica for students. Finally, the scope and breadth of nursing education needed to meet the needs of reformed health care delivery will require assessment of whether the current educational modality—where the majority of nurses complete their primary nursing education in associate degree programs—produces the right mix of RNs and skills needed to enact these reforms. Without a change in demand, however, the educational system will continue to produce the RN supply—the numbers and skill composition—that it has in the past.

Finally, workforce planning and forecasting will likewise require a comparable paradigm shift. Forecasting models based on current RN demand will not produce useful estimates to guide future policy, i.e., the capacity of the RN workforce to meet the needs of future models of health care services. The current RN workforce is deficient in a number of dimensions to support health reform. Specifically, there is a shortage of RNs deployed to ambulatory care settings and a shortage of advanced practice nurses delivering primary care services. There is a shortage of RNs trained and working as care managers directing and delivering care coordination for patients in acute and post-acute care systems. There is a shortage of RNs with sufficient training and experience in the full array of clinical practice and team management skills that reorganized care delivery models will require. Estimating these shortages, and developing the pathway to resolving them argues for a wholesale new approach to assessing future nursing requirements and preparing and allocating nursing resources to meet those requirements.
Moreover, without a national, integrated approach to workforce planning, one that includes and obligates the critical stakeholders to the goals of an evidence-based and effectively deployed health care workforce, forecasting efforts will produce estimates that cannot guide future workforce planning. In the absence of interdisciplinary collaboration, health care education and the supply forecasts it feeds will proceed as a decentralized, professionally governed activity that produces estimates of health care workforce requirements that meet individual professional goals that may not serve the nation’s need for an effectively prepared and deployed workforce.

Further challenging these efforts will be incorporating the effects of fully integrated health information support, which available evidence suggests will significantly influence the skill mix needed to deliver health care services. HIT will be a key factor affecting the practice of nursing and medicine over the next generation, and its impact on nursing practice and workforce requirements is still very poorly understood. In the future, a more complex calculus will be needed to assess the overall change in efficiency or cost versus benefit of HIT systems. It will be necessary to provide controlled evidence showing the impact of an entire well calibrated HIT supported system within an ACO or other integrated delivery systems. Rather than a single end point (like RN time spent charting) a full market basket of patient outcomes will need to be included as the end point in this equation. And this assessment would also need to account for the fact that the ACO will likely be able to adjust the skill mix of its HIT-supported workforce in order to deliver the same or higher level of care quality more efficiently. For example, this could be accomplished by substituting a higher percentage of lower salaried professionals who can extend their scope of practice with guidance from computerized clinical support systems.

**Recommendations**

**Recommendation 1:** The U.S. Department of Health and Human Services should spearhead an interagency innovations research collaborative with responsibility to test new models for organizing health care services and determine the workforce features critical to achieving desired cost and quality outcomes.

For too long health services research and health workforce studies have not been effectively integrated. Studies testing various models for redesigning health care service delivery have focused primarily on the outcomes achieved by delivery system innovations in contrast to usual care but have not included an explicit assessment of the relative contributions of different configurations and skill sets of health care clinicians to the outcomes achieved. Health care workforce research has largely adopted a human capital approach—i.e., stud-
ies assessing supply and demand for various health care clinicians and factors contributing to recruitment and retention of health care workers—with little time spent on assessing the optimal mix of clinicians and skills to achieve cost and quality outcomes. By failing to integrate these two analytic areas, we produce a health care workforce that is poorly positioned to efficiently and effectively enact delivery system reforms that stand to improve system performance and costs. Demonstration projects that assess the effects of service delivery innovations and encourage a range of skill mix models as well as role differentiation (i.e., who performs which tasks) will grow the evidence base that is sorely needed to inform both health system redesign and workforce planning. Only a concerted and cumulative effort will produce the evidence needed to guide payment policy changes that support delivery system and workforce reforms.

The U.S. Department of Health and Human Services should establish a government-wide interagency innovations research collaborative comprising all agencies/departments engaged in health care service delivery and research, with the goal of testing new models to organize and pay for health care services and determining the workforce features critical to achieving desired cost and quality outcomes from these new models. The Quality Interagency Coordination Task Force (QuIC), established in 1998 harness the federal government’s efforts in health care quality improvement, offers a prototype for such an initiative (AHRQ, 2001). The purpose of the QuIC was “to ensure that all Federal agencies involved in purchasing, providing, studying, or regulating health care services worked in a coordinated manner toward the common goal of improving quality care.” Our proposed innovations research collaborative would span such agencies as the Veterans Health Administration, the Department of Defense, the Agency for Healthcare Research and Quality, the National Institutes of Health, and CMS. The new Center for Medicare and Medicaid Innovation established under health reform would be an integral participant. Dedicated funding from each agency would be set aside to build the pool of funds available to undertake the concerted body of research needed and increase the target populations and workforce configurations studied to further our understanding of how to most effectively structure these innovations. Private-sector partnerships would be encouraged, especially with the payer community, since an appropriately aligned payment policy is the linchpin to adopting new models of care by providers and demanding the workforce needed to enact them. Additional partnerships with organizations engaged in quality and outcomes measurement, such as the National Quality Forum, should likewise be pursued. An independent advisory board should be empanelled to develop recommendations on the innovations research agenda to be pursued by the collaborative.

In addition to determining the skill mix configuration that produces optimal cost and quality outcomes, a full assessment of the methods and processes by which those configurations are achieved will be needed. This assessment would explicate the range of policy and strategic initiatives that could be pursued to
promote such configurations. Such skill mix changes have been of great interest to the UK National Health Services (NHS), who sponsored a systematic review of the literature on the shifting roles of health care providers (Sibbald et al., 2004). In that review, which focused to a considerable degree on nursing, the authors offered a framework that captured the range of processes through which changes in the roles, and thus the skill mix, of health care providers occur (Box F-2). The authors further note certain administrative or policy changes, largely at the interface between settings, that could likewise lead to shifts in roles and skill mix of providers (Box F-2). Dubois and Singh (2009) note that achieving optimal “skill mix” options requires taking a much more dynamic approach to workforce utilization by exploring the full range of skill flexibility and skill development that could lead to newly configured roles and more effectively deployed staff. This process would involve identifying and confronting any institutional and regulatory barriers to achieving the staff configurations needed to meet the cost and quality outcomes of these delivery system innovations.

Recommendation 2: The Health Resources and Services Administration of the U.S. Department of Health and Human Services should (a) create a multistakeholder National Workforce Advisory Group responsible for developing op-

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**BOX F-2**

Processes and Policy Initiatives Producing Health Care Workforce Skill Mix Changes

Processes producing role changes that influence skill mix:
- **Enhancement**—Current role of provider is extended
- **Substitution**—Provider's role expanded by exchanging tasks with another type of provider
- **Delegation**—Tasks are moved up or down a “traditional” disciplinary ladder
- **Innovation**—New domain of practice is created by introducing a new type of provider with a previously untapped scope of practice

Policy initiatives producing shifts in roles and skill mix:
- **Transfer**—Services previously provided in one setting (e.g., hospital) are now provided in another setting (e.g., ambulatory care) by a different set of providers
- **Relocation**—Changing the setting of service but not the providers (e.g., transitional care nurses providing transitional care services in the hospital and the patient's home)
- **Liaison**—Providers in one setting (e.g., mental health) collaborate with those in another setting (e.g., primary care) to shift clinical roles to that setting
tions for integrated, skill-based workforce requirements models, and (b) collaborate with the Agency for Healthcare Research and Quality (AHRQ) to provide funding to support the development of analytic approaches to assess skills shortages rather than personnel shortages and for articulating optimal skill-mix configurations to address those skills shortages.

Over the years the federal government has invested considerable resources in analytic efforts to estimate the future supply of and demand for doctors, nurses, and a range of allied health workers. Together the estimates from these activities have been used to estimate the shortfall or surplus in these health occupations. These efforts are flawed in several significant ways that affect their utility for future workforce planning. As discussed earlier the demand-based models are founded on current patterns of demand which we have shown for nurses to poorly conform to evidence-based models for effective nursing use. The supply-based models derive from current patterns of producing nurses that are influenced in part by current demand and by current patterns of education that are not well aligned with the future RN workforce requirements to support delivery system redesign. Finally, these models do not take into account the overlap in the skills and abilities of RNs and other health occupations, e.g., doctors, as well as other nursing personnel categories.

In its 2008 report, Out of Order, Out of Time, the Association of Academic Health Centers (2008) calls for the creation of a national health workforce planning body to provide a coordinated approach to health workforce planning that offers an integrated national strategic vision rather than decentralized multi-stakeholder decision-making. This idea is echoed in provisions in the health reform legislation calling for the creation of a National Health Care Workforce Commission. Our proposed recommendation would support and augment the work of this Commission in two ways: (1) by creating an Advisory Group responsible for developing a range of options for building integrated skill-based workforce requirements models, and (2) by providing funding through AHRQ to explore ways to assess and compare the outcomes of health care services offered under a range of skill-mix configurations derived from these integrated requirements models. These strategies would be founded on a comprehensive review of the literature and related resources illuminating the full range of workforce configurations employed in the delivery of health care services and, where available, associated outcomes.

The reorganization of health care service delivery that will accompany many of the innovations included in health reform has potentially profound implications for RNs, whose broad scope of practice places them at the cross section of virtually all health care settings. Redefining roles and responsibilities of health team members that such innovations will entail could significantly affect the skill mix
of the team and of nursing in particular. For example, HIT or other technological innovations may allow health care workers with less training to move into expanded roles with efficiency gains while maintaining quality, e.g., lab techs rather than nurses recording and monitoring biological responses to treatment changes; simultaneously these innovations may lead to improved care by moving clinicians into previously unmet clinical arenas, e.g., moving RNs into providing care management. In both instances these role redefinitions—lab techs moving into clinical lab monitoring from which nurses exit as they assume new roles in care management—change the roles and skills mix of health team members in significant ways.

This recommendation provides strategies to develop and evaluate a broad range of workforce configurations and assess their implications for health care workforce planning. Moreover, by shifting the focus from personnel shortages to skill shortage we invite a wider and more diverse array of policy options to meet the care delivery needs of the public with more effective skill-mix configurations.

**Recommendation 3: Nursing education must become a full partner of health care system redesign through meaningful participation in redesign initiatives, and revamping its educational enterprise to meet the needs of redesigned service delivery.**

Health care services redesign and the nursing education enterprise are not well aligned, as noted in highlights from the recent Carnegie Foundation study on nursing education:

A major finding from the study is that today’s nurses are undereducated for the demands of practice. Previous researchers worried about the education-practice gap; that is, the ability of practice settings to adopt and reflect what was being taught in academic institutions. Now, according to the authors, the tables are turned: nurse administrators worry about the practice-education gap, as it becomes harder for nursing education to keep pace with the rapid changes driven by research and new technologies. (Carnegie Foundation for the Advancement of Teaching, 2009)

Delivery system redesign initiatives included in health reform depend upon a set of skills and experiences that nursing education has yet to incorporate demonstrably into its pedagogy. Primary nursing education is still largely located in the acute care domain, with students mastering the care of the acute manifestations of chronic disease rather than care management of complex chronic illness. Care coordination and management are not integral to the classroom and clinical activities of nursing students, and yet it is a role that nurses can and have ably assumed in delivery settings where such skills will be increasingly demanded. Transitional care, which the evidence to date shows is a critical feature in pre-
venting hospital readmissions and other adverse events, lies directly in the scope
of nursing practice. Yet clinical education does not afford the opportunity to
follow patients across health care settings. Thus transitional care, as well as all
other cross-setting models of care, are infrequently practiced and thus even less
frequently taught. Despite its increasing recognition as the foundation for effec-
tive care into the future, team-based care and multidisciplinary care management
remain if anything the province of classroom instruction and rarely connected to
the practice setting. Primary care and community-based approaches to care rep-
resent a minority share of the nursing curriculum even as the demand for these
services is predicted to grow. The consequence is the production of succeeding
generations of nurses that are not well positioned—in numbers and skills—to
meet the needs of a redesigned delivery system.

Meaningful collaboration between nursing education and health care delivery
redesign will encourage the alignment in their goals, which is critical to their
joint success. Opportunities to advance such collaboration, and mechanisms
for its support, should be actively sought. For example, Medicare-funded pilot
studies and demonstration programs testing programs that rely on nursing-led
interventions, such as ACOs or transitional care, should include representatives
from nursing education—its leadership as well as key stakeholders, such as the
regulatory bodies that determine the terms and scope of nursing education and
practice—in activities associated with the design, review, implementation, evalu-
ation, and dissemination of these initiatives. In similar form, health professions
schools testing models of interprofessional education and other models of team-
based care education should include representatives from the clinical directors
of medicine and nursing in health systems and other key stakeholders from the
clinical practice communities.

In reciprocal fashion, this collaboration should inform nursing education as
to where gaps exist in educational offerings and skills development to meet the
needs of a redesigned delivery system. Closing the gaps will involve thoughtful
appraisal of where and how to integrate these new areas of knowledge and clinical
experiences into the current curricular offerings. Faculty expertise will need to be
developed in a number of these care models. The premium on clinical placements
will require consideration of how simulation learning environments may augment
current clinical experiences. HRSA should empanel a Technical Advisory Group
whose purpose would be to make recommendations on the role and opportunities
for relevant agencies within the federal government to support the development of
new programmatic and curricular offerings to build this needed skill set, includ-
ing a full review of the grants and initiatives within Title VIII and other sources
of federal funding for nursing education. The report from the Technical Advisory
Group should include a discussion of the role of other critical stakeholders, e.g.,
state regulatory bodies, health care private foundations, professional associations,
etc., in better aligning health professions education with the unfolding reforms
from health care reform and related initiatives.
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APPENDIX F


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Transformational Models of Nursing Across Different Care Settings

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Group Health Home Care and Hospice

INTRODUCTION

From the time of Florence Nightingale when nursing introduced public health and hygiene principals to the care of wounded soldiers, to the 20th century establishment of advance practice nurses, nursing has been at the forefront of health care transformation. We are now challenged as the health care needs of the population change from an acute and infectious disease focus to that of an aging population with chronic disease. The cost of health care is rising and the number of people who are poorly served by our health care system is increasing.

Along with the change in the health care landscape we are facing a nursing workforce shortage and a nursing leadership shortage. By the year 2025, it is estimated that we will have a shortfall of between 300,000 and a million nurses. Four out of every 10 nurses will be over the age of 50 (Buerhaus, 2008). Moreover, by 2020, 75 percent of the current nurse leaders will have left the nursing workforce (Hodes Aging Workforce Study, 2009).

The following briefs represent the creative and innovative thinking of nurse leaders to address our current and future challenges. They were prepared for the Robert Wood Johnson Foundation Initiative on the Future of Nursing Institute of Medicine Committee, by fellows of the Robert Wood Johnson Foundation Executive Nurse Fellows program. This is an advanced leadership program for nurses in senior executive roles in health services, public health and nursing education who aspire to help lead and shape the U.S. health care system. The program is

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1The responsibility for the content of this article rests with the authors and does not necessarily represent the views of the Institute of Medicine or its committees and convening bodies.
designed to give nursing and nurses a more influential role across many sectors of the economy. Fellows in this program represent the expertise and leadership of today and the leadership of the future. These briefs include background on the needs, evidence-based innovations and most important, recommendations for healthcare in 21st century.

The briefs include the following areas in health care and health care education:

- Transformational Partnerships in Nursing Education
- Innovative Nursing Education Curriculum
- Acute Care
- Chronic Care
- Palliative and End-of-Life Care
- Community Health
- School Health

**COMMON THEMES**

A number of common themes emerge from the briefs. In order to meet the challenges of the future we must embrace technology, foster partnerships, encourage collaboration across disciplines and settings, ensure continuity of care and promote nurse-lead/nurse managed health care.

- **Technology.** Advances in technology open a new world in the provision of health care. The use of technology includes electronic health records, telehealth, remote monitoring, education through simulation, and a host of as yet undiscovered innovations.

- **Partnerships and Collaboration.** The importance of partnering and collaborating extends beyond interdisciplinary care at the bedside to nursing education-community partnerships, community and business partnerships, and public and private partnerships.

- **Continuity of Care Across Settings.** Our current “siloed” system leaves significant gaps in care. Smooth transition of patients from setting to setting is especially needed with the elderly and chronically ill populations.

- **Nurse-lead and Nurse Managed Health Care.** From the developing model of primary care community based programs to retail-based nurse practitioner clinics, nurses are filling in the primary care gap.

**RECOMMENDATIONS**

Each brief includes an important set of recommendations specific to the area addressed. However, a number of universal recommendations emerge that direct the future of nursing and health care.
• **Education.** The current nursing education model is not adequate to meet the needs of the future. Education must develop new partnerships with the community, business and healthcare institutions. More emphasis and resources must be directed to preparing master’s- and PhD-level nurses.

• **Public Policy.** Solid funding sources are needed to support nurse practitioners, nurse managed community health programs and nursing education. Funding must cross settings from acute care to home and community based care. Nurses must be included on local, state, and national health care advisory and policy committees.

• **Care Models.** We must continue to develop innovative care models based on current successes such as the acute care agile self-directed nursing teams, the rural healthy aging community model and school-based and community-based nurse managed clinics. These models should cross disciplines, foster collaboration and partner with communities, business and other organizations.

The future of health care rests solidly with the strength nursing brings in holistic care, ability to collaborate and innovate from the bedside to the community and the ability to adapt to the changing environment. In order to make this happen nursing must adapt education and curriculum to the new century, promote higher education, advocate for innovative models of care and advocate for the health care and education policy to support those innovations.

**REFERENCES**


TRANSFORMATIONAL PARTNERSHIPS IN NURSING EDUCATION

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INTRODUCTION

Although the nursing care environment has changed significantly over the past 30 years, little has changed in the educational methods used to prepare new nurses. Since the 1930s, most clinical education in nursing has been structured with a faculty member supervising a small group of students on one or more in-patient units. Students usually move to new settings for each clinical rotation. This traditional model is heavily dependent on nursing faculty and often requires students to wait for direct faculty supervision. Students often are “strangers” to the registered nurses providing patient care in these settings. This arrangement can compromise the cohesiveness of the nursing team and limit opportunities for building professional relationships between students, registered nurses, and other members of the health care team. Developing a more structured and cohesive partnership between the registered nurse and the student, both of whom are providing care to the same patients, has the potential to revitalize clinical education in nursing.

BACKGROUND

Since Buerhaus and colleagues (2000) first documented the nursing shortage facing the United States, educational institutions have been challenged to increase capacity. The most commonly cited reasons for lack of nursing school capacity are a shortage of nursing faculty and availability of clinical sites (AACN, 2005). Over the last decade new partnership models have developed to finance the creation and expansion of nursing programs, create access to nursing education at all levels, expand and support faculty members, and increase capacity to—and experiences at—clinical sites for students.
As early as 1993, the Robert Wood Johnson Foundation provided stimulus grants through Colleagues in Caring, a grassroots, state-by-state initiative to bring together healthcare administrators, academics, state regulators, and legislators. This early dialogue prompted states and health care providers to broaden financial support for colleges of nursing, develop joint simulation training centers, and create new approaches to placing nursing students in clinical settings. The initial support from a major philanthropic organization evolved into centers for nursing workforce expansion in a number of states. The number of graduates has increased, but is still not sufficient for future workforce needs (Buerhaus et al., 2009). New models for accelerated doctoral programs are key to producing more nursing faculty and innovative partnerships are imperative the success of these programs.

Pre-licensure nursing education is a costly endeavor. While health care organizations have contributed to existing schools, others have acquired nursing schools as part of broader hospital acquisitions. Feeling the pressure of nursing shortages as they plan future organizational growth, large health systems have forged partnerships with private universities to open additional schools of nursing. Institutions such as DeVry, Kaplan, the University of Phoenix, and Western Governors University have business models that can respond to market needs with rapid expansion. The International University of Nursing in St. Kitts, West Indies is the first offshore U.S.-based college of nursing. This sector can be expected to grow, especially as states and local communities respond to budget shortfalls in a downturn economy.

INNOVATIONS

Across the nation, innovative academic-service partnerships are reenvisioning the role of the registered nurse as clinical teacher and facilitating 1:1 relationships between nurses and students over extended periods of time (Allen et al., 2007; Joynt and Kimball, 2008; Moscato et al., 2007). In these partnerships, students, faculty, and staff report that students have less unproductive time spent waiting for clinical supervision and better socialization to the professional nursing role (Udlis, 2008). When clinical education is structured to facilitate relationships between students and nursing staff, the faculty role changes as well and includes more involvement with the professional development of nurses as preceptors, coaches, and clinical teachers. Most importantly, students and faculty are not viewed as visitors in the clinical setting, but rather as integral members of the nursing team, committed to building cultures of quality and safety (MacIntyre et al., 2009). Many hospitals are requiring faculty to participate in internal continuing education and competency validation. Innovative partnerships are reengineering the faculty role to take advantage of what graduate prepared faculty can bring to the clinical setting.

The National Council of State Boards of Nursing (2008) reports a wide varia-
tion in clinical hours between schools of nursing. There is no evidence linking any specific number of hours to improved student outcomes. A change in focus from hours to demonstrated competencies, whether in simulation labs or clinical settings, would make more optimal use of the clinical sites available for student experiences and help make education available to more students. Program evaluation studies that document the relative worth of breadth verses depth in the clinical experience will help academic–service partnerships move from traditional to evidence-based approaches.

Universities and community colleges are increasing their efforts to adopt statewide curriculum models, allowing for seamless transition between programs. These partnerships between associate and baccalaureate nursing programs create more efficient and effective educational advancement pathways for students. Recognizing the link between improved patient outcomes and baccalaureate nursing education (Aiken et al., 2003; Heller et al., 2000) and the need to build efficiencies in nursing educational programs, the state nursing schools in Oregon (http://ocne.org) and Hawaii (www.nursing.hawaii.edu) created Statewide Nursing Consortiums Curriculums that provide a seamless transition to a baccalaureate in nursing for nurses with associate degrees in one additional year of full-time study. These programs are creating reusable learning objects (i.e., case studies, simulation scenarios, concept-based clinical learning activities) that are immediate, portable, accessible, and ready for on-demand education, suitable for a technology-savvy student population. Initial outcomes from these programs are promising include an increase in the student’s national nursing certification rates and positive student learning outcomes (Tanner, 2009).

Innovations in interdisciplinary education on college campuses include new health care models that are designed to produce collaborative learning among students in nursing, management, journalism and communication, and architecture programs (Melnyk and Davidson, 2009). These nontraditional academic partnerships bring a variety of perspectives and expertise together that could define the future of education, health, and health care. The dramatic expansion of second-degree programs in nursing is producing a more liberally educated nursing workforce that should facilitate interdisciplinary competence in practice settings.

Partnerships between states are also transforming nursing education by creating access to educational opportunities across state lines. These interstate collaborations between educational institutions are offering joint programs that increase access to all levels of nursing education in rural and underserved areas in the United States through course sharing and collaborative program development across educational institutions (i.e., the joint Neonatal Nurse Practitioner program at University of California San Francisco and University of Hawaii and The Nursing Educational Xchange). Although these opportunities are emerging, there is still work to be accomplished on a national level to further support interstate partnership in nursing education. National nursing licensure at both the RN and Advanced Practice levels would allow the state boards of nursing to focus
more on consumer protection in their state rather than the regulatory issues of granting state licenses.

RECOMMENDATIONS

Cultivating partnerships will provide many avenues for building capacity in innovative ways for nursing education. Ten recommendations for the future of nursing education are

- Create nontraditional partnerships within and outside of educational institutions;
- Explore opportunities for the creation and expansion of nursing programs through private partnerships and health care institutions;
- Develop, implement, and evaluate innovative academic–practice partnerships between nursing programs and acute care, primary care, long-term care, community, and public health settings;
- Move from a time-based model of clinical nursing education to a competency-based model, and evaluate the evidence to support this type of learning in nursing education;
- Support the implementation and evaluation of statewide curriculum models between universities and community college systems;
- Expand interdisciplinary educational opportunities and programs;
- Champion interstate partnerships to increase access to educational opportunities;
- Support research for evidenced based educational practices that challenge existing norms;
- Build stronger relationships between nursing students and registered nurses providing patient care; and
- Address policy issues that create barriers to the above recommendations.

Innovative partnerships between nursing education and nursing practice are essential if the nursing profession is to meet the challenges ahead. The dissemination of successful innovative models in nursing education requires evidence as well as creative and adaptive partnerships that are developed, nurtured, and evaluated.

REFERENCES


APPENDIX G

INNOVATIVE NURSING EDUCATIONAL CURRICULUM FOR THE 21ST CENTURY

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INTRODUCTION

The changing landscape of healthcare in America requires that clinicians be skilled in responding to varying patient expectations and values; provide ongoing patient management; deliver and coordinate care across teams, setting, and time frames; and support patients’ endeavors to change behavior and lifestyle—education which is in short supply in today’s academic and clinical settings (IOM, 2003). Nursing education needs to innovate at the micro and macro system level for the 21st century. It cannot be business as usual.

In order to truly transform care, practice and education will need to partner on curriculum development and the professional socialization of the new nurse.

BACKGROUND

Innovation in academic settings, specifically colleges of nursing is often hindered by the pressure to meet educational and regulatory requirements established by national organizations, accrediting agencies, and the state boards of nursing that govern and set standards for nursing practice at both the baccalaureate and graduate levels (Melnyk and Davidson, 2009). These regulations should not be barriers to innovation. Time-honored traditions in nursing education such as the current undergraduate clinical instruction model, a disease and illness-oriented curriculum, and the need for extensive clinical practice before matriculating in doctoral programs should be reexamined. There is a need to embrace technology-infused education, transdisciplinary approaches to care, and translational research. Students need to learn how to effectively assess and manage some of the most significant health problems currently confronting our society (e.g., mental health disorders, obesity, patient safety) and how to innovate changes in our health care system (Melnyk and Davidson, 2009). Furthermore, a very uncomfortable, difficult question needs to be asked: “What should be the most appropriate degree for entry into nursing practice?” Given the complexity and wide range of knowledge and competencies that will be required of nurses in the 21st century, it is strongly recommended that nurses be prepared at the baccalaureate level for entry into
practice. Moreover, the entry into practice debate needs to be resolved in the 21st century (Benner et al., 2010).

**INNOVATIONS: TECHNOLOGY-INFUSED EDUCATION, TRANSDISCIPLINARY APPROACHES TO CARE, AND TRANSLATIONAL RESEARCH**

Simulation is one very effective tool that exposes students to the complexity of clinical settings without the hazards of real life (Irons side et al., 2009). Future nursing curricula need to develop interdisciplinary simulation scenarios focusing on collaboration and crucial conversations so that students can learn how to deal with ineffective professional relationships and unsafe practice in a controlled environment (AACN, 2005). Transdisciplinary or interprofessional models of simulation and debriefing can examine and dissect failed communication in health profession’s education and result in a series of recommendations to improve health care environments and patient outcomes. The curriculum for the 21st century needs to provide an opportunity for future health care providers to participate in collaborative education to obtain the necessary advocacy skills to promote a safe, healthy work environment for the patients they serve. Additionally, with the rapid expansion of knowledge, the development of information appraisal and navigation skills are essential for future nurses (Melnyk and Davidson, 2009).

Transdisciplinary or interprofessional models of education are at the core of new type of dedicated education unit: one that educates nurses, physicians, pharmacists, and other professionals depending on the type of patient needs addressed. Dedicated education units have previously implemented best practices utilizing the staff nurse as educator (Moscato et al., 2007). This new model of education is broader, more inclusive, and seeks to find commonalities in the cultures of both service and academe and may provide an ideal site for faculty practice as well. As a starting point, a hospital environment is chosen as an exemplar to demonstrate the feasibility of the model. Chief nursing officers would dedicate select units and develop methods to choose seasoned nurses to work in the new environments as change agents. Clinical educators in nursing and other disciplines would establish daily rounds with input from all students at varying levels based on Benner’s Novice to Expert (Benner, 1984). More experienced students would mentor the novice. A model of leveled reflective learning has been described in Sweden utilizing different hospitals for different levels of learning within the context of the dedicated education unit (Lindahl et al., 2009).

Nurses, hospitalists, and other health professionals are educated in teaching pedagogy and contribute to the education and evaluation of the students. This innovative model also facilitates a better understanding of what each discipline contributes to the overall plan of health improvement. Students are exposed to multiple faculty members who share responsibility for students and students become a member of the team (Budgen and Gamroth, 2007). Transdisciplinary
team meetings will periodically assess the adequacy of the model, the experience of the student, and the areas for growth.

BUILDING THE SCIENCE

It has been well documented that the nursing profession faces a serious shortage of nursing faculty, as well as a severe dearth of underrepresented minority (URM) faculty (Potempa et al., 2008; Sullivan Commission, 2004), that has dramatic implications for, and is a threat to, the future of nursing. In order for nursing to be a truly resonating force for health in the 21st century, it is essential that we grow the science of nursing and demonstrate its effectiveness in fostering health. The case can be made that the production of masters and doctorally prepared nurses is more critical than a focus on preparation of Registered Nurses. Difficult decisions must be made. Which educational setting best supports the preparation of different levels of practice? Advanced Practice Nurses across the board are needed; nurse faculty, nurse leaders, and nurse scientists are all in high demand.

Masters Entry into professional nursing programs has brought a needed cadre of adult learners with broad-based backgrounds into nursing that enhance the discipline. The emergence of the professional doctorate (DNP) is integral to supporting disciplinary growth. We promote a view of the practice doctorate as one not divorced from research but rather additive to the development and use of science. But this will not be enough. A solid background in science, scientific inquiry, and the scientific basis of health is essential to develop health care innovation.

RECOMMENDATIONS

The authors propose strategies to shape the future of healthcare by creating models of nursing education focused not only on curriculum changes, but also on transforming the student population, integrating the science and research in the curriculum and influencing health care policy.

Curriculum and Technology

- Create truly unique Transdisciplinary Simulation Centers across the country where students from the health disciplines of nursing, health professions, and medicine will be exposed to the complexities of teamwork situations within the clinical setting.
- Develop curriculum well grounded in disease prevention, health promotion, and screening, and public health. Include greater emphasis on the aging, older adult, ethics, genetics, public speaking, and writing skills (Sauder et al., 2006).
- Develop sufficient technology skills to better support increased knowledge management including point-of-care technology.
• Include a nurse educator role in all master’s and doctoral programs.
• Increased emphasis on global health and knowledge development at all educational levels.
• Teach students to deal with the ambiguities of the health care environment.

Transforming the Student Population
• Increase the number of BSN accelerated and Masters Entry in Nursing programs designed for second degree students.
• Increase doctoral student enrollment especially those of URM (Kim et al., 2009). Partnership models between research intensive institutions and schools with less research are essential. Models that support early professional movement to the doctorate are essential.

Integrating Science and Research
• Focus on interpreting clinical data and managing improvement.
• Cultivate disciplinary knowledge across all levels of curricula based on an understanding of the science of the discipline and the scientific process (Potempa and Tilden, 2004).
• Develop the role of the nurse scientist.
• Develop “scientifically aware” nurse clinicians who will collaborate with nurse scientists to move research to the bedside. Focus on “Evidence–Creating Nursing,” the direct collaboration between nurse clinicians and nurse scientists.
• Reengineer the Doctor of Nursing Practice (DNP) to include the conduct of research in the form of a practice dissertation.

Health Care Policy
• Increase support for BSN education as a minimum requirement for practice.
• Increase support for the development of advance practice nurses to meet the growing need for primary care providers identified in health care reform measures.
• Institute dedicated education units across the country that are transdisciplinary.
• Promote a better understanding of the business and financial dimensions in nursing and health care.
• Advance Medicare or other federal support to create a Graduate Nursing Education Fund. (similar to Graduate Medical Education).
• Institute a national nursing licensure program.
SUMMARY

Nursing science can raise clinical standards, influence health policy, inform citizens, improve the health and well-being of the public and possibly transform care (Tilden and Potempa, 2003). With health reform cresting, nurses have an enormous opportunity to influence a new evolving health care system that truly improves the health of our nation. The time for innovation is now.

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INTRODUCTION AND BACKGROUND

Acute care describes healthcare provided to treat a condition over a short period of time. The hospital has been the center for acute care delivery for more than a century. There are three major problems with this “brick and mortar” model of acute care:

- Hospital care is the highest cost health care and demand is increasing.
- Hospital care is associated with complications. Poorly designed systems result in errors that compromise patient care and safety.
- Hospital care is inadequately integrated with prevention and post–acute care systems. Care transitions between providers and settings are fragmented.

The present acute care hospital is largely dependent on the over 50 percent of registered nurses in the United States who work in hospitals. The predominant hospital role of nurses is to care for human bodies and prepare patients and families to leave the hospital as soon as possible. This care delivery model is labor intensive and predicted to break down as workforce shortages escalate.

CARE TEAM OF THE FUTURE: AGILE TEAMS, PRAIRIE LAKES HEALTH CARE SYSTEM, WATERTOWN, SOUTH DAKOTA

A medical–surgical unit care delivery model referred to as “Agile Teams” replaced a “Total Patient Care” care delivery model. In the Total Patient Care model, a nurse is assigned a number of patients to care for over a shift. The nurse is often task-oriented with responsibility for medication administration, documentation, and other patient care procedures with some assistance from unlicensed personnel. Such models are often fragmented emphasizing the nurse’s plan of care for the patient during the shift instead of focusing on the interdisciplinary team’s plan to transition the patient to the next level or care.

In the Agile Team Model, a team of three bedside care providers is assigned to care for a cohort of 10–12 patients. Every team has at least one experienced professional nurse but team composition varies. For example, the team may con-
sist of three registered nurses, or two registered nurses and a licensed practical
nurse, or one registered nurse and two other types of providers. This allows for
flexible and productive staffing. Self-organization allows the team to determine
how to best provide care for the patient cohort depending on patient needs and
team capabilities.

The traditional care plan report has been eliminated in favor of a daily team
planning conference to discuss patient care. The team enters data into an elec-
tronic record and between meetings, any team member can access the record to
view or add current information about the patient.

This model has improved unit productivity and provided staffing flexibil-
ity without compromising patient care. Unit productivity improved from 10.2
hours per patient day to 7.5 hours per patient day. The hospital has adopted the
philosophy of “doing less with less” as a sustainable model. The outcome is a
high-quality product with the least amount of waste.

FUTURE SCENARIOS

While the Agile Care Team model is an improvement within the current state
of acute care, we need to consider a future that embraces technology and extends
beyond the walls of the current hospital system. Imagine the manual care delivery
system transformed into one that is managed virtually. An interdisciplinary care
team is located in a control center with capability to plan, monitor and administer
treatment to patients in hospitals or homes. The control center is connected to
the patient at the care scene through multiple electronic data transfer interfaces.
Treatment is administered through technology including robotics or by unlicensed
staff directed to complete tasks through devices such as web cams, bluetooths,
bar code medication verification scanners, and other information transfer devices.
Complex tasks once only executed by a highly trained provider can now be com-
pleted through robotic and information systems. Errors in care are eliminated as
providers in the control center focus on the treatment plan instead of distractions
at the care scene such as completing tasks (including medication administration),
looking for supplies, completing paperwork, managing interruptions, and moving
patients. Nurse-to-patient ratios, increasing nursing time in direct care, nursing
stations, and bedside change-of-shift reports between registered nurses are now
obsolete. Now the professional nurse in the control center is a provider of care
integration, expert surveillance, and management of imminent clinical needs such
as pain management and emergency intervention.

Imagine this. The hospital of the future is not “a place” but rather a collec-
tion of inpatient and outpatient facilities as well as patient homes interconnected
through a shared information technology infrastructure. Care will no longer be
defined by episodic events such as a hospital stay but rather by the episode of
care required across settings and providers to fully recover from an illness or
manage an exacerbation of a chronic disease. Patients and their families will ac-
cess a “control center” website tailored to their needs in their homes to connect to the acute care team and manage their own care. Home monitoring devices will provide data and continuous feedback about clinical status. Readmissions to the hospital due to failure of care protocols and inadequate support will be markedly reduced. Healing will occur at home.

**INNOVATIVE APPROACHES TO CREATING THE FUTURE**

Innovative approaches already exist that forecast this model in the future:

- “e-ICU” technology that connects rural hospital ICUs to the expertise of larger trauma hospitals;
- Bar-code medication verification systems and electronic medication administration records;
- Bedside access to medications and supplies; robotics;
- Interdisciplinary care teams that include engineers to identify poorly designed work processes; and
- Tele-home health that monitors patients who at home.

**RECOMMENDATIONS**

We need to change the way we think about our traditional brick and mortar care delivery system. The emerging changes we believe will be most influential include the following:

- **Human Caring Models.** Bent and colleagues (2007) reminds us nursing is the discipline that creates the path to advance human health, dignity, and relatedness no matter what our advances in technology may be. Nursing’s body of knowledge related to human caring is essential to the healthcare system and must be incorporated into the design and development of any future care delivery models. Care delivery models with virtual processes can be designed to maintain human relationships for caring and healing.

- **Hospital Workplace Transformation.** Initiatives such as Transforming Care at the Bedside and Return to Care empower front line teams to make changes to care delivery processes that are patient centered and add value. In addition, Magnet credentialing supports cultures of transformational leadership and infrastructure to support innovations and development of new care delivery models. Human factors engineering in hospital units eliminates wasteful, unsafe workarounds and establishes reliable systems for defect-free care. These initiatives demonstrate the ability of providers to self-organize and innovate for care model transformation.
- **Interdisciplinary Care Teams.** Care delivery teams will be interdisciplinary and connect in ways to be most effective to meet patient needs. They will evolve from current models in which team members operate in organizational silos or forced matrices (e.g., committees) within organizations. Instead of nurses developing the patient’s care plan for the hospital stay, interdisciplinary teams will plan the patient’s transition to the next level of care. New team roles will develop to manage the transformed system. Care delivery models will be designed with interfaces to effectively coordinate services across multiple disciplines and settings. Clinical and therapeutic decision making will be collaborative.

- **Shared Information Environments.** Rich, accessible information environments will complete the transition from manual care models to e-care with human caring. Care delivery models will be designed to provide access to the information needed for clinical and therapeutic practice. Models will be designed to provide the information environment required for critical thinking and professional judgment, open access to records, and fully wired patient care settings. Documentation will become a byproduct of the care process, not its own process.

**SUMMARY**

Changing the way we think includes discarding our current models of work and replacing them with something altogether different. Hospital leaders need to foster cultures of innovation and build effective teams to do the work. Regulators need to help remove the barriers that now prevent such innovation and allow the system outcomes to better inform the direction and application of the regulatory environment. Changing the way we think requires serious culture change and transformational leadership.

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NURSING INNOVATIONS: THE FUTURE OF CHRONIC DISEASE MANAGEMENT

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INTRODUCTION

Nurse-led initiatives are at the forefront of the management of chronic diseases—a significant health care focus of the 21st century. The Centers for Disease Control and Prevention report that the leading causes of death and disability in the United States are chronic diseases such as heart disease, cancer, and diabetes. In absolute terms, more than 1.7 million people die of a chronic disease annually in this country. For 25 million people, chronic, disabling conditions cause major limitations in activity; the prolonged course of illness and disability result in extended pain and suffering and decreased quality of life for millions of Americans. The costs in human and economic terms of these diseases are incalculable; paradoxically, these diseases are also the most preventable. This Brief presents five nurse-led innovations in which chronic disease management is approached in cost-effective and practical ways, using prevention and health promotion orientations.

TRANSFORMACION PARA SALUD

The Transformacion Para Salud Program is a HRSA-funded demonstration project at the Larry Combest Community Health and Wellness Center, a nurse-managed primary care center. Advance Practice Nurses oversee four Promotores, who are certified community health workers (CHWs). The CHWs apply the Transformation for Health conceptual framework based on Paulo Freire’s educational philosophy and developed in the School of Nursing at the Texas Tech University Health Sciences Center (Esperat et al., 2005, 2008), to provide intensive care coordination involving home visitation and telephonic contacts. Clients and families served, who belong to health disparate groups residing in
a medically underserved area, are enrolled in the chronic disease management program. Beyond primary medical issues, in applying the transformation framework, the interdisciplinary team takes into account social determinants of health in care delivery, and involves engagement of a community advisory board in the program implementation. Within the first year of implementation, improvement in both primary biomarkers and secondary behavioral indicators has been observed in the clients. Cost-effectiveness analyses will be conducted at the end of the project period. A major challenge is to maintain sustainability of the program beyond the grant period because services are not reimbursable through third-party payors at this time.

**INTENSIVE PRIMARY CARE**

The St. Vincent’s Nurse-Managed Health Center (STV-NMHC) is operated by the University of Texas Medical Branch (UTMB) School of Nursing. The mission of STV-NMHC is to provide comprehensive, quality primary care to uninsured residents of the Galveston community. The clinic opened in the immediate aftermath of Hurricane Ike and is supported by UTMB based on the assumption that the practice can decrease hospitalizations in the patients served resulting in cost savings to the hospital. The Center operates using Intensive Primary Care, designed to serve adults with chronic health problems and based on the premise that this segment of the patient population need more “intensive” primary care interventions just as some patients in hospitals need a different level of care in intensive care units. Nurse practitioners, in partnership with nurse case managers and a highly integrated staff, assess patients holistically and address barriers to care and self care. A comprehensive Quality Improvement Program using the Chronic Care Model is in place to address all aspects of care. A new electronic health record tracks outcomes, such as clinical status, functional status, patient satisfaction, self-management goals, access to care, and practice management functions such as the billable services, as well as cost effectiveness. Barriers encountered include bureaucratic issues inherent in large academic settings, as well as the need to meet state requirements of medical oversight and practice protocols. A recent change in prescriptive authority oversight has added to the paperwork burden. Changes in legislations removing oversight for nurse practitioners would significantly help STV-NMHC and similar practices.

**THE NURSING MOBILE HEALTHCARE PROJECT**

The University of Medicine and Dentistry of New Jersey School of Nursing (UMDNJ-SN), in a collaborative, joint partnership initiative with the Children’s Health Fund, has implemented a nurse-faculty managed Mobile Healthcare Project, designed to reduce the morbidity and mortality of medically underserved patient populations in four New Jersey cities. Since March 2006, patients have
been treated for both acute and chronic illnesses within the scope of practice of Advanced Practice Nurses. The Project serves as a practice site for nursing and medical faculty, and as a clinical rotation for nursing and medical students. Mobile nurse-managed centers enable the deeper penetration of this much needed service in underserved communities. This Project is one visionary approach to the Institute of Medicine’s call for the improvement of quality of care through the restructuring of clinical education, with nursing in leadership roles. Outcomes are tracked using a structured process. One of the main Project outcomes is cost effectiveness, because it utilizes faculty-supervised nursing and medical students and an interdisciplinary mobile health team staff. This project is in partnership with Project’s Community Advisory Board, consisting of representatives from the community-based organizations. Challenges include efforts to expand the same reimbursement mechanisms now afforded to fixed site clinics to mobile nurse-managed centers by third-party payors.

**MIGRANT HEALTH SERVICE, INC.**
**NURSE-MANAGED HEALTH CENTERS**

Migrant Health Services, Inc. (MHSI) is a HRSA-funded voucher program whose primary goal is improving the health status of Hispanic migrant and seasonal agricultural workers (Guasasco et al., 2002; Lausch et al., 2003). In Minnesota and North Dakota, MHSI has established four seasonal satellite nurse-managed health centers (NMHCs), two mobile units, as well as four year-round NMHCs to meet the health and educational needs of farmworkers. Services include assessment, health promotion, disease prevention and self-management, health risk assessment, counseling, and health education (Guasasco et al., 2002). Patient outcomes have dramatically improved, such as a significant decrease in patients’ hemoglobin A1Cs. Another innovation was the development of Cluster Clinics, a series of 9–11 mini-clinics, physically arranged so patients can circulate a single site for two or three hours to receive medical care, diabetes education, and counseling. An interdisciplinary diabetes team provides health care, education, and counseling according to the American Diabetes Association Clinical Practice Recommendations. The education and counseling address such issues as nutrition, diet, exercise, tobacco use, foot care, and access to recommended services and referrals (Heuer et al., 2004). Challenges include continuity and the availability of funding for this invisible, bilingual, mobile population.

**CENTURA HEALTH AT HOME**

Centura Health At Home (CHAH) is the largest home care organization in Colorado and is part of the Centura Health system, a not-for-profit, faith-based health care system. CHAH instituted an interactive Telehealth Program in 2004 for congestive heart failure patients with high recidivism. Telehealth nurses monitor patients each day in real time and can perform a video visit enabling one-on-
one interactions with the patient in their home, responding to real-time diagnosis specific questions. Vital signs, oxygen saturation rates, and auscultation of heart and lung sounds using NASA technology stethoscopes is collected though the patient may be up to 50 miles away. The telehealth nurse is able to intervene at the right time to address disease-related issues, and to determine if a home visit is indicated. The telehealth nurse does all of this either from the office or from their home through a secure website. With a caseload of 40 patients, the telehealth nurse can monitor and do video visits on 12 patients a day as opposed to a home care nurse who averages five patients a day with a case load of 20 patients. Telehealth allows the nurse to intervene at the right time while the home care nurse may not know the status of patients until a home visit is conducted; by the time the home care nurse visits, the patient may already be back in the hospital. Today, over 900 Centura Health patients have received telehealth services. The number of hospital readmissions within 30 days of hospitalization for this group is 9.7 percent, compared to hospitals nationwide which have a readmission rate of over 20 percent for primary diagnosis of congestive heart failure. Three years of tracking of this program shows that 81 percent have remained without need for further hospitalizations. The intervention has successfully kept patients from being readmitted to the hospital, with tremendous savings (estimated $5.2 million) in health care dollars, showing that this technology is the future for home care agencies.

CONCLUSIONS AND RECOMMENDATIONS

These examples demonstrate how nursing can provide the leadership and skills in addressing one of the nation’s top health care challenges—chronic disease. In order to continue and sustain these initiatives the following must occur:

- Establish solid local, state, and federal funding for nurse-led initiatives in chronic care.
- Support the development implementation and evaluation of innovative nurse-led models of care.
- Fund education initiatives to train nurse leaders in business, public policy, outcome monitoring, and quality improvement.
- Eliminate regulatory and oversight barriers that inhibit the ability of advance practice nursing to provide primary care.

Nursing is shaping health care of the future by creating innovative programs that are effective, low-cost, and reach the populations that most need the care.

REFERENCES

PALLIATIVE AND END-OF-LIFE CARE
TRANSFORMATIONAL MODELS OF
NURSING ACROSS SETTINGS

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INTRODUCTION AND BACKGROUND

One antidote to the burgeoning crisis in health care is to reconceptualize our care delivery model from episodic disease management to living with chronic and life-limiting diseases and injuries. Palliative care, which includes hospice care at the end of life, offers a promising method for actualizing this focus.

At the core of palliative care is the essence of nursing—care and caring. When people are struggling to manage their health problems, they need astute clinicians who can help interpret their responses to diseases and treatments, advocate for holistic and effective care, facilitate relationships with providers, and provide physical, emotional, and psychospiritual care. Although contemporary models of palliative care include end-of-life and bereavement care, they are broadly applicable for all people who are experiencing acute, chronic, or debilitating conditions from the time of diagnosis.

Nurses have been instrumental in the evolution of hospice and palliative care in Europe and the United States. Dame Cicely Saunders, who was a nurse, physician, and social worker, established the world’s first hospice in London in the 1960s. Florence Wald, a colleague of Saunders, and a former dean of the Yale School of Nursing, established The Connecticut Hospice, in New Haven, as America’s first hospice in 1974 (NHPCO, 2008). According to the National Hospice and Palliative Care Organization, 1.45 million patients received hospice services in 2008, including 38.5 percent of all persons who died in the United States that year. Nurses comprised the largest number of hospice providers involved in that care (NHPCO, 2009).

Registered nurses, as well as advanced practice nurses, have also played leading roles as members of interdisciplinary teams in the development of palliative care programs. These teams focus on improving quality of life through pain and symptom management, enhanced communication and decision-making...
support, and facilitation of safe transitions between care settings (Morrison and Meier, 2004). Palliative care programs began to emerge in hospitals in the late 1980s and have evolved to include programs focused on intensive care, long-term care, community-based care, and pediatric care. Between 2000 and 2005, these programs increased by 96 percent in United States hospitals (AHA, 2007). The demand for these services will continue to rise with the aging of the baby boomer population and the evolution of health care innovations that extend life by preventing and treating both acute and chronic illnesses.

**NURSING AT THE FOREFRONT OF POLICY**

The National Consensus Project, chaired by Betty Ferrell, PhD, RN, FAAN, which represents four Coalition organizations (the American Academy of Hospice and Palliative Medicine, the Center to Advance Palliative Care, the Hospice and Palliative Nurses Association, and the National Hospice and Palliative Care Organization) has developed and disseminated the Clinical Practice Guidelines for Quality Palliative Care in 2004 and 2009. These guidelines serve as a national standard for informing providers, policy makers, and consumers about the attributes of high-quality palliative care (National Consensus Project for Quality Palliative Care, 2009).

**THE NURSE AS A KEY WORKER**

Patients with palliative care needs often have multiple providers and use several different institutions. This scenario is especially true in pediatrics. To ensure continuity and avoid fractured care, it is essential that the care follow the patient and family. Palliative care provides aggressive symptom management, coordination of care, and psychosocial support with improved linkages to all sites of care (Remke, 2007). A designated “key worker,” supported by an interdisciplinary team, is essential to caring for these patients and families in a holistic way (Field and Behrman, 2003). Often this key worker is a nurse who can bring in other members of the team as needed. Nurses are experts in coordinating both the physical and psychosocial care; so they are ideal providers to serve as key workers to provide continuity of care across the continuum of care and through various settings.

An example of this model is the Pain and Palliative Care Program at Children’s Hospitals and Clinics of Minnesota that provides palliative care to inpatients, patients in their homes, and in a palliative care clinic. The nurse who is the key worker visits patients wherever they are, and assists with care coordination, medication reconciliation, and transition arrangements. These interventions take place in any location, including other inpatient facilities. These “continuity visits” encourage consistency and smooth transitions across sites of care.
NURSE PRACTITIONERS AS PALLIATIVE CARE CONSULTANTS

On the other end of the age continuum, the Palliative Care Center of the Bluegrass, in Lexington, Kentucky, employs nurse practitioners who serve as external palliative care consultants to nursing home staff, residents, and their families. These consults can be initiated by physicians or nursing directors at the nursing homes. The nurse practitioners provide both clinical consultation and education to nursing home staff, focusing on symptom management, advance care planning, patient and family communication, and supporting transitions to hospice services, if needed. Both Medicare and Medicaid will provide reimbursement for this type of external consultation provided by a nurse practitioner. Nursing homes who have used this consultation service report improved pain and symptom management, increased patient satisfaction, and fewer emergency room transfers. This Center has been nationally recognized as one of the Palliative Care Leadership Centers by the Center to Advance Palliative Care (CAPC, 2008).

Advanced practice nurses in critical care units, such as Margaret Campbell, PhD, RN at Detroit Receiving Hospital in Michigan and Patrick Coyne, MSN, APRN, at Virginia Commonwealth University, have also demonstrated the effectiveness of interventions by palliative care services within their institutions. Campbell has developed protocols that promote both physical and emotional comfort to patients and families during the process of weaning patients from mechanical ventilation (Campbell, 1998). Coyne and colleagues have demonstrated significant improvements in their patients with pain, nausea, depression, anxiety, and shortness of breath (Coyne, 2009; Khatcheressian et al., 2005).

A COST-EFFECTIVE MODEL OF CARE DELIVERY

Palliative care interventions enhance physical and psychological well-being, enhance communication between patients, families, and caregivers, increase patient and family satisfaction, and facilitate transitions through complex care delivery environments. Beyond these benefits, palliative care tends to be a cost-effective model of care delivery. A recent multisite study by Morrison and colleagues (2008) demonstrated significant reductions in pharmacy, laboratory, and intensive care unit costs. In their study, which included over 5,000 hospitalized palliative care patients, the palliative care patients who died had a net savings of $4908 per hospital admission, and palliative care patients who were discharged alive had a net savings of $1696 per admission, in comparison to matched cohorts of comparable patients who received usual care.

RECOMMENDATIONS

Palliative care is a model that is consistent with basic nursing values, which include caring for patients and their families regardless of their age, culture,
socioeconomic status, or diagnoses, and engaging in caring relationships that transcend time, location, and circumstances. The following recommendations enhance the role of nursing in palliative care and enhance care for both patients and families:

- Support the essential contributions of registered nurses and advance practice nurses within the evolving model of palliative care in the United States.
- Support nursing education and research that advances the palliative care model.
- Use the palliative care model as a framework when addressing the needs of the chronically ill population.
- Ensure that nurses with palliative and end-of-life care expertise are part of local, state, and national health care advisory committees.
- Ensure that representation on MedPac includes nursing with expertise in palliative and end-of-life care.

Nurses address the complexity of patient and family needs and to serve as cost-effective care coordinators or health care navigators for patients and families with both chronic and life-limiting illnesses, to reduce suffering and improve the quality of living and dying across the lifespan.

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THE FUTURE OF NURSING

NURSES CLOSE THE GAP IN COMMUNITY HEALTH

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INTRODUCTION AND BACKGROUND

Nurses across this country are equipped and capable of meeting the diverse needs of communities by providing leadership, engaging stakeholders and developing and implementing evidence-based models of care to close the gap between preventive and primary care services. The overall health improvement of the nation requires evidence-based health promotion and disease prevention. Nurses design and implement these solutions in a multitude of settings including public health, school-based health centers, nurse managed health centers, convenient care clinics, federal health centers, and home health. Nurses working to address the needs of community health have firsthand knowledge in understanding the healthcare needs of a diverse population, especially in underinsured and uninsured populations facing a widening rift in quality care (Hurley et al., 2005).

As far back as 1986, the Office of Technology Assessment (OTA) released a groundbreaking case study about nurse practitioners (NPs) concluding that the quality of care provided by NPs is equivalent to and in some cases better than that of physicians (Safriet, 1992). Using the advanced practice skills of nurses, technology builds capacity to move seamlessly from the individual-to-community level data to build statewide quality scorecards. The Commonwealth State Scorecard on Health System Performance for 2009 (Moody and Silow-Carroll, 2009) can look vastly different by 2015 by improving access and preventive care, ensuring equitable care, and decreasing avoidable hospitalizations that will help lead to improved healthy lives for the country.

EVIDENCE-BASED MODELS

Nurses working in a predominately Hispanic community, using Como Convivir Con Su Artritis (How to Live With Your Arthritis), expanded the health care team by recruiting leaders from the Hispanic community to be trained to teach the Stanford
Self-Management Model, which provides an evidence-based framework to help patients understand their role in chronic disease management. Classes were held at local community sites and helped to reach a vulnerable population (Lorig et al., 1999). In partnering with patients, nurses helped patients gain a better understanding of their chronic condition and improve medication adherence.

In the African American community, high blood pressure (HBP) is one of the most common chronic disease in the United States. A study led by Dr. Martha Hill, the dean of the Johns Hopkins University School of Nursing, demonstrated how a health care team led by a nurse practitioner, a community health worker and a physician consultant successfully lowered blood pressure by 44 percent as compared to control group. By lowering blood pressure, the men in the study also benefited from fewer signs of heart and kidney damage, all of which lead to lower healthcare costs. The nurse practitioner and healthcare team worked in a community setting and providing primary care interventions. An important highlight is that the health care team worked with high-risk African American males in an urban community. The multidisciplinary NP led team, ensured patients received regular health care services and established lasting, trusting relationship that led to lifestyle changes ultimately leading to improved hypertension management (Hill et al., 2003).

Nurses working in the community play a critical role in health promotion and disease prevention. A study by Dr. Loretta Sweet Jemmott, Director of the NINR Hampton-Penn Center to Reduce Health Disparities, demonstrated how black nurses working in schools, health clinics, and other primary care settings helped at risk adolescents learn the importance of using safer sex practices to reduce their exposure to HIV infection. The nurses used various evidence-based interventions designed such as audiovisual demonstrations, technical skill building demonstrations, role-playing, and discussions to engage the adolescents in protecting themselves and others in their community from HIV infection (Jemmott et al., 1998).

The Nurse-Managed Health Center (NMHC) is an evidence-based model that provides care to 2.5 million patients across the country. Services provided in NMHC include primary care, health promotion and disease prevention services to medically underserved patients living in both rural and urban areas (NNCC, 2009). They strengthen the nation’s health care safety-net by providing services regardless of a patient’s ability to pay or insurance status. Services are offered in easily accessible locations such as schools, homeless shelters, senior centers, churches and public housing developments by a wide array of health care professionals, including nurse practitioners serving as primary care providers, registered nurses, health educators, behavioral health specialists, community outreach workers and collaborating physicians. For many patients, the centers are their only option for accessible and affordable care. In addition to the incredible menu of services provided, NMHC are cost effective as demonstrated by researchers at Johns Hopkins University School of Public Health who analyzed Uniform Data
System (UDS) data from the Bureau of Primary Health Care for 1996 to 2001 found that medical encounter costs at nurse-managed federally qualified health centers (FQHCs) were 11 percent less than encounter costs with other providers (NNCC, 2009).

Convenient care clinics (CCCs) are a rapidly expanding, affordable, accessible, consumer-driven health care alternative. There are close to 1,200 of these clinics in high-traffic retail outlets, often with a pharmacy adjacent, in more than 30 states and the District of Columbia, reflecting a capacity to see more than 17 million patients annually, a number that is easily scalable (CCA, 2009). Generally open 7 days a week, with extended weekday hours, patients are seen on a walk-in basis and visits typically take 15–20 minutes. Common treatments and diagnoses include cold/flu, rashes/skin irritation, and muscle strains or sprains. CCC clinicians, the majority of whom are nurse practitioners, also provide immunizations, physicals, and preventive health screenings. CCCs complement the medical home by connecting patients to appropriate levels of care. The low cost and accessibility of CCCs also lessen demand on emergency rooms.

Northwest Colorado Visiting Nurse Association serving rural and frontier Colorado has begun a redesign of community health services with a focus toward cost efficiency, well-being, primary care and prevention, and a simplification of the medical system. The new vision of health for Northwest Colorado includes evidence based programs, best practice models and visible amenities encouraging wellness, prevention and health. By segmenting the population into five groups: Healthy Beginnings (0–3 years), Healthy Growing (3–19 years), Healthy Living (19–49 years), Healthy Aging (50 years and up), and Healthy Endings (all ages), the VNA has created a continuum of services and an integrated model of service delivery. Through early identification and detection, and community health education, residents are channeled into primary care and a true medical home model. In the past year the VNA has opened a hospice and palliative care residence, implemented an award winning Aging Well program, and opened a Federally Qualified community health center. Nursing leadership has been central to the holistic, community-based vision.

**RECOMMENDATIONS**

Policy makers, funders, educators, and practitioners must look beyond the medical model as the sole solution to community health needs and recognize the contribution nursing and nurse practitioners (NPs) are making to primary care and the health of the entire community. The following recommendations strengthen the nursing role in future innovations.

- Develop and implement performance indicators like those used by the Commonwealth Fund’s State Scorecard, to monitor whether the health
improvement strategies are being implemented as intended and whether it is having the intended impact.
- Require the insurance industry to recognize and fund nurse practitioners as primary care providers with a full scope of practice.
- Require nurse participation on national quality committees charged with developing and implementing health information solutions, public health, community and school-based health, development of performance measures, reimbursement formulas, scientific research, clinical guidelines, and potential business solutions to help health reform in our country.
- Increase the awareness of our legislative leaders and policy makers of the role and impact of nurses using social marketing and targeted education of the insurance companies, boards of health, and business community especially the HIT Industry.
- Educate the public about the role and impact of nursing to help fill the healthcare gaps and provide access to care.

Nursing is an essential component in researching, developing and implementing community based health programming.

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SCHOOL NURSES, SCHOOL-BASED HEALTH CENTERS, AND PRIVATE PROGRAMS SUCCESSFULLY IMPROVE CHILDREN’S HEALTH

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“Investing in children is not a national luxury or a national choice. It’s a national necessity.” Marian Wright Edelman

INTRODUCTION

School nurses serve nearly 50 million students in approximately 97,000 public elementary and secondary schools (USDE, 2008). Sadly, almost a quarter of the nation’s schools do not have the benefits of a skilled nurse, and yet studies like one conducted by the Milwaukee Public School System found that “in schools with nurses, principals and clerical staff reported significant reductions in the time that they spent addressing student health issues. In support of students attending classes, nurses returned students to their classroom over 90% of the time” (Baisch et al., 2009).

HISTORICAL AND CURRENT OVERVIEW

Nurses have been a part of the school setting since the late 1800s, with the initial mandate to monitor vaccinations, decrease school absenteeism, and prevent the spread of communicable diseases. In the last 10 years school nurses have concentrated on new areas of care that have emerged as a result of

- Medical advancements that allow children with multiple medical issues to survive;
- A rising incidence of diseases with life-threatening implications like diabetes, seizures, severe allergic reactions, asthma, bleeding disorders, and genetic conditions;
- An increase in mental health disorders, including rising incidence of autism and related neurodevelopment disorders; youth gambling, alcohol, tobacco, drug abuse, and other addictive behaviors; youth with eating disorders, anxiety, depression, and suicidal ideation; youth exhibiting bullying, harassment and violent behaviors; and
- An increasing number of children living in poverty, including those who are homeless, migrants, immigrants or refugees.
As school districts face budget cuts nationwide, school nurses are often the first to lose their jobs. This is especially true in states that do not mandate school nurses. The federal government requires that children who have health impairments need to have a connection with a school nurse, but in many school districts this may mean contracting for a few hours of nursing service from an agency source. The national federal guidelines for school nurses are a ratio of one nurse to 750 students. Only 12 states comply with this ratio—Vermont has the lowest ratio: one nurse for 305 students, Utah the highest: one nurse for 4,952 students (Zaslow, 2006).

The current nurse-to-student ratio means that nurses cover multiple schools and run from one emergency to another. To address the current inadequacies where nurses face work overload, nurse leaders, together with parents, children, and communities have developed two innovative school health programs: school-based health centers and public–private partnerships, that can be replicated nationwide and can provide many new and exciting opportunities for nurses to expand their scope of practice.

SCHOOL-BASED HEALTH CENTERS

School Based Health Centers (SBHCs) are primary care clinics in the schools that provide developmentally appropriate physical, emotional, behavioral and preventive health care to students regardless of their ability to pay. SBHCs are similar to a local primary care office: with a secretary or receptionist, nurse, nurse practitioner, and at some sites a mental health therapist. Currently there are 2,000 SBHCs nationwide, and have had the following positive impacts:

- SBHCs are prevention and wellness oriented.
- SBHCs see children who otherwise would not get care.
- One in four adolescents who are at risk for adverse health outcomes such as teen pregnancies, suicide, and substance abuse can easily and readily access services in a setting where they spend the majority of their days.

Nationwide satisfaction surveys indicate that 97 percent of the students appreciate and value the care they receive; and 60 percent report that they would not have received health services without the health centers (Schlitt, 2007).

SUCCESS: SCHOOL NURSES AND SBHCS COMPLEMENT EACH OTHER

Jack, a 10th grade student at a local high school, had been to school only 11 days as of December 1, 2008, due to sickness. The school nurse reviewed the absent record with Jack. Jack complained that he would become short of breath walking the half mile to school so he stayed home. With parent permission, she referred Jack to the SBHC. The nurse practitioner diagnosed Jack with asthma.
and prescribed medication. During the exam she also noted symptoms of depression and referred Jack to the mental health specialist at the SBHC. The mental health specialist confirmed the diagnosis of depression along with suicide ideation and additionally the potential to do harm to himself and others. Jack has remained under the care of the practitioners in the SBHC. December 1, 2009, Jack continues with a stellar attendance and academic achievement record. His asthma and mental health conditions are under control through the combination of care delivery between the school nurse and the staff in the SBHC. This partnership has been successful in keeping Jack safe and healthy and engaged in learning.

PUBLIC–PRIVATE PARTNERSHIPS INITIATED BY SCHOOL NURSES

Another innovative example in school health programs are the public–private partnerships that nurses are developing in communities around the country. One of the primary tenets of a nurse is to be a coordinator of care. In research studies conducted by both Lamb and Sofaer, care coordination is identified as one of the most important processes that nurses perform. The IOM has identified care coordination as one of the top 20 priorities for national action to transform the health care system. In the community, the school nurse coordinates care in the public school among a variety of providers and community agencies that offer services to children and their families. The nurse can provide point of service care at the site and manage almost all of the health concerns that students present. This arrangement increases the student’s time in the classroom and maximizes education. The nurse is also in an ideal position to guide children and their families into appropriate acute care, if needed.

SUCCESS: NURSES DEVELOP COMMUNITY PARTNERSHIPS

Michigan is experiencing the brunt of the economic downturn with their automotive manufacturing base disintegrating. They have been forced to create a model of public–private partnership in order to provide health care to one of their most vulnerable populations: children. The Michigan model has placed the nurse in the driver’s seat of coordinating care in the school. Funding is primarily provided by the both the health system and the educational system. However, the school nurse typically coordinates over 80 community agencies to provide services for students and their families. This coordination equates to thousands of in-kind hours and dollars. None of which would happen without the nurse.

The Michigan model has utilized Community Health Workers (CHWs) in their schools as well. It is imperative to note that this is only under the supervision of the registered nurse. The broadened responsibility has challenged nursing to gain new leadership and delegation skills. This model requires clear practice guidelines and health policies developed by the state board of nursing and adapted by the school system. The school nurse is the health leader in the school
community. She has demonstrated leadership in delivering health outcomes, reducing costs, and providing extraordinary benefit to the community. This model has also been replicated and is exportable.

RECOMMENDATIONS AND ACTIONS NEEDED

Certificated School Nurses need to be present in the schools in order to advocate for school nursing services for every child. SBHCs contribute to academic achievement by taking physical and behavioral health problems out of the classroom and place them into the hands of qualified medical professions and link students to health services and resources available in the community. Through collaboration with community providers and building public–private partnerships, primary care, mental health, health education and dental care services can be provided at little or no cost to the students and their families. Improved student outcomes and academic achievement result where schools have a partnership with a school nurse, an established SBHC, and community collaborations.

- Mandate a certified school nurse/student ratio of 1:750 students in every state and in all schools.
- Allocate federal and state governments funds to school-based health centers so that all students, regardless of their ability to pay, can access comprehensive medical, dental and mental health care by nurse practitioners, nurses, and other health care professionals.
- Establish funding for school health development of public–private partnerships, including community health worker programs that are led by certified school nurses.
- Require nurses who work in schools to have a minimum of a bachelor’s degree and a school nurse certificate.

SUMMARY

With an expected increase in the number of children who have complex medical, genetic and psychiatric health conditions that require more nursing oversight, school nursing provides the expertise and coordination to assure that children receive the care they need. School nurses are at the forefront of promoting and developing innovative school programs like School-Based Health Centers and coordinated partnerships with private and public agencies.

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PUBLIC HEALTH NURSING: TRANSFORMING HEALTH ACROSS POPULATIONS

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INTRODUCTION

A well-educated public health nursing workforce would improve the health of all people and minimize health differences among populations by addressing the physical and social determinants of health (Manitoba Health, 1998). Public health nursing is unique among the nursing specialties in its integration of the art and science of two distinct disciplines—public health and nursing. Public health nurses (PHNs) employ their considerable expertise in promoting health and preventing disease to address the health needs of populations, such as emerging and reemerging infectious disease, an epidemic of chronic disease, a rapidly aging population with increasing health needs, escalating health care costs, and pressure to prepare for and respond to public health emergencies ranging from H1N1 influenza to bioterrorism. Many of these challenges cannot be resolved at the individual level and must be addressed through policy and environmental change. PHNs work in partnership with multidisciplinary teams and community members to create conditions in which people can be healthy.

PUBLIC HEALTH NURSING ISSUES

As the largest component of the public health workforce, PHNs are vital to the protection of health in America’s communities; almost every health department in the nation, large or small, employs PHNs (NACCHO, 2009). Unfortunately, public health nursing is in the midst of a crisis—the erosion of the public health nursing infrastructure.

- Historically, every state health department had an executive PHN position. Today, only 23 states support such a leadership position (ASTDN, 2008). Severe budget cuts in local and state health departments have led to the reduction or elimination of PHN positions. In 2004, decrease was reported in registered nurses working in community and public health settings, down from 18.3 to 14.9 percent (HRSA, 2004).
- Health departments currently face a PHN shortage; 30 out of 37 states...
reported public health nursing as the field that will be most affected by workforce shortages in the future (ASTHO, 2004). This critical PHN shortage may jeopardize the system’s ability to respond to new and emerging public health threats.

- Many health departments, particularly those in more rural states, hire nurses from 2-year associate degree programs that do not provide public health content, and who are not prepared to practice public health nursing.
- The educational system faces a growing shortage of faculty adequately prepared to teach public health nursing, a lack of clinical sites that provide meaningful PHN clinical experiences, and little incentive or support for advanced PHN graduate study, which has led to low enrollment in PHN graduate programs.

EVIDENCE-BASED PUBLIC HEALTH NURSING MODELS ELECTRONIC HEALTH RECORDS AND PUBLIC HEALTH NURSING OUTCOMES

A joint practice and data quality project was undertaken by public health nurse managers in four local health departments. The project utilized the Omaha System, a standardized nursing language and a computerized clinical documentation system. This project articulated standards for client assessment, developed pathways of care for typical PHN client groups and/or client problems, and defined common quality assurance standards to monitor PHN practice and data quality. Standardized data allowed PHNs to compare client outcomes between health departments. As a result, public health nurses were able to influence policy decisions by reporting data to funders, stakeholders, and the community (Monsen et al., 2006).

HOME VISITING PROGRAMS

The Nurse Family Partnership (NFP) is an evidence-based program in which public health nurses visit the homes of pregnant, low-income families during pregnancy and teach them to parent during the baby’s first 2 years of life. This program has demonstrated consistently positive outcomes in randomized controlled trials, including pregnancy (reduction in subsequent pregnancies 2 years after child’s birth, reduction in preterm deliveries among women who smoked), parenting (less child abuse and neglect, reduction in behavioral and intellectual problems in child age 6, reduction in arrests of child age 15), and family self-sufficiency (fewer arrests of mothers 15 years after child’s birth, increase in father presence in the household, reduction in welfare use) (NFP, no date). The program has been shown to save taxpayers money, paying for itself based on government spending alone (Isaacs, 2008). It is important to note that nurses are central to the success of this home visiting program. Utilization of paraprofessionals to
deliver the NFP demonstrated little to no effects as few as 2 years after program completion (Olds et al., 2004). PHNs across the nation are implementing the NFP in over 300 counties and several statewide programs. Various versions of the Health Care Reform Bill of 2010 have proposed nationwide implementation of the NFP. Public health nurses, with over a century of expertise in home visiting and established relationships with their communities, are in a position to lead this national initiative.

**PREVENTION AND CONTROL OF INFECTIOUS DISEASE**

Not all evidence-based programs are new. Public health nurses continue as critical players in some of the most dramatic evidence-based programs in history—the eradication/reduction of vaccine preventable diseases and tuberculosis. A recent PHN task analysis of 60 PHNs from 29 states revealed that the detection, prevention and control of infectious diseases are core public health nursing activities (ASTDN). Despite the fact that the PHNs in the task analysis worked in many different program areas ranging from emergency preparedness to family planning, they were all involved with the prevention and control of vaccine preventable diseases and tuberculosis.

Over 90 percent of PHNs reported working in immunization clinics, a classic evidence-based intervention. Most of the disease prevention and control work that the PHNs reported was population-focused: surveillance and disease investigation; identification and outreach to high risk populations; audits of immunization records in schools; audits of clinics to determine compliance with recommended immunization standards; and development of population-based immunization registries. As part of emergency preparedness, half of the PHNs were involved in planning and staffing mass dispensing clinics.

Tuberculosis (TB) is a similar cross-cutting issue. Three fourths of the PHNs reported that they work with clients who have latent or active TB; over 80 percent of PHNs administer and read tuberculin skin tests. The current CDC recommendation for the treatment of persons with TB is Directly Observed Therapy (DOT), or watching clients take their medications to ensure compliance. Over two-thirds of PHNs in the task analysis reported that they conduct Directly Observed Therapy home visits. Evidence demonstrates that PHN case management dramatically increases successful DOT completion rates (Mangura et al., 2002). In 1994, Massachusetts mandated that health departments use nurses to assess suspected TB cases and manage treatment, resulting in completion rates between 93 and 95 percent, which are among the highest in the nation (Geiter, 2000).

**REINVIGORATING PUBLIC HEALTH NURSING EDUCATION**

Two federal grants—one in Minnesota and another in Wisconsin—developed a new model for public health nursing education. “Linking Public Health Nursing Practice and Education to Promote Population Health” and “Linking Education
and Practice for Excellence in Public Health Nursing Project” (http://www.son.wisc.edu/LEAP/) brought together public health nursing faculty from baccalaureate schools of nursing with public health nurses from local health departments that provide clinical sites for PHN students. They formed regional projects that redesigned the PHN student experience based on community priorities. Both projects recruited, trained, and supported a network of preceptors. These projects resulted in a significant increase in collaboration among and between schools of nursing and local health departments, expansion of clinical placement sites, student clinical experiences that contribute to meeting the goals of local health departments, a more active role for local health departments in assuring competencies necessary to begin PHN practice, greater emphasis on population-based PHN practice in schools of nursing curricula, and increased numbers of graduates indicating interest in pursuing a career in public health nursing.

**RECOMMENDATIONS**

A well-prepared public health nursing workforce in numbers sufficient to deliver essential public health services is critical for the health and economic well-being of communities. Public health nurses possess a core set of skills and knowledge that allow them to adapt to ever-changing community needs. In order to achieve public health nurses’ potential, however, they must increase their visibility and policy advocacy.

**Education and Leadership Development**

- Partner with PHN organizations to create leadership development programs for PHNs in federal, state and local health departments. This is particularly important for state PHN leaders, of whom 80 percent are new to their job since 2005.
- Advocate for public health nursing leadership positions in all state health departments.
- Develop new models to fund, prepare and advance associate degree nurses who are working in PHN positions.
- Develop and share effective, innovative strategies to teach public health nursing, including clinical simulations, cross-disciplinary classes, and clinical immersion experiences in the community.
- Provide incentives for graduate school, including traineeships and loan forgiveness programs for advanced PHN graduate study.
- Develop and disseminate a tailored curriculum for teaching public health nursing.
- Work with stakeholders to conduct a national enumeration to determine the actual number, educational preparation, and distribution of PHNs in the United States.
Public Health Policy

- Fund research to better articulate the contributions and outcomes of public health nursing interventions. Unfortunately, when public health nurses are doing their jobs well, they are invisible and their work is often not valued.
- Market the pivotal role of PHNs to increase political influence and secure more funding.

The flexibility, versatility, and passionate commitment to the communities they serve place PHNs in a position to lead the changes necessary for creating the conditions in which people can be healthy.

REFERENCES


Federal Options for Maximizing the Value of Advanced Practice Nurses in Providing Quality, Cost-Effective Health Care

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INTRODUCTION

As decision makers at every level wrestle with the urgent need to broaden access to health care, three challenges have become clear. The care provided must be competent, efficient, and readily available at all stages of life; it must come at a cost that both individuals and society at large can afford; and it must allow for appropriate patient choice and accountability. Among the options available to promote these goals, one stands out: wider deployment of, and expanded practice parameters for, advanced practice nurses (APNs). The efficacy of this option is uniquely proven and scalable. These well-trained providers—including nurse practitioners, nurse midwives, nurse anesthetists, and clinical nurse specialists—can and do practice across the full range of care settings and patient populations. They have proven to be valuable in both acute and primary care roles, and as generalists as well as specialists. By professional training as well as by regulatory and financial necessity, they have emphasized coordinated and cost-effective care, and they have tended more than other providers to establish practices in traditionally underserved areas.

The role of any professional group is typically delineated by a process that moves from awareness of capabilities, to acceptance, to acknowledgment and

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1 The responsibility for the content of this article rests with the author and does not necessarily represent the views of the Institute of Medicine or its committees and convening bodies.

2 For purposes of this paper, I take it as a given that APNs—like any other appropriately trained and licensed professionals—are able and effective providers within the sphere of their competencies. This has been amply confirmed by numerous studies and analyses over the years, and the literature is readily available.
formal policy making. Despite significant progress in several venues, however, this process has been stymied, in the case of APNs, by the many regulatory obstacles and restrictions that currently impede the full realization of their potential. Chief among these, as I have noted elsewhere, are “conflicting and restrictive state provisions governing [APNs’] scope of practice and prescriptive authority… as well as the fragmented and parsimonious state and federal standards for their reimbursement” (Safriet, 1992). While an extensive catalog of these restrictions appears in the section “Current Impediments in the Regulatory Environment,” the following two examples—one state-based and one federal—will perhaps capture the flavor of the problem.

- In Louisiana, according to the Board of Medicine, no one other than a physician may treat chronic pain, even if the provider in question is trained as a nurse anesthetist, is competent to treat pain, and has been directed to do so by a physician.³
- Medicare precludes a certified nurse specialist from certifying a patient for skilled long-term care, or from performing the physical required for admission, even though the CNS has been treating the patient on an ongoing basis.⁴

THE DIMENSIONS OF THE PROBLEM

There are several steps that the federal government can and should take to eliminate, or at least mitigate, the wasteful effects of such needless restrictions as these. To approach the task effectively, however, decision makers must (1) understand several contextual factors specific to nursing; (2) be familiar with the extensive array of restrictions that are embedded in state and federal regulations (as well as in private organizations’ policies), and grasp their historical origins; and (3) develop a clear understanding of the impediments—ranging from inertia to resistance to active opposition—to a more rational deployment of APNs.

Nurse-Specific Contextual Factors

Any effort to design more effective and cost-efficient health care delivery models by maximizing the contributions of APNs must proceed from a basic understanding of several fundamental aspects of our current framework. Among the most important of these are the following.

1. **The diversity of nursing practice.** “Nursing writ large” encompasses a wide variety of skill levels and roles, and nursing practice routinely takes

⁴ Social Security Act § 1819(b)(6).
place in an almost infinite variety of settings, ranging from the intensive care unit of trauma centers to schools, patients’ homes, prisons, long-term care facilities and nursing homes, community health clinics, and outreach centers. While these diffuse practice settings and roles have no doubt enhanced the nation’s health, the very diffusion and multifaceted nature of nursing practice has often meant that nursing has been slighted in the nascent measurement movement which seeks to apply cost and care-effectiveness standards.

2. **Economic invisibility.** Nursing services traditionally have been treated as an expense (albeit an essential one) rather than as an individually identified revenue or income source on institutional or governmental balance sheets. And from the patient’s perspective, nursing services rarely, if ever, are separated out from institutional room charges or other professional fees on billing statements. Unsurprisingly, these accounting practices promote the widespread perception that nurses are not “revenue generators” (RWJF, 2010). Perhaps in part because of this “revenue invisibility,” nursing has been underrepresented in, or excluded from, the decision-making processes (both private and governmental) that determine the metrics upon which costs, value, pricing, and payment are based. This asymmetrical financial treatment has special salience today, as most reform proposals are focused increasingly on defining the value of services and rewarding the attainment of performance measures. And as APNs continue to participate in, and often lead, the development of innovative practice models designed to better meet patients’ needs, it is essential that payment schemes include complete and accurate measurement and valuation of their services.

3. **Multiple routes of entry.** Nursing is the only profession which has multiple educational pathways leading to professional licensure. In all states but one, successful completion of 2-, 3- and 4-year degree programs is recognized as fulfilling the educational requirements for licensure as a registered nurse (RN). This unique multiplicity of qualifying pathways is supported by some, and opposed by others, in the professional, educational, and policy-making arenas, and it will no doubt continue to be assessed as workforce policy focuses on ensuring an adequate supply of well-prepared nurses. Regardless of how this issue is ultimately addressed, however, the current reality is that 2 years of nursing education meets the educational requirement for licensure as a registered nurse, which is the first step for recognition and licensure as an APN. This fact has posed problems for those who seek to promote wider legal authority for, and utilization of, APNs. Even though master’s-level education and national certification are now uniformly required for APN licensure,\(^5\)

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\(^5\) For a recently adopted uniform framework for APNs, see APRN Consensus Work Group and National Council of State Boards of Nursing APRN Advisory Committee (2008).
policy makers and state legislators are sometimes confused about (or susceptible to opponents’ mischaracterizations of) the underlying educational and training requirements when considering expanded recognition of APNs’ scopes of practice. While patience and information can overcome most of these concerns, much time and many resources are consumed in the process.

4. **Care versus cure.** As some voices in the current reform debates acknowledge, our emphasis for far too long has been on curing illness, rather than on promoting health. This has led to a systemic overemphasis on training in acute care, technologically robust settings, and to a payment structure skewed toward procedural interventions by increasingly sub-specialized providers. Perhaps unsurprisingly, we have correspondingly undervalued public health. More to the point, we have consistently undervalued coordinated, primary care provided throughout the patient’s life spectrum in a variety of settings, including the community, the home, long-term care facilities, and hospice. As a group, APNs have extensive experience across all these settings. Their traditional approach of blending counseling with clinical care, and coordinating health services as well as appropriate community resources in support of patients, could be a model for policies that seek a more optimal balance of providers prepared to meet the needs of the American public.

**Regulatory Barriers to the Full Deployment of APNs**

*Current Impediments in the Regulatory Environment*

For health care providers of all types (other than physicians), the framework defining who is legally authorized to provide and be paid for what services, for whom, and under what circumstances is among the most complex and uncoordinated schemes imaginable. It reflects an amalgam of regulations, both prescriptive and incentivized, at the state, local, and federal levels. The effects of these governmental regulations are further compounded by the credentialing and payment policies of private insurers and managed care organizations.

The explicit restrictions resulting from this complex and uncoordinated scheme are many, but they can be grouped into two principal categories: (a) state-based limitations on the licensed scopes of practice for APNs (and other providers) which prevent them from practicing to the full extent of their abilities, and (a) payment or reimbursement policies (both governmental and private) that either render them ineligible for payment, or preclude their being paid directly for their services, or pay them at a sharply discounted rate for rendering the same services as physicians.

In many states, the legal framework authorizing APNs’ practices has evolved in step with their expanding skills, education, training, and abilities. In several
other states, however, their full utilization is hampered by outdated (or in some
cases newly imposed) restrictions on a full range of professional services. De-
pending on the jurisdiction, these restrictions may preclude or limit the author-
ity to prescribe medications, admit patients to hospitals or other care facilities,
evaluate and assess patients’ conditions, order and evaluate tests and procedures,
and the like.

To illustrate the pervasive and detrimental variations embodied in many state
licensure statutes and regulations, consider the following example.

Imagine an APN who has attended a nationally accredited school of nursing
for the BSN and Master of Nursing degrees, and who has passed the national
licensure examination for RN licensure as well as national certification examina-
tions in her APN practice area. Imagine further that two adjacent states, A and
B, have adopted regulations representing both ends of the regulatory spectrum,
and that our APN is licensed in both of them.

In State A, she is permitted independently to examine patients, order and inter-
pret laboratory and other tests, diagnose and treat illness and injury, prescribe
indicated drugs, order or refer for additional services, admit and attend patients
in a hospital or other facility, and get paid directly for her services.

When she steps across the line into State B, however, it is as if her competence
has suddenly evaporated. Depending on her practice area and the particular con-
stellation of restrictions adopted by the legislature of State B, she will encounter
many if not most of the following prohibitions.

**Examination and Certification**

She may not examine and certify for:

- worker’s compensation,
- DMV disability placards and license plates, and other DMV testing,
- jury service excusal,
- mass transit accommodation (reduced fares, access to special features),
- sports physicals (she may do them, but can’t sign the forms),
- declaration of death,
- school physicals and forms, including the need for home-bound
schooling,
- COLST, CPR or DNR directives,
- disability benefits,
- birth certificates,
- marriage health rules,
- treatment for long-term-care facilities,
- alcohol and drug treatment involuntary commitment,
- psychiatric emergency commitment,
- hospice care, or
- home-bound care (including signing the plan of care).
Referrals and Orders

She may not refer for and order:

- diagnostic and laboratory tests (unless the task has been specifically delegated by protocol with a supervising physician),
- occupational therapy,
- physical therapy,
- respiratory therapy, or
- durable medical equipment or devices.

Examination and Treatment

- She may not treat chronic pain (even at the direction of a supervising physician).
- She may not examine a new patient, or a current patient with a major change in diagnosis or treatment plan, unless the patient is seen and examined by a supervising physician within a specified period of time.
- She may not set a simple fracture, or suture a laceration.
- She may not perform:
  - cosmetic laser treatments or Botox injections,
  - first-term aspiration abortions,
  - sigmoidoscopies, or
  - admitting examinations for patients entering skilled nursing facilities.
- She may not provide anesthesia services unless supervised by a physician, even if she has been trained as a nurse anesthetist.

Prescriptive Authority

- She may not have her name on the label as prescriber.
- She may not accept and dispense drug samples.
- She may not prescribe:
  - some (or, in a few jurisdictions, any) scheduled drugs, and
  - some legend drugs.
- She may not prescribe even those drugs that she is permitted to prescribe except as follows:
  - as included in patient-specific protocols
  - with the co-signature of a collaborating or supervising physician
  - if the drugs are included in a specific formulary or written protocol or practice agreement
  - if a specified number or percentage of charts are reviewed by a collaborating or supervising physician within a specified time period
  - if the physician is on-site with the APN for a specified percentage of time or number of hours per week or month
  - if the APN is practicing in a limited number of satellite offices of the supervising physician
  - if the prescription is only for a sufficient supply for 1 or 2 weeks, or provides no refills until the patient sees a physician
− if a prescribing/practice agreement is filed with the state Board of Nursing, Board of Medicine and/or Board of Pharmacy, both annually and when the agreement is modified in any way
− pursuant to rules jointly promulgated by the Boards named above
− if the collaborating or supervising physician’s name and DEA # are also on the script.

• She may not admit or attend patients in hospitals
  − if precluded from obtaining clinical privileges or inclusion in the medical staff,
  − if state rules require physician supervision of NPs in hospitals,
  − if medical staff bylaws interpret “clinical privileges” to exclude “admitting privileges,” or
  − if hospital policies require a physician to have overall responsibility for each patient.

Compensation

• She may not be empanelled as a primary care provider for Medicaid, Medicare Advantage or many commercially insured managed care enrollees.
• She may not be included as a provider for covered services for Workers Compensation.
• She may be paid only at differential rates (65%, 75%, or 85% of physician scale) by Medicaid, Medicare or other payers and insurers.
• She may not be paid directly by Medicaid.
• She may not be certified as leading a Patient-Centered Medical Home or Primary Care Home.
• She may not be paid for services unless supervised by a physician.
• She may indirectly affect the eligibility of other providers for payment because
  − pharmacies cannot get payment from some private insurers unless the supervising or collaborating physician’s name is on the script, and
  − hospitals cannot bill for APNs’ teaching or supervising medical students and residents and advanced practice nursing students (as they can for physicians who provide those same services).

As this example illustrates, the restrictions faced by APNs in some states are the product of politics rather than sound policy. Competence does not change with jurisdictional boundaries; the only thing that changes is legal authority. Indeed, the point is even more sharply illustrated by those states in which an APN’s authorized scope of practice may vary within the state depending on the geographic location of the practice, the economic status of the patient, or the corporate nature of the practice setting. In sum, this practice environment for APNs echoes the conclusion of a previous Institute of Medicine report, which succinctly described the current regulatory framework for health care providers as “inconsistent, contradictory, duplicative, outdated, and counter to best practices” (IOM, 2001). And that disturbingly accurate conclusion was based only upon explicit regulatory
provisions. APNs must also contend with the additional debilitating effects resulting from nursing’s traditional “revenue invisibility,” and from APNs’ absence or exclusion from key decision-making venues such as hospital governing boards and medical staffs and organizations designing quality and cost metrics.

The Costs of This Dysfunctional Regulatory Regime

Even though APNs, like all health professionals, have continued to develop and expand their knowledge and capabilities, the state-based licensure framework described above has impeded their efforts to utilize these ever-evolving skills. For historical reasons that will be explained more fully below, virtually all states still base their licensure frameworks on the persistent, underlying principle that the practice of medicine encompasses both the ability and the legal authority to treat all possible human conditions. That being so, the scopes of practice for APNs (and other health professionals) are exercises in legislative exception making, a “carving out” of small, politically achievable spheres of practice authority from the universal domain of medicine. Given this process, it is not surprising that APNs are often subjected to unnecessary restrictions of the kind I have described. The net result is a distressing catalog of dysfunctions with their attendant costs.

- Because licensure is state-based, there are wide variations in scope of practice across the country for all professions other than physicians. This inconsistency also causes additional problems because payment or reimbursement mechanisms tied to scope restrictions in one state can become the “common denominator” for policies applied across all states. The result is often a “race to the bottom,” in which decision makers, for reasons of efficiency and uniformity, adopt the most restrictive standards for payment and practice and apply them even in more progressive states. State A, that is, may be subject to perverse pressures to become more like State B, rather than the reverse. This dynamic has been especially problematic for APNs because they, more than most other providers, have been viewed by some in organized medicine as real or potential economic competitors.

- Access to competent care is denied to patients, especially those located in rural, frontier, or other underserved areas, in the absence of a willing and available “supervising” physician.

- Able providers are demoralized when they cannot utilize the full range of their abilities, and they often relocate to more accommodating states or leave the practice altogether, thus exacerbating the current maldistribution and shortage of providers (Huang et al., 2004; Sekscenski et al., 1994; Weissert, 1996).

- Innovations in care delivery are stifled, especially in community settings that emphasize primary care, as well as in home or institutional settings for patients with chronic conditions.
• The cost of care is increased and much time is wasted by unnecessary physician supervision, and by duplication of services resulting from required “confirming” visits with a physician and co-signatures for prescriptions or orders.
• Educational and training functions and opportunities are distorted by disparate reimbursement eligibility for supervision of medical residents or students, on the one hand, and APN students on the other.
• Flexibility in deployment, both between and within existing delivery systems, is unnecessarily reduced.
• The risk of disciplinary action looms over even routine provider–patient interactions (such as a telephone consultation or filling a prescription) when these activities cross state borders.
• Millions of dollars and countless hours are spent in state and federal legislative and administrative proceedings focused on restricting or expanding scopes of practice or payment policies.
• The promise of new technologies and practice modes remains significantly unrealized. Telepractice or telehealth systems, for example, would allow APNs and other providers to utilize telecommunications technology to monitor, diagnose, and treat patients at distant sites, but their use is stymied by multiple and conflicting licensure laws and payment provisions.

Current Impediments to Removal of These Restrictive Provisions

The principal causes of the existence and continuation of unnecessarily restrictive practice conditions for APNs can be grouped into three categories: (1) purposeful or inertial retention of the dysfunctions resulting from the historical evolution of our state-based licensure scheme, (2) lack of awareness of APNs’ roles and abilities, and (3) organized medicine’s continued opposition to expanding the authority of other providers to practice and be paid directly for their services. All of these causes are rooted in the historical evolution of the state-based licensure scheme. The relevance of that history to the current regulatory environment can scarcely be overstated, and it is there that we must begin if we are to understand the present situation.

State-based Licensure and the All-Encompassing Medical Practice Acts

Historical development The United States was one of the first countries to regulate health care providers, and physicians were the first practitioners to gain legislative recognition of their practice. By the early 20th century, each state had adopted a so-called “medical practice act” that essentially claimed the entire human condition as the exclusive province of medicine. The statutory definitions of physicians’ scope of practice were—and remain—extremely broad. The following medical practice act is representative.
Definition of practice of medicine—A person is practicing medicine if he does one or more of the following:

1. Offers or undertakes to diagnose, cure, advise or prescribe for any human disease, ailment, injury, infirmity, deformity, pain or other condition, physical or mental, real or imaginary, by any means or instrumentality;
2. Administers or prescribes drugs or medicinal preparations to be used by any other person;
3. Severs or penetrates the tissues of human beings.6

The breadth of definitions such as this was remarkable in itself, but the real mischief was accomplished through corresponding provisions making it illegal for anyone not licensed as a physician to undertake any of the acts included in the definition. The claim staked by medicine was thereby rendered not only universal but (in medicine’s own view) exclusive,7 a preemption of the field that was further codified when physicians obtained statutory authority to control the activities of other health care providers “so as to limit what they could do and to supervise or direct their activities” (Freidson, 1970). Not that long ago, for example, even registered professional nurses could not perform such basic tasks as taking blood pressure, starting an IV, or drawing blood unless under a physician’s “order.” Absent such a directive, they would have been deemed to be practicing medicine by “diagnosing” or “penetrating the tissues of human beings.” (The full reach of the latter provision is further illustrated by the fact that, well into the 1970s, only physicians were permitted to pierce ears.)

Present-day consequences: competence, authority, and the disjunction between “can” and “may” Even though some of the more striking manifestations of this “everything is medicine” approach have gone by the wayside, the authority to supervise or direct other providers, combined with the authority to “delegate” medical procedures and tasks to nonphysicians, persists to this day. It underpins the legislative infrastructure that continues to subvert even the best efforts to develop a rational, effective scheme that promotes the highest and best use of all trained providers, especially those—like APNs—who seek to practice to the full extent of their competencies. No matter what their training, experience, and abilities, as noted earlier, they are perpetually in the position of having to carve out tasks or functions from the all-encompassing medical scope of practice that still prevails in every state. And even after the carving out has been accomplished, it is often accompanied by mandatory physician supervision or collaboration. In this way, the pervasive medical practice acts “exert a gravitational force that

7 Sociologist Eliot Freidson has aptly characterized this statutory preemption as “the exclusive right to practice” (Freidson, 1970).
continues to skew all attempts to rationalize the scopes of practice, or spheres of lawful activity, for providers other than physicians” (Safriet, 2002).

To be clear, the medical practice acts of every state authorize a licensed medical doctor to undertake virtually any kind of medical or health intervention. Indeed, by virtue of his General Undifferentiated Medical Practice authority (referred to by the profession itself as GUMP), “an MD may practice gynecology, oncology, orthopedics, pediatrics, retinal surgery, or psychiatry on alternating days, through treatment modalities that are decades old or were invented yesterday—all under the same generic medical license he obtained years ago” (Safriet, 2002, p. 311). Most physicians, of course, would never think of practicing beyond the bounds of their competence, but the point cannot be overstressed that it is not the licensure laws that prevent them from doing so. Rather, they limit their areas of practice according to norms deriving from common sense and decency, professional ethics and judgment, institutional credentialing and voluntary accreditation standards, and insurance concerns. That is, as individuals they implicitly acknowledge that their authority extends beyond the reach of their competence: They may do much more than they can competently do. And as they acquire new knowledge and skills, they may deploy them freely under their existing practice acts. Their existing authority, that is, covers any expansion of their competence.

Most APNs, in contrast, are in precisely the opposite situation. Thanks to the carving-out process that gave birth to their practice acts, their scopes of practice are so circumscribed that their competence extends far beyond their authority. They can do much more than they may legally do. In addition, they must seek administrative or statutory revision of their defined scopes of practice (a costly and often perilous enterprise) every time they acquire a new skill set. As a result, their competence—what they can do—is sometimes several years (or more) ahead of what they may do under existing law. The sum total of wasted professional assets represented by this disparity is striking.

The damage caused by the dynamic I have described is troubling enough when viewed from the perspective of a single jurisdiction, but it wreaks havoc on a national scale. Why? Because in each state the scopes of practice governing all health care providers (other than physicians) are the end product of a set of political realities, struggles, and compromises particular to that state. Stitched together, these practice acts become a crazy quilt of widely varied, often inconsistent, sometimes contradictory licensure and payment laws.

Although I have made the point already, it bears repeating: the crazy quilt makes no logical sense. Neither the underlying science of health care nor the capabilities of individuals change according to political boundaries. Bodies are bodies, and competence is competence, in both State A and State B. The only thing that changes at the border is the authority conferred or withheld by each jurisdiction. Indeed, the success of APNs and other providers in providing safe and effective care in State A and its progressive ilk—states where their authority has been enlarged in keeping with their competence—is the best possible evidence
that the constraints imposed by more restrictive jurisdictions are irrational. As one national organization has noted, “no study has shown that a state with restrictive scope of practice laws has better health outcomes than a state with expansive practice acts” (AAHC, 2008, p. 24).

Rather, the more restrictive jurisdictions embody the confluence of history, legislative realities, and the continuing professional dominance of the first organized group to arrive on the scene. Indeed, the point was neatly (if inadvertently) made by the Louisiana State Board of Medical Examiners in the pain-management Statement of Position referred to in the Introduction:

The Board’s opinion is not and cannot be altered by representations that a particular CRNA [Certified Registered Nurse Anesthetist] has received postdoctoral training in such areas or has performed such activities in this or another state. A non-physician may have education, training, and, indeed, expertise in such an area but expertise cannot, in and of itself, supply authority under law to practice medicine (emphasis added).

In offering the above summary, I want to be clear that I mean to attribute no malice or ill will to individual actors in the scope-of-practice battles. The problems have become structural and cultural, and we all—physicians included—pay a huge price for the consequences, measured in extra real dollars spent on health care, in lack of access to competent care, and in the constant antagonism among health care professionals who would be better served by working cooperatively to provide optimal care. Indeed, one of the saddest consequences of the dynamic I have described is that, in fighting the dominance of medicine, the other health care professions have fallen into some of the same patterns of asserted ownership and control. Physical therapists vie with occupational therapists, for example, about who may treat what, and clinical psychologists are often at loggerheads with professional therapists. Even worse, intraprofessional rivalries have begun to emerge: practitioners with more formal training seek to raise the ceiling for themselves while simultaneously struggling to make sure that their floor remains where it is, i.e., to make sure that no one with less extensive training will be permitted to perform certain contested tasks, regardless of their ability. There is a terrible irony in this “each against all” state of affairs, but it is the logical end product of a process that metes out authority based upon who one is, rather than what one can do.8

8 Interestingly, when it comes to physicians’ (rather than all other providers’) practice, recognition of shared ability seems to trump professional status. For example, with increased medical specialization and heightened reliance on specialty “certification” as a prerequisite for institutional privileges/credentialing as well as for payment eligibility, medical organizations themselves have begun to emphasize that a physician’s ability, rather than professional certification or specialty status, should determine scope of practice, at least as far as physicians’ clinical privileges are concerned. See, for example, the following from a listing of the American Academy of Family Physicians’ policy state-
General Public Lack of Awareness

Another result of the history deriving from our all-encompassing medical practice acts is the fact that the general public almost reflexively associates health care with physicians. Although nursing functions have existed for millennia, the formal development and legal recognition of APNs as a distinct professional group has occurred only in the past 40–50 years. Thus, though the public is increasingly familiar with provider titles such as nurse practitioner, nurse-midwife and nurse anesthetist, it is still “doctor” who “knows best.” As the prominent medical sociologist Eliot Freidson has noted, “health services” as understood in the United States “are organized around professional authority, and their basic structure is constituted by the dominance of a single profession [medicine] over a variety of other, subordinate occupations.” This construct, which underpins the continued centrality of “doctor” and “physician” in the popular culture, prevents the public from forming an accurate perception of the many and diverse types of essential health care providers and their spheres of competence. Instead, misperceptions are reinforced by mass media marketing messages—for example, those declaring that “only your doctor can prescribe” a drug, when, in fact, APNs in a majority of the states can and do legally prescribe that drug on their own license. Of course, this misperception is both the result of, and sustained by, laws that require a physician’s name to be listed on the label for a prescription written by an APN, or require a bill for APN services to be submitted in the physician’s name.

Of the three impediments to reform that I have identified, this lack of understanding on the part of the general public is clearly the most amorphous. It is a

9 He goes on to add that “[this] professional dominance is the analytical key to the present inadequacy of the health services.” Eliot Freidson, Professional Dominance: the Social Structure of Medical Care (1970). For an especially insightful analysis of the development of the cultural, economic, political, and social authority and dominance of the physician, and especially of organized medicine, see Starr (1982).

APPENDIX H
powerful part of the overall dynamic, however, because patients and their families cannot demand access to, and payment for, APNs’ services if they are unaware of the availability and effectiveness of those services. Significant advocacy for more rational regulation will not emerge on a broad scale until laypeople understand what is possible, and what is at stake.

Legislative Inertia, “Scope of Practice Fatigue,” and Organized Opposition to Change

Many states have recognized the evolution of APNs’ education and training, as well as their documented practice abilities. In those states, APNs’ licensure laws have been reformed in two important ways: first, they have been revised to eliminate requirements that APNs enter into formalized practice relationships with physicians (including practice agreements or protocols and physician supervision or direction); second, they explicitly grant APNs the authority to prescribe drugs and devices, to order and interpret tests, to admit to appropriate institutional facilities, and to be designated as primary care providers for various insurance programs—all on their own license as regulated by the Board of Nursing.\(^\text{10}\) In undertaking such reforms, these states have shaken off the detrimental effects of the medical-preemption dynamic described above. Instead, they have based their scope of practice and corollary provisions on assessments of these providers’ proven clinical abilities, to the ultimate benefit of their citizens’ health and pocketbooks. Which raises the question: why have all states not done this, especially when faced with the growing, and increasingly expensive, health needs of the general public? There may be multiple reasons for this, but three are especially noteworthy.

**Legislative inertia and scope of practice fatigue**  To begin with, the legislative process writ large is generally characterized by inertia. Change requires not only the identification and analysis of problems and potential solutions, but, even more importantly in the political arena, a coalescence of support sufficient to enact a measure. Given the usual context within legislators must act—a context reflecting multiple agendas and interests, as well as finite political or suasion capital—it is often easier to “let things be” than to marshal the forces required for change.

This dynamic is compounded, in the case of licensure practice act proposals, by “scope of practice fatigue.” Most legislators are well acquainted with (and many have been caught in the crossfire of) the professional “turf battles” that have played out repeatedly across the states as individual provider groups seek modifications to their professional practice acts or administrative rules to better

\(^{10}\) For a comprehensive review of each state’s regulations, see Pearson (2009).
reflect their evolving competencies (Finocchio et al., 1998, p. 50). Understandably, lawmakers have grown weary of the fight, especially when there may be little to gain and much to lose in championing reform.

**Organized opposition to change** These two factors—legislative inertia compounded by weariness and risk-aversion—define the arena within which a more active and powerful force has been brought to bear, and that is the advocacy efforts of several national medical organizations and their state affiliates.

Countless thousands of individual physicians (including two who helped create the new roles of nurse practitioner and nurse anesthetist) have long recognized and supported the full practice capabilities of APNs. It is the official policy of several national medical organizations, however, to actively oppose legal recognition of any other providers’ expanded authority to practice without physician supervision and be paid directly for their services.

Seemingly unmoved by the demonstrably safe and effective practice of unsupervised and directly paid APNs in many states, organizations such as the American Medical Association, the American Society of Anesthesiologists, and the American Academy of Pediatrics continue to oppose rational realignment of APNs’ state practice authority and eligibility for reimbursement. The following sampling of policies, and public statements by their officers, is illustrative.

- The American Medical Association has adopted and continued to re-affirm resolutions which direct the organization to pursue, “through all appropriate legislative and other advocacy activities,” measures designed to
  - “oppose the enactment of legislation to authorize the independent practice of medicine by any individual who has not completed the state’s requirement for medical licensure,” (a position that may seem unremarkable until one remembers that, under the medical practice acts, everything is “the practice of medicine”);
  - “oppose any attempt at empowering non-physicians to become unsupervised primary medical care providers and be directly reimbursed”; and
  - support physicians who oppose efforts by alternative providers to obtain increased medical control of patients by legislatively expanding

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their scopes of practice without physician direction and oversight by state boards of medical examiners.\textsuperscript{15}

- The policy statements of the American Society of Anesthesiologists include the following:
  - “ASA opposes the independent practice of nurse anesthetists and views legislation and regulations designed to grant independent practice authority—mostly regulations promulgated by state nursing boards without concurrence by state medical boards—as efforts to confer a medical degree by political means rather than by educational means” (ASA, 2004, p. 4).
  - “Anesthesiology, in all of its forms, including regional anesthesia, is the practice of medicine” (ASA, 2004, p. 24).

- From the American Academy of Pediatrics:
  - “AAP chapters and state medical and specialty societies, as well as national medical and specialty societies, should be proactive in legislative advocacy and should partner in informing legislators, health care purchasers, the media, and the public about the differences in the education, skills, and knowledge of various health care professionals. Legislative advocacy includes opposing legislation to expand the scope of practice of nonphysician clinicians, particularly independent practice, independent prescriptive authority, and reimbursement parity” (AAP Committee on Pediatric Workforce, 2003—reaffirmed January 2006).
  - “A public conflict with nurse practitioners who have independent practice status in some states, could endanger hopes for health care reform that could be very beneficial to pediatricians . . . We don’t want to hurt the efforts of our members to preserve physician-directed primary care [and] we encourage our members to oppose scope of practice legislation’ that would permit nurse practitioners to have independent practices” (Anderson, 2009).\textsuperscript{16}

Although this opposition\textsuperscript{17} could be motivated by several factors, a consistent theme seems to be that “if something is medicine”—and of course everything is,


\textsuperscript{16} David Tayloe, Jr., President of the American Academy of Pediatrics, commenting upon the eligibility of Nurse Practitioners to participate in health/medical homes pilot projects.

\textsuperscript{17} In furtherance of its long-standing opposition to APN independent practice (including prescribing authority) and direct payment, the AMA, in concert with six national medical specialty societies and several state medical associations, formed a coalition named the Scope of Practice Partnership (SOPP) in 2005. The express purpose of the SOPP is to “concentrate the resources of organized medicine to oppose scope of practice expansions by allied [sic] health professionals that threaten the health and safety of the public.” See AMA Board of Trustees Report 24—A-06, Subject: Limited Licensure Health Care Provider Training and Certification Standards (2006).
given the breadth of the definition in state medical practice acts—then it cannot be a skill or task that can be competently (or legally) performed independently by anyone other than a medical doctor. As I have noted elsewhere (Safriet, 2002, p. 310), such an approach reflects a profound misapprehension of the dynamic nature of knowledge and skill acquisition, and it stands in stark contrast to a more realistic notion of shared versus exclusive prerogatives.18

The pervasiveness of this perspective of professional exclusivity is exemplified by its incorporation, perhaps unwittingly, in an otherwise helpful informational guide on scope of practice that was developed by the Federation of State Medical Boards, a national nonprofit organization representing the 70 medical boards of the United States and its territories (FSMB, 2005). Two aspects of the FSMB Guidelines are especially noteworthy. First, they are intended to be considered “by State medical boards and legislative bodies when addressing scope of practice initiatives relating to persons without a license to practice medicine”19—in other words, to everyone other than physicians, whose scope of practice is seemingly assumed to be not only universal but inviolable and eternal. Second, the underlying assumption of the preeminence of medicine is made explicit by the prefatory statement that “All discussions about changes in scope of practice should begin with a basic understanding of the definition of the practice of medicine and recognition that the education received by physicians differs in scope and duration from other health care professionals. Non-physician practitioners may seek authorization to provide services that are included in the definition of the practice of medicine under existing state law” [emphases added].20 Statements like these seem to reify the primacy and exclusivity of medicine. They ignore the reality that competencies are shared, and that legal authorization of these competencies could and logically should be based on professional abilities rather than notions of exclusive ownership.

While this “everything begins with medicine” trope continues to animate the advocacy activities of some, others have pursued a very different approach to rationalizing the authority–abilities metric that should guide regulatory practice parameters for all health care providers. The most succinct statement of this approach is set out in a 2007 monograph entitled Changes in Healthcare Professionals’ Scope of Practice: Legislative Considerations, collaboratively produced by

18 See, for example, Mirvis (1993): “[N]urses, clinical pharmacists, and other allied health professionals are now educated and trained to perform many tasks previously assigned only to physicians. In these areas, physicians have a right to autonomy because of their knowledge, but it is not an exclusive right. Instead, it is a right to be shared with other appropriately credentialed professions [emphasis added].”


20 Ibid.
representatives of six associations of regulatory boards (NCSBN, 2007). The monograph emphasizes that the most important—indeed the only relevant—questions concerning scope of practice are whether the “change will better protect the public and enhance consumers’ access to competent healthcare services.” In contrast to the static, exclusivity paradigm adhered to by some, the monograph notes two particularly relevant basic assumptions that should frame any scope-of-practice decision:

- **“Changes in scope of practice are inherent in our current healthcare system.”** Healthcare and its delivery are necessarily evolving. . . . Healthcare practice acts need to evolve as healthcare demands and capabilities change.
- **“Overlap among professions is necessary.”** No one profession actually owns a skill or activity in and of itself. One activity does not define a profession, but it is the entire scope of activities within the practice that makes any particular profession unique. Simply because a skill or activity is within one profession’s skill set does not mean another profession cannot and should not include it in its own scope of practice.

It is to be hoped that this “safe and effective abilities” focus will supplant the “first we must start with medicine” refrain as legislative and administrative actions to foster less restrictive practice parameters for all providers are undertaken at both state and federal levels. If so, we will move closer to the goal of enhancing the public’s access to practitioners who can provide competent and cost-effective care in a wide range of practice settings.

### THE GROWING RECOGNITION OF THE NEED FOR CHANGE

While professional associations, legislators, and administrators are all too familiar with the difficulties encountered in reconciling regulatory authority with evolving clinical abilities, an awareness of the need for change has been slow to develop in the wider policy-making and public arenas. Now, however, with sustained efforts to increase access to care in cost-effective ways, a growing and increasingly diverse chorus of voices is calling for true reform of health care workforce regulations.

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21 The Monograph was developed by representatives of the following organizations: Association of Social Work Boards (ASWB), Federation of State Boards of Physical Therapy (FSBPT), Federation of State Medical Boards (FSMB), National Board for Certification in Occupational Therapy (NBCOT), National Council of State Boards of Nursing (NCSBN), and National Association of Boards of Pharmacy (NABP). Full text of the document: https://www.ncsbn.org/ScopeofPractice.pdf.

22 Monograph, p. 9.
Early Studies: The Pew Commission and Institute of Medicine Reports

One of the earliest and most thorough analyses of the regulatory context of health care providers was produced in 1998 by the Pew Commission’s Taskforce on Health Care Workforce Regulation (Finocchio et al., 1998). The Taskforce Report looked broadly at professional regulatory components, including boards and governance structures as well as continuing competence requirements, and more particularly at scopes of practice authority. Noting that “differences from state to state in practice acts for the health professions no longer make sense,” the Taskforce recommended the development of national standards for uniform practice authority, and the dissemination to the states of models based on “the least restrictive practice acts for each profession.” Among their findings and recommendations are the following:

- “Traditional boundaries—in the form of legal scopes of practice—have blurred.”
- “Some scopes of practice conferred upon licensed occupations and professions are unnecessarily monopolistic, thereby restricting consumers’ access to qualified practitioners and increasing the costs of services.”
- “Clinical practice is no longer based on exclusive professional or occupational domains.”
- “If someone is competent to provide a health service safely, and has met established standards, then he or she should be allowed to provide that care and be reimbursed for it, even if that care was historically delivered by members of another profession.”
- “Demonstration projects [can] provide an empirical basis for rational development of legally defined scope of practice provisions, which reflect evolving clinical competence, and make optimum use of skilled health care practitioners.”

Several years later, the lessons of the Report’s scope-of-practice analysis were reflected in the 2001 Institute of Medicine publication *Crossing the Quality Chasm* (IOM, 2001), which noted that “a major challenge in transitioning to the health care system of the 21st century envisioned by the committee is preparing the workforce to acquire new skills and adopt new ways of relating to patients and each other.” Among the approaches recommended by the IOM Committee was a modification of “the ways in which health professionals are regulated to facilitate the needed changes in care delivery. Scope-of-practice acts and other workforce regulations need to allow for innovation in the use of all types of clinicians to meet patient needs in the most effective and efficient way possible.” This approach led to the recommendation that research be pursued “to evaluate how the current regulatory and legal systems . . . facilitate or inhibit the changes needed for the 21st-century health care delivery system.”
The Emerging Consensus

More recently, several reports by research organizations, as well as statements by health policy analysts, have focused on the need for reform of the regulations affecting both practice boundaries and payment for providers such as APNs. A short summary of these commentaries further confirms that the views of health care analysts are converging on a central conclusion: the current scope-of-practice framework must be changed.

- In cautioning against the “Siren Song of GME [Graduate Medical Education]” expansion as a means of addressing the need for more primary care services, Fitzhugh Mullan and Elizabeth Wiley note: “The increased need for physician services can be met by better use of the physicians we have now . . . and by the increased use of nurse practitioners and physicians assistants in primary care and specialty care settings. The important principle underlying this latter strategy is that all clinicians should work to the maximum of their training and licensure [emphasis added]” (Health Affairs, 2009).

- In identifying necessary foundations for cost containment and value-based care, the Engelberg Center at Brookings included as a key reform for improvement of the health care workforce: “Create incentives for states to amend the scope of practice laws to allow for greater use of nurse practitioners, pharmacists, physician assistants, and community health workers [emphasis added]” (Engelberg Center for Health Care Reform at Brookings, 2009, p. 2).

- In a report for the Business Roundtable evaluating the effects of health care reform through the lens of the private sector, Hewitt Associates recommended that, as part of the concept proposed in some current reform bills to create an Innovation Center at the Centers for Medicare and Medicaid, test models should include measures to fund “nurse-practitioners and physician assistants to manage chronically ill patients,” and to enhance greater professional service capacity by “greater utilization of nurse practitioners” (Hewitt Associates, 2009, pp. 8, 22).

- In a comprehensive analysis of the need for a national, coordinated health workforce policy, the Association of Academic Health Centers found that “Inconsistencies in scope of practice laws engender numerous challenges.” The report went on to add that “lack of national uniformity in scope of practice limits health professionals’ mobility and practice,” and that “many professionals and policymakers believe that the appropriate response to workforce shortages is to expand the scope of practice of various health professionals. Such a change would also contribute to leveraging workforce capacity and increase access to care.” Unless and until this is done, “patients may be unable to obtain the services of skilled
providers across state lines and may have fewer choices of safe and effective providers [emphasis added]” (AAHC, 2008, pp. 21, 26, 27).

- A National Association of Community Health Centers report on transforming primary care services noted that “NPs and PAs play a vital role in the delivery of primary care. *State scope of practice laws, which regulate the range of permissible practice for various health care professionals, encourage NPs to locate in states allowing them to provide a broader range of services.*” The report added that “State scope of practice standards set the boundaries by which key primary care providers, namely NPs and PAs, can deliver care. *State policymakers must consider how these standards encourage or discourage primary care professionals to locate in and form teams in underserved areas. Some states, including Colorado and Pennsylvania, have dealt with primary care shortages in underserved areas by expanding scope of practice for NPs, PAs, CNMs, nurses, and dental hygienists. If health centers are to form medical or health care homes and maximize quality and efficiency, policies that facilitate team functions for patients will be needed [emphasis added]” (NACHC, 2009).

- An analysis by the National Academy of State Health Policy of state regulations governing retail clinics concluded that such clinics are a desirable service-delivery mechanism providing accessible, less costly, evidence-based services. The analysis went on to note that, as reported by clinic representatives, the “most powerful state regulatory tools affecting their operations are the scope of practice regulations that govern nurse practitioners and [physician assistants].” “These kinds of regulations can greatly affect the cost structure of retail clinics and may affect where retail clinics locate, their staffing, and their hours of operation.” The report concluded that many states have chosen not to regulate these clinics directly, but rather have relied on existing health care provider regulations and market forces to decide the fate of these clinics, with one ‘most notable exception’: “often in response to physician groups, states have increased physician oversight of non-physician practitioners who work at retail clinics [emphasis added]” (NASHP, 2009).

**Pulling It All Together: The RAND Corporation Study**

All of these themes are echoed and elaborated in one of the most recent and comprehensive reports in the field, which focused specifically on the access, quality and cost gains to be realized by reforming the current regulatory mélange. The Massachusetts Division of Health Care Finance and Policy commissioned the RAND Corporation to “develop a comprehensive menu and assessment of cost containment strategies and options and to determine their potential effect on the health care system.” The resulting report released in August 2009 (Eiber et
al., 2009) described the results of analysts’ assessment of 12 high-priority policy options, including upper- and lower-bound estimates of potential cost savings from these options over 10 years. In addition, the report identified “what has to happen to implement a change” for each of the options. Under the general heading of “Redesign[ing] the Healthcare Delivery System,” the most promising cost containment options included two of particular relevance to APNs—“Encourag[ing] Greater Use of Nurse Practitioners and Physician Assistants,” and “Promot[ing] the Growth of Retail Clinics.” (These options are significant, for purposes of this paper, because nurse practitioners [NPs] are a major cohort within the larger class of APNs, and the analysis that applies to them applies also to their other advanced-practice colleagues.) The most relevant passages of this section of the report are quoted below.

Option: Encourage Greater Use of Nurse Practitioners…

Nature of the Problem

Even though they are educated to perform many routine aspects of primary and specialty care and even though studies have shown that they provide care similar to that provided by physicians, NPs generally cannot practice as independent medical providers and therefore are underutilized in the provision of primary care…. Given widespread agreement that there is a critical shortage of primary care physicians in the Commonwealth, expanding scope-of-practice laws could be a viable mechanism for increasing primary care capacity and reducing health care costs.

Proposed Policy Option

Under a changed [more independent] scope of practice, public and private insurers could choose to reimburse NPs directly for their services and could allow consumers to choose a non-physician provider as their primary care [provider]. Specifically,

• Allow NPs to practice independently, without physician oversight.
• Allow greater practice autonomy for NPs by eliminating the requirement that the Board of Registration in Nursing consult and reach consensus with the Board of Registration in Medicine to promulgate its APN regulations.

Footnotes:

23 For a summary of results of further modeling of eight of the original policy options on a national scale, see Hussey et al. (2009).
24 A third option relevant to ANPs, Create Medical Homes, is not included here since the modeled analysis was limited specifically to “physician-led teams,” and some current reform proposals include a broader definition of primary care provider-led health homes which could be led by APNs.
25 This latter option is important because retail clinics are staffed principally by nurse practitioners.
26 Although the RAND report included PAs and NPs in this policy option, I have omitted references to PAs from this summary, both because my focus is on APNs, and because the regulatory scheme for PAs is fundamentally different than that for APNs, in that, though individually licensed, their scope of practice in all states is determined by delegation by a required supervising physician.
• Reimburse NPs directly for their services. Since NPs [currently] cannot bill directly for their services, bills presented to insurers often are not transparent and may not even indicate who provided the treatment. Were the state to allow nonphysician providers to practice independently, and therefore bill directly for their services, payers would have the option to pay differential rates for primary care services.

• Allow consumers to designate an NP as their primary care provider. This was accomplished, pursuant to a new cost containment law, which requires all insurance carriers to provide members the opportunity, on a non-discriminatory basis, to select a NP as a primary care provider.

• Use provider payment options (such as capitation and case rates) that would encourage physicians to utilize NPs. Providers or provider organizations that accept risk (such as in capitation or case rate payment) will have an economic incentive to employ NPs, whereas those paid on a fee-for-service basis may not. As observed by the Pew Commission, ‘The cost-saving imperatives explicit in capitation will move service-delivery to the least costly practitioners. Moreover, third-party payers likely will focus more on services than on providers in determining reimbursement.’

• Reimburse the same amount for basic medical services, whether provided by a physician or an NP.

It should be emphasized that, in framing their cost analysis, the report’s authors used quite conservative treatment assumptions. For the lower bound of savings, they assumed that “NPs and PAs could provide all care for 6 simple acute conditions (cough, throat symptoms, fever, earache, skin rash, and nasal congestions), corresponding to the subset of conditions commonly treated at retail clinics.” For the upper bound of savings, they assumed that these providers could provide care for these six conditions “as well as for all general medical examinations and well-baby visits.” Even given these narrow treatment parameters, the potential savings in Massachusetts over a 10-year period ranged from a lower bound of $4.2 billion to an upper bound of $8.4 billion.

The authors also noted that the higher savings estimates were supported by a majority of the studies in the research literature, which confirm that NPs and PAs “can deliver care for a large fraction of diagnoses at equivalent quality and lower cost than physicians,” that the “use of NPs leads to high levels of patient satisfaction,” and that “NPs are more likely to provide disease prevention counseling, health education, and health promotion activities than are physicians.”

Quite tellingly, the factors that were identified as tending toward the lower savings range involved some of the common regulatory dysfunctions discussed earlier in this paper. First and foremost was the challenge presented by the need for revised laws broadening the scope of practice of NPs (and, by implication, other APNs as well): “Proposed changes in scope-of-practice laws are ‘among the most highly charged policy issues facing state legislators and health care regulators,’ often triggering guild or ‘turf battles among professions’ that have
at times lasted over a period of years.” In addition, the report noted that the restrictive nature of Massachusetts’s practice parameters may have reduced the supply of NPs available to practice in that state, even if its licensure laws were to be reformed, because many may already have left the state or dropped out of the workforce. “[R]esearch suggests that the supply of NPs is influenced both by scope of practice and reimbursement policies, and that a greater supply is available in states with more expansive scope of practice regulations.”

The detailed analysis contained in the RAND report confirms and amplifies the fundamental conclusion reached by an ever-growing cohort of health care policy analysts: many of the most promising efforts to improve our health care delivery system will have to reckon with the debilitating regulatory restrictions currently imposed on providers’ practice parameters. While a fundamental restructuring of these laws may be long in coming, there are many steps that can be taken now to address some of the well-known, pervasive problems.

**STRATEGIES FOR CHANGE AT THE FEDERAL LEVEL**

There is a broad range (in both scope and number) of actions that the federal government could undertake to eliminate, or at least ameliorate, the adverse effects of the many impediments noted above. Some of these actions emphasize uniform national practice standards and parameters, and are therefore perhaps more aspirational in nature. Others are more specific and immediately actionable. Of the latter, some have to do with the federal government’s own policies and agencies, and others are measures that the federal government could take to promote rational policymaking in the states.

**The Aspirational: What Would an Ideal System Look Like?**

*Rationalizing Education, Licensure, and Compensation*

If one were charged with the task of designing a logical and effective educational and regulatory framework for the health care workforce, it seems clear that the resulting scheme would include few if any of the most notable features of our current system. It would not, for example, segregate students into profession-specific introductory courses in biology, anatomy, physiology, chemistry, and the like. It also would not presume that all aspects of the healing arts and sciences are within the ambit of any, or surely only one, profession. And given the universal, scientific nature of human physical and mental health, it would not tolerate 50 or more variations in each of the practice parameters for each of the many professional roles, all developed through the lobbying of elected politicians by special interest groups. Finally, it would not pay for services at a rate based entirely upon the licensed status of the provider. In short, it would not replicate the educational, practice, and payment provisions of our current system.
Rather, the ideal framework would do the following:

- provide for a common curriculum for all health professional students for foundational courses, and include requirements for interdisciplinary training in clinical practice settings;
- recognize that the provision of health care entails a range of actions, and regulate those actions based upon the degree of danger and specialized skill involved;
- explicitly acknowledge, for tasks that should be regulated, that the competence to perform these tasks safely is not profession-specific;
- establish appropriately uniform professional standards and practice parameters;
- accommodate needed flexibility and evolution in a profession’s practice by utilizing assessment processes in which an appointed, standing committee would review proposals for change and make recommendations for necessary governmental action; and
- base payment for covered services on what and how well a service was provided, rather than on who provided it.

The Federal Role in an Ideal Scheme

The logical consequence of such an approach would be national regulations (including federal licensure or certification, as appropriate) for all regulated health providers, with more uniform educational preparation and scope-of-practice provisions for each profession. A variation on this scheme could be what one might call “shared direct licensure,” in which the federal government would establish a uniform scope of practice for each profession, while retaining the current role of state licensure boards in performing credentials evaluation and verification, disciplinary functions and continued competence assessments.

A national approach to licensure (either comprehensive or shared with the states) is intuitively appealing. After all, the healing arts, as applied, are organic rather than political or geographic, and there are already many national characteristics and requirements embedded in current systems governing educational accreditation, licensure examinations, and professional certification. Unfortunately, notwithstanding the benefits of such an approach, there are undeniably many obstacles to its implementation. Two in particular stand out: (1) the realities of the traditional (though not inevitable) role of the states in health care licensure; and (2) the likelihood that the very same forces that have prevailed in many states would succeed in bringing about a similar result at the national level—that is, in making sure that national standards would embody the most restrictive, rather than the most progressive and empowering, scope-of-practice provisions, thus actually making the situation worse in those states that currently pursue a more enlightened approach.
The Here-and-Now: What Immediate Steps Can the Federal Government Take to Promote the Highest and Best Use of APNs?

Given these and other realities, perhaps the preferred path for the federal government should be to pursue a more rational regulatory framework by (1) promoting best practices drawn from current domestic and international systems and (2) remedying specific problems that are within its power to resolve. There are a number of steps that could be taken now to advance this agenda.

Articulate National Priorities and Raise Public Awareness: the “Bully Pulpit”

**National priorities** Through an Executive Order or other appropriate vehicle, the federal government could declare that the highest and best utilization of health care providers is a national priority, consistent with the goal of promoting wider access to quality care in cost-effective ways. And unnecessary restrictions on providers’ practice scopes distort efficient practice and impede the development of more innovative and effective delivery mechanisms.

**Public awareness** By explicitly identifying the highest and best use of all providers as a national priority, the federal government would also begin to raise public awareness of APNs and other providers and what they can offer. A follow-on public information campaign could provide further detail.

Identify, Integrate, and Publicize Best Practices in a Preferred Scope of Practice Framework

Building on previous calls for federal action on workforce policies, the administration (through the Secretary of HHS, the Surgeon General, or CMS) could appoint a Health Workforce Commission. The Commission would be charged with:

- gathering and analyzing the most progressive regulatory provisions to be found both domestically and internationally;
- producing a “preferred scope of practice framework” for APNs (or all health care providers) that incorporates the least restrictive conditions necessary for safe and effective practice; and

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27 See, for example, the Pew Taskforce, the IOM Report, and the AAHC reports.
28 As I and others have noted elsewhere in some detail [see Safriet (2002) and Dower (2008)], many preferred practices could be drawn from the existing framework of the Ontario Regulated Health Professions Act. For a complete description of the evolution and current parameters of that scheme, see http://www.hprac.org/en/.
• distributing the model to
  − state and federal entities responsible for any facet of regulating health providers’ practice or payment for services, and
  − private entities that utilize or pay for providers’ services (such as commercial insurers and health care facilities), or which establish or review standards for institutional or organizational accreditation.

This strategy would promote wider awareness of both the problems of the current system and the existence of achievable, preferred practices.

Incentivize the States to Adopt the Preferred Framework

Raise awareness and promote rational analysis  Pursuant to existing (or, if necessary, supplemental) statutory authority for annual state reports and assessments of Medicaid and SCHIP, the Secretary of HHS and/or the Administrator of CMS could require the Governor and/or Director of Medicaid/SCHIP of each state to submit an annual report that:

• specifies how any of their state’s health care provider practice acts and regulations impose restrictions not included in the preferred model framework, and
• documents the justifications for these continued restrictions.

A compilation of these reports could be posted on the HHS and CMS and other appropriate websites and could be distributed to associations such as the National Council of State Legislatures and the National Governors’ Association, as well as to public advocacy groups.

Create fiscal incentives  A final step in this progression would move from increasing awareness of to incentivizing the adoption of the preferred framework. The Medicaid federal match formula could be increased by 0.5 percent for those states that revise their laws to be consistent with the preferred framework, or (perhaps more equitably for those states that have already reformed their laws) the federal match for nonconforming states could be decreased by 0.5 percent.

Ensure That APNs Are Visible, and That Their Roles Are Taken into Account

To ensure that APNs and nursing in general are “present and accounted for” when counting matters, at least two significant actions should be taken.

• The National Center for Health Statistics should confirm that all its National Health Surveys and resulting statistical and series reports include information on the full range of APNs’ practices and settings.
All federal agencies (CMS, NCHS, HRSA, etc.) should be charged with ensuring that any coding, assessment or benchmark schema used in any federal health care program (or state program receiving federal funds) for payment, performance, accreditation, or forecasting purposes are inclusive and fairly representative of the kinds of providers and practices affected by those schema. A partial list of such metrics would include the Medical Expenditure Panel Survey, HEDIS, CAHPS, CPT codes, performance measures and quality indicator data sets, Joint Commission and National Quality Forum standards, and benchmark tools for federally sponsored pilot and demonstration projects and the like.

Monitor for Anticompetitive Behavior

The Federal Trade Commission (FTC) should be charged with actively monitoring proposed state laws and regulations specifically applicable to retail or convenient care clinics (or other innovative delivery mechanisms utilizing APNs) to ensure that impermissible anti-competitive measures are not enacted. The need for such monitoring is confirmed by the recent FTC evaluations of proposals in Massachusetts and Illinois and Kentucky, which revealed that several such provisions (including limitations on advertising, differential cost-sharing, more stringent physician supervision requirements, restrictions on clinic locations and physical configurations or proximity to other commercial ventures, and limitations on the scope of professional services that can be provided which do not apply to the same credentialed professionals in comparable limited care settings) could be considered anticompetitive.

Rationalize Professional Education and Training Opportunities and Corresponding Payment Schemes

Curriculum The Department of Education should emphasize interdisciplinary curricular opportunities in the criteria used by the National Advisory Committee on Institutional Quality and Integrity in granting continued recognition of nationally recognized accrediting agencies for health care education.

Graduate-level education for APNs Federal funding for graduate-level, APN education (and educational loan-repayment subsidies) should be expanded. Since the time and cost required for completing APN educational and training require-

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ments is less than that for comparable physician providers, some have estimated that an expenditure of $1 billion (of either new funds or those shifted from GME) could lead to a cumulative 25 percent increase in the number of fully qualified APNs over a 10-year period.30

The role of Medicaid and Medicare Medicaid regulations should be clarified to ensure that Nurse-Managed Health Centers and Clinics are eligible for Medicaid reimbursement. Medicare reimbursement for hospitals should include payment for expanded APN training programs; similarly, reimbursement for APNs’ supervision and training of medical students and residents as well as APN students in hospitals should be made on the same basis as that for physician supervisors.

Promote Parity in Recognition and Payment for Services

- Medicaid should require states to recognize nurse practitioners and certified nurse midwives as Medicaid Primary Care Case Managers, as opposed to the current provision for “optional” recognition.
- If an APN’s services are allowed by state law to be provided autonomously without supervision by any other provider, CMS should not condition any designation (such as those required for “Centers of Excellence”) or Medicare or Medicaid coverage and payment for those services upon any required supervision. Among other provisions affecting APNs, this would require a revision of the current CMS “Opt-Out” regulation31 for conditions of participation for anesthesia services in hospitals, critical access hospitals, and ambulatory surgical centers. Under the current regulation, even in states whose licensure laws do not require physician supervision of certified registered nurse anesthetists, CMS will not pay for an “unsupervised” CRNA’s fully competent and authorized services unless the Governor of that state, after conferring with the Boards of Nursing and Medicine, certifies to the CMS that s/he has found that “it is in the best interests of the state’s citizens to opt-out of the current federal physician supervision requirements, and that the opt-out is consistent with state law.”
- CMS should encourage state Medicaid programs to cover health care services provided by retail or convenient care clinics.
- Consistent with the comprehensive primary care services they provide to uninsured and vulnerable populations, Nurse-Managed Health Centers

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30 Lewin Group, 2009 study.
should be eligible for the same enhanced reimbursement and support provided by the government to Federally Qualified Health Centers.

Undertake Other Available Measures to Improve APNs’ Practice Context

While I candidly acknowledge that I am not aware of all of the many authorization, payment, or even survey provisions contained in the hundreds of state and federal regulatory measures affecting APNs—and I am not sure that anyone could be—I do know that there are many examples of APNs’ differential treatment or total absence. While policy makers and other public advocates move forward with efforts to remove many of the large-scale impediments resulting from the dynamics previously discussed, there are immediate steps that can be taken to improve the practice context for APNs. Several specific examples follow:

- The CMS should ensure that APN practices, including Nurse-Managed Health Centers, are eligible to receive subsidies under the ARRA of 2009/stimulus funds for adoption of the Electronic Health Records systems currently being developed by the Health Information Technology Policy Committee, or any other HIT initiatives.
- The Office of Personnel Management should condition any insurer’s participation in the Federal Employees Health Benefits Program upon verification that APNs’ services (consistent with their full authority under state law) are directly accessible by members and are covered and paid for on the same basis as physicians.
- Any federally sponsored initiative to promote patient-centered, coordinated primary care should incorporate the Institute of Medicine’s definition of primary care, which includes “the provision of integrated, accessible health care services by clinicians who are accountable . . . [emphasis added]” (IOM, 2001). Consistent with this, legislation and implementing rules should assure that any federal pilot or demonstration initiatives under Medicare or Medicaid promoting primary care (such as “health- or medical-homes”) include APN-led practices and Nurse-Managed Health Clinics as eligible participants. Furthermore, CMS should encourage or require any accrediting organization (such as the National Committee on Quality Assurance) whose assessments and recognition are relied upon in any way for basic or enhanced reimbursement, to include APN-led practices in their health/medical home standards and processes.
- In Medicare legislation and CMS regulations, the terms “physician” and “physician services” should be defined to include APNs’ services when those services are within the APNs’ scope of practice as defined by state law.
- Medicare legislation and implementing regulations should authorize
nurse practitioners and certified nurse specialists to certify patients for home health services and for admission to hospice, and clarify that they are authorized to certify admission to a skilled nursing facility, and to perform the initial admitting assessment.

- Medicare Hospital Conditions of Participation should be amended or clarified to facilitate APNs’ eligibility for clinical privileges and membership on the medical staff.
- Nurse-Managed Health Clinics should be included in the regulatory definition of “essential community providers” that will be promulgated pursuant to the section of the Affordable Care Act that creates the Health Benefit Exchanges.

CONCLUSION

Almost every aspect of health care in the United States is in flux. The current reform debates include a seemingly endless (and ever-changing) number of proposals intended to reduce costs and improve access to quality health services. At the same time, modes of health care delivery continue to evolve synergistically at a breathtaking pace, with newly discovered biologics and pharmaceuticals, increasingly adept robotic interventions, personalized therapeutics, nanotechnology, interactive knowledge platforms, and computerized diagnostic and treatment aids that reduce the barriers of time and geography.

The end product of these developments is unknown. Health care reform, even when finalized, will not be fully implemented for several years, and the resulting ramifications on the efficiency and effectiveness of the delivery system will not be understood until even later. And the science and technology of health care delivery will continue to evolve.

In contrast, there are certain fundamental things that we do know.

- The infrastructure necessary for the implementation of any conceivable reforms—and for the application of new assessment and treatment modalities—is deeply flawed, stuck in place and amazingly static.
- More specifically, the framework for certifying to the public that an individual trained to provide care can do so competently is profoundly broken for the reasons I have described.
- Notwithstanding the larger uncertainties, there are known problems with promising solutions which can be acted on immediately, and which will be helpful now and in the future regardless of the final contours of any reform legislation or further developments in the delivery of care.

In sum, the fundamental flaws in the regulatory framework that I have described are real, and they rob us as a nation of the full range of care options that our health care providers are capable of offering. This is particularly true of
APNs, who have a proven track record of providing needed care across a range of patient populations and practice settings—and this in spite of the regulatory obstacles with which they have had to contend. Freeing APNs from the unnecessary constraints I have identified (which are at bottom nothing more than the historical artifacts of medical preemption) will achieve two important objectives. First, it will better enable Americans, wherever they are situated, to receive much-need health services at a cost they can afford. Second, it will begin to remedy the systemic unfairness that has distorted many aspects of the healthcare delivery system, and will serve as a model for comprehensive reform of our entire regulatory framework by focusing on the evolving ability and competence of all providers rather than on rigid proprietary prerogatives.

REFERENCES


APPENDIX H


The Future of Nursing Education

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SUMMARY AND CONCLUSIONS

“Learn the past, watch the present, and create the future.”

In October 2009, Don Berwick and I were out of the country when we received invitations from Susan Hassmiller to co-author a background paper on the future of nursing education for the Robert Wood Johnson Foundation/Institute of Medicine (RWJF/IOM) Committee on the Future of Nursing. Initial conversations led to long lists of potential topics to be covered. Inevitably, we kept coming back to the question: What would be useful to committee members who deserved a base for their deliberations that was focused and helpful? In the end, we decided that detailed descriptions of the current challenges and recommendations for the future of nursing education from two people were not the answer. Instead, we requested and received permission to challenge five leaders, in addition to ourselves, to write short papers focused on recommendations addressing the most important three issues from each of their perspectives.

With input from the RWJF/IOM Committee members and staff, we chose five esteemed (and busy) leaders and asked them to rise to this challenge within 10 weeks. Each person agreed, and each met the deadline. There were no group discussions, and, since each of us submitted our papers at the same time (no one finished early!), no one altered his or her content based on reading someone else’s contributions.

1The responsibility for the content of this article rests with the authors and does not necessarily represent the views of the Institute of Medicine or its committees and convening bodies.
The seven papers are reprinted below, followed by a summary of the themes that emerged across papers. How does it match what you would have written?

**SUMMARY**

The authors of the preceding papers came from the Northeast, South, Midwest, and Western parts of the country. One is a distinguished physician colleague, and the nursing educators are comprised of three professors (one a dean emeritus) and three current deans. Each has exerted leadership—in science, teaching, practice, and policy—for multiple decades. Each leads initiatives that extend beyond the boundaries of their places of employment. One is the current president of the American Academy of Nursing. What can we learn across the issues each chose to raise?

The style of the papers differed, so what was called a recommendation, conclusion, or issue varies. I extracted each major point, regardless of label. These major points from all authors are included in the categories below. Following each theme, authors for whom this was a major point are listed in regular font. Some additional authors mentioned the same point but not at the level of recommendations, conclusions, or major issues, and their names are listed in *italics*. Finally, I organized themes using categories that the RWJF/IOM committee chose for panel presentations at their upcoming meeting (what to teach, how to teach, where to teach), adding a few remaining categories so that all major points were included.

**What to Teach (or What Students Should Learn)**

- Competencies necessary for continuous improvement of the quality and safety of health care systems—patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics (Berwick, Cronenwett, *Tanner*)
  - Mastery of knowledge of systems, interpretations of variation, human psychology in complex systems, and approaches to gaining knowledge in real-world, local contexts (Berwick)
  - Skills and methods for leadership and management of continual improvement, for nurse-teachers and nurse-executives (Berwick)
- Competencies needed in new care delivery models
  - Population health and population-based care management (Tanner)
  - Care coordination (Tilden)
- Knowledge based on standardized science prerequisites (Dracup, Tanner)
- Health policy knowledge, skills, and attitudes (Tilden)
- Competencies related to emerging health needs—e.g., geriatrics (Tanner)
How to Teach

- Guide students in integrating knowledge from clinical, social, and behavioral sciences with the practice of nursing to enhance development of clinical reasoning skills (Cronenwett, Dracup, Tanner, Tilden)
- Enhance opportunities for interprofessional education (Cronenwett, Dracup, Gilliss, Tilden, Tanner)
  - Evaluate and test models of interprofessional education, including timing, determination of what levels of students should learn together, and what content is most effectively delivered with interprofessional learners (Tilden)
- Develop and test new approaches to pre-licensure clinical education, including use of simulation (Dracup, Tanner)
- Involve students in interprofessional quality improvement projects (Berwick, Gilliss, Cronenwett)
- Develop model pre-licensure curricula that incorporate best practices in teaching and learning and can be used as a framework for community college–university partnerships (Tanner)

Where to Teach

- In baccalaureate and higher degree programs (Aiken, Cronenwett, Dracup, Gilliss, Tanner, Tilden)
  - Significantly increase the number and proportion of new registered nurses who graduate from basic pre-licensure education with a baccalaureate or higher degree in nursing (Aiken, Cronenwett)
  - Require the BSN for entry into practice (Dracup, Tilden)
  - Support community college/university partnerships that increase the number of associate degree graduates that complete the baccalaureate degree (Dracup, Tanner)
  - Allow community colleges to provide baccalaureate degrees (Dracup)
- In post-graduate residency programs
  - Develop and test clinical education models that include post-graduate residency programs (Tanner)
  - Implement requirement of post-graduate residency for initial re-licensure (Cronenwett, Tanner)
- In health care settings that foster day-to-day change and improvement (Berwick)
- In programs built on strong academic–practice setting partnerships (Cronenwett, Gilliss)
  - At Academic Health Centers, promote governance structures that combine the strategic, rather than operational, oversight for nursing (Gilliss)
In settings that are models of integrated care where care coordination skills can be developed (Tilden)

Who Teaches (Characteristics of Desired Faculty Members of the Future)

Increase the number of faculty members:

- Whose criteria for appointment and advancement include recognition of practice-based accomplishments, including engagement in the work of improving health care (Berwick, Gilliss, Dracup, Cronenwett)
- Who can move easily during careers between practice and academe (Gilliss)
- Who shorten their career paths from BSN to doctoral degree (Aiken, Dracup)
- Who maintain professional certification and/or clinical competence (Gilliss)
- Who build alliances with faculty in other disciplines (medicine, engineering, business, public health, law) (Gilliss)
- Who are capable of leading efforts to advance interprofessional education (Dracup, Tilden)

Recommendations: To Nursing Organizations

- Ensure that schools produce ever-increasing numbers of nurse practitioners for primary care roles at a time when expanded access to health care will increase society’s need for primary care providers (Cronenwett, Gilliss)
  - Challenge current credit-heavy requirements and test teaching innovations that improve competence while reducing program credits (Gilliss)
- Support the faculty development necessary to bring about the magnitude of reforms in nursing education recommended in the Carnegie study, necessitated by advances in nursing science and practice and guided by advances in the science of learning (Tanner)
- Advance post-master’s DNP education, maintaining specialist preparation at the master’s program level (Cronenwett, Gilliss)
  - Fund initiative to facilitate professional consensus that DNP programs should be launched as post-master’s program for the foreseeable future (Cronenwett)
  - Clarify the expectations for nurse scientists interested in translational research—will both the DNP and the PhD be required? Will the DNP alone be sufficient for tenure-track positions in research-intensive universities? (Dracup)
Include as accreditation criteria for nursing education programs:
- Substantive nursing education–service partnerships, e.g., in shared teaching and clinical problem solving (Cronenwett, Gilliss)
- Interprofessional education (Cronenwett, Dracup, Gilliss, Tilden)
- Development of competencies in health policy (Tilden)
- Student/faculty participation in or leadership of teams that work to improve health care (Berwick, Cronenwett)
- Student competency development related to health policy (Tilden)

Identify top ten areas of needed faculty development and provide public recognition for success (Gilliss)

Support a learning collaborative of state boards of nursing willing to implement regulatory requirements for transition to practice residency programs as a prerequisite for initial re-licensure (Cronenwett)

Require proof of a nurse’s participation in or leadership of teams that work to continuously improve the health care system for renewal of certification (Berwick)

Urge testing of interprofessional teamwork and collaboration and health policy competencies in licensure exams (Tilden)

Recommendations: To Government and Other Organizations

Increase scholarships, loan forgiveness, and institutional capacity awards to increase the number and proportion of newly licensed nurses graduating from baccalaureate and higher degree programs (Aiken, Cronenwett)

Increase scholarships, loan forgiveness, and institutional capacity awards for graduate nurse education at master’s and doctoral levels (Aiken, Dracup)

Redirect Medicare GME nursing education funds to support graduate nurse education (Aiken, Dracup, Tanner)

Redirect Medicare GME nursing education funds from hospital-based pre-licensure programs to postgraduate residency programs (Cronenwett, Tanner)

Promote innovation and evaluation of novel approaches to improving preparation for the practice of nursing through expanded Title VIII funding (Cronenwett, Tanner)

Invest in nursing education research, related particularly to the evaluation of multiple pathways to licensure (Tanner)

Use CTSA or other research facilitation structures to promote knowledge development at the point of care, translation of knowledge into practice, practice improvements, and interprofessional education (Dracup, Gilliss)
• Create a federal health professions workforce planning and policy capacity in the Executive Branch (Aiken)
• Expand authorities for Title VII/VIII funds to support development and evaluation of interprofessional education innovations (Gilliss)
• Expand Nurse Faculty Loan Programs and other loan forgiveness/scholarship programs that produce more faculty (Aiken, Dracup)
• Encourage public and private resource investments that incentivize students and nursing programs to expedite production of qualified nurse faculty by shortening the trajectory from entry into basic nursing programs through doctoral and post-doctoral study (Aiken, Dracup)
• Use Perkins funds to incentivize community college nursing programs to increase the proportion of their nursing students who complete their initial education with a BSN (Aiken)
• Increase programs that support greater production of nurse practitioners for primary care (and remove legal barriers to interprofessional education and practice) (Aiken, Cronenwett)
• Fund a longitudinal study to track state-based data on number and proportion of new nurse graduates from ADN vs. BSN/higher degree programs (Cronenwett)
  – Advance media attention to states that exemplify “best practices” in the distribution of new nurse graduates from ADN vs. BSN programs (Cronenwett)
• Include health services research (in addition to drug and treatment intervention trials) in initiatives to enhance comparative effectiveness research (Aiken)
• Require universities and colleges (presidents, provosts, deans) to support infrastructures and mandates for interprofessional education (Tilden)

CONCLUSION

The recommendations of seven leaders committed to the development of future generations of health professionals included some expected diversity of views. Nonetheless, given the long list of issues that would have been covered had we chosen to write one comprehensive paper, a remarkably small number of themes emerged. Hopefully, these rich ideas and themes can be used to inform the deliberations of the RWJF/IOM Committee on the Future of Nursing. Even more hopefully, a collective national response to these important issues will create a future that meets nursing’s obligations to the society it serves.
NURSING EDUCATION POLICY PRIORITIES

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Nursing is one of the most versatile occupations within the health care workforce. In the 150 some years since Nightingale developed and promoted the concept of an educated workforce of caregivers for the sick, modern nursing has reinvented itself a number of times as health care has advanced and changed (Lynaugh, 2008). As a result of nursing’s versatility, new career pathways for nurses have evolved attracting a larger and more diverse applicant pool and a broader scope of practice and responsibilities. Nursing, because of its versatility, has been an enabling force for change in health care along many dimensions including but not limited to the evolution of the high-technology hospital, the possibility for physicians to combine office and hospital practice, length of hospital stay among the shortest in the world, reductions in the work hours of resident physicians to improve patient safety, extending national primary care capacity, improving access to care for the poor and rural residents, and contributing to much needed care coordination for the chronically ill and frail (Aiken et al., 2009). Indeed, with every passing decade, nursing has become a more integral part of health care services to the extent that a future without large numbers of nurses is impossible to envision.

A POLICY CHALLENGE

From a policy perspective, nursing’s versatility is important to note for the simple reason that nursing has evolved faster than public policies affecting the profession. The result is that nursing’s forward progress to better serve the public is hampered by the constraints of outdated public policies involving government education subsidies, workforce priorities, scope of practice limitations and regulations, and payment policies. An important priority in national health care reform is achieving better value for the expenditures made on health services. Since health care is labor intensive, getting more value will depend in large part on enhancing productivity and effectiveness of the workforce. Nurses represent a large and unexploited opportunity to achieve greater value.

The purpose of this paper is to identify and discuss several key changes in nursing education policy that are critically needed to shape the nurse workforce to best serve the health care needs of the American public in the years ahead. It is written with the assumption that nurse scope of practice and payment policy reforms will take place over the near term to remove some of the existing barriers to nurses practicing to the full extent of their education and expertise. This assumption is based on steady progress in removing barriers to nursing practice at the state level and language in current national health reform legislation show-
ing greater neutrality in the designation of types of health professionals who can participate in and lead new initiatives in primary care and chronic care coordination. Changes in nursing education policies are needed to ensure that the nurse workforce of the future is appropriately educated for anticipated role expansions and changing population needs.

Five priority recommendations regarding the future of nursing education are advanced for consideration by the RWJF Committee on the Future of Nursing at the IOM:

- Increase and target new federal and state subsidies in the form of scholarships, loan forgiveness, and institutional capacity awards to significantly increase the number and proportion of new registered nurses who graduate from basic pre-licensure education with a baccalaureate or higher degree in nursing.
- Increase federal and state subsidies for graduate nurse education at the master’s and doctoral levels in the form of scholarships, loan forgiveness, and institutional capacity with a priority on producing more nurse faculty.
- Encourage public and private resource investments to incentivize students and nursing programs to expedite production of qualified nurse faculty by shortening the trajectory from entry into basic nursing education through doctoral and post-doctoral study by expedited bachelor of science in nursing (BSN) to PhD programs and comparable innovations.
- Create a federal health professions workforce planning and policy capacity in the Executive Branch with authority to recommend to the President and the Congress health workforce policy priorities across federal agencies and departments.
- Recommend the inclusion of health services research on various forms of nursing investments in improving care outcomes including comparisons of the cost effectiveness of improving hospital nurse-to-patient ratios, increasing nurse education, and improving the nurse work environment. At present comparative effectiveness research is more focused on drug and treatment intervention trials than on innovations in care delivery including workforce interventions.

**PRIORITY FUNDING TO INCREASE INITIAL BSN GRADUATES**

Every year the percent of new registered nurses graduating from associate degree programs increases, and it is now over 66 percent of all new nurse graduates. Multiple blue ribbon panels on nursing education, including the just released Carnegie Foundation Report on Nursing Education (Benner et al., 2010) as well as health workforce reports to Congress for two decades, have concluded that there is a substantial shortage of nurses with BSN and higher education to meet
current and future national health care needs. Advances in medical science and technology, the changing practice boundaries between medicine and nursing, and the increase in the share of the population with multiple chronic health conditions create a level of complexity in health care that requires a more educated health care workforce. Nursing is the least well educated health profession by far but the one experiencing the greatest expansion in scope of practice and responsibilities. The National Advisory Council on Nurse Education and Practice (NACNEP) (1996), policy advisors to the Congress and the U.S. Secretary of Health and Human Services on nursing issues, urged almost 15 years ago that policy actions be taken to ensure that at least 66 percent of nurses would hold a baccalaureate or higher in nursing by 2010; the actual result is closer to 45 percent. As described in the sections below, growing evidence suggests that the shortage of nurses with BSN and higher education is adversely affecting a number of dimensions of health care delivery now and these problems will only become exaggerated in the future.

Quality of Hospital Care

A growing body of research documents that hospitals with a larger proportion of bedside care nurses with BSNs or higher qualifications is associated with lower risk of patient mortality. Aiken and colleagues (2003) in a paper published in the *Journal of the American Medical Association* (*JAMA*) showed that in 1999, each 10 percent increase in the proportion of a hospital’s bedside nurse workforce with BSN qualification was associated with a 5 percent decline in mortality following common surgical procedures. A similar finding was published by Friese and associates for cancer surgical outcomes (Friese et al., 2008). Aiken’s team has replicated this finding in a larger study of hospitals in 2006. Similar results have been published for medical as well as surgical patients in at least three large studies in Canada and Belgium (Estabrooks et al., 2005; Tourangeau et al., 2007; Van den Heede et al., 2009).

This research has motivated the American Association of Nurse Executives, the major professional organization representing hospital nurse chief executive officers who employ 56 percent of the nation’s nurses, to establish the BSN as the desired credential for nurses. Many hospitals, particularly teaching hospitals and children’s hospitals, are acting on the evidence base by requiring the BSN for employment. Nurse executives in teaching hospitals have a goal of 90 percent BSN nurses, and community hospital nurse executives aim for at least 50 percent BSN-prepared nurses (Goode et al., 2001). Since only 45 percent of bedside care nurses have a BSN, many executives cannot reach their goals.

Access and Costs

There is some research evidence that the cost effectiveness of nursing improves with a more educated workforce. In Aiken’s *JAMA* paper, evidence was
presented to show that the mortality rates were the same for hospitals in which nurses cared for 8 patients each, on average, and 60 percent had a BSN and for hospitals in which nurses cared for only 4 patients each but only 20 percent had a BSN (Aiken, 2008; Aiken et al., 2003). More research is needed to assess the comparative value of investing in different nursing strategies that evaluate the relative cost and outcomes of increasing nurse staffing, educational levels, and improving the organizational context and culture of the nurse work environment. At this point the evidence is encouraging that a more educated hospital nurse workforce might allow for a smaller nurse workforce without adversely affecting patient outcomes. If confirmed in future research, this finding could have important implications for both cost of hospital care and for the number of nurses actually needed in the future to staff hospitals.

In the ambulatory sector, there is a strong research base documenting that nurses with advanced clinical training, usually master’s degrees in advanced clinical practice, provide primary care with outcomes comparable to, and in some domains like symptom control and satisfaction better than, those of physicians and with lower costs (Griffiths et al., 2010; Horrocks et al., 2002). Rand researchers estimated, for example, that the state of Massachusetts could save up to $8 billion over a decade by attracting more advanced practice nurses and removing barriers that prevent them from practicing at the full level of their education and expertise (Eibner et al., 2009). Increased use of advanced practice nurses is one of the very few practice innovations currently underconsidered in national health reform, including medical homes and chronic care coordination, that would yield net cost savings nationally according to Rand researchers (Hussey et al., 2009).

How the Shortage of BSN Nurses Impacts Future Nurse Supply

As argued above, the shortage of BSN nurses has implications for health care quality and safety, access, and costs of care. A less well recognized consequence of the shortage of BSN nurses is a shortage of faculty which could have a long-term impact on national production capacity of nurses for the future.

The Department of Labor estimates that 600,000 new jobs will be created for nurses over the next 10 years, the highest rate of new job production for any profession (Bureau of Labor Statistics, 2009). In addition, over a half million nurses in the current workforce, which has an average age of around 48, will reach retirement age over the same period, resulting in the need for over a million nurses to be added to the national workforce. The good news is that there is tremendous interest in nursing as a career in the United States after a century of difficulty attracting the best and brightest to nursing. The reasons for this unprecedented interest are multifaceted, having to do with attractive incomes, averaging nationally $65,000 a year and higher in some locations, better job prospects than in other employment sectors, and perceptions of personally satisfying work helping others. If we can take advantage of this unprecedented interest and expand nursing school production, future nursing shortages could be greatly attenuated.
The bad news is that nursing schools do not have the capacity to absorb the great windfall in applicants. Estimates suggest that at least 40,000 qualified applicants to nursing schools are being turned away each year (AACN, 2009). There are several reasons why nursing schools are unable to accept the influx of applicants. Nursing schools have expanded enrollments steadily for more than a decade with graduations increasing from about 75,000 in 1994 to 110,000 in 2008. Resources of all kinds are now stretched and schools are having difficulty expanding further. Institutions of higher education in general are experiencing serious budget constraints and as a result are slowing enrollment growth. Additionally the shortage of nursing faculty has become a major constraining factor.

A strategy for ameliorating the nurse faculty shortage that has received little attention to date is to increase entry-level education of nurses to produce a larger pool of nurses likely to obtain graduate education. In a recent paper in *Health Affairs* Aiken and colleagues provided a cohort analysis to determine the highest education achieved by nurses receiving their basic or initial nursing education between 1974 and 1994 (Aiken et al., 2009). We found that choice of initial nursing education program—associate degree or baccalaureate—was the major predictor of final educational attainment. Close to 20 percent of nurses irrespective of initial nursing education obtain a higher degree. However, of the 20 percent of associate degree nurses who obtain an additional degree, 80 percent stop at the baccalaureate degree. Of the 20 percent of nurses with a baccalaureate degree who go on for additional education, almost 100 percent obtain at least a master’s degree. This is an important finding for the design of policy interventions since investments in encouraging BSN education have not distinguished between RN-to-BSN programs and basic BSN programs. The yield for teachers is entirely different between the two types of programs. If the current scenario of distribution of nurses by type of basic education had been reversed since 1974 and 66 percent of nurses had graduated from BSN programs instead of 33 percent, we estimate that there would be over 50,000 more nurses with master’s and higher degrees today.

We concluded in our *Health Affairs* paper that it was a mathematical improbability that the nurse faculty shortage could be solved without changing the distribution of nurses by type of basic education. There are simply not enough nurses who obtain a master’s or higher degree to meet the dramatic increase in demand for clinicians, administrators, teachers, and leaders who require a graduate degree.

What would be the expected yield in terms of nursing faculty that would be likely to obtain by increasing basic BSN education? To answer this we undertook an analysis of the National Sample Surveys of Registered Nurses over time to explore whether career trajectories of nurses with graduate education had changed over time. The answer is yes—significantly. For example, in 1982, 17 percent of nurses with master’s degrees and 62 percent of nurses with doctorates were in faculty positions compared to only 7 percent of master’s and 41 percent of nurses with PhDs in 2004. Nurses with graduate degrees are selecting positions in
clinical care and administration in ever larger numbers. The yield for teachers is clearly greater for those who earn doctoral degrees which argues for policies that aggressively recruit BSN nurses into expedited doctoral education thus bypassing the master’s, which has a very clinical curriculum and a different end objective focused on producing clinicians. Probably for historical reasons, many schools build their curricula sequentially from BSN to MSN to doctoral degree. However, the clinical master’s in specialty practice has little to do with learning to teach or to conduct research. The clinical masters is not a building block for doctoral study but a terminal degree like the MBA or the Masters in Engineering. In order to address the faculty shortage two things would have to happen simultaneously. More nurses would need to initiate basic nursing education at the baccalaureate level AND expedited BSN to PhD programs would need to be expanded to interest students in teaching careers earlier and expedited to bypass the clinical masters that emphasize career trajectories in clinical care. The clinical master’s is not a building block for doctoral education but a different career pathway.

Tying educational loan forgiveness to teaching is a reasonable supplemental strategy along with a focus on BSN to PhD education to help offset lower incomes in faculty positions. Actually closing the gap between practice and academic salaries is not feasible. The gap exists in every practice discipline including medicine, law, business, and engineering. University faculty salaries vary for different fields depending upon market factors but not enough to close the gap between teaching and practice within disciplines. Combining clinical and academic responsibilities for nurse faculty is a potential strategy for enhancing faculty incomes. However, in only a few nursing specialties like nurse anesthesia or executive positions are rates of remuneration for clinical nursing care high enough to offset lower academic salaries for teachers with joint clinical appointments.

Articulation programs aimed at facilitating additional education for RNs with less than a baccalaureate degree have been tried for decades and do little to produce more teachers. Once nurses qualify for licensure, 80 percent do not seek further education. Oregon has the most innovative approach to improving articulation between associate degree and baccalaureate programs by standardizing requirement; the Oregon program has twice the success rate of the national average with 40 percent of associate degree nurses obtaining the BSN. However, the Oregon articulation initiative would not solve the shortage of teachers because most of those who get the BSN will not go for a second additional degree. RN-to-MSN programs would have a somewhat higher yield for teachers than RN-to-BSN completion courses but not nearly as high a yield as BSN-to-PhD programs.

Associate degree education is appealing to policy makers because it seems to offer upward mobility and it is less expensive and more geographically accessible. However, data suggest in the case of registered nurses that initial qualification for licensure at the associate degree level actually constrains educational and
career mobility compared to those who initially qualify at the bachelor’s degree level. The advantages of associate degree education, lower out-of-pocket costs and geographic proximity, can be offset in the case of nursing by public subsidies for educational costs and distance learning. The length of associate degree and baccalaureate programs are not significantly different because of licensure requirements. Maintaining three (including diploma) educational pathways for nurses that at least on the surface do not seem radically different have a dramatic impact on the upward educational mobility of nurses thus contributing to the shortage of faculty and other nurses requiring graduate-level education.

The majority of countries with health care comparable to the United States have moved to standardize nursing education at the baccalaureate entry level including the European Union. States have the authority in the United States to set licensure requirements for nursing. Prospects for standardizing education of nurses through licensure changes across 50 states are not good. However, financial incentives imbedded in public subsidies for nursing education could have a significant effect on changing patterns of education just as payment incentives change medical practice patterns.

The IOM Committee should recommend increasing public subsidies for basic nursing education—federal and state—and tying these funds to the production of baccalaureate graduates. Policies should be neutral on types of institutions—community colleges or 4-year colleges and universities—that could benefit from funding. Capitation funding on the basis of BSN graduates from basic education programs could be effective in shifting the proportion of graduates toward more with BSN qualifications. Coupled with increased funding for graduate nurse education, this could be an effective strategy for addressing the faculty shortage along with shortages of advanced practice nurse clinicians and administrators.

IOM committee members in a previous discussion of this option asked what the yield would be for faculty positions in increasing baccalaureate graduates. Additional research is needed to answer this important question directly. However, we know from existing research that BSN initial graduates are three times more likely to get a master’s degree and twice as likely to get a doctoral degree than associate degree nurses (Aiken et al., 2009), which would likely produce more teachers. Because the current yield of teachers is relatively low overall among nurses with graduate degrees—only 7 percent of master’s graduates and 41 percent of doctoral graduates electing faculty positions—policies to increase baccalaureate initial education would have to be accompanied by efforts to increase the teacher yield. Promising strategies to increase the teacher yield among those with graduate credentials include scholarship and educational loan repayment for those in teaching roles and funds to expand BSN-to-PhD expedited programs. And investments in more baccalaureate nurse graduates would also likely return additional benefits in the form of better quality, improved access, and efficiency for those electing clinical practice roles, an outcome in the public’s interest.
INCREASED FEDERAL AND STATE FUNDING FOR GRADUATE NURSE EDUCATION

The evidence is strong that the growth of advanced nurse practice has contributed to improved access to general care (Aiken et al., 2009). Over the past decade advanced practice nurses have largely staffed the new retail clinics that currently provide about 3 million ambulatory visits a year at an estimated per visit cost of below the average cost to a physician office. Additionally, advanced practice nurses have enabled the largest expansion of Community Health Centers (CHCs) since the Great Society Program; CHCs currently provide over 16 million visits in 7,300 sites to largely underserved people. In total, advanced practice nurses are estimated to provide up to 600 million ambulatory patient visits a year, a national primary care capacity enhancement that will become increasingly critical to access in a context of primary care physician shortage.

The rate of production of new advanced practice nurses (APNs) which had been growing steadily since the 1970s has been flat in recent years. Interest among nurses in advanced practice roles appears strong but the shortage of student financial aid for graduate nurse education has a chilling effect on enrollment growth. It is difficult for many nurses to forego employment income to attend graduate programs full time without scholarships or loans which are in short supply. The major source of funding for graduate nurse education is Title VIII annual appropriations which currently total about $60 million (estimate for graduate education only, not all of Title VIII funding), compared to $2.4 billion for direct graduate medical education for physicians. A large proportion of APN students pursue graduate education on a part-time basis which slows the production of new graduates. Employer tuition benefits, an important source of educational assistance for practicing nurses, have been reduced during the economic downturn, eroding available financial support for graduate nurse education, particularly at the master’s level which is generally required for advanced nurse clinical practice.

Medicare, since its inception, has paid for a share of graduate medical education. It has also reimbursed some hospitals for a portion of their nursing education costs. An analysis we conducted of 2006 HCRIS data from the Centers for Medicare and Medicaid Services (CMS) suggested that Medicare funding for nursing education was slightly less than $160 million annually, a small amount compared to medical education investments, but almost as much as all of Title VIII funding for nursing in that year. CMS has a larger estimate of $300 million in Medicare payments for nursing education but we cannot verify that estimate with publicly available data. But whether Medicare funding is $160 million or $300 million annually, policies governing expenditures are very different from how the funds are spent in support of medical education, the amount is large relative to other sources of federal support for nursing education, and the funding does not materially affect the supply of nurses or the quality of nursing
care for the elderly (Aiken and Gwyther, 1995). Most of the funds are limited to hospital-sponsored diploma nursing schools which currently prepare less than 5 percent of new RNs annually. Also five or six states account for almost half of Medicare nursing education funding because of the location of the relatively few surviving diploma nursing schools.

A number of workforce studies and commissions, including a 1997 IOM committee, have called for the realignment of Medicare funding for nursing education to graduate nursing education (IOM, 1997). The health reform bill passed by the Senate proposes a small demonstration of up to five hospitals to test Medicare payments for graduate nursing education. While better than no progress at all, the proposed demonstration is too small to significantly advance a change in Medicare policy that is long overdue.

There is sufficient information available now as suggested by the Institute of Medicine in 1997 to realign Medicare nursing education funding to graduate nursing education. This could be a budget-neutral programmatic shift which would more than double current federal funding levels for graduate nursing education and serve as a significant stimulus for increased production of advanced practice nurses to meet the multitude of existing and emerging needs resulting from the continuously changing boundaries between nursing and medicine.

**FEDERAL AUTHORITY ON HEALTH WORKFORCE POLICIES**

There is little effective health workforce policy-making at the federal level. The modest nursing policy capacity is located within the Health Resources and Services Administration, an agency within the Department of Health and Human Services (HHS) with little of its own funding and no authority to engage CMS which controls Medicare nursing education funding or the Department of Education, where the largest funding for nursing education resides in the form of Carl Perkins Act funding for community colleges.

Patterns of basic pre-licensure education for nurses have changed dramatically in the 45 years since the nation’s last major health reform—Medicare and Medicaid. In 1965, over 85 percent of nurses received their basic education in hospital-sponsored diploma programs; now less than 5 percent do. The percentage of registered nurses receiving training in associate degree programs was less than 2 percent in 1965 but is over 66 percent today. Baccalaureate nursing programs produced about 10 percent of new nurses in 1965, which increased to about a third of new nurses by 1980 and has been stable there for 30 years (Aiken and Gwyther, 1995). Current Medicare policies for support of nursing education as implemented by CMS are still based on nursing education patterns that existed when Medicare was passed but that are practically irrelevant today. CMS has been resistant to proposals to realign existing Medicare support for nursing education to graduate nursing education through multiple different administrations in Washington.
The single largest source of federal support for nursing education is the Department of Education’s funding for community colleges through the Carl Perkins Act. Perkins funds exceed $8 billion annually. A high priority should be set on examining whether and how Perkins funds could be targeted to incentivize community college nursing programs to increase the proportion of their nursing students who complete their initial education with a BSN. There are numerous feasible strategies to do this including having community colleges offer the BSN as in Florida and other states as well as innovative partnerships with 4-year colleges and universities perhaps using state-of-the-art distance learning technologies supported by Perkins funding.

The most influential of the many commissions on nursing over the decades was the 1982 IOM study *Nursing and Nursing Education: Public Policies and Private Actions*. That study made a recommendation involving an organizational change within HHS that dramatically altered national nurse leadership and nursing education. The recommendation was to move the responsibility and budget authority for nursing research from HRSA to NIH where research was highly visible and influential. The establishment of the National Institute of Nursing Research within two decades fundamentally transformed the engagement of nursing in evidence-based innovations to improve health outcomes, helped create new and important interdisciplinary research and research training collaborations, and improved the relevance and quality of nursing education in universities. The proposal to establish a nursing workforce authority at a higher level of the federal government could have an equally influential impact on the adequacy of the national nurse workforce.

**FINAL THOUGHTS**

The Commission on the Future of Nursing has considered many important aspects of the education and practice of nursing. Of the many types of recommendations the committee might consider, recommendations regarding federal (and state) funding of nursing education are among the most actionable and potentially influential in creating a future for nursing that serves the public’s interests in patient-centered accessible health services at affordable costs. What is good for the public is genuinely good for nursing. Using public nursing education policy as a vehicle for achieving a better balance between the qualifications of nurses and national health care needs could result in great return on investment now and in the years ahead.

**REFERENCES**

APPENDIX I

PREPARING NURSES FOR PARTICIPATION IN AND LEADERSHIP OF CONTINUAL IMPROVEMENT

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“I see,” said the nurse,
“You’re saying that I have two jobs: doing my job, and making my job better.”

In the 20 years since I first heard that comment from my colleague, Paul Batalden, MD (retold January 2010), who was quoting a participant in a course he was teaching on health care improvement, I have never heard a more succinct summary of the modern view of the pursuit of quality in a complex system. It is a deceptively simple idea, replete with implications for the preparation, self-image, support, and daily life of the professional. It represents a comprehensive goal for the modern nurse and for those who wish to prepare people for that role.

The capacity to “make my job better” is not inborn. Nor is it usually taught in professional education. What professional education, including nursing education, has more reliably focused on is the content of the job—the subject-matter knowledge and cognitive and manipulative skills to care for patients in existing processes and institutions. Standards exist for how one ought to perform tasks, including dynamic tasks like problem-solving; professional preparation instills mastery of those tasks, and professional licensure and certification allege to assure achievement of that mastery.

W. Edwards Deming, one of the great theorists and teachers of improvement in systems contexts, distinguished this discipline-specific and subject-matter knowledge, which tells one, in effect, “how to be a nurse,” from what he called “Knowledge for Improvement” (or, less felicitously, “Profound Knowledge”) (Deming, 1994), which would tell one “how to improve nursing” or, more accurately, “how to help improve the system of which nursing is a component.” Mastery of the first—subject-matter mastery—does not confer mastery of the second—knowledge for improvement. This form of knowledge invites attention to the system in which professional work is conducted.

In some ways it is surprising how little our pedagogy promotes appreciation of systems of care. Arguably, most graduates of most health professional educational programs suffer from considerable “functional illiteracy” about the systems in which they work. Few emerge from their studies with a well-developed sense of responsibility for the performance of these systems, even though they work in those systems and depend on them every day.

The evidence of serious deficiencies in the performance of health care as a system is overwhelming and incontrovertible. It fueled the findings and recommendations of the landmark Institute of Medicine report, Crossing the Quality Chasm, in the year 2001, which claimed: “Between the health care we have and the care we could have lies not just a gap but a chasm” (IOM, 2001, p. 1). Its
diagnosis—incapable systems of care: “In its current form, habits, and environment, American health care is incapable of providing the public with the quality health care it expects and deserves” (IOM, 2001, p. 43). The Chasm report established six “Aims for Improvement” of care, which now compose a canonical list:

- safety (reducing harm from care);
- effectiveness (increasing the reliability of alignment between scientific evidence and practice, reducing both underuse of effective practices and overuse of ineffective ones);
- patient-centeredness (offering patients and their loved ones more control, choice, self-efficacy, and individualization of care);
- timeliness (reducing delays that are not instrumental, intended, and informative);
- efficiency (reducing waste in all its forms); and
- equity (closing racial and socioeconomic gaps in quality, access, and health outcomes).

In the decade since the Chasm report, the social imperative for all six of these improvements has increased, with perhaps special emphasis lately on “efficiency” as the costs of American health care have come to appear less and less sustainable. Activities in health care policy, management, and payment have increased, with more or less coherence, in pursuit of those goals. Yet the response from health professionals (and the faculties who train them) to shoulder accountability for health system performance has been limited, and in many places virtually absent.

If, as the Chasm report alleges, the current system of care is “incapable” of the needed improvement, then, logically, pursuit of the IOM Aims for Improvement requires that the system change. Nursing, like any health care profession, can become an object of change, or an agent of change. The latter role will require a new form of professionalism with new skills in system redesign.²

Nursing is positioned well to be a change agent. One recent national project to reduce patient injuries, the Institute for Healthcare Improvement’s 100,000 Lives Campaign (McCannon et al., 2006) translated the IOM aims of “safety” and “effectiveness” into operational form as “bundles” of evidence-based care procedures, such as the “Central Line Bundle” to prevent catheter-associated infection.

²Some elements of that new professionalism have been labeled in the reformulation of goals of resident training by the Accreditation Council for Graduate Medical Education (ACGME) as “systems-based practice” and “practice-based learning and improvement.” The Association of Boards of Medical Specialties (ABMS) were “partners” in the definition of competencies both for initial certification (after residency) and for Maintenance of Certification—a process adopted now by each medical specialty member of the ABMS. The latter means that every practicing medical specialist will be required to demonstrate performance improvement in practice in order to maintain their board certified specialty status.
bloodstream infections, the “Ventilator Bundle” to present respirator-associated pneumonias, and Rapid Response Teams to intercept patient deterioration with early warning, diagnosis, and treatment. Hundreds of hospitals reported success in improved patient outcomes, and a recurrent pattern included activated nurses, supported to standardize their own processes of care according to the Institute for Healthcare Improvement (IHI) “bundles,” and empowered and supported to monitor and enforce those standards across disciplines, including with their physician colleagues (Berwick et al., 2006). Present steadily at the point of care, committed to excellence and reliability, equipped to measure locally, biased toward teamwork, and, crucially, encouraged to innovate locally to adapt changes to local contexts, nurses proved the ideal leaders for changing care systems and raising the bar on results.

Some relevant education innovation are well under way. The pioneering work of the Quality and Safety Education for Nurses (QSEN) project (Cronenwett et al., 2007) and the adoption by the American Association of Colleges of Nursing of the QSEN quality improvement competencies in The Essentials of Baccalaureate Education for undergraduate nursing education is heartening and opens the possibility that students across the professions will develop similar competencies for the improvement of care. Further, QSEN’s work on faculty development (Cronenwett et al., 2009a) and graduate nursing education (Cronenwett et al., 2009b) to extend these ideas into all of nursing professional development is exciting. IHI’s Open School for the Health Professions is an interprofessional educational community that helps students from all the health professions to acquire the skills to become change agents for health care improvement.

From the viewpoint of nursing education, the capacity to help improve systems of care has two big elements: (a) personal skills and (b) a context of leadership and management that allows those skills to thrive in action. Nursing education fit for the needs of the 21st century will attend to both.

**PERSONAL SKILLS: THE CATEGORIES OF KNOWLEDGE FOR IMPROVEMENT**

Deming’s four “profound knowledge” categories offer a useful framework for education goals and achievements for nurses capable of helping to improve systems:

1. Knowledge of Systems
2. Knowledge of Variation
3. Knowledge of Psychology
4. Knowledge of How to Gain Knowledge

Let us explore each.
Knowledge of Systems

“Knowledge of Systems” refers to understanding the technical characteristics of complex systems, in which factors like interdependency, feedback loops and other nonlinear dynamics, uncertainty, and sensitivity to small changes constantly operate. Without systems knowledge, one approaches work (or life in general) as a series of lists, with a mentality of checking off tasks, with assumptions of direct and linear cause-and-effect dynamics. The world, or the organization, is modeled like a machine, and simplification seems helpful. In health care, of course, things rarely work that way. In clinical work, medications can have remote, delayed, and confusing side effects; organs interact in complex and powerful ways; patient status can be unstable, with feedback loops that spiral into sudden disasters and unwelcome surprises. Well-trained nurses are familiar with system dynamics of that sort: they understand the pituitary-adrenal-hypothalamic axis; they have studied family systems; and they are alert always to medication interactions and the effects of organ failure on physiology. Each of these requires “knowledge of systems,” that is, knowledge of the body as a system, for appropriate diagnosis and response.

Where “knowledge of systems” is less robust in the preparation of nurses (as well as most other health professionals) is in understanding the work of health care as a system. This ignorance is the harvest less of intent than of historical accidents. In effect, modern health care is an assemblage of component roles, disciplines, and institutions built up more or less independently, and often without much regard for their interactions. Nurses and doctors who will work together for their entire professional lives rarely train together for even a single day. Tasks are compartmentalized. In many medical records “nursing notes” remain separate from “physicians’ notes,” and in many hospital wards the “Nurses’ Conference Room” and “Nursing Rounds” are separate from the “Doctors’ Conference Room” and “Medical Rounds.” The fragmentation runs deep, as reflected in language, oaths, uniforms, schedules, and prerogatives.

In addition, the processes of care themselves, by which I mean the flows and steps through which patients, specimens, information, and ideas pass, are often unclear and designed, if at all, only unconsciously. No one is really sure what all the steps are that a patient traverses from admission to diagnosis to treatment to discharge, and no one is in charge of the entire flow. In Paul Batalden’s words, health care lacks the “catwalks” that make processes visible, and therefore analyzable, in manufacturing. It is very hard to manage and improve what one cannot see or understand, and “process illiteracy” confounds health care redesign often.

This is not inevitable. “How do we do that?” is a perfectly reasonable and tractable question for almost any set of interdependent deeds in health care, just as long as someone is in a position to ask and to mobilize the information to find the answer. The answer may prove embarrassing—there may be no stable process
at all, or the one that does exist can look, upon inspection, absurdly wasteful or unscientific; but, the ability to examine and study processes opens the door to changing processes, which is on the road to improving them.

I am not a nurse, but my guess is that nursing educators will have no difficulty at all recognizing some educational goals in which “knowledge of systems” is already a high priority. For example, I suspect that nursing training for some specialist roles, such as for participation in an open heart surgery team, is full of attention to system dynamics of all sorts. No patient has ever gotten successfully onto and off of a heart–lung machine without exquisite attention by an entire team to process steps, interdependencies, and interactions, likely very consciously designed and monitored.

The task in modernization of nursing education is to generalize the pursuit of system knowledge into all that nursing is and does. Topics of relevance may include (a) health care as a system, (b) general systems theory, (c) queuing theory and flow in care systems, (d) reliability and reliability engineering, (e) lean production, and (f) resilience (Spear, 2008). In the important and special arena of safety, system topics include (g) human factors science (Reason, 1990), (h) team communications and collaboration, (i) failure mode and effect analysis, and (j) properties of high-reliability organizations (Weick and Sutcliffe, 2007), to name a few.

Knowledge of Variation

Professor George Box has said, “All systems produce information on the basis of which they can be understood.” The new professional capable of leading and participating in improvement knows how to hear and use that information.

Measurement is abundant in health care, as nurses well know. Nurses spend an inordinate proportion of their time documenting and recording things; they measure all the time. However, measuring is not at all the same task as using measurement, especially using measurement to improve. When measuring for improvement (as opposed to measuring for judgment or measuring for selection), one is either (a) observing variation to extract ideas or (b) introducing variation to study the consequences.

Observing variation is what nurses do every day in recording a patient’s vital signs, for example. The aim is inference: either that the patient is stable, or that a systematic or sudden change in status is under way. In effect, every blood pressure or temperature measurement is a test of a hypothesis that either “something special is going on” or “nothing special is going on.” Nurses in that role are like other scientists—continually measuring and making repeated inferences (Berwick, 1991).

How well they do that helps to determine patients’ outcomes. “Is the antibiotic working as expected?” “Is the blood pressure coming under control?” “Is the patient entering, or staying in, proper fluid balance?” Upon the answers to
those questions, based on proper interpretation of variation, rest crucial decisions about maintaining or changing theories and therapies. The challenges of proper interpretation are significant, and neither physicians nor nurses yet today receive sufficient instruction in how to understand variation correctly. The consequence of failure are what Dr. Deming referred to technically as two forms of “tampering.” The first form is to react to a random change in a measurement—such as a temporary rising temperature or a temporarily falling blood pressure—as if it were informative (“the antibiotic is not working,” or “this patient needs more pressor”) when, in fact, the observed fluctuation is only random, and would revert if nothing new were done. The converse form of tampering is to classify a change as characteristic of a system when, in actual fact, it is not at all likely to be representative of the general system from which it comes. This misinterpretation can lead one to make a wholesale change in response to a special event, as when our transportation security system radically alters inspection regimes in response to a single, unlikely-to-be-repeated threat.3

As modern medical care and monitoring multiply the volume of information and the number of measurements flooding the nurse at the front line, the demand for technical sophistication in interpreting physiological and biochemical variation rises steadily. The modern nurse should be equipped as never before with the knowledge to interpret variation correctly, to avoid tampering, and to increase agility in appropriate response.

What applies to patients applies to systems of care, as well. The “vital signs” of health care as a system are numerous and, like measurements of patients, increasing in availability daily. System characteristics include, for example, waiting times and delays, rates of complication and outcomes of surgery and other interventions, infection, and mortality, patient satisfaction, costs and levels of waste and efficiency, safety levels and adverse events, and levels of variation in approaches to diagnosis and treatment. Many such measurements are appearing in new forms of accountability of health care organizations and professionals to payers, regulators, accreditation agencies, consumer groups, and licensing bodies. The psychology of such external measurement can be quite negative, inducing fear, anger, and sometimes deceptive practices even among the most committed professionals, but this negative cycle ought not to obscure a basic fact: that the improvement of health care systems requires very much the same type of measurement, used internally, that scrutiny bodies demand and use for other purposes externally (James et al., 2003). Ideally, even if no one else required measurement of infection rates or surgical outcomes, clinicians, themselves, ought to seek them avidly as a crucial resource for making care better.

3 The technical description of the first form of tampering is “reacting to common cause variation as if it were of special cause”; the second form is “reacting to special cause variation as if it were of common cause.” Knowing the difference between “special cause” and “common cause” variation is at the heart of modern statistical process control.
Modern nurses will, of necessity, have to learn the tasks involved in measurement for scrutiny and compliance—that’s the hard fact. But, modernized nursing education will emphasize far more the role and use of system metrics as a support to the continual improvement of health care along all six of the IOM dimensions. Individual nursing practice will, in that mode, include avid measurement and sophisticated interpretation to answer questions of the form: “How is our system doing at X, and what can the variation tell us about how to do better?”

Measurement for improvement goes far beyond mere observation. It includes systematic, local interventions—making changes in processes of care and assessing and learning from the consequences of those changes. An important boundary exists between formal scientific investigations—experiments that ought to invoke the whole apparatus of planning and human subjects protection that are now required in some settings—and the daily practice of continual improvement through the introduction and assessment of better local processes—the “Plan-Do-Study-Act” approach that is at the core of modern improvement methods, and about which we will have more to say below. That said, the modern nurse ought to be equipped to participate in and often to lead systematic changes in work processes, and to assess their effects on the outcomes desired (Langley et al., 2009).

**Knowledge of Psychology**

Largely because interdependency, especially interdependency among people, is so much a characteristic of complex systems like health care, human nature and psychology play a strong role in the success or failure of improvement efforts. Dr. Deming had in mind a rather long list of the components of “psychology” whose understanding and mastery underpin successful improvement work. One short subset of relevant skills is this:

- Conflict resolution and negotiation;
- Group process and meeting management;
- Forging and maintaining cooperation and coalitions;
- Adult learning;
- Understanding motivation, especially intrinsic motivation;
- Communication and signaling; and
- Maintaining a culture of safety.

The unifying concept among these topics is “managing and improving interpersonal relationships,” which can be daunting in a context of high pressures on production, historical boundaries among disciplines and subsystems, hierarchy, and high risk. Scholars of so-called high reliability organizations (HROs) (Weick and Sutcliff, 2007) nonetheless find that it is exactly under conditions of stress, risk, and complexity that relationships matter the most in determining success. It may be impossible for nurses unilaterally to effect better relationships unless
other professionals aim to do the same, but nurses are so central to health care processes that they may well be able to take the lead.

Knowledge of How to Gain Knowledge

Learning in complex systems is, itself, complex. Nonlinear systems confound attempts to develop and enforce simple models of cause and effect, and so traditional, hypothetico-deductive methods to explore cause and effect often fail. We know that in the daily life of parenting, marital relationships, and team sports, where “continual learning and improvement” replaces “planned experiment” as an approach for gaining knowledge.

Even where firm, cause-and-effect knowledge exists in science-based health care—the knowledge, for example, that antibiotic A will almost always kill bacterium B—the application of that knowledge runs straightaway into the messy world of complex systems. That is, reliably getting the antibiotic safely into the body of a patient with that germ turns out to be a constant challenge as systems fail (the order got lost), unpredicted side effects occur (the patient is on an incompatible other drug), local circumstances become highly relevant (the drug is unfamiliar to the new doctor), and errors multiply (the bacteriological report was on the wrong patient). The fact is frustrating and inescapable: in health care, as in any complex enterprise, the simple, scientific facts lie fallow without continual adaptation to local contexts.

The consequence for improvement is this: almost all effective improvements require continual, local experimentation—local growth in knowledge. All improvement requires change (although not all changes are improvements), and proper change requires continual learning. A modern workforce, including modern nurses, is fully equipped to act as “scientists at work.” When the nurse quoted at the top of this essay said, “I have two jobs: my job and improving my job,” she was entering a world of continual trial and learning for both of those roles.

We might call the subject, scarily, “epistemology,” for it involves, after all, a theory of knowledge, itself: the idea that human beings in complex systems best acquire new knowledge by making changes and studying the effects of those changes. But, it is in fact not so arcane at all. This is the form of learning that all healthy people use in almost all the common endeavors of their daily lives—the endeavors that they care about and are in some degree of control over: sports, hobbies, loving relationships, cooking, dieting, and getting a good night’s sleep. In every single case, the individual who wishes to get better finds ways continually to test new approaches, knowing that, as we all know: “If you continue to do what you’ve always done, you’ll always get what you’ve always gotten.” That’s not good enough for your tennis game or your gardening, and it’s not good enough for the work of health care, either.

The jargon of modern improvement is “PDSA”—“Plan-Do-Study-Act.” This describes a simple, iconic cycle of aim-setting, testing, reflection, and change.
based on reflection. The modern nurse who intends to “improve the job” effectively needs to be a master of the “PDSA Cycle” at work. Unlike in gardening or tennis, PDSA at work is not a solo enterprise. Almost all forms of organized quality improvement activity today involve teams; groups, not soloists, carry out the tasks of will building, measurement, idea generation, design and conduct of small-scale tests of change, reflection, and guidance to further action. These compose quality improvement projects. For a modern nurse, participation and leadership in such project work is the form taken of action based on “knowledge about how to gain knowledge.”

LEADERSHIP AND MANAGEMENT SKILLS

The four areas of skill and knowledge explored above—systems, variation, psychology, and epistemology—compose a strong set of goals for modernized nursing education on behalf of quality improvement. One key element is missing, however—the context of leadership and management that allows those skills to thrive. Not all nurses will become formal system leaders during their careers, but those who do will more effectively nurture system improvement if they understand how to lead improvement.

A full exploration of “leadership for improvement” is beyond the scope of this essay, and numerous resources are readily available attempting to describe what leaders need to know in order to foster improvement in the systems they lead (Reinertsen et al., 2008). However, a few leadership-dependent elements deserve special mention because they interact so strongly with the topics addressed above:

• Setting Aims and Building Will to Improve
• Measurement and Transparency
• Finding Better Systems
• Supporting PDSA Activities, Risk, and Change
• Providing Resources

When leaders, including nursing leaders, establish these and other preconditions in the work setting, they can effectively liberate the energy and wisdom of the front-line staff and middle managers to incorporate continuous improvement into their daily work, and they stand a better chance of ensuring that these good-hearted, local improvement efforts align with and support the most important strategic goals of the organization and system as a whole. Just as good teachers in a classroom make it possible for students to become active learners, so do good managers make it possible for nurses and all health professionals to become active, curious, effective, and, ideally, joyous improvers.
SUMMARY

Modern health care demands continual system improvement to better meet social needs for safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity. Nurses, like all other health professionals, need skills and support to participate effectively in that endeavor, and, often, to lead it. Nursing education is poised to accelerate progress by embedding health care improvement skills in all phases of professional formation.

Following are recommendations intended to support this vision:

1. Preparation of nurses should include mastery of knowledge of systems, interpretation of variation, human psychology in complex systems, and approaches to gaining knowledge in real-world contexts.
2. During professional preparation, nurses-in-training should experience and reflect upon active involvement in multidisciplinary quality improvement projects and work settings that foster day-to-day change and improvement.
3. During professional preparation, nurses-in-training should experience, reflect upon, and develop the knowledge, skills, and attitudes that create competence in patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics.
4. Preparation of nurse-teachers and nurse-executives should include acquiring and practicing skills and methods for the leadership and management of continual improvement.
5. Organizations that license and certify nurses or accredit nursing education programs should require evidence of nurses’ preparation for participation in or leadership of teams that work to continuously improve health care systems and individual and population health.

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NURSING EDUCATION PRIORITIES FOR IMPROVING HEALTH AND HEALTH CARE

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The health professions derive autonomy for establishing professional standards and regulatory mechanisms from a social contract that assumes professionals will act in the best interests of the societies they serve. Proposed changes in nursing education, therefore, must derive from broad societal aims. In the United States, we face few challenges as daunting as the one before us, namely to simultaneously improve the health of populations, enhance the patient experience of care (including quality, access, and reliability), and reduce, or at least control, the per capita cost of care (Berwick et al., 2008). Among the many issues that nursing educators could be called upon to address to meet these aims (Cleary et al., 2010; Forbes and Hickey, 2009), I have chosen three that, if addressed, would have significant impact on nursing’s ability to meet society’s needs as outlined by the above “triple aim.”

CONCLUSION I. In order to meet the nation’s need for nurses, people with strong academic preparation need to be educated in collegiate nursing programs in far greater numbers than they are today.

In 1992, Fagin and Lynaugh reviewed the history of nursing education and proposed that societal needs for nursing as an occupation (i.e., a vital work serving the public) and as a profession (i.e., a living body of knowledge and skills) were best met if the proportion of nurses prepared at the baccalaureate (BSN) level exceeded those prepared in associate degree (ADN) and diploma programs (Fagin and Lynaugh, 1992). They proposed three methods (direct transfer linkage, partnership projects, and nurse associate programs) to end the bifurcation of nursing education between universities and community colleges and to ensure that graduation patterns did not result in a workforce with the majority of the country’s nurses possessing the associate’s degree as their highest level of educational preparation. Although features of each of Fagin and Lynaugh’s (1992) proposed methods can be found in programs implemented during the last two decades (for instance, improvements in articulation agreements, partnership projects like the Oregon Consortium for Nursing Education, and differentiation of North Dakota licensure levels), our nation continues to produce far more pre-licensure graduates from ADN than BSN programs annually (roughly 60/40 percent if one includes RN–BSN transition degrees [Aiken et al., 2009]).

The literature debating the relative merits of pre-licensure education at ADN and BSN levels is large and beyond the scope of this paper. Some evidence sug-
gests that the percentage of nurses prepared at the BSN level on hospital units is positively correlated with better patient outcomes (Aiken et al., 2003), and during times when no shortage of nurses exists, the baccalaureate graduate is now the preferred new graduate hire. Nonetheless, most states continue to educate greater numbers of ADN than BSN graduates every year. In North Carolina, new pre-licensure graduates who completed programs in 2006 included only 29 percent who were graduates of BSN or entry-MSN programs (North Carolina Institute of Medicine, 2007). Including the RN-BSN graduates, the total proportion of BSN or higher degree graduates in 2006 rose to only 36 percent (North Carolina Institute of Medicine, 2007). Some states graduate even lower proportions of BSNs among their new nurse graduates each year (California Strategic Planning Committee for Nursing, 2010). Fagin and Lynaugh’s (1992) predictions concerning the diminishing educational levels of the overall composition of the nursing workforce have come true.

States invest in the above combination of nursing pre-licensure programs for many reasons, not the least of which are the lower costs in faculty salaries and student tuition/fees associated with associate degree programs. But another important factor is the geographic distribution of ADN programs, which are more likely to be offered in rural and other medically underserved communities than are BSN programs in American colleges and universities. The Urban Institute, in its recent study of the nursing workforce, reported that medical personnel, including nurses, tend to work near where they are trained, so the distribution of support for nursing education matters (Bovbjerg et al., 2009). Nursing personnel are needed in virtually every community in America, and ADN programs help ensure that the nation has a broader geographic distribution of nursing personnel than we could attain with BSN graduates alone.

Nonetheless, we have created a huge problem with our current educational patterns. By educating more ADN than BSN graduates, we have narrowed the pipeline of nurses likely to go on to graduate school.

The greater the number of nurses in basic practice, the greater the number of nurses needed in advanced roles, such as nurse managers, nurse executives, clinical nurse specialists, and faculty. Health care reform bills may enable greater access to primary care, thus escalating the need for nurse practitioners and midwives. All of these roles require that nurses seek graduate education.

Nurses who receive their pre-licensure education in colleges and university programs are overwhelmingly more likely to go on to graduate school than graduates of ADN programs. Using North Carolina licensure data, Bevill and colleagues (2007) analyzed the pursuit of higher educational degrees of RNs from two cohorts. They reported:

Only 26% of the 2,418 members of the 1983-84 cohort at 20 years and 17% of the 4,211 members of the 1993-94 cohort at 10 years pursued higher degrees, and just 19% and 12% of the respective cohorts did so in nursing. More than 80% of all nurses in either cohort who attained a master’s degree in nursing
APPENDIX I

or a doctorate in any field began their nursing career with a bachelor’s degree. (Bevill et al., 2007, p. 60)

Aiken and colleagues (2009) reported similar results from a national study. They found that of the nearly 1.4 million nurses who obtained ADN or BSN degrees between 1970 and 1994, only 6 percent of the nurses with original ADN degrees had gone on to earn graduate (master’s or doctoral) degrees, whereas nearly 20 percent of the original BSN graduates had done so. Though improving overall educational levels with programs that smooth the pathway from ADN to BSN are valuable, the critical need is to assure an adequate pipeline for graduate education by expanding the capacity of current and future BSN programs.

One important innovation of the last decade has been the opening of accelerated BSN (ABSN) programs for students who already have college degrees in another field. A previous argument advanced in favor of ADN education as a response to nursing shortages (that is, that you could produce new nurses in 2 years instead of 4), became obsolete as universities opened programs that educated BSN graduates in 12–18 months. Currently, there are 218 ABSN programs in the United States and an additional 57 programs that accelerate students in a direct path to a master’s degree (AACN, 2009a). ABSN programs, while addressing the need for new nurses in basic practice, have served as an unusually successful pipeline for advanced practice (APN) master’s programs. They attract students who bring rich backgrounds from other fields, academically successful students, and students who are motivated and know what they want from a career (AACN, 2009a). Bentley (2006) and Brewer and colleagues (2009) found that the accelerated program graduates, when compared to traditional nursing bachelors degree graduates, were more likely to be male, nonwhite, and older, thus addressing the need for increased diversity in nursing. Brewer and colleagues (2009) also reported that the accelerated graduates often moved quickly into management positions.

In February 2009, the American Association of Colleges of Nursing reported 2008–2009 survey data from 663 nursing schools (87 percent of total number of collegiate-level programs) showing that almost 50,000 qualified applicants to collegiate nursing programs were turned away (AACN, 2009a). The most frequently cited reason was insufficient faculty (63 percent) (AACN, 2009a).

To ensure the future ability of nursing education to meet societal needs, therefore, we must increase our capacity to educate college/university-bound students. These graduates will expand the number of nurses in basic practice, but they will also address other critical needs, namely our shortages of nursing faculty and primary care advanced practice nurses.

An additional benefit derives from the fact that students exposed to health care leaders at early stages in their career, as collegiate students are, are likely to become the nursing leaders of tomorrow. (Personal note: At the 2009 Sigma Theta Tau International Biennial Convention, among the nursing leaders honored...
The Future of Nursing: Leading Change, Advancing Health

with prestigious Founders’ Awards, each in accepting their award spoke about the importance of exposure to distinguished nursing leaders early in their careers.)

RECOMMENDATIONS

1. Fund a longitudinal national study to track the percentages of new nurse graduates per year from ADN/diploma vs. collegiate pre-licensure programs by state. Include tracking of data regarding faculty shortages, primary care nurse practitioner and basic nursing shortages by state, with the goal of better understanding the relationships between new nurse educational levels and critical societal needs.

2. Advance media attention to states that exemplify “best practices” in the distribution of new nurse graduates derived from ADN versus BSN programs.

3. Through capitation approaches, direct enrollment expansion funds (from private or public sources, especially federal Title VIII funds) that ensure expansion of pre-licensure programs at colleges/universities until such a time as there is greater equity in production of new nurse graduates.

CONCLUSION II. To meet societal needs for primary care providers, nursing education needs to expand the numbers of annual graduations from programs that prepare nurse practitioners.

Although health care reform legislation remains unfinished, the United States may extend health insurance to more than 30 million Americans with a promise that they (and all currently insured citizens) will have access to high-quality and affordable care. Shortages of primary care physicians, nurse practitioners, and physician assistants are severe under current conditions and will escalate dramatically (as Massachusetts is currently experiencing) if Congress passes the bills under consideration (New England Healthcare Institute, 2009). Health care costs will have to be reduced or contained, or the nation will face an economic burden that is unsustainable. Under any likely scenario, the need for nurse practitioners (NPs) will increase dramatically.

In the most recent academic year, approximately 7,500–8,000 students graduated from NP programs (AANP, 2009). Of the 125,000 NPs practicing today, most qualify as primary care providers (49 percent family, 18 percent adult, 3 percent gerontological, and 9 percent pediatric specialties) (AANP, 2009). Currently, the vast majority of students complete educational requirements for certification exams in their NP specialty at the end of master’s (MSN) programs. Recently, Doctor of Nursing Practice (DNP) programs have been introduced, adding competencies related to organizational systems leadership for quality improvement, information systems and patient care technology, health care policy, interprofessional collaboration and clinical prevention for improving patient and
population health (AACN, 2006b). These competencies, currently provided in post-master’s DNP programs almost exclusively, build on specialty practice education received in MSN programs and, in most cases, practice experience from basic practice, administrative, or faculty roles. It is beyond the scope of this paper to describe fully the rationale for the practice doctorate (AACN, 2004), but major reasons include the demand for formal practice-centered education and scholarship opportunities beyond those provided by the master’s degree and equity issues with other health professionals who have converted their professional master’s programs to professional doctorates in programs equivalent in length to most nursing master’s programs (e.g., physical therapy, pharmacy, etc.).

Most schools of nursing with graduate programs (approximately 475) feel tremendous pressure (whether or not they have the resources to mount quality DNP programs) to convert their master’s or post-master’s DNP programs to DNP programs that prepare NPs for entry into practice because of the American Association of Colleges of Nursing position statements on the DNP, as represented below:

AACN members have endorsed the transition from specialty nursing practice education at the master’s level to the DNP by the target goal of 2015. AACN recognizes the importance of maintaining strong interest in roles (e.g., nurse practitioner, clinical nurse specialist, nurse midwife, and nurse anesthetist) to meet existing health care needs. In response to practice demands and an increasingly complex health care system, programs designed to prepare nurses for advanced practice nursing will begin the transition to the practice doctorate for nurses who initially want to obtain the DNP, as well as for nurses with master’s degrees who want to return to obtain the practice doctorate. AACN will assist schools in their transitioning to the DNP and in their efforts to partner with other institutions to provide necessary graduate level course work. Specialty focused master’s level programs will be phased out as transition to DNP programs occurs. Master’s programs will continue to be offered and will prepare nurses for advanced generalist practice. (AACN, 2006a, p. 12)

No licensure or certification requirements mandate this change to date. Even the Commission on Collegiate Nursing Education (CCNE), the autonomous accrediting agency associated with AACN which will accredit DNP programs, has to date said nothing about requiring a transition to entry-to-practice DNP programs.

The entry-level DNP has been opposed by a minority within the profession since its conception (Dracup et al., 2005; Meleis and Dracup, 2005). Recently, some AACN member deans and the National Organization of Nurse Practitioner Faculties submitted letters to the AACN Board requesting that they remove the threat of the 2015 date for requiring the transition to entry DNP programs (personal communications, November 2009). With a dearth of qualified faculty, many programs of uneven quality are being mounted. But the bigger issue is that
faculty members have begun to realize what a tremendous investment of faculty and student time is required to complete the DNP. Doctoral requirements for independent projects/dissertations are important for building the capacity for DNPs to contribute to quality improvement and translational science, but they take time and commitment to scholarly approaches to inquiry. Schools are realizing that they cannot educate the same numbers of DNPs per year at the entry level as they are currently graduating at the MSN level.

Inevitably, a transition to DNP programs for entry into NP practice would reduce the production of NPs at exactly the time when the country may experience a dramatic increase in need. We have not yet seen a decrease in the number of MSN graduates per year, because only a small number of schools have phased out MSN specialist programs to date. To increase, or even maintain, the current annual graduation numbers of primary care NPs would require funds (from students and schools) to pay for at least one additional year of study for each graduate, sufficient numbers of qualified faculty members to teach the additional year’s program content and supervise individual scholarship projects, and more preceptors for the additional hours of supervised clinical time. These are significant costs during a period of economic downturn that has reduced budgets for almost all schools of nursing.

The irony is that the literature is replete with results of studies showing that the NP workforce, as currently trained, provides patient care of high quality. Pohl and colleagues (2010) reviewed the literature in a recent background paper for the January 2010 Josiah Macy Conference, *Who Will Deliver Primary Care and How Will They Be Trained?* Their summary stated:

NPs have practiced in a variety of models, and the outcomes of their practices have been studied for more than 40 years. Repeatedly, when quality of care has been assessed in studies that are highly rated on strength of evidence, NP providers have been found to provide equivalent, and in some cases, superior care. Because of the supervision requirements and payment models that have funded physicians as heads of practices, evidence about relative costs of care using various primary care provider mix teams has been difficult to obtain. Such studies are needed prior to implementation of any public policy that would reimburse primary care at significantly higher costs. (Pohl et al., 2010, pp. 182–183)

Rather than mandating the increased costs to students, faculty and schools of nursing that would be required to convert to entry DNP programs now, all pressure to start DNP entry programs should be removed, allowing the external environment (societal needs, school budgets, student and employer demand) to settle the issue over time. At a minimum, nursing education should commit to a transition period that will not diminish production capacity at a time of critical societal need. Many organizational leaders (maybe even AACN, and definitely CCNE) would welcome an external voice that emphasized that the needs of patients and society should take precedence over professional aspirations at this time.
APPENDIX I

RECOMMENDATIONS

1. Fund a project that would include RWJF/IOM committee members and representatives of relevant professional organizations involved in APN certification, accreditation, education and practice. Provide facilitative leadership (like Ellen Kurtzman did for the RWJF-funded project to achieve consensus on establishing a Nursing Quality and Safety Alliance) for reaching consensus that DNP programs should be launched as post-master’s programs for the foreseeable future so that nursing maintains or increases the numbers of NP graduates each year.

2. As a secondary goal in the process above, ensure that nursing master’s programs remain targeted at specialist preparation, not generalist preparation as currently proposed by AACN.

3. Fund the development of briefs aimed at state governors and attorney generals that emphasize the importance (to the cost/quality of health care in their states) of removing legal, regulatory, or reimbursement policy barriers to the ability of nurse practitioners to serve as primary care providers or leaders of patient centered medical homes or other methods of patient care delivery.

CONCLUSION III. New models of education are needed to ensure that the competencies required to do the work and improve the work of nursing and health care are embedded in nursing education programs.

Nursing education programs began to transition out of hospital-based, apprenticeship programs into academic settings (colleges/universities and community colleges) over 50 years ago. Aligning nursing education with the dominant American approach to professional preparation in other fields fostered numerous gains for the advancement of knowledge, the development of faculty and advanced practice roles, and the quality of nursing education and practice. Throughout the decades, however, nursing leaders have been challenged by the separation of academic and practice worlds and the difficulties associated with building sufficiently strong links between practice and academe to ensure that nursing students develop the competencies that make them able to work effectively in health care settings (Cronenwett and Redman, 2003; Fagin, 1986). Recent studies of newly licensed registered nurses illustrate that the gap remains (Kovner et al., 2010; Pellico et al., 2009). For example, the new nurses in the study by Pellico and colleagues called for more educational experiences involving 8-hour clinical days, more realistic patient/nurse ratios, and better preparation for communication activities such as change-of-shift reports, delegating, rounding with physicians, and charting (Pellico et al., 2009).

Added to this perennial problem, the first decade of the 21st century was marked by a series of IOM reports outlining the problems with health care qual-
ity and safety. In response, the pace of change in practice settings escalated, as new quality improvement processes and measures were adopted, and data about quality and safety became transparent to the public. By and large, full-time faculty members in schools of nursing were uninformed about these changes as they developed. Not surprisingly, Kovner and colleagues found that 39 percent of new nurses in a 2008 survey thought they were “poorly” or “very poorly” prepared or “had never heard of” quality improvement, although BSN graduates reported significantly higher levels of preparation in evidence-based practice and assessing gaps in teamwork and collaboration (Kovner et al., 2010).

Since 2005, RWJF has funded the Quality and Safety Education for Nurses (QSEN) project (Cronenwett et al., 2007, 2009a, 2009b) to address the challenge of educating nurses who will be prepared to continuously improve the health care systems in which they work. Faculty have available two websites with resources for developing teaching strategies aimed at the knowledge, skills, and attitudes that must be developed to achieve competence in patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics (Cronenwett et al., 2007)—namely the QSEN website at www.qsen.org and the Institute for Healthcare Improvement Open School at http://www.ihi.org/IHI/Programs/IHIOpenSchool/. A series of faculty development conferences and national forums on this topic are being launched by QSEN (through UNC and AACN) to provide further support for embedding these topics in nursing programs.

The rapidity with which nursing faculty can become “out of touch” with the requirements of current practice was made evident during this decade (Sherwood and Drenkard, 2007), and there is much yet to learn about how to overcome the negative consequences of the gaps between nursing education and practice. The Carnegie Commission funded a study of professional formation across multiple disciplines, and a recent book by Benner and colleagues (2009) described a call for radical transformation of nursing education. To the point being raised here, the multiyear study concluded that there needs to be better integration of coursework with clinical experiences, so that coursework and classroom learning are tied to what actually happens in patient care rather than being studied in the abstract. Faculty, they argue, must help students make the connection between acquiring and using knowledge, so that students develop clinical reasoning skills for the diverse, complex practice that is nursing (Benner et al., 2009). Faculties cannot perform these functions unless they possess clinical expertise or work closely with nurses in practice at each step from curriculum design to development of simulation, classroom and clinical teaching strategies, and assessment of student performance. Likewise, there are great challenges associated with teaching system competencies (as opposed to the competencies related to the care of individual patients), such as interprofessional teamwork and collaboration, safety sciences, or quality improvement, when faculty are not actually doing the work of improving health care systems themselves.
Nursing faculties and their practice partners have tried a variety of strategies to continuously improve the preparation of students for practice. Some examples (without citing a huge literature) are capstone courses with staff nurse preceptors, dedicated education units, faculty practices, inter-professional learning experiences, cross-appointing nursing staff on faculties and faculty members on patient care units, requiring teachers of undergraduate students to practice at least a day a week, hiring clinical experts to help faculty develop cases for simulated clinical teaching, and keeping student clinical experiences in one institution for greater depth in exposure to safety cultures, quality improvement projects, and electronic health records. More innovation is needed, along with studies that will help identify “best practices” for dissemination.

The other major barrier to achieving effective practice competencies is the lack of a structured and financially supported residency training program during the first year of initial licensure as a nurse. Because schools of nursing prepare pre-licensure graduates as generalists, newly licensed nurses, by definition are not prepared with the knowledge and skill base for practice with specific patient populations. Wherever a new nurse begins practice, a period of mentored supervision and support should be provided. The National Council of State Boards of Nursing is working to promote criteria for the transition to practice period that would need to be met before the new nurse was relicensed at the end of the first year of practice (NCSBN, 2009). AACN and the University Healthsystem Consortium offer support, and accreditation through CCNE, for nurse residency programs aimed at BSN graduates (AACN, 2009b). Nonetheless, no consistent requirement for nurse residencies reinforces the importance of this phase of education for the practice of nursing.

**RECOMMENDATIONS**

1. Promote innovation and evaluation of novel approaches to improving preparation for the practice of nursing through designated Title VIII (HRSA, USPHS) funding mechanisms.
2. Urge accrediting bodies (CCNE and NLNAC) to require evidence that faculty have the practice expertise or effective clinical partnerships to prepare students for the work of nursing practice and improving the work of nursing and health care.
3. Promote funding mechanisms for the development and testing of new methods of interprofessional education through simulation, case studies, and clinical practice.
4. Promote innovation and evaluation of models that engage nursing faculty in the work of improving health care.
5. Support learning collaboratives of state boards of nursing who are willing to work out the issues related to implementing regulatory requirements for transition to practice residencies as a prerequisite for initial relicensure.
6. Require that any hospitals receiving GME monies for “nursing education” devote those resources to supporting transition to practice residency programs.

FINAL THOUGHTS

The exercise of choosing only three areas of focus for this paper makes me realize the challenge that RWJF/IOM committee members face as you decide what actions to take to ensure that nursing meets the needs of the public for the foreseeable future. I hope the ideas from these collective papers on the future of nursing education assist you in your difficult but important task.

REFERENCES

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The future of nursing has changed drastically over the past few decades. The complexity of care in many diverse settings, the role of advanced practice nurses as independent providers, and the growing recognition of the important role of scientific evidence upon which to base nursing practice have changed the way nurses are viewed by the public and the way they should be educated. The complex demands of practice combined with a shortage of experienced practitioners in many of the health care professions have created opportunity and, in some areas, a state of potential crisis. As health care reform looms and the population continues to age, nursing education must embrace these challenges, expanding and improving on what it offers currently to better prepare the nurse of the future.

Many issues face the nursing profession today; all seem to be filled with odd contrasts.

- Nursing is a profession characterized by a highly complex practice with nurses often making life and death decisions. Yet the formal education required to prepare clinicians for this challenging practice is less than any of the other health professions (i.e., nurses can currently practice with a 2-year associate degree and 80 percent who enter the profession with this degree choose not to get further formal education in the form of another degree) (Aiken et al., 2009).

- The projections for nursing shortages in the near future are alarming, but the urgency of those shortages are blunted by the current economic crisis that has kept many nurses in the workforce and has reduced vacancy rates. The seeming resolution of the shortage has diverted the attention of the media and government to other problems and has reduced the chances that nursing education will receive the resources it needs to expand enrollments.

- A current and projected faculty shortage is a serious impediment to solving the preparation of new nurses, but nursing faculty remain one of the most poorly compensated categories of nurses.

- Nursing is a profession that increasingly must be based on science and strong empirical data and yet the number of scientists within it to generate new knowledge remains disappointingly small.

- Nursing is a profession charged to care for a highly diverse population of patients and yet it remains highly nondiverse in gender, race, and ethnicity. The lack of diversity among nurses, with the consequent discordance
between clinician and client, serves to reduce the effectiveness of the care nurses provide.

- Finally, it is a profession that must have strong interprofessional relationships with other members of the health care team to be effective and yet nurses (and other health professionals) are educated traditionally in silos with little exposure to students in other health professions and no formal opportunities to develop team skills.

This list is undoubtedly incomplete. Even taken alone, it underscores the need for a critical reappraisal of how we educate the next generation of nurses and what recommendations we make to federal and state governments, as well as to the organizations responsible for accrediting nursing educational programs, to provide appropriate preparation and economic support to the next generation of nurses.

Three issues will be highlighted in this paper: the shortage of nurse scientists, the lack of educational preparation for preparing nurses to provide patient-centered care within an interprofessional team of health care providers, and the lack of effective formal teaching in pre-licensure programs in the areas of nursing science, natural and social sciences, humanities, and leadership. Two of the three are particularly germane to university-based schools of nursing who are facing severe faculty shortages and to practicing clinicians who make decisions each day based on tradition rather than empirical evidence. The third area was highlighted in the recent Carnegie Foundation Report on nursing education (Benner et al., 2010) and has important ramifications for the entire nursing profession and for the future health of our nation.

**THE SHORTAGE OF NURSE SCIENTISTS**

According to the most recent survey of the RN population conducted by the Health Resources and Services Administration (HRSA) in 2004, the number of RNs in the United States is 2.9 million (U.S. Department of Health and Human Services, 2006). The number of nurses prepared at the master’s or doctoral level rose to 376,901, which was an increase of 37 percent from 2000 (U.S. Department of Health and Human Services, 2006). Although 13 percent of nurses hold a graduate degree, only 1 percent have a PhD and are prepared to conduct independent research in their field. In fact, only 555 students graduated with a PhD in nursing in 2009, a number that has been relatively unchanged for the past decade (AACN, 2009). Thus, the numbers of nurse scientists working to create the empirical data upon which nursing practice is based is trivial compared to the need.

Why do so few nurses pursue doctoral study? The problem is not access. The number of PhD programs has doubled over the past two decades; however, the number of nursing graduates prepared at the PhD level has remained essentially
unchanged (AACN, 2009). Three reasons for the continuing shortage of nurse scientists can be posited. First, educational preparation at the associate degree or hospital diploma level serves as an impediment to easy access to graduate study. In 2004, 34 percent of registered nurses (n = 981,238) reported the associate degree as their highest level of nursing or nursing-related education, while 18 percent (n = 510,209) held a hospital diploma (U.S. Department of Health and Human Services, 2006). Over 50 percent of nurses today would face approximately 8–9 years of formal university-based education in order to receive a PhD compared to the 4–5 years required to attain a PhD in other disciplines that require a baccalaureate degree. Entry into the nursing profession at the associate degree level serves as a disincentive for the majority of nurse graduates to continue further study to the PhD level (Cleary et al., 2009). Even more disheartening is the fact that the number of nurses whose highest educational degree in nursing is the associate degree has increased by 232 percent since 1980 (U.S. Department of Health and Human Services, 2006). Moreover, the vast majority of these nurses (i.e., those who obtain an associate degree to practice nursing) do not pursue a bachelor’s degree anytime in their career. In 2004, only 21 percent of RNs initially educated in associate degree programs had received a baccalaureate degree, while only 6 percent of this population had gone on to obtain a MS or PhD degree (Aiken et al., 2009). Thus, nurses prepared at the associate degree level are highly unlikely to undertake doctoral study during their careers.

Second, nurses have more interruptions in their careers and often begin doctoral study at a later age than individuals in other disciplines. The nursing profession traditionally has viewed clinical experience as a prerequisite to graduate education and new graduates were encouraged to practice clinically by faculty and peers between degrees rather than continuing straight on to obtain a PhD. This career path has resulted in the norm of nurses returning for a master’s degree in their mid-thirties to become an advanced practice nurse (e.g., nurse practitioner or clinical nurse specialist) or administrator, then returning to the workforce for another decade, and finally returning to graduate school to obtain a PhD in their late thirties or even older. Nurse scientists complete their doctoral degrees, on average, at the age of 46, which limits the number of years they have to build a scientific program and contribute to the scientific base of nursing practice (Dracup et al., 2009). To help reverse this trend, many nursing schools have developed programs that admit students into graduate programs directly from undergraduate or master’s programs and faculty are slowly changing their commitment to this model of advisement.

Third, faculty salaries provide an important disincentive to return to school to obtain a PhD. Although academics in all disciplines are rarely compensated at the same level as their peers in industry, the disparity for nurses is one of the largest. Nurses working as clinicians make, on average, 30 percent more than assistant professors, who typically make from $50,000 to $70,000 at the assistant professor level (Dracup et al., 2009). Advanced practice nurses make, on average, 100 to 150 percent more than assistant professors (Cleary et al., 2009). In a recent
survey conducted by the American Association of Colleges of Nursing (AACN) to describe the nursing faculty shortage, respondents cited inadequate salary as the number one cause of the faculty shortage (Fang and Tracy, 2009).

Besides the three reasons cited above to explain the low number of PhD-prepared nurses, the development of a professional doctorate (i.e., the Doctor of Nursing Practice or DNP) is also a trend worth noting. The degree was introduced in 2004 by the American Association of Colleges of Nursing (AACN) with a recommendation by its members to adopt the DNP degree for all advanced practice nurses by 2015. The degree is designed as the terminal degree for nursing practice and may be combined with a PhD for nurses interested in conducting translational science. The reasons given by the organization at the time of adoption were the following: the rapid expansion of knowledge underlying nursing practice; increased complexity of patient care; national concerns about the quality of care and patient safety; shortages of nursing personnel which demands a higher level of preparation for leaders who can design and assess care; shortages of doctorally prepared nursing faculty; and increasing educational expectations for the preparation of other members of the health care team. The degree has been a source of contention within the profession and has evoked concerns by various physician and nursing organizations (AMA, 2010; Dracup et al., 2005). However, DNP programs have mushroomed across the states with 92 currently awarding degrees and another 102 in the planning process (AACN, 2009). Whether or not DNP programs will attract applicants that would not have been interested in a PhD is unknown and what affect it will have on future PhD applications is also unknown. However, it is important to note that the program is focused on preparing its graduates “to fully implement the science developed by nurse researchers prepared in PhD, DNSc, and other research-focused nursing doctorates” (AACN, 2010). Its graduates are not expected to contribute scientific discoveries or to lead interdisciplinary teams of scientists. Thus, the DNP will not meet the need for more nurse scientists and it may contribute to their shortage.

Recommendations Related to Shortage of Nurse Scientists

- **Address the pipeline.** A major impediment to attracting the large number of nurses scientists needed in the future is the high percentage of nurses prepared in community colleges. Federal and state funding needs to be allocated to creating innovative solutions to assisting graduates of community colleges to get BS degrees such as allowing community colleges to award BS degrees (a controversial but attractive option) or developing programs like the Oregon model where all nursing students are enrolled in the university and have the option of completing a fourth year to attain their BS degree (Tanner et al., 2008).

  It would be helpful if the committee clarified the role of the DNP for the broader community and considered the impact of DNP programs on the shortage of PhD graduates. It is currently not clear whether universi-
ties will appoint DNP graduates to tenure-track positions, but clarification of this point will be important for the profession as it continues to clarify the differences between the two doctoral degrees. Do nurse scientists conducting translational research need both a DNP and a PhD? If the answer is yes, the pipeline has just become longer.

- **Augment federal and state funding for PhD students and their research.** One way to compensate for low faculty salaries is for nursing students to be relieved of their educational debt. The Nurse Faculty Loan Program under Title VIII creates a student loan fund within individual schools of nursing that students can access. Students who teach at a school of nursing following graduation cancel up to 85 percent of their educational loans plus interest. In 2007 and 2008, 729 students were funded nationally each year, a 43 percent decrease from the preceding years.\(^4\) With almost 4,000 students in PhD programs in nursing during those same years, as well as an unknown number studying in other disciplines, this program needs to be strongly augmented and widely publicized.

  A second program under Title VIII provides educational grants to schools (i.e., Advanced Education Nursing Grants) that can be used to support students in graduate programs. Again, the amount available for individual schools is paltry compared to the need. For example, the University of California San Francisco School of Nursing receives an average of $200,000 of AEN funds annually to support 720 graduate students. Student debt is inevitable and the dream of a faculty position fades quickly.

  Funding for pre- and post-PhD research and study is available through the National Institute of Nursing Research, but again this funding has been severely limited. Historically the Institute was funded at one of the lowest rates among all the institutes at the National Institutes of Health since its inception, which limits its ability to support doctoral students.

  Two other new sources of funding are pending and require strong support by the Committee on the Future of Nursing. Nursing organizations have long urged Congress to redirect Medicare funding (GME funds) that currently is restricted to hospital diploma nursing education toward graduate education (Aiken et al., 2009). This change would give hospitals incentive reimbursement for students and allow hiring of additional faculty. Also, capitation grants (similar to the Nurse Training Acts of 1971 and 1975) would allow schools to recruit additional doctoral students as well as improve facilities and hire faculty. The bleak outlook

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\(^4\) Source: Division of Nursing, Health Resources and Services Administration 2006−2008 as summarized in AACN’s Congressional Requests: A Focus on Promoting Access to Quality Health Care.
for nursing faculty shortages will not change without massive changes in federal support for nursing education.

A LACK OF INTERPROFESSIONAL COLLABORATION IN EDUCATION

In both acute and chronic health care settings, there is mounting evidence that interprofessional practice models are effective in improving patient outcomes, patient and provider satisfaction, and health care costs (IOM, 2004; Needleman and Hassmiller, 2009). However, these models of interprofessional practice are not based on the educational experiences of health care professionals, who are most often taught in university departments or schools that function as educational silos that encourage little or no contact with students from other professions. Students from schools of medicine, nursing, and pharmacy, for example, rarely share courses, participate in discussion groups, or experience faculty (and therefore role models) from health care professions other than their own during their formal education. The tradition of educational isolation in the health care disciplines encourages the maintenance of historical stereotypes and discourages the communication skills and understandings that are essential for effective teams.

Unfortunately, assembling multiple professionals together in a single clinical setting after graduation does not guarantee interprofessional collaboration will occur, despite the fact that it is increasingly recognized as fundamental to the quality and safety of patient care. Role confusion can abound. For example, physicians and nurse practitioners share many of the same role functions despite a very different philosophical orientation, which can be source of conflict and differing priorities. Clinical nurses specialists and social workers both focus on the family system, which may lead to confusion of responsibilities and functions. Professional organizations may fuel professional rivalries by conducting various turf protection exercises, particularly related to reimbursement. Hospitals, where much of health care is delivered, have rigid organizational structures and professional hierarchies that often serve to create a “we” vs. “they” structure within the different disciplines represented on a team that is the antithesis of a highly functioning team. Students need to gain the skills of communication and collaboration across health care disciplines early in their careers if they are to function effectively in professional teams.

The benefits of creating an interprofessional educational experience are great. Students are able to exchange different theoretical perspectives, address historical stereotypes, and develop communication and leadership skills that are critical to highly functioning teams in the clinical setting (Spear and Schmidhofer, 2005). An important benefit from the standpoint of university administrators is the potential for sharing resources, including expert faculty, space, and physical equipment. For example, an increasing number of universities are beginning to build simulation centers designed for interprofessional student teams to par-
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THE FUTURE OF NURSING

participate in exercises designed to increase teamwork. Sharing a single simulation center provides the various professional programs with opportunities for realistic interprofessional learning that are difficult to arrange in real clinical practice. The simulation exercises build confidence before contact with real patients and provide a safe environment where mistakes become learning opportunities. Working together on patient scenarios and real-life case studies can also improve teamwork and promote better understanding between professions.

So if collaboration and effective communication among disciplines is so valuable, why is it so little in evidence in nursing education? Some of the reasons are historical. Student nurses in hospital diploma programs were often taught by medical faculty. When nursing education moved out of the hospital setting, some nurse educators were eager to shed the tradition of medical faculty as well. Medical schools, in turn, migrated to universities decades before schools of nursing. This difference in timing meant that many schools of medicine were established without any school of nursing, and they still do not have a nursing program in the same university. Nursing programs are now housed in community colleges or in universities that do not have schools of medicine or other health disciplines. Curricula for different health professions were developed without collaboration from other disciplines. The most egregious symptom of the lack of collaboration in education is the large number of medical programs that are on different academic calendars than the other health care disciplines in their same university, making it difficult for students to have a platform for collaboration.

Ultimately it is the responsibility of educators in the various disciplines to create a learning environment in which students, preceptors, and patients may teach and learn from one another. They can do this through a variety of strategies:

- A single orientation day for the health professions that introduces the philosophy of interprofessional education,
- Joint faculty appointments,
- Shared courses across schools that includes the completion of assignments by interdisciplinary teams,
- Interdisciplinary student-managed clinics,
- Social networking sites that include students from all health professions, and
- Interprofessional social events sponsored by the university.

Educated in an interdisciplinary model, individuals entering the workforce will do so with the mindset that collaboration among all health care practitioners is how patient care should be approached. The mindful inclusion of interprofessional educational experiences potentially will lead to more effective communication across disciplines and ultimately patient care that is safe, cost-effective, and of high quality.
Recommendation Related to Interprofessional Collaboration in Education

- Develop and implement strategies to reward interprofessional collaboration in nursing education. The development of the Clinical and Translational Science Awards by NIH is a model of how to develop a culture of interdisciplinary teams where none existed. Creating an award structure that demanded interdisciplin ary collaboration among scientists forged many researcher alliances on university campuses. Similarly, the education of health professionals must be viewed through a different lens than is currently used. Accrediting bodies and university review committees should include interprofessional collaboration as part of the criteria for a quality nursing program, as well as the programs of other health professions such as medicine and pharmacy. Expectations for interprofessional collaboration must be set in university program reviews, accreditation criteria, and individual faculty promotion criteria if a change in culture is to be achieved.

PRELICENSURE NURSING EDUCATION

This third area is the easiest and the hardest to present. It is the easiest because it has recently been the topic of an exhaustive study by the Carnegie Foundation. It is the hardest because the findings of their study are complex and required a full-length book to present (Benner et al., 2010). After numerous site visits and countless interviews, the authors made 26 recommendations that deserve serious consideration by the committee. It seems that to ignore the major findings of the first systematic study of nursing education in decades would be folly.

Briefly, the research team of Benner and colleagues focused on a variety of basic nursing programs by which students are prepared to take the NCLEX-RN examination and become registered nurses as well as one RN-to-BSN program. They visited two community college programs (billed as 2 years in length but often 4 years because of the required prerequisites and waiting list times), three generic baccalaureate programs, two fast-track second baccalaureate degree program of 14–18 months designed for students with a bachelor’s degree in another field, a single diploma program offered through a freestanding school of nursing affiliated with and sponsored by a hospital (2–3 years in length), and a single master’s entry level program that provided a prelicensure program for students with a bachelor’s degree in any subject followed by a 2-year master’s program. The researchers identified three areas of apprenticeship in basic nursing programs: acquiring and using knowledge and science, developing skilled clinical reasoning, and ethical comportment and formation. They found the latter two areas adequately or more than adequately addressed in the educational programs they reviewed. They found the former sadly deficient across all programs where students were often subjected to thousands of power point slides as a substitute...
for knowledge transfer. Given the complexity of patient care in today’s demanding environment and the increasing independence of nurses who must judge among various treatment alternatives and select the best course of action, the lack of nurses’ preparation for their role in terms of scientific principles and clinical knowledge is somewhat astounding and clearly disturbing.

The review team found the variety of prerequisites across programs troubling, particularly in light of the large number of applicants coming with a degree from another bachelor’s degree program. Some nursing programs had stringent science prerequisites while others had almost none. They were concerned that, in particular, RN-to-BSN programs often did not have the depth of science courses required for grounding appropriate clinical knowledge. Ultimately the sciences required to prepare students for nursing education must be rigorous and similar across programs.

Finally the pedagogies of the classroom were noted to be sadly deficient compared to the effective pedagogies of teaching in the clinical setting. Classroom instructors need to adopt the teaching methods that are so effective in the clinical world of patient care, while also increasing the quality and level of nursing science, natural and social sciences, and humanities.

Recommendations Related to Prelicensure Education

- **Standardize Prerequisites.** The lack of standardization across different programs means that students in the same program bring varying degrees of preparation to their learning of the clinical science required for care of patients. The profession must create a standard list of relevant prerequisites in the humanities, natural sciences and social sciences that all programs would be expected to adopt.

- **Require the BSN for entry into practice.** This is perhaps the most contentious of recommendations but also the one that has eluded the profession for the past five decades. The various entry paths into the profession have been confusing to the public and to other health professionals. It will be important to provide incentives for nurses with AD degrees to return for a BSN or, when possible, a MS degree. Articulated programs will be crucial as we move towards an all BSN entry into the nursing profession.

- **Consider more effective teaching strategies related to the transfer of clinical science in the preparation of new nurse graduates than currently used.** A great deal of research has been conducted over the past two decades on problem-based learning and other teaching strategies effective in engaging students in learning. According to Benner and colleagues (2010), many of these have not been adopted by faculty teaching the formal component clinical science. They recommend that pedagogies be developed and used to keep students focused on the
patient’s experience. Medical pathology and disease mechanisms are best taught in direct association with patients’ illness experiences, psychosocial responses, and needs for self-care. Simulation exercises, case studies, and group experiences can all be used to enhance learning. Since many of these learning strategies have been adopted by our colleagues in the other health sciences, models are available. National repositories of case studies would be of great support in this transition from the “death-by-PowerPoint” lecture format to a more student-engaged and patient-focused format.

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NURSING EDUCATION: LEADING INTO THE FUTURE

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“Nursing is the protection, promotion, and optimization of health and abilities; prevention of illness and injury; alleviation of suffering through the diagnosis and treatment of human responses; and advocacy in health care for individuals, families, communities, and populations.”


INTRODUCTION

The educational preparation required for a career in nursing today is not what it was in 1971, nor should it be. Sadly, Benner, Sutphen, Leonard, and Day (2010) have reported that too often nurse educators replicate their own educational experience for students, failing to recognize the many reasons why such preparation is inadequate to meet the needs of today’s nurse. In fact, nursing education is not the business of preparing nurses for today, but for tomorrow.

The invitation to identify three critically important areas of reform in nursing education has proven to be a more difficult assignment than was initially obvious to me. A lifelong educator, I feel as though I have been given three wishes. If I could “rub the lamp” and change three things, what would they be? Why would I select these reforms and how would I undertake the needed changes? The invitation, not a simple intellectual exercise, begs the question of me—“What am I, in my capacity as a leader in nursing education, doing to address the future?” And the personal vulnerability lies in confronting the possibility that if I identify three reforms that have little relationship to my daily work, I may be part of the problem.

To contextualize my comments, I offer a few observations about my career and point of view. I have worked as a nurse educator in baccalaureate and higher degree programs since 1974. My appointments have taken me to public and private institutions, secular and religious, and most often to large academic health centers. Over the last 25 years, my classroom and mentoring activities have focused on the preparation of advanced practice nurses for primary care and the preparation of nurse scientists; I have remained in contact with entering, second degree students in nursing by teaching a course on leadership. Since 1993, I have held major administrative responsibilities, first as a department chair, later as a dean, and currently as a dean and vice chancellor in a large academic health center within a university distinctive for its culture of interdisciplinarity.
REFORMING NURSING EDUCATION:
THREE PRIORITIES FOR ACTION

The complexity of today’s world could not have been imagined when nursing instructor Gwendolyn Fortune followed me from hospital room to hospital room during my senior year clinical rotation in Team Leading. I have often recalled her insistence that I make good use of my time while conducting patient rounds, doing at least three or four things at once: check on the condition of the patient, make sure the room is clean and the facilities are in good working order (e.g., night lights have working bulbs), that no unnecessary equipment has been left in the patient’s room and that the members of the care delivery team have completed their assignments as scheduled. Although I was a successful pupil, at 21 years of age I found her to be a bit overbearing and exceptionally humorless. Years later, I looked back on my educational experience with her and realized two things: (1) being organized, observant and able to multi-task were all valuable assets; and (2) her name was “Miss Fortune.”

The skills gained under the direction of Miss Fortune have continued to be valuable to me, despite the changes in the patterns of care delivery and the movement away from team leading. She introduced me to basic management and I will always be grateful. The anecdote also serves as a reminder that while some lessons are enduring, and the basic skill sets timeless, much of the content of nursing education has changed. The body of knowledge required for safe practice has grown geometrically, as have the tools for accessing information, and the skills required for the safe delivery of care. Educational reforms must address how we improve access to needed and relevant information for students within nursing, how we develop the nurse’s ability to access and use information following program completion and how the educational pathway is ordered to assist in build a career pathway in clinical nursing. I believe the three reforms I have selected will address these broad concerns.

REFORM 1. Place greater emphasis on the development of committed partnerships that will enrich nursing education programs, specifically partnerships with nursing service, medical education, and a select group of disciplines that are especially relevant to health and health care delivery (engineering, business, policy, law, and the environment).

The fractured relationship between nursing education and nursing service must be repaired. Although somewhat exaggerated, many would generalize that academic nurses view nurses in service delivery as anti-intellectual and, conversely, the service delivery community views academic nursing as irrelevant and out of touch. The chasm works against the progress of both communities, communities that are actually one, separated by two distinct corporate missions.
A variety of structures designed to bring nursing education and service into closer alignment were implemented at the University of Florida (Dorothy M. Smith), Rush (Luther R. Christman), Rochester (Loretta C. Ford), and Case Western Reserve (Joyce Fitzpatrick) in the 1970s. In several of these models, one leader was appointed to oversee both education and service delivery. Dually appointed faculty members were expected to teach and deliver care or provide leadership in the care delivery setting. Faculty complained that their days were unending and the combined work of delivering clinical care and teaching was impossible. By the 1990s these models unraveled and the leadership functions were again assigned to separate leaders, one for education and one for service. By necessity and given a world of competing demands, the delivery of care requires an immediate focus on the life and death needs of patients, the “tyranny of the urgent,” and this overrides the needs of students or scholarly projects, which are less time-sensitive. But the separation of education and service has resulted in a practice–education gap that is growing. Benner and colleagues suggest that the problem is largely due to nursing education’s inability to keep up with changes in the service sector (Benner et al., 2010).

The problem is not new. In 1983, the Institute of Medicine report, Nursing and Nursing Education: Public Policies and Private Actions, included the following recommendation:

Closer collaboration between nurse educators and nurses who provide patient services is essential to give students an appropriate balance of academic and clinical preparation. (IOM, 1983)

That 27-year-old report urged the federal government to offer grants that would promote collaboration.

The American Association of Colleges of Nursing has advocated for the development of strategic partnerships between education and service and their website includes profiles of selected arrangements that appear to be successful. The American Organization of Nurse Executives website lists materials for education and service partners to evaluate their collaborations. Calls for education–service partnerships continue in the nursing literature (Gilliss and Fuchs, 2007).

**Recommendation 1:** Where possible, particularly at Academic Health Centers, promote governance structures that combine the strategic, rather than the operational oversight for nursing.

**Recommendation 2:** Require the demonstration of an education–service partnership in accreditation criteria for education and service settings, to include such activities as
shared governance, shared teaching, shared clinical problem solving, and participation in continuing education.

Today’s faculty shortage is thought to relate, in part, to salary disparities between education and service. The median annual salary for a beginning registered nurse (who may not have a college degree) was $62,089 in April 2009 (Salary Wizard, 2010); the median salary for a doctorally prepared assistant professor was $89,973 in 2009 (Fang et al., 2009). Although the salary difference of approximately $28,000 may seem a large increase, the additional educational expenses combined with opportunity costs of returning to school may be daunting for some nurses. The implementation of the Nursing Education Loan Repayment Program has eased the financial pain for those nurses who wish to direct their careers toward roles in education. The loan program now repays 60 percent of the qualified loan balance in exchange for 2 years of service in an approved shortage facility. An additional 25 percent may be negotiated for a third year of service (HRSA, 2010). The program holds the promise of preparing more faculty members to teach, but that does not address the development of specific competencies required to teach in clinical areas. In fact, many newly doctorally prepared nurses anticipate moving into faculty roles where they can redirect their careers toward nonclinical pursuits. The faculty shortage is real, but the more specific problem is identifying faculty talent to teach in the clinical area. Those competencies are in short supply and we need to create incentives to promote the development or maintenance of clinical expertise and clinical engagement.

**Recommendation 3: Require nurse faculty members to maintain professional certification and tie these qualifications to educational accreditation. Develop institutionally based incentives for faculty to maintain clinical competency, such as participation in a faculty practice plan.**

In many fields the careers may reflect a migration from industry to education to public service and back. This has not been typical in nursing. Movement from the practice setting to the educational settings and back has not been valued. Rather, a distinct skill set and preparation has been identified for each role. Increasingly, educators are expected to have a background in curriculum design, tests and measurement and pedagogy. The criteria for advancement in the academy represent yet another barrier. Adhering to the standards set by most universities, academic nursing programs impose specific, rigorous and rather narrow criteria for appointment and promotion. These criteria rely more heavily on scholarly accomplishments than on practice acumen. The net effect is the evolution of a professorate with limited knowledge and experience in the practice environment (which is seen as a distraction to the development of a program of
research) and limited understanding of how to prepare graduates for the realities of practice.

**Recommendation 4: Expand criteria for faculty appointment and advancement to include recognition of practice-based accomplishments, including leadership, innovation and evaluation. Normalize the career movement between the practice and educational settings within nursing.**

Every report published by the IOM for the last decade has called for the use of teams for the delivery of care. (I am completely confident that one of my fellow authors will go into this issue in detail, but I will list the recommendation for the record.) Reports suggesting that teams do affect better patient care outcomes (Grumbach and Bodenheimer, 2004), but there is very little evidence that effective educational approaches for co-education of members of the health care team have been enacted, evaluated, and replicated. Team work is an essential skill in today’s health care delivery system and students must be prepared to function on teams. Incentives must be direct programs toward making this change.

**Recommendation 5: Promote funding initiatives that will plan and implement classroom and clinical co-education of health care providers, particularly nursing and medicine. Explore existing federal mechanisms to sustain worthwhile results, for example the combined use of Titles VII and VIII for models within primary care.**

Although universities organize themselves into orderly pods called disciplines, real-world problems seldom emerge as discipline-specific. The order imposed by disciplines directs those within the discipline toward a quasi-proprietary body of knowledge, provides a set of tools for discovery, and frames data elements systematically to promote problem solving. But, the down side of that order is that disciplines tend to bring the same basic set of information and solutions to novel problems. Said another way, if your only tool is a hammer, then all your problems look like nails. Some believe that multidisciplinary collaboration has moved from the periphery to the core of our work in universities (University Leadership Council, 2009). The problems we face are simply too diverse and complex to approach with old solutions. The content and problem solving approaches used within the discipline of nursing will be enhanced through closer educational exchange with other disciplines.

**Recommendation 6: Although others sources provide greater detail on the specific curricular changes needed (see Benner et al., 2010), alliances with other disciplines**
will yield new approaches to the problems faced in nursing education and service delivery. In particular content and practical experiences should be developed with engineering, business, public and health policy, legal, and environmental experts.

**REFORM 2: Recognize the important role that translation will play in strengthening nursing education, improving nursing practice and connecting the two.**

The IOM report, *To Err is Human: Building a Safer Health Care System* estimated in 1999 that many as 98,000 people die in hospitals each year as a result of medical error (IOM, 1999). Further, these errors have been estimated to cost approximately $37.6 billion each year; roughly half of the expense is attributable to preventable errors (AHRQ, 2010). In the decade since that report was published the care delivery community has undertaken needed reforms to appoint patient safety officers and promote cultures of safety that will assist in the creation of a quality and safety conscious work environment. Within the education community the Robert Wood Johnson Foundation sponsored the Quality and Safety Education for Nurses (QSEN) project (Cronenwett et al., 2009), directed by Linda Cronenwett. The lessons of the QSEN project provide some direction for other areas in which there are education–practice gaps.

In brief, Cronenwett and colleagues found that faculty interested in creating a quality and safety curriculum acknowledged their limited expertise and willingness to engage in a collaborative. With a relatively small financial package, teams from a group of 15 schools participated in an educational collaborative that developed and implemented systematic curricular changes that were clinically relevant. In this case, critically important knowledge was disseminated to the educational environment.

**Recommendation 7: Identify the top ten priority areas for faculty learning and use similar, evidence-based approaches to accelerating the development of expertise/capacity (learning collaborative) in key areas. Provide public recognition for those educational environments that have developed expertise in the ten areas. Encourage a service-delivery focused organization, such as the American Organization of Nurse Executives, to lead the identification of topics and the development and implementation of the recognition.**

Conversely, useful evidence produced within the academy does not always find its way into clinical practice. Numerous sources cite the frequent disconnect between practice decisions and the evidence that would support them (IOM,
THE FUTURE OF NURSING

2001; Melnyk and Fineout-Overholt, 2005). The management of information, though improved through technology, requires additional resources for use in the clinical setting.

**Recommendation 8: Enlist nursing education (that is, faculty and students) in clinically based activities supporting knowledge development and process improvement at the point of care.**

The establishment of the Doctor of Nursing Practice (DNP) has been controversial within nursing (Dracup et al., 2005; Meleis and Dracup, 2005) and beyond (Landro, 2008). The design and implementation of DNP programs has varied considerably from Columbia University’s focus on the development of doctorally prepared advanced practice nurses who can utilize skills and knowledge to independently provide expert nursing care in all care settings (Columbia University, 2010), to programs like Duke’s that focus on leadership, innovation, and translation and aim to a prepare nurse leaders for interdisciplinary health care teams who will work to improve systems of care, patient outcomes, quality and safety (Duke University, 2010).

Although one can argue that the lack of curricular standardization in these programs is problematic for the public and the profession, their popularity is clear. In 2009, the AACN reported that 92 DNP programs were currently enrolling students and another 102 DNP programs were in the planning stages. From 2007 to 2008, DNP program enrollments nearly doubled from 1,874 to 3,415. During that same period, the number of DNP graduates increased from 122 to 361 (AACN, 2010). Data available from the AACN’s 2009 Enrollment Survey indicate that enrollments in research-focused doctoral nursing programs have continued to increase slightly (from 3,439 in 2004 to 3,976 in 2008) while DNP enrollments increased from 170 to 3,415 during the same interval (Fang and Bednash, 2009). The obvious conclusion is that the programs are meeting a need. Anecdotally, our students report they would never have been interested in a PhD; they want to advance their understanding of how to effect improvements in the health care environment.

**Recommendation 9: Advance the Doctor of Nursing Practice (DNP) as a vehicle for the preparation of advanced practice nurses for leadership roles in translation—to include examination of evidence, innovation, policy revision, and dissemination.**

At Duke we have developed the Duke Translational Nursing Institute (DTNI), housed within and partially funded by the NIH-supported Clinical and Translational Science Award (the Duke Translational Medicine Institute). We have hired experts to facilitate inquiry by staff nurses at the point of care; hired experts to
facilitate the evaluation of innovative models of care; and hired experts to study the barriers and facilitator of dissemination of change. We have begun a small grants program and hired staff to consult on research design and analysis, and manuscript development.

**Recommendation 10:** Promote the creation of research facilitation structures that promote knowledge development at the point of care, the testing and evaluation of innovative models of care, and the study of implementation. Build incentives into funding mechanisms that encourage a variety of forms of similar collaboration. Explicitly promote the development of and translation of knowledge into nursing practice and practice improvements through the CTSA mechanism.

**REFORM 3:** Commit to the preparation of masters prepared specialists in nursing, and prepare these graduates to deliver care that is safe, culturally competent, high value/low cost, and patient-centric.

For over 30 years, the research literature has consistently substantiated the safety and quality of care delivered by masters-prepared nurses, particularly nurse midwives and nurse practitioners delivering primary care (Brown and Grimes, 1995). Today 1,400 Certified Nurse Midwives (CNMs), 28,000 Certified Registered Nurse Anesthetists (CRNAs), 125,000 Nurse Practitioners (NPs), and over 2,300 Clinical Nurse Specialists (CNSs) are providing advanced practice nursing in the United States. The proposal to move all specialty preparation to the doctoral level and use the master’s degree in nursing to prepare generalist by 2015, as advanced by the American Association of Colleges of Nursing, has not been based on evidence that this will improve the quality of care delivered.

Further, the probability is high that an extended educational pipeline would deter qualified nurses from continuing through the doctorate. At a time when the nursing education community is being called upon to produce more primary care providers to meet the growing national need for primary care, such a proposal seems ill timed, if not irresponsible. Justifications that current masters program curricula are over-credited should not substitute for more careful examination of how to teach the specialty content in a fewer number of credits.

Finally, current employers of masters prepared nurses have expressed concern that there are no roles/no needs for the masters prepared generalists and they are unlikely to hire them.

**Recommendation 11:** Advocate for the continued preparation of the specialist at the masters level; encourage market forces, rather than professional societies and educational
accrediting groups, to drive a change that appears profession-centric, rather than in the interests of improving patient care.

**Recommendation 12**: Challenge the current credit-heavy requirements in existing masters programs to test innovations in teaching that would improve competence and reduce program credits. If models of care delivery using masters prepared nurse generalists are available, conduct rigorous evaluations of their use and outcomes, including value, to serve as the basis of proposed changes.

Upon reflection, this list of reforms and specific recommendations does correspond to many of my ongoing responsibilities; however, the opportunity to review the work of others and consider the limits of my own actions has served as a catalyst to do more next week. The responsibility for the educational and personal development of the nursing workforce has vast and far-reaching consequences for nursing and for health care. Rapid social changes, acceleration in knowledge development, and the development of new tools for managing information will not go away. We must change our approach to ensure that it addresses the context and the goal. We must lead with the future in mind.

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APPENDIX I


TRANSFORMING PRE-LICENSURE NURSING EDUCATION: PREPARING THE NEW NURSE TO MEET EMERGING HEALTH CARE NEEDS

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ABSTRACT

Evidence is accumulating that nurses completing pre-licensure programs are not equipped with the essential knowledge and skills for today’s nursing practice, nor prepared to continue learning for tomorrow’s nursing. Citing the need to improve quality and increase capacity, this paper offers three recommendations for transforming nursing education: (1) Create new nursing education systems which use existing resources in community colleges and universities and which provide for common prerequisites and a shared competency-based nursing curriculum and instructional materials. (2) Convene one or more expert panels to develop model pre-licensure curricula which: (a) can be used as a framework by faculty in community college-university partnerships for development of their local curriculum; (b) are based on emerging health care needs and widely accepted nursing competencies as interpreted for new care delivery models; (c) incorporate best practices in teaching and learning. (3) Invest in a national initiative to develop and evaluate new approaches to pre-licensure clinical education, including a required post-graduate residency under a restricted license. The author notes that these changes will require significant investment in the reforms, as well as in nursing education research and faculty development. The return on investment would be improved educational capacity and a better prepared nursing workforce, responsive to emerging health care needs and rapidly changing health care delivery systems.

TRANSFORMING PRE-LICENSURE NURSING EDUCATION: PREPARING THE NEW NURSE TO MEET EMERGING HEALTH CARE NEEDS

The Carnegie Foundation for the Advancement of Teaching joins a chorus of calls for transformation of pre-licensure nursing education (Benner et al., 2009b). Citing the shift of significant responsibility to nurses for managing complex medical regimens, as well as increasing complexity of community based practices, Benner and colleagues concluded that nurses entering the field are not equipped with the essential knowledge and skills for today’s practice nor prepared to continue learning for tomorrow’s nursing (p. 31). They found (1) weak curricula in natural sciences, technology, social sciences and humanities, and in developing cultural competency; (2) weak classroom instruction and limited integration between classroom and clinical experiences; (3) limited strategies in helping
students develop habits of inquiry, raising clinical questions, seeking evidence for practices; (4) faculty and student perception that students are ill prepared for their first job and dissatisfaction with the teaching preparation of current nursing faculty; (5) and multiple pathways to eligibility for the licensure examination, with tremendous variability in prerequisites, the curricular requirements, and the quality of offerings.

The Carnegie study is one of many citing the inadequate preparation of nurses for today’s practice in complex, acute care environments (Berkow et al., 2008; Burritt and Steckel, 2009; Joint Commission on Accreditation of Healthcare Organizations, 2002; NCSBN, 2001) There is a growing body of evidence that confirms registered nurses are indeed essential to patient safety (AHRQ, 2007) and experts warn of further compromise in patient safety and care quality as experienced nurses retire in droves and the ratio of new graduates to experienced nurses increases (Orsolini-Hain and Malone, 2007). While 84−88 percent of new graduates are employed in hospital-based practice for their first position (Kenward and Zong, 2006; Kovner et al., 2007), increasing numbers of nurses have migrated to non–acute care settings. Currently only 60 percent of all nurses practice in hospitals while over 40 percent of nurses practice in non–acute care settings, such as ambulatory clinics, nursing homes, schools and public health (HRSA, 2004). As care continues to shift from hospitals to community-based settings, as the population ages and care management in the community becomes more complex, and as new health care needs emerge, a new kind of nurse will be needed. Educational programs must be redesigned to better prepare this nurse.

In addition to these quality issues, educational capacity issues must also be addressed. The projected shortage of nurses is well documented (Buerhaus et al., 2009) and academic institutions have done a remarkable job of increasing enrollments (AACN, 2010; NLN, 2009a) but without further action, the supply of new nurses will fall well short of the demand as a result of serious limitations in educational capacity. In the 2006–2007 year, over 40 percent of qualified applicants for pre-licensure programs did not gain admission (NLN, 2008) and in 2008–2009, approximately 40,000 qualified applicants were turned away from nursing programs (Kovner and Djukic, 2009). Principal causes for limitations in educational capacity: shortage of qualified faculty, insufficient number, quality and type of sites for clinical education and budgetary constraints (AACN, 2010; NLN, 2006, 2009a, 2009b).

In this paper, I offer three recommendations related to transformation of pre-licensure education which address the quality and capacity issues and which provide for the possibility of leveraging existing resources in order to make critical changes. I will use models currently being tested in Oregon, the Oregon Consortium for Nursing Education (Gubrud-Howe et al., 2003; Tanner et al., 2008), as well as in Hawaii and regions of California as an exemplar of some of these recommendations.
Recommendation 1: Create new nursing education systems which use existing resources in community colleges and universities and which provide for common prerequisites, a competency-based nursing curriculum and shared instructional resources.

Rationale

Entry into practice at the bachelors level, as recommended in the Carnegie report, has been on the profession’s agenda since 1965. Few would argue against the notion that more education is better, and there is growing evidence that the level of education is strongly correlated with patient outcomes (Aiken et al., 2003, 2008; Estabrooks et al., 2005; Torangeau et al., 2007). Yet community colleges are a vital resource to meet educational capacity requirements. The roughly 1,000 community college nursing programs (NLN, 2009a) provide access to education in rural and underserved communities, educating approximately 60 percent of all new graduates each year (HRSA, 2004). The nearly 700 baccalaureate programs prepare approximately 31 percent of new graduates each year (AACN, 2010; HRSA, 2004). There are nearly 600 baccalaureate completion programs, many of which boast articulation agreements that smooth the transition from associate degree to the bachelors, yet only 20.6 percent of associate degree graduates continue for the bachelors’ degree (HRSA, 2004). The net effect of a disproportionately small pool of bachelors’ degree graduates is simply fewer nurses who are eligible and likely to continue for the advanced education necessary to become faculty (Aiken et al., 2009).

One approach to capitalizing on community college nursing program resources to increase the number of baccalaureate graduates is to allow community colleges to offer the bachelors’ degree. Sixteen states have changed regulations to allow community colleges to offer baccalaureate degrees, and several have launched bachelors in nursing programs (Community College Baccalaureate Association, 2008).

The current patchwork of educational programs is inefficient. Community college “two-year programs,” typically take 3 or more years to complete. Prerequisites vary widely across programs; students who may meet the course requirements for admission to one school’s program do not meet those of another school. Nursing curricula, while containing similar content and meeting similar accreditation standards, are also quite variable in terms of sequence and credit hour allocation; program faculty varying in number from as few as 4 or 5 faculty in smaller programs to well over 50 each invest considerable time and resources in developing and maintaining their own program’s curriculum and instructional resources. The variation in curricula creates additional challenges in clinical education: staff nurses who frequently provide supervision for students from multiple programs, at varying levels, and differing instructional goals, may end
up very unclear about what students might be safely expected to do (MacIntyre et al., 2009).

Exemplar

One model for addressing these inefficiencies and for improving access to baccalaureate education is a partnership between community college and university programs. The Oregon Consortium for Nursing Education (OCNE) was designed to increase capacity for baccalaureate education by making best use of scarce faculty, classrooms, and clinical education resources (Gubrud-Howe et al., 2003; Tanner et al., 2008) Eight community colleges and the five campuses of the public university school of nursing developed and implemented a shared, competency-based curriculum that culminates in a bachelors degree. What sets this model apart from traditional articulation agreements is that the curriculum is standard across all partner campuses: nursing faculty from full partner schools developed and approved a common curriculum plan (including competencies, benchmarks, course titles, descriptions, credit hour allocation and outcomes) as well as academic standards for student admission and progression. The potential for increasing faculty capacity and productivity is beginning to be realized, as faculty from one campus can fill in and teach a course on another campus, and as instructional materials (such as examinations, case studies, scenarios for simulations) are developed and made accessible to all faculty through a web-based searchable database linked to the curriculum.

OCNE admitted its first class of students in fall of 2006, and is engaged in a Robert Wood Johnson Foundation (RWJF)–funded evaluation study of outcomes, including student performance measures and degree completion. Early results are encouraging, as roughly 40 percent of graduates from community college partner schools have enrolled in the courses required for baccalaureate completion (Tanner et al., 2008). Needs for program improvements are being identified, including improved advisement and services for students transitioning from community college to the university, development and implementation of statewide interprofessional educational experiences, and provision for ongoing faculty development. Similar statewide or regional university–college partnerships are being planned in at least five other states with the Hawaii statewide consortium positioned to implement in fall 2010.

Recommendation 2: Convene one or more expert panels to develop a model pre-licensure curriculum which: (1) can be used as a framework by faculty in community college–university partnerships for development of their local curriculum; (2) is based on emerging health care needs and widely accepted nursing competencies as interpreted for
new care delivery models; (3) incorporates best practices in teaching and learning.

Rationale

Demands for a new kind of nurse have been abundant for the last two decades, fueled, in part, by vast changes in the nursing practice environment, including a tremendous increase in the complexity and acuity of patient care in the hospital setting, decreased lengths of stay and the shift of care and recovery to the home and community, explosion of new technologies, exponential growth of information and knowledge, clear identification of the “quality chasm” (IOM, 2001) and the recognition of the significance of nursing in patient safety (IOM, 2003). New competencies have been promulgated to address the quality chasm and patient safety goals (IOM, 2003; Cronenwett et al., 2007), geriatric care (AACN, 1998), clinical prevention, and population-based care (Allan et al., 2005) among many other areas and incorporated into requirements for accreditation (CCNE, 2009; National League for Nursing Accrediting Commission, 2008).

Demographic changes alone demand different focus in pre-licensure programs. The number of older adults in the United States will almost double between 2005 and 2030, presenting multiple challenges for the health care system (He et al., 2005). The majority of older adults suffer from at least one chronic health condition. The fastest growing segment of the population is the “over 85” age group, and it is estimated that a minimum of 50 percent of this group will require help with activities of daily living (He et al., 2005; IOM, 2008). Direct care workers are the primary providers of paid hands-on care to older adults, and together with families, provide the majority of care for adults in community based care settings. Registered nurses in community-based settings have responsibility for guiding, teaching and/or supervising these caregivers, yet have little training or experience in how to work effectively with them.

While the amount of geriatric/gerontologic content and experiences in pre-licensure programs has increased in the last decade, it is still uneven, and effective teaching is hampered by lack of faculty expertise (Berman et al., 2005; Gilje et al., 2007; Ironside et al., 2010). Most curricula are organized around traditional nursing specialties (e.g., maternal–child, pediatrics, medical–surgical, or some slight variation in name such as adult-health) and clinical experiences are largely centered in acute care settings (McNelis and Ironside, 2009). Clinical education which focuses geriatrics occurs principally in nursing homes (with some noteworthy exceptions), and often in the first year of the nursing program when students may fail to appreciate the complexities of providing care to older adults (Ironside et al., 2010). Although interprofessional geriatrics education has been promoted (AACN, 1998) and geriatrics competencies (AACN, 1998) are similar
across disciplines (Mezey et al., 2008), most health profession education continues to occur in silos (Barnsteiner et al., 2007).

Curricular changes over the last decade have tended to be additive, rather than transformative, i.e., adding content or circumscribed courses as new competencies appear in the literature (Ironside, 2004; NLN, 2003). The majority of nurse educators first learned to be nurses in content-laden, highly structured curricula, and few have received advanced formal preparation in curriculum development, instructional design, or performance assessment. Faculty, tending to teach as they were taught, focus on covering content (Duchscher, 2003), a practice reflected more recently in the Carnegie study; they see curriculum mandates as a barrier to creating engaging, student-centered learning environments within their schools (Schaefer and Zygmont, 2003).

O’Neil (2009) makes a compelling argument for a major overhaul of nursing curricula. He suggests that traditional nursing competencies such as care management, patient education, public health intervention, and transitional care will dominate in a reformed health care system, as it inevitably moves toward emphasis on prevention and management over acute care. But he points out that “. . . these traditional competencies must be reinterpreted for students into the settings of the emergent care system, not the one that is being left behind. This will require faculty to not only teach to these competencies but also creatively apply them to health environments that are only now emerging” (p. 318). It is critical that we revisit possible and optimal expectations for entry level nurses, based on population needs and likely changes in care delivery models, then align pre-licensure and residency programs accordingly. Revamping curricula collaboratively with other health professions schools (Mezey et al., 2008) provides opportunity for meaningful interprofessional collaboration.

Advances in the science of learning also support curriculum overhaul. While nursing education research is sparse, a growing body of research on learning from a variety of other fields supports the need for active engagement of the learner, and a focus on deep learning of the discipline’s most central concepts (Bransford et al., 2000; Weimer, 2002). As pointed out in the Carnegie study, the typically content-laden nursing curriculum results in superficial coverage of content, a failure to engage students in rehearsing for clinical practice by grappling with real-life clinical situations, and a failure to integrate across knowledge, clinical reasoning, skilled know-how and ethical comportment. Faculty complain about the demand to cover content, fearing that students will not pass their licensure examination (Schaefer and Zygmont, 2003) and, as the Carnegie study suggests, faculty need guidance in what is essential content in the curriculum, as well as how to teach it in a way that engages students. Bain (2004), from his study of expert teachers describes this practice:

Teachers in our study . . . believe that students must learn facts while learning to use them to make decisions about what they understand or what they should do.
To them, “learning” makes little sense unless it has some sustained influence on the way the learner subsequently thinks, acts, or feels. So they teach the “facts” in a rich context of problems, issues and questions. (p. 29)

The integrative teaching described in the Carnegie study is in stark contrast to the belief and related practices that “students cannot learn to think, to analyze, to synthesize, and to make judgments until they ‘know’ the basic facts” (Bain, 2004, p. 29).

A recent example illustrates ways in which content can be reduced in order to provide for pedagogies of integration and engagement. In separate studies, Giddens (2007) and Secrest, Norwood, and Dumont (2005) showed that only one fourth to one third of approximately 120 health assessment techniques typically taught in the standard health assessment course are used routinely by nurses in practice across settings. They suggest that this content could be significantly reduced, teaching fewer techniques well, and adding others only as they relate to specific situations and can be taught in the context of clinical judgment. Changes like this could result in a significant reduction of content, overall, providing opportunity for the integrative teaching and learning that is so aptly illustrated in the Carnegie study.

The content-laden curriculum, and resulting ineffective teaching practices, is a long-standing problem which is likely to be exacerbated as practices change, and new competencies are mandated. It is a problem which is unlikely to be successfully resolved by the individual faculty in the over 1,700 nursing programs across the county. Guidance from an expert panel, proposing curriculum models which meet the growing list of competencies, with processes for rapid cycle changes in curriculum content, will be necessary to lead essential changes in pre-licensure curricula.

Exemplar

The curriculum developed and implemented by OCNE partners is based on assumptions such as these above. Faculty assumed that their students would practice in an environment vastly different from the current one, one in which there would be fewer RNs; by equipping RNs with expanded skills related to delegation, coordinating care, community-based and population-based practice, use of data to affect outcomes and collaborative team management, better use can be made of RNs’ full scope of practice, skills, and expertise. In this curriculum, fundamentals of nursing have been redefined as evidence-based practice, culturally sensitive and relationship-centered care, leadership and clinical judgment, with these concepts and others introduced early in the context of health promotion and spiraled throughout the curriculum. Through a 2-year faculty development program, faculty leaders in the OCNE partner programs applied advances in the science of learning by intentionally reducing content, to focus principally
on the most prevalent health problems and practices. Instructional approaches have been dramatically altered toward case-based instruction, integrating simulation, drawing on best practices in the development of these approaches. In this competency-based program, the faculty role is shifting from the delivery of content to the development of learning activities that will lead students to competent performance. The RWJF study of the OCNE program includes measures of classroom teaching fidelity which allow for study of teaching practices linked with learning outcomes.

Recommendation 3. Invest in a national initiative to develop and evaluate new approaches to pre-licensure clinical education, including a required post-graduate residency under a restricted license.

Rationale

Pre-licensure clinical education has remained essentially unchanged for at least 40 years (Tanner, 2006). As a derivation of hospital-based apprenticeships, students are placed in clinical settings, mostly acute care, and assigned to provide care for one or more patients. They learn through providing care to these patients, while being supervised by clinical faculty, with varying degrees of support by staff nurses employed by the clinical agency (McNelis and Ironside, 2009; Chappy and Stewart, 2004). Because the experience is organized around individual patients, students may be rarely engaged with the full scope of nursing decision making, including linking patient outcomes with larger systems issues (MacIntyre et al., 2009) or population-based care management. The nature and quality of students’ clinical experience is highly dependent on events that occur during the time of placement, leaving to chance such experiences as interdisciplinary teamwork, managing crisis situations, and working with families in the provision of care (Gubrud-Howe and Schoessler, 2008). Because the focus of learning is necessarily on acute care, there is little practical experience in strategies for management of chronic conditions, health behavior change, or coordinating care across settings. There is scant empirical literature supporting the traditional model of clinical education; indeed, the evidence that graduates feel unprepared for practice (Benner et al., 2009b) and that first-line managers are dissatisfied with the level of preparation suggest that the model is not effective (Berkow et al., 2008).

Importantly, the pervasive use of this approach as the primary clinical education model results in limited capacity; the number clinical sites is cited as a major barrier to enrollment expansions (AACN, 2009) and effective clinical teaching (McNelis and Ironside, 2009). While the use of high-fidelity simulation has been proposed as a solution to these limitations in capacity, and early studies about its effectiveness are promising (Harder, 2010), there is little evidence that it expands
faculty capacity, and little guidance about what portion of clinical experience can be replaced with simulation.

The required number of clinical hours varies widely from one program to another, and most state boards of nursing do not specify a minimum number of clinical hours in pre-licensure programs (NCSBN, 2008). It is likely that many of the clinical hours do not result in productive learning. Students spend much of their clinical time doing routine care tasks repeatedly, which may not contribute significantly to new learning. Faculty report spending most of their time supervising students in hands-on procedures leaving little time focused on fostering development of clinical reasoning skills (McNelis and Ironside, 2009).

There have been some advances in clinical education, resting on strong academic–service partnerships. Preceptorships are widely used, and a recent integrative review suggests that they are at least as effective as traditional approaches (Udlis, 2006), while conserving scarce faculty resources. The Dedicated Education Unit (DEU) is receiving increasing attention as a viable alternative for expanding clinical education capacity (Moscato et al., 2007). In this model, units are dedicated to instruction of students from one program. Staff nurses who want to teach as clinical instructors are prepared for this role, and faculty expertise is used to support the development and comfort of the staff nurse as clinical teacher. Early results suggest the DEU can dramatically increase capacity and have a positive effect on student and nursing staff satisfaction; a multisite study funded by the RWJF is currently under way to evaluate outcomes of the DEU model. A variety of other clinical partnerships have been designed to increase capacity in the face of a nursing faculty shortage (Baxter, 2007; DeLunas and Rooda, 2009; Kowalski et al., 2007; Kreulen et al., 2008; Kruger et al., 2010).

There is an expanding body of evidence supporting the cost-effectiveness of postgraduate residencies. In 2002, the Joint Commission on Accreditation of Healthcare Organizations recommended the development of nurse-residency programs, a recommendation most recently endorsed by the Carnegie study. Successful programs have been launched by Versant (Beecroft et al., 2001, 2004, 2006); the AACN and University Health System Consortium developed a model for post-baccalaureate nurse residencies (Goode and Williams, 2004; Krugman et al., 2006; Williams et al., 2007, and AACN recently adopted accreditation standards for these programs [CCNE, 2009]) The National Council of State Boards of Nursing has developed a regulatory model for transition to practice programs, recommending that state boards of nursing enforce a transition program through licensure (NCSBN, 2008, 2009).

Residency programs are predominantly supported in hospitals and larger health systems, with a focus on acute care. Indeed, this has been the area of greatest need as most new graduates gain employment in acute care settings (Kovner et al., 2007) and the proportion of new hires (and nursing staff) that are new graduates is rapidly increasing. It is clear that even the best nursing programs cannot adequately prepare new graduates to work in the current acute care environment (Goode et al., 2009).
It is essential that programs outside of acute care settings be developed and evaluated. Given the demographic changes on the horizon, the shift of care from hospital to community-based settings, the need for nursing expertise in chronic illness management, care of the older adults in home settings, and in transitional services, nurses need to be prepared for new roles outside of the acute care setting. It follows that new types of residency programs appropriate for these types of roles need to be developed and become part of the regulatory framework.

In sum, in order to increase educational capacity, improve educational outcomes, and better prepare graduates for the seismic shifts likely to occur in practice, there is an urgent need to develop and test new pre-licensure clinical education models including postgraduate residencies.

**Exemplar**

One model is currently being implemented and evaluated by OCNE programs, funded by the Department of Education, Fund for Improvement of Postsecondary Education (Gubrud-Howe and Schoessler, 2009), which includes some of the following desired features (Tanner, 2006):

- Focus on learning outcomes, rather than on placements and completion of clock hours, considering essential competencies such as the development of clinical judgment, ethical comportment, interprofessional teamwork, technical proficiency and new competencies required in contemporary professional practice.
- Contain a variety of learning activities, designed to achieve specific learning outcomes, and taking into account the level of the student, the acuity of the patient, the complexity of the desired learning, and the skill of the faculty.
- Incorporate research on learning and best practices identified by the Carnegie study pointing to (1) the type of preparation the student would do in anticipation of the clinical learning; (2) the interaction between faculty and student to support learning (e.g., questioning, guiding); (3) the type of debriefing used to help the student learn the major lessons of the activity; (4) approaches to assessing student learning; and (5) guidance provided to the student for reflecting on the activity.
- Include integrative or immersion experiences which recognize and incorporate the growing body of literature about apprenticeships and situated learning (e.g., Lave and Wenger, 1991) deliberate practice (e.g., Ericsson, 2004), development of expertise in practice (Benner et al., 2009a), preceptorships, and academic–service partnerships.
- Integrate simulation as a complement to “hands-on” clinical experience using best available evidence to plan scenarios and incorporate into the clinical education curriculum (Harder, 2010).
- Recognize the need to vary the student-to-faculty ratio and time on task,
depending on the nature of the learning activity, the level of the student and the patient population.

- Support clinical nursing staff in clinical instruction, without overtaxing clinical resources, and at a level appropriate for the level of the student and the patient population.

**SUMMARY**

Implicit in these recommendations is the need for significant investment in nursing education research and in faculty development. While there is obvious need for research in nursing pedagogies, there is also a critical need for evaluation of the multiple pathways to nursing licensure. For example, fast-track curricula for students with second degrees have increased exponentially in the last 5 years, with very little evidence of their effectiveness, and virtually no study of curricular structures and instructional methods appropriate for this population of students (Cangelosi and Whitt, 2005). Yonge and colleagues (2005) reviewing nursing education research spanning 1991–2000 found that 80 percent had no identified funding source. Broome (2009) in calling for investment in the science of nursing education, points to the link between quality of research and funding. It seems implausible that the replacement of half of the nursing workforce during the next decade can be effectively addressed without building a stronger scientific basis for nursing education. Similarly, faculty development is critical in order to bring about the magnitude of change recommended here and in the Carnegie study.

Taken together, these recommendations echo those of the Carnegie Foundation study, calling for transformation of pre-licensure education. It will require partnership across all levels of nursing education and health systems, redirecting Medicare funding from hospital based pre-licensure programs to postgraduate residency and advanced practice programs, expanding Title VIII funding, and other federal resources for support of educational reform. The return on investment would be improved educational capacity and a better prepared nursing workforce, responsive to emerging health care needs and rapidly changing health care delivery systems.

**REFERENCES**


APPENDIX I


THE FUTURE OF NURSING EDUCATION

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The Committee on Quality of Health Care in America of the Institute of Medicine concluded that “the American health care delivery system is in need of fundamental change. The current care systems cannot do the job. Trying harder will not work. Changing systems of care will” (Committee on Quality of Health Care in America, 2001, p. 4). Since the publication of the IOM’s quality chasm reports, numerous organizations have called for changing not only systems of care, but also systems of health professions education, realizing that it will be the clinicians of the future who can most effectively change how care is delivered. Health professions education has overall seen little fundamental change in the past 50 years and is in urgent need of new vision. New goals are needed to improve the degree to which the practice of graduates improves the health of the population; enhances the patient’s experience of care; and reduces or controls the per capita cost of care.

BACKGROUND

Education in the health professions is expected to produce graduates proficient in core competencies as specified by the Pew Health Professions Commissions (Recreating Health Professional Practice for a New Century, Pew, 1998) and the Institute of Medicine (Greiner and Knebel, 2003). These competencies focus on issues of professional behavior (e.g., ethical standards, cultural competence) and focus of care (e.g., prevention, primary care) with the overarching intent to (1) provide patient-centered care, (2) apply quality improvement principles, (3) work in interprofessional teams, (4) use evidence-based practices, and (5) use health information technologies. Although there is wide agreement and support for these competencies, curricula have been slow to change. Faculty, themselves educated in past eras, laden curricula with factual content delivered in turgid lectures, often portrayed in dense PowerPoint slides. Students graduate with ample factual knowledge but often with little sense of integration and poor ability to function in interprofessional teams or coordinate care effectively across the multiple care settings which most patients travel.

The Carnegie Foundation for the Advancement of Teaching (http://www.carnegiefoundation.org/) recommends innovations in teaching in nursing and medicine with three emphases—integration (students’ ability to connect basic, clinical, and social science knowledge with clinical experience); systems improvement (student opportunities to improve the health care system); and professionalism (students’ acquisition of the qualities of professionalism including the formation and adoption of the shared values, behaviors, and aspirations of the
profession). Its recent report, *Educating Nurses: A Call for Radical Transformation* (Benner et al., 2010), calls for teaching that invites students to develop a sense of salience, clinical reasoning, and clinical imagination. To achieve this, the best teachers must teach well beyond disembodied content, teaching students instead “how to be a nurse who uses evidenced-based knowledge and cultivates habits of thinking for clinical judgment and skilled know-how. Their (the best teachers’) teaching is integrative and patient-centered . . . these teachers coach their students, engaging them in experiential learning to develop situated knowledge, skills, and ethical comportment” (p. 15).

The looming workforce shortages in most clinical disciplines demand that educators prepare graduates for greater flexibility across disciplinary boundaries and less entrenched, siloed thinking. Many organizations speak to this. For example, the Association of Academic Health Centers cites decentralized decision-making in health workforce education and weak national health workforce policy as reasons for the growing crisis in the future supply of health professionals, and calls for urgent corrective action to improve and finance training (*Out of Order, Out of Time*, 2008). The national Physicians Foundation recommends that physicians cede much clinical management “downstream” to nurse practitioners and physician assistants with the physician’s consultative oversight (*Physicians and Their Practices Under Health Care Reform*, 2009, www.physiciansfoundation.org/FoundationReportsDetails). These positions by physicians indicate a greater acceptance of nursing’s key place on the team in the care delivery enterprise.

In the past few years, enlightened nursing education has been moving from content-based curricula taught within segregated compartments, such as care settings isolated from each other and isolated disease-based content, to concept-based, integrated curricula that emphasize evidence-based care and clinical decision making across settings, ages, and diagnoses. New American Association of Colleges of Nursing (AACN) *Essentials* documents reflect these changes. While encouraging, this movement is slow and falls short of radical reform.

**Focus of the Paper**

This paper focuses on three target areas for emphasis in nursing education—interprofessional education, education for care coordination, and education for health policy—each essential for a transformed health care system. In such a system, nursing care must be recognized by the American public, policy makers, and others on the health care team as an indispensable ingredient to quality care. Each of these targets for curricular reform calls for pedagogy that emphasizes integration and hands-on application well beyond factual content. This will require faculty development so that teachers engage and excite students. Each of the targets should become fundamental content for baccalaureate, master’s, and doctoral nursing education, with increasing levels of complexity and expectations
for application and outcome. Together the three target areas could serve as pillars on which to structure the curriculum.

Others will likely select other targets for change, and there are many from which to choose. Increasing requirements for admission to nursing schools, training and recruiting a more diverse faculty, funding mechanisms for programs and students, improving mechanisms for assessing student performance, reducing and strengthening the myriad, often confusing pathways of nursing education, dealing with the issue of minimum education for entry into practice, and achieving new standards for nursing education—all are topics urgently needing new vision and bold change for the profession to receive the recognition and credit it deserves.

A major barrier of nursing education for the advancement of the profession, and specifically for embracing the three target areas of this paper, is nursing education at the community college level. Since 2006, the majority of new nurses who sit for the NCLEX-RN licensure exam each year are graduates of community college associate degree programs. The nursing profession’s inability to insist that professional nursing requires a minimum of a 4-year baccalaureate degree gravely impedes the stature of the profession. Because associate degree students are less likely to be educated in academic health centers, they have less proximity and exposure to students of medicine or most other health professions. Additionally, after graduation, other health professionals are disinclined to welcome collaborative teamwork with nurses who do not hold a baccalaureate degree. Further, the three topics of this paper vastly exceed community college curricula. Therefore, a premise of this author is that the nursing profession must require the BSN as minimum education for initial licensure for practice. It simply can no longer allow infighting and special interests to dominate. Doing so has resulted in an average lowering of education for nurses over the past 40 years, during a time in history when other health professions have been increasing their education requirements.

**INTERPROFESSIONAL EDUCATION**

Medical errors and care fragmentation are major problems that beg for change in health professions education. Poor communication among clinicians and resulting disparities in care priorities have been well documented. For example, in one study of an inpatient unit, only 48 percent of physicians talked to the RN on their team, and in only 13 percent of cases did the MD and the RN have complete agreement on the care priorities of the day (Evanoff et al., 2005).

One outgrowth of this problem has been a move, primarily in England, Canada, and the United States, to bring health professions students in academic health science universities and medical centers together for periods of interprofessional education (IPE). Defined as “occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care” (Barr et al., 2005), such education is based on the premise that
students’ greater familiarity with each others’ roles, competencies, nomenclatures, and scopes of practice will result in more collaborative graduates. Graduates from programs with IPE training will be ready to work effectively in patient-centered teams where miscommunication and undermining behaviors are minimized or eliminated, resulting in safer, more effective care and greater clinician and patient satisfaction. Specifically, IPE is thought to achieve collaboration in implementing policies and improving services, prepare students to solve problems that exceed the capacity of any one profession, improve future job satisfaction, create a more flexible workforce, modify negative attitudes and perceptions, and remedy failures in trust and communication (Barr, 2002).

Efforts have been made to evaluate the effectiveness of IPE in improving outcomes, typically including increased student satisfaction, modified negative stereotypes of other disciplines, increased collaborative behavior, and improved patient outcomes. However, IPE’s effect is not easily verified since control group designs are expensive, reliable measures are few, and time lapses can be long between IPE and the behaviors of graduates. Barr and colleagues reviewed 107 evaluations of IPE in published reports, judged to be of sufficient quality for inclusion according to Cochrane review standards (www.cochrane.org), and found support for three outcomes: IPE creates positive interaction among students and faculty; encourages collaboration between professions; and improves aspects of patient care, such as more targeted health promotion advice, higher immunization rates, and reduced blood pressure for patients with chronic heart disease (Barr et al., 2005). In further work, Reeves et al. (2009) reviewed six later studies that met methodology inclusion criteria as randomized controlled trials, controlled before-and-after studies, and interrupted time series design studies. Four of the studies found that IPE improved aspects of how clinicians worked together, such as an improved working culture and decreased errors in an emergency department, improved care management for domestic violence victims, and improved knowledge and skills of clinicians caring for mental health patients. The remaining two studies found that IPE had no effect at all. Although empirical evidence is mixed, there is widespread theoretical agreement and anecdotal evidence that students who demonstrate teamwork skills in the simulation lab or at the bed- or chair-side with patients will apply them beyond the walls of their academic programs, particularly if valued and reinforced by the care environments in which they later work.

In the early days of IPE, students graduated into patient care environments in which siloed and hierarchical systems predominated, thus creating a significant disconnect between their college-based learning and post-graduation experience. Now, 10 years into the widespread reforms triggered by the IOM’s searing Quality Chasm reports, the practice environments students enter tend to reinforce rather than discourage cooperative behaviors and attitudes. This shift suggests a readiness for IPE and fuels the momentum among health science universities toward a growing acceptance of IPE in curricula.
APPENDIX I

IPE goes well beyond classroom-type courses comprised largely of didactic lectures, considered ineffective in cultivating team-based behaviors. Sitting side-by-side in lecture halls produces little student engagement with either the faculty or other students. From a pedagogical perspective, IPE learning comes from conjoint reflection, problem solving, and experience. Effective IPE training produces much more than the sum of its parts, rather, it generates interprofessional discourse that shapes collaborative thinking and behavior. IPE typically takes one or more of three approaches: (1) clinical skills lab simulation activities using manikins or standardized patients in case scenarios often videotaped to facilitate review and reflection, (2) service learning projects that enhance students’ civic engagement often with diverse communities, and (3) specific patient group clinics such as in the care of geriatric or HIV/AIDS patients.

Barriers to IPE exist (Gilbert, 2005) but are surmountable. Jurisdictions of faculty and professional organizations abound. Different accrediting bodies are loath to yield control over traditional curricula and standards. Space in curricula, with their emphasis on factual content over synthesis, integration, and cooperation, is limited. Relatively rigid academic calendars control course schedules. Other barriers pertain to motivating faculty. How to reward and give faculty credit for IPE when the traditional reward systems such as promotion, tenure, and merit raises are governed within, not across, professions. Resources of the various deans to support IPE likely differ. Typically schools of nursing have smaller overall budgets than schools of medicine but a higher percent of funding that supports the education mission. Medical school faculty typically are expected to generate a larger proportion of their salaries through clinical practice and/or research. When done well IPE can be expensive for many reasons, e.g., small groups with stability over time to allow for reflection and the development of trust, and/or expensive equipment for simulations. These budgetary issues can contribute to different levels of willingness of deans to support IPE.

Recommendations

1. Students at all levels of nursing education—baccalaureate, master’s, and doctoral—must have exposure to IPE training and demonstrate competence in interprofessional collaboration.

2. Since academic curricula tend to resist change unless pressured by external forces such as accreditation requirements and licensure/certifying exam content, major education and standard-setting organizations must cooperate to bring about IPE. In addition, endorsement of IPE must come from the highest levels within academic settings, including presidents, provosts, and deans.

3. Nursing faculty need development in IPE teaching, which requires structure and funding. The traditional notion of “teacher as expert” urgently needs replacement with teacher as coach and facilitator. Faculty, whose average age nationally is in the mid-50s, need the tools to make this transition. In
addition, since most nursing faculty are not active in practice, their own clinical experience is often dated and sometimes based on past unsatisfying interprofessional relationships, making them poor champions for IPE.

4. The level and timing of bringing various students together requires analysis and pilot testing because of students’ varying educational pathways and readiness for IPE. For example, evaluate pairing senior medical students with graduate nursing and allied health students, in an effort to have students bring relatively comparable amounts of university education and clinical exposure to the experiences.

5. IPE should be structured around knowledge, skills, and competencies to include: interpersonal and listening skills; techniques for constructive dialogue and disagreements; how “evidence” in evidence-based practice is weighted; systems thinking and problem solving; engaging patients and families as active participants in care; verbal and nonverbal communication within the care team; effective data reports and displays; stereotypes and prejudices; and appreciating alternative conceptual frameworks and points of view.

EDUCATION IN CARE COORDINATION

Both the health professions literature and the popular press note that failures in patient care coordination are widespread in the United States. Indeed, fragmented care, lost records, hand-offs without full information, poor return of information from specialty care after referral, unnecessary and redundant procedures and services—and the attendant patient fatigue, frustration, and costs—are the very heart of the quality chasm. This problem is particularly acute for the 125 million people with chronic illness, disability, or functional limitations, and for the elderly whose numbers will swell in the decades ahead. Short hospital stays have exacerbated the problem.

Historically, primary care physicians coordinated their own patients’ care within and across settings, but this function has all but been lost for myriad reasons, including the growth in hospitalist care, patient self-referrals to specialists, the breakdown in communication between primary care and specialty care, financing constraints on physician time, and overall uncoordinated systems of information technology. Failures in care coordination also can be traced to curricula where the competencies required are assumed to be intuitive and thus minimized or overlooked altogether.

Serious consequences result from poor care coordination. Especially worrisome is the post-hospital fate of patients. One study of care transitions found that 19 percent of patients experienced adverse events following discharge from a U.S. teaching hospital, most of which were avoidable and typically related to poor communication (Forster et al., 2003). In another survey, 48 percent of newly discharged patients reported not receiving information about side effects of new prescriptions ordered at discharge (Schoen et al., 2005). In a study of urgent care
patients, in 33 percent of cases information such as medical history and laboratory results was absent. In half the cases, the information was essential to patient care (Gandhi, 2005).

As defined by the National Quality Forum (2006), care coordination should meet patients’ needs and preferences for information and services across settings over time. This facilitates beneficial, efficient, safe, and high-quality patient experiences and improved health care outcomes. Qualities and principles of care coordination include an enduring patient relationship and an established and up-to-date care plan that anticipates routine needs, manages acute, episodic, and chronic care needs and tracks progress toward goals that are jointly set by the health care team and the patient/family. Care coordination ensures information flow to and from referrals to specialty care or community services; ensures that all team members, including the patient, are apprised of tests and services with results readily available; reconciles medication orders and educates patients and families about side effects and medication management; and reduces opportunities for error. Care coordination requires linguistically and culturally competent communication with the patient and family, and seeks and responds to patient/family questions and feedback.

Yawning gaps in care coordination are rallying many health professions organizations to search for solutions. For example, the American Board of Internal Medicine Foundation structured its annual Forum on this topic in 2007, and later spearheaded a consortium, referred to as the SUTTP Alliance (Stepping Up to the Plate for Managing Transitions in Care) comprised of 10 medical specialty societies, including the American College of Physicians, the American Academy of Family Physicians, and the Society of Hospital Medicine. Nurses are the logical and ideal clinicians to fill the role of care coordinator, yet a similar alliance among nursing organizations is absent. Germaine to this paper, curricula in care coordination in nursing education are underdeveloped.

Nursing research has produced important findings about advance practice nurses as care coordinators. Brooten’s early work on care of low-birth-weight infants (Brooten et al., 1986) showed significant cost and quality improvement for early discharge and follow up home care by advance practice nurses (APNs). Naylor and colleague’s (1999, 2004) studies of a transitional care model by APNs for older cardiac patients post-hospitalization also demonstrated positive effects of nurse-managed transitional care. In these models, APNs tailored post-discharge services to each patient’s situation and followed patients by telephone and home visits. The intervention emphasized patients’ and caregivers’ goals, individualized plans of care developed and implemented in collaboration with patients’ physicians, educational and behavioral strategies to address needs, and coordination and continuity of care across settings. Overall outcomes were positive across a series of studies, showing lower rehospitalization rates, fewer hospital days when readmitted, substantial cost savings, and greater patient satisfaction with care.
Another superlative example of care coordination is On Lok Senior Health Services for older adults living in San Francisco. For over 30 years, On Lok has used multidisciplinary teams, electronic medical records, capitated payment, and a full range of services (including transportation, housing, meals, adult day health services, and geriatric aides who make frequent home visits) to provide seamless transitions for nursing home-eligible frail elders at lower cost than usual care. On Lok became the model for similar institutions around the United States through the Program of All-Inclusive Care for the Elderly (PACE) (Bodenheimer, 1999).

Another care coordination model is Tom Bodenheimer’s “teamlet” (Bodenheimer and Laing, 2007), dyads that are a subset of the larger health care team and comprised of a physician and, ideally, an experienced nurse or an APN. Patients enter “an expanded encounter,” in which pre-, post-, and between-visit care is continually monitored and coordinated by the nurse. Ingredients for success include making sure the patient understands advice and direction and agrees with the plan of care; communicating and interpreting laboratory and other diagnostic tests, and continually looping information between the patient and family, the physician, other care providers such as clinical pharmacists and allied health. Bodenheimer notes that ideally the coach would be an RN or an advanced practice nurse, but in their absence, a medical assistant could be trained for the role.

Thus, the role of care coordinator as patient advocate, communicator, assessor, and intervener, ideally suited to what nurses do best, presents a huge opportunity for nursing education. But, as implied by Bodenheimer, the nursing profession will be bypassed if nurses fail to seize the opportunity. To do so, however, requires that nursing school curricula incorporate not just the knowledge underlying the competencies of the role but convey the importance of the role to students by threading the concept and competencies of care coordination throughout the curricula. As already mentioned, most nursing curricula currently teach compartmentally, not across systems. Courses, particularly in the baccalaureate program where attitudes about nursing and nursing care are first formed, focus on content and skills in specific discrete clinical settings. Faculty generally teach within, not across, settings of care. Often the master’s level Clinical Nurse Specialist program is the only track with a course or parts of courses that address care transitions and care coordination, and this content may be confused with case management, the latter being a more limited concept usually applied to containing costs within reimbursement systems.

Interprofessional education discussed above will by itself, improve graduates’ competence in care coordination because many of the competencies students learn in IPE are relevant. However, there is a body of knowledge and sets of skills, attitudes, and role-related behaviors specific to care coordination that should be integrated throughout the levels of nursing education rather than confined to episodic IPE training.
APPENDIX I

Recommendations

1. BSN students should be placed for clinical training in new models of integrated care that require care coordination, such as accountable care organizations within universities or medical homes.

2. MSN students should study the research cited above that shows the effectiveness of APN transitional care. Components of MSN clinical training should include the care coordination role.

3. Across education levels of nursing education, care coordination should be structured around knowledge, skills and competencies to include: advanced assessment skills appropriate for senior baccalaureate and master’s/DNP students; interpersonal and communication skills necessary for the ability to communicate with patients and families with a high degree of sensitivity and cultural competence, as well as the science-based skills necessary to communicate effectively with physicians and others on the health care team; competencies in care planning that integrate the biological, social, and psychological needs of patients; understanding of and ability to seek and apply evidence-based protocols and national standards for patient conditions; and payment and social services systems to better address the full range of patients’ and families’ needs.

HEALTH POLICY EDUCATION

In large measure nursing education must remain patient focused. This makes sense for an applied discipline whose goal is the prevention or amelioration of illness and the improvement in the wellbeing of patients, families, and communities. However, a major lesson of the past 20 years is the degree to which health systems and policy shape the health both of populations and individual patients. Yet nursing students gain only a glimmer that health policy at multiple levels, from the hospital unit to the federal government, affects not only their practice but ultimately the fate of patients. Few educational programs include more than a token course on health policy, typically only at the graduate level. Since nursing education curricula generally treat health policy as extra rather than core, the naiveté of graduates, is no surprise. With few exceptions, nurses generally view themselves as being shaped by, not shaping, policy.

Since nurses largely take a back seat to policy processes, the profession’s input has been relatively invisible, certainly compared to that of medicine (Mechanic and Reinhard, 2002). Few nurses, when asked “What is nursing?” include health policy as a component of what nurses do (Gebbie et al., 2000). Missed opportunities for nursing to shape legislation or wade into legislative debates are all too common. One example is the recent Centers for Medicare and Medicaid Services (CMS) rule that restricts reimbursement for such “never events” as pressure ulcers, certain catheter-related infections and injuries, and certain surgical site
infections. The majority of these conditions can be prevented by excellent nursing care, yet the nursing profession has not effectively convinced the Congress or the American public that nursing care is the key ingredient safeguarding the public from these problems (Leavitt, 2009).

Another example is the “killing grandma” and “death panel” controversy, sparked by wording in the August 2009 congressional health care reform bills. Thousands of nurses across the country have daily, intimate contact with patients and families in the throes of decision making about DNR orders, advance directives, and other end-of-life issues. Nurses have close personal knowledge about how they and other clinicians facilitate discussions and considerations about palliative care and life-extending treatments. Despite this, nurses were largely silent in the face of widespread public misunderstanding and resulting acrimonious outcry over what is intended in counseling patients facing such decisions. This silence is surely an outgrowth of the inattention of nursing curricula to health policy.

The Healthy People Curriculum Task Force, convened by the Association of Academic Health Centers and the Association of Teachers of Preventive Medicine, with representatives from medicine, nursing, pharmacy, and physician assistants, as well as their educational associations recommended the following four domains fundamental to health professions curricula on health policy (http://www.atpm.org/CPPH_Framework/index.html):

- Organization of clinical and public health systems (connecting the pieces of the system; connecting clinical care to public health structures)
- Health services financing (underlying determinants of cost and options for payment and cost containment; comparison to health systems of other countries)
- Health workforce (understanding the roles and responsibilities of other health professionals)
- Health policy process (introduction to the impact of policy on health and clinical care, the processes involved in developing policies, and opportunities to participate in those processes, whether within a local institution or state or federal legislation)

Medicine has advocated the inclusion of these domains in all medical school curricula (Riegelman, 2006). Nursing curricula should do no less.

As emphasized above, health policy curricula are needed at the baccalaureate, master’s, and doctoral levels of nursing education, with increasing scope and complexity as the student advances. Political competence requires continuing skill development that begins early in students’ education, thus setting the course toward the graduate’s life-long engagement.

Baccalaureate students need to understand the role of policies at the unit level that shape the environment in which they will eventually work. Workplace policies (e.g., mandatory overtime, nurses’ authority to close beds to new admis-
sions based on professional judgment of adequate staffing, school nurses’ authority to teach reproductive information) lend themselves for students’ analysis and can help students clarify their own biases and potential ethical conflicts.

Another example of the type of policy work ideal for analysis by baccalaureate, and even graduate, nursing students pertains to the Robert Wood Johnson Foundation and the Institute for Healthcare Improvement project, Transforming Care at the Bedside (www.ihi.org/IHI/Programs/TransformingCareAtTheBedside/). TCAB is an excellent teaching–learning vehicle for students to gain understanding of local policy and how it is shaped. Originally designed as a way to improve hospital work environments so that more nurses would seek (and stay) in positions on medical–surgical units, TCAB also addresses care improvement processes, such as rapid PDSA (plan-do-study-act) cycles for gathering data to influence patient care policies. Faculty should engage baccalaureate students in this TCAB literature, with application in clinical assignments and an emphasis on policy implications and processes. In addition, baccalaureate students need an understanding of the important role that nursing organizations can play so as to encourage their involvement both as students and as graduates.

Graduate education in nursing, both at the master’s and doctoral levels, should be infused with multiple learning experiences in health policy, including both explication and hands-on experience. Building on the foundation from the health policy curriculum at the baccalaureate level, APN students need to be actively involved in political processes that affect the care they will deliver in the future. At this stage of their education, they should be expected to understand the link between evidence and policy, i.e., the role that data can play in illuminating problems and capturing the attention of policy makers. IPE can provide collaborative efficiencies so that interprofessional student groups engage together in policy projects.

AACN’s DNP Essentials (www.aacn.nche/DNP/pdf/Essentials.pdf) includes “Health Care Policy for Advocacy in Health Care” (Essential V), which expects DNP graduates to engage in the health policy process, whether through institutional decision-making, influencing organizational standards, or governmental actions. It is expected that students will be oriented to the principles of social justice, particularly in advocating for the underserved. Examples of hands-on assignments include preparing and presenting a policy brief analyzing a state or national health policy issue or problem related to access, utilization, cost, or quality; writing a letter (not to be sent) to an editor or an elected official on a health issue; and educating the lay public through speaking at local Rotary or other civic organization.

At the PhD level, student understanding of how to impact health policy moves specifically to the role of research. The focus at this level should be on advanced knowledge of political processes within the state and federal government and on the competencies needed to articulate research findings persuasively. Students should understand how to plan their doctoral studies and related work,
such as scholarly projects and the dissertation, toward the end goal of becoming influential. Many authorities (e.g., McBride et al., 2008) urge researchers to engage end users when framing research since those in position to make policy frequently complain that the research they need is rarely available. A useful exercise for PhD students early in their program is to meet with a state or federal elected member to discuss topics of mutual interest in improving health or health care and determining what evidence may be useful in future policy agenda.

Linking research findings to health policy formulation requires a set of specific skills which should be core to PhD education. These range from the concrete, for example, selecting a title for a policy brief or media report that reflects the key take-away message (since busy policy makers will overlook material that does not draw them in quickly), to the more conceptual, e.g., learning the separate perspectives of legislators who make policy and researchers who study health problems, which Hinshaw refers to as “moving between two cultures” (Hinshaw, 2008).

**Recommendations**

1. In addition to health policy courses at baccalaureate, master’s, and doctoral levels, health policy objectives should be threaded throughout the curriculum, ideally embedded in every course and reflected in course assignments. Using probing questions that invite student reflection, synthesis, integration, and deduction, faculty should lead students to articulate the policy implications in everything they study.

2. Accreditation and licensure/certifying examinations must ramp up their expectations for student competencies related to health policy.

3. Health policy education should be structured around knowledge, skills and competencies to include: policy-related relationship building skills; techniques for crafting testimony and writing effective white papers and position statements; effective use of numeric and narrative data to emphasize evidence-based information; working with the media; critiquing the ethical aspects of health policy in terms of vulnerable populations; mastering health policy terminology; understanding legislators’ perspectives; techniques for policy analysis; legislative processes in policy development; roles of stakeholders and special interest groups; and advocacy and strategies to influence policy.

**EPILOGUE**

The RWJF/IOM Initiative on the Future of Nursing will yield transformational recommendations for the nursing profession at a critical time in history for nursing and for America’s health care system. There is much to reform in nursing education, from agreement about the minimum degree for entry into practice to
producing graduates with the requisite knowledge, skills, and interprofessional competencies they will need. This paper has reviewed the rationale for and curricular implications of three target areas—interprofessional education, education for care coordination, and education for health policy—around which to restructure education at the baccalaureate, master’s, and doctoral levels. The author acknowledges the difficulties in changing entrenched curricula and habits of faculty educated in past eras. But one remains optimistic, given the many examples of progress already made (Benner et al., 2010) that an enlightened profession with a will for change can bring about a refreshing new future for nursing education.

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

The future of nursing in the United States will be shaped by an array of factors and forces—and each of these, in turn, will be shaped by the myriad international factors and forces created by globalization. This paper describes general trends and broad themes in globalization and international nurse migration, profiles nursing education, regulation and utilization in various countries, and relates them to the future of nursing, both in the United States and globally. It describes foreign-educated nurses in the United States workforce within the context of global variances in nursing education programs, credentialing mechanisms, and employment practices. It also provides a global snapshot of education and regulation in historic and emerging countries that have supplied migrant nurses to the U.S. workforce and describes their migration patterns.

The paper envisions a future with international models of nursing education, regulation and practice. Thus, the impact of international and regional trade agreements is described as they serve as catalysts for these international models. The paper asserts that nursing reform in the United States must be understood and envisioned within an international and historical context that integrates global trends and issues. Against this backdrop, the implications of migration and globalization for education, service delivery and health policy in the United States are identified and discussed.

1 The responsibility for the content of this article rests with the authors and does not necessarily represent the views of the Institute of Medicine or its committees and convening bodies.
Trends in International Migration

Worldwide, demand for nurses exceeds supply and chronic shortages are characteristic of the current global nurse workforce. The 2006 World Health Report (WHO, 2006) identified shortages of human resources as a critical obstacle to the achievement of the Millennium Development Goals (MDGs) for improving the health of global populations. Moreover, the report identifies the importance of nursing as an integral element of health systems’ infrastructure.

Various studies also have documented the important link between nurse staffing levels, service delivery and health outcomes, suggesting that important issues exist with respect to how the nursing health workforce is managed. One important factor that has received considerable attention is the mobility and migration of nurses and their impact on the global delivery of health services (Kingma, 2006).

Globalization of the nursing workforce must be viewed within the context of the worldwide development of the knowledge economy. This phenomenon identifies intellectual capital as a valuable asset and encourages the export of education and knowledge workers as significant contributors to a country’s economy. For example, national policies in the Philippines and India support the export of nurses (Healy, 2006; Thomas, 2006) with China and Korea beginning to follow a similar path (Fang, 2007).

The importance of the nurse export business is reflected in the exploding growth of nursing schools in the Philippines and India, and in the large sums of money received through remittances. Many countries, such as India and China, see the current demand for nurses as a business opportunity. Khadria (2007) describes the process in India as “business process outsourcing” (BPO). It includes comprehensive training, recruitment and placement programs for popular destinations, like the United States and the United Kingdom. It is assumed that these growing markets facilitate care as a global product delivered by migrating nurses.

Worldwide, the education and regulation of nurses is highly diverse and varies considerably in scope and complexity. Despite these international differences, a number of factors allow nurses to migrate throughout the world, creating continuous challenges to the maintenance of nursing education, practice and regulatory standards. For example, the United States is unique in having created

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2 WHO estimates that the world needs to increase the number of health workers by more than four million. WHO defines health workers to be all people engaged in actions whose primary intent is to enhance health, such as doctors, nurses, midwives, and others.

3 The World Bank defines remittances as the personal earnings international migrants send back to their family and friends. Remittances represent an important source of added income and stability for individuals, families, and communities. Remittances play a significant role in reducing the level and severity of poverty (each social determinants of health) and contribute to the economic development in many low and middle income countries.
CGFNS International to address these issues, thus creating a comprehensive data base on variances in nursing, education, regulation and practice worldwide, making it a global resource.

A major challenge for all countries is to establish workforce planning mechanisms that effectively meet nursing resource requirements in terms of supply and demand. In that regard, nursing shortages in the United States mirror the growing interdependency of labor markets throughout the world and the need for national and international nursing workforce policies. The challenge for workforce planning related to the global migration of nurses, however, is to focus not only on the number of nurses entering the country, but also on the number of nurses leaving the country, the number of new nurse graduates and the effect of internal migration, such as the movement of nurses from state to state and from rural to urban areas. Also essential is an understanding of the education and licensure systems of migrating nurses to ensure a proper skill mix for the nursing workforce of a country (Kingma, 2006).

Thus, the global nurse workforce must be viewed, not only within the context of the health status of nations, government investment in health budgets, nurse/health care migration, economic realities, and working conditions but also within the context of the diverse preparation and practice of its practitioners.

**Recommendations for the Future of the U.S. Nursing Workforce**

The authors believe that the Committee has an unparalleled opportunity to challenge the status quo in nurse utilization and to significantly contribute not only to a national but also a global health workforce agenda. Such an agenda requires reliable, stable and competent nurses functioning at all levels of health care systems. The authors have provided specific recommendations for your consideration, and present them within a contextual framework that acknowledges the historic and current leadership role U.S. nursing plays in the international nursing community. That framework suggests that the Committee’s recommendations will have dramatic domestic and global implications. The authors have identified six recommendations for action:

1. Promote targeted educational investment in foreign-educated nurses in the U.S. nursing workforce.
2. Promote baccalaureate education for entry into nursing practice in the United States.
3. Harmonize nursing curricula.
4. Add global health as subject matter to undergraduate and graduate nursing curricula.
5. Establish a national system that monitors and tracks the inflow of foreign-educated nurses, their countries of origin, the settings in which
they work, and their education and licensure to ensure a proper skill mix for the U.S. nursing workforce.

6. Create an international body to coordinate and recommend national and international workforce policies.

**Recommendation 1: Promote Targeted Educational Investment in Foreign-Educated Nurses in the U.S. Nursing Workforce**

One response to the global shortage of nurses is to increase the number of nurses produced. Scaling up the health workforce is on the global agenda (Vujicic et al., 2009). Likewise, the growing demand in the United States for nurses and the predicted nursing shortfall require that the United States increase its number of nurses and nurse faculty (Buerhaus et al., 2009).

The clear linkage between quality nursing education and health outcomes identifies that nursing education and continuing professional development are essential elements when tackling nursing workforce challenges for the future delivery of care. Moreover, there is a clear linkage between quality nursing education and health outcomes. Since substantial numbers of foreign-educated nurses hold baccalaureate degrees, targeted opportunities for education should be directed at encouraging them to complete masters and doctoral nursing programs as preparation for clinical and faculty leadership roles. This approach would increase the applicant pool for graduate study and enlarge faculty numbers. In addition, it would prepare foreign-educated nurses with graduate degrees to serve in faculty and leadership roles in their home countries when they return—an approach used in many professions to upgrade a country’s knowledge and skill base by profession. CGFNS data identify that many foreign-educated nurses have completed master’s degree programs but are hired to only work in staff nurse positions, suggesting underutilization or lack of consideration for other nursing or faculty roles (CGFNS, 2002).

**Recommendation 2: Promote Baccalaureate Education for Entry into Practice in the United States**

Baccalaureate programs are on the rise internationally. In most cases, the rise of baccalaureate nursing programs represents a focused, often mandated, policy agenda—without the complex history that has framed baccalaureate education in the United States. The Philippines moved to the baccalaureate for entry into the profession in the mid-1980s. Canada also requires the baccalaureate for entry for new graduates in most provinces. The United Kingdom has moved to university preparation of first level nurses. Mexico and India are phasing out their non-baccalaureate nursing programs. The Ukraine has scaled up its nursing programs, as well, in order to enhance the profession in the country and to increase
the global marketability of its nurses. This international trend toward mandated baccalaureate education for entry into the profession places the United States in a less progressive and less competitive position in the global nursing community.

Although the Bologna Process\(^4\) directly concerns Europe and its immediate neighbors, it has generated global attention because harmonization of nursing standards in this large geographical area will have worldwide implications (Zalalequi et al, 2006). It has heightened awareness in many countries of the need for baccalaureate education in nursing, motivating them to move toward the baccalaureate as the entry into practice credential.\(^5\)

Because the requirements and competencies of the Bologna Process and the Tuning Project\(^6\) identify the need to address educational equivalences and differences in nursing education and qualifications worldwide, careful comparisons between education systems will be necessary for the foreseeable future. For example, competencies and hours of instruction of clinical practice will need to continue to be assessed when countries import nurses.\(^7\)

Although baccalaureate education for entry into U.S. nursing has been controversial since 1965 (ANA, 1965), the present complexity and high technology used to practice nursing in all settings requires now and in the future that nurses be grounded in science and critical thinking. The rise of baccalaureate education globally, coupled with the Bologna Process, suggests that the United States must upgrade its educational standards for entry into the profession. The profession needs to muster the political will to make this unrealized goal a reality—not only to address quality gaps in educational preparation, but also to be a credible player in the future domestic and global health care labor market.

**Recommendation 3: Harmonize Nursing Curricula**

U.S. nurse educators should form strategic partnerships to share nursing knowledge and exchange information and best practices state-to-state and regionally. The U.S. nursing education community should promote sustainable global knowledge networks and the open exchange of tools that promote curricula in-

\(^{4}\)The Bologna Process creates the European Higher Education Area by making academic degree and quality assurance standards more comparable and compatible throughout Europe. The Bologna Process currently has 46 participating countries committed to “Harmonizing the Architecture of the European Higher Education System.” It is named after the place it was proposed, the University of Bologna, Bologna, Italy.

\(^{5}\)Canada, India, and the United Kingdom are examples of countries implementing baccalaureate education for nursing.

\(^{6}\)The “Tuning Project” is a methodology utilized with the Bologna Process that establishes reference points and builds templates for learning outcomes and competencies for specific academic disciplines.

\(^{7}\)U.S. immigration law requires that foreign-educated nurses seeking U.S. employment must have their credentials evaluated in terms of comparability of education, English language proficiency, and licensure validity.
novation based on learning outcomes. Sustained investment in nursing education must become a national and world priority.

**Recommendation 4: Add Global Health as Subject Matter to Undergraduate and Graduate Nursing Curricula**

To better prepare nurses to work within a globalized health system, U.S. nursing programs should include courses on global health. Such courses would focus on the characteristics of health systems worldwide with course content including, for example, high exposure to infectious diseases, underinvestment in health system infrastructure, deteriorating working conditions and acceleration of health professional migration. This would prepare U.S. students to better deal with the migrating nurse workforce and its future demographic characteristics.

**Recommendation 5: Establish a National System that Monitors and Tracks the Inflow of Foreign Nurses, Their Countries of Origin, the Settings in Which They Work, and Their Education and Licensure**

A comprehensive database that collects, monitors, and tracks information about foreign-educated nurses in the U.S. workforce would play a significant role in formulating health care policy. Such a database would assist governmental and private agencies regarding the education, skill mix, practice, and immigration patterns of immigrant nurses—all necessary data to intelligently inform health planning and policy decisions.

**Recommendation 6: Create an International Body to Coordinate and Recommend National and International Workforce Policies**

Globalization has created a world market for a globalized nursing workforce. For nurses to take advantage of these opportunities, mechanisms are needed that compare the education and qualifications of applicants against global standards. Such an entity would acknowledge that mobility is a core element of globalization and recognize the need for international standards of minimal competence. The United States should work closely with the International Council of Nurses (ICN) in pursuing this goal.

The 2006 *World Health Report* (WHO, 2006) focused on health and human resources and identified the central role regulators play in the protection of the public. It also acknowledged that factors such as migration are placing existing approaches to regulating professionals under considerable strain. While regulators generally have well-established standards and processes for initial registration, this is not usually the case for determining continuing competence. Ensuring
the competence of health professionals remains an important regulatory issue that is now being framed in the broader context of promoting patient safety and advancing the quality of health care services. Ensuring the competency of health professionals entering the United States remains an important priority—as it is for other countries.

In short, a newly established standard of continued competence needs to be offered globally. This new standard must, at a minimum, measure the aptitude, knowledge and skills of nurses around the world and predict their ability to succeed in patient care in global health care environments. The challenge is to incorporate into workforce planning, the development of appropriate quality assurance processes and mechanisms that encompass foreign providers and educational programs in such a way as to ensure predictability and competence in the workforce (Aiken et al., 2004; Kingma, 2006; Little and Buchan, 2007).

OVERVIEW OF INTERNATIONAL NURSING EDUCATION AND REGULATION

Key Issues and Challenges in Nursing Education

Although nurses share a common professional history, internationally their educational preparation, regulation, and practice patterns are highly diverse and vary considerably in complexity and scope. There are differences in credentialing requirements that include professional licensure, use of titles, and accreditation of educational programs (ICN, 2003). Because of these world-wide differences, the skill mix of the nursing workforce also is diverse. Thus, the globalization of the nursing workforce must be viewed not only within the context of the health status of nations, government investment in health budgets, nurse/health care migration, economic realities, and working conditions but also within the context of the diverse preparation and practice of its practitioners.

Achieving global standards for the education of nurses is a vision of many nursing professionals, and has been promoted by the ICN for over a century. However, achieving that goal remains unrealized and is complicated by the variations in nursing education throughout the world. Many countries specify university-level education as the minimum entry requirement for nursing—but the idea of university education for nursing remains challenging, with disparities being common in the programs currently offered in different parts of the world. Compounding the issue is the number of countries that still consider initial nursing education at the secondary school level to be adequate.

Educational programs also vary in type, number, size, and degrees offered. For example, all nurses from the Philippines complete a baccalaureate degree. Denmark, Ireland, New Zealand, and Spain also have single programs for qualifying as a nurse. On the other hand, in the United Kingdom, nurses receive either a nursing diploma or a degree. In the United States there are three educational
Entry-level professional nursing programs are designated as diploma, associate degree or baccalaureate. Diploma programs are the most prevalent, worldwide, with baccalaureate programs on the rise. However, many countries are experiencing faculty shortages, which substantially impacts the number of nurse graduates from all programs. For instance, schools in Vietnam and Eastern Europe still operate under the practice of physicians serving as the majority of nursing faculty. Other countries, such as those in the Middle East, do not have the infrastructure to support higher education and nurses must travel abroad to be educated as faculty. In many countries shortages of nursing faculty relate to cultural, social and economic norms about the education, status and role of women. In many instances most patient care jobs are held by female nurses while administrative and faculty jobs are held by male nurses or doctors. The shortage of experienced nursing faculty, worldwide, adds to the challenge of establishing and maintaining standards (Blythe and Baumann, 2008).

Action by the World Health Assembly (WHA) in 2001 included the development of global standards for the initial education of nurses. This was followed in 2006 by the World Health Organization (WHO) Task Force on Global Standards in Nursing and Midwifery Education and in 2009 by the WHO publication, *Human Resource for Health: Global Standards for the Initial Education of Professional Nurses and Midwives*. The WHO goal of global standards is to establish educational criteria and ensure outcomes that (1) are based on evidence and competency; (2) promote the progressive nature of education and lifelong learning; and (3) ensure the employment of practitioners who are competent and who, by providing quality care, promote positive health outcomes in the populations they serve (WHO, 2009).

Many source and recipient countries have established educational programs to ease the transition of migrant nurses. For example, colleges and universities in Canada have created courses to respond to knowledge deficiencies. Canada also has created prior learning assessment and recognition (PLAR) initiatives that provide practical validation of immigrant nurse competencies in lieu of and/or in conjunction with course work (Hendrickson and Nordstrom, 2007). Because there can be language and cultural adaptation issues, countries like the United Kingdom require foreign nurses to undergo orientation to the local culture of health care upon their arrival in the United Kingdom (Kingma, 2006).

Blythe and Baumann (2008) state, “While international and national nursing bodies are focusing on international standards for nurses, more inclusive movements for educational harmonization that involve national governments are underway. One of the most significant is the Bologna Process.” The purpose of
the Bologna Process is to make academic degree standards and quality assurance standards comparable and compatible throughout Europe. The process extends beyond the EU to include some 46 countries.

Global standards continue to be a goal of the future. In the meantime, countries must work to ensure an adequate source of health professionals to provide care for current and future patient needs. Ideally, global standards will be guidelines that serve as benchmarks for the profession. The commitment of the United States to pursue this goal would have a significant impact on its realization.

Key Issues and Challenges in Nursing Regulation

Regulatory Structure

In addition to differences in education, the nursing profession varies by country in how it is regulated. Many countries have had statutory nursing regulation for years, regulation that ensures a safe and competent nursing workforce. However, there are still countries with no nursing regulation, rules, or other regulatory mechanisms that emanate from the government. In still other countries there is provision for nursing regulation, either in statute or in other systems of rules, however, for various reasons no mechanisms exist that establish a legal framework for nursing as an autonomous regulated profession (ICN, 2009a). Some examples of regulatory systems include:

- A single regulatory authority, such as the Nursing and Midwifery Council (NMC) in the United Kingdom.
- A national/governmental body that determines basic competencies but has no regulatory authority, such as Denmark, Ireland, and Taiwan (ICN, 2009a).
- Regions acting as autonomous units with the government setting standards for only some of the jurisdictions, for example, Spain (ICN, 2009a).

Therefore, as nurse migration accelerates, it should be recognized that the standards, competencies and qualifications required to practice as a nurse vary globally.

Licensure

All countries do not license nurses. Some countries require nurses to pass an examination after completion of their nursing education before they can practice. Nurses in the Philippines, Australia, Thailand, Japan, Singapore, the Cameroons, Korea, and Poland take a licensing exam that provides national licensure and registration as a first level (registered) nurse. Other countries, such as Nepal and Mexico, do not require a post-graduation examination. The nursing schools
administer an exit or qualifying examination and upon passage, the student is
granted a diploma. The diploma allows the graduate to practice as a nurse.

While some countries provide national licensure, still others license nurses
by province or state. Countries such as India only allow nurses to be licensed in
one state at a time. In Canada, nurses are licensed by the individual provinces.
Each province has its own educational structure and regulatory authority; how-
ever, nurses licensed in one province can achieve licensure by endorsement in
another province. In the United States nursing licensure is at the state rather than
the national level. The United States does not offer a single nursing license that is
recognized and valid in all states and territories within the United States. Instead,
each state controls the practice of nursing within its borders. The nurse must be
licensed in the state in which he/she is employed. The United States does offer
the mutual recognition model of nurse licensure, which allows a nurse to hold a
license in his or her state of residency and to practice in other states, subject to
each state’s practice law and regulation. Under mutual recognition, a nurse may
practice across state lines unless otherwise restricted (NCSBN, 2009a).

As part of emerging practices around increased migration, some countries
test nurses’ competencies before they leave their country of origin. For example,
the National Council of State Boards of Nursing administers the U.S. Nurse Li-
censure Examinations (NCLEX-RN® and NCLEX-PN®) in major cities around
the world to test the competencies of nurses who desire to migrate to the United
States to work. Pass rates of foreign-educated nurses on the NCLEX-RN exami-
nation are generally in the 48−52 percent range but vary by country of education
and experience with multiple-choice testing.

A number of U.S. states require that foreign-educated nurses take the CG-
FNS Qualifying Exam® as a prerequisite for licensure. Annual CGFNS Validity
Studies over the last 5 years indicate that foreign-educated nurses who pass the
CGFNS Qualifying Exam on the first attempt have an 88−92 percent chance of
passing the NCLEX-RN examination on the first attempt, which is comparable to,
and in some cases higher than, the pass rates of U.S. graduates taking the NCLEX
for the first time. Table J-1 depicts the 2007 NCLEX pass rates of U.S. and
internationally educated nurses as well as nurses educated in the countries that
are historical and emerging suppliers of registered nurses to the U.S. workforce.
Statistics for foreign educated nurses who sat for the NCLEX-PN examination
also are provided because many registered nurses who are unable to pass the RN
examination go on to take the PN licensure examination.

Other countries that import nurses, such as Canada, also give their licensing
examinations abroad. Saudi Arabia and the United Arab Emirates give licensure
examinations in the Philippines and India for potential immigrants to their coun-
tries. Still other countries ensure a supply of foreign-educated nurses by estab-
lishing agreements with governments, where nurses are comparably educated
to supply quotas of nurses for defined periods (Kingma, 2006). Both the United
Kingdom and Japan have such arrangements with the Philippines.
Registration

Registration of nurses is an administrative process that allows the government agency responsible for health and safety to track and monitor health care professionals. In some countries, such as the United Kingdom, registration is the recognition by the professional regulation body that the nurse has completed all educational requirements to practice as a nurse. In countries in which licensure by examination is required, registration by the regulatory body documents that the nurse has passed the examination and met all requirements to be listed on the registry. Registration requires an initial fee, and in most countries, periodic payment of fees to maintain that registration.

Graduates of nursing programs in such countries as Peru, Columbia, the Dominican Republic, the Ukraine, Armenia, Russia, and other Eastern European countries are not required to hold licenses. The graduate nurse’s diploma serves as the permit to practice the profession of nursing. The nurse’s professional standing is maintained by the school of nursing, the Ministry of Health, or the professional association.

With the trend of increasing globalization and mobility of the nursing workforce, regulators are under increasing pressure to deal with the myriad number of nurses who wish to move from their country of origin to work in new jurisdictions. Because regulations vary considerably in complexity and scope, not all countries or jurisdictions are able to absorb these mobile nurses into their workforce. In general, countries that receive significant numbers of foreign-educated nurses employ a variety of regulatory approaches to ensure that migrating nurses are prepared to practice competently and safely in new, and often unfamiliar,
health systems and cultures. For example, in the United States foreign-educated nurses must meet federal requirements for obtaining an occupational visa and then state requirements for licensure before they can be employed as a nurse.

Nursing Titles

Titles are used to inform the public of the scope of practice and the professional identity of a health care worker. Titles may differ by country. The nurse’s role and responsibilities also may differ by country, although the titles may be the same. Commonly, there are four categories of titles: first-level or registered nurse, second-level or practical nurse, specialty-midwife, and nonprofessional level.

In the United Kingdom and its former colonies, as well as in South Africa, the registered or first-level nurse may have a diploma or baccalaureate in nursing. The enrolled nurse is considered a second-level nurse, has 1-2 years of education, and reports to a registered nurse or doctor. In some countries, midwives and nurses whose initial education was in a specialty, such as entry-level psychiatric nurses, are only licensed to practice their specialty. Some countries have community health nurses who are neither registered nor enrolled. Table J-2 presents the education and title variations in select countries. These countries represent diversity geographically, culturally and developmentally. They also are countries from which we expect increasing numbers of nurses who are interested in migration.

INTERNATIONAL MODELS OF NURSING

All countries, including the United States, require that professionals who enter the country to work meet certain educational and/or licensure requirements. Those seeking to practice nursing are no exception. Although there are no universal standards of education, the nursing profession, through international health care and nursing bodies and catalyzed by the ICN, has established baseline standards for entry into nursing education programs.

These standards posit that professional nursing is an entry-level profession whose education begins upon completion of secondary school (high school). Vocational or second level nursing education is conducted either before or after secondary school or is a program that is part of the secondary school curriculum. In most instances, entry into higher education requires completion of secondary education. Initial education is the first program of education required to qualify as a professional nurse.

First-Level Nurses

ICN has established guidelines and advocates for educational standards for first level, general nurses. The ICN Guidelines for National Nurses Associations
### TABLE J-2 Titles of Nursing Personnel from Select Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>First Level</th>
<th>Second Level</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Nurse Diploma or BSN</td>
<td>Technical or Auxiliary</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>State Registered Nurse</td>
<td>Enrolled Nurse</td>
<td>Registered Midwife</td>
</tr>
<tr>
<td>Columbia</td>
<td>General Nurse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Junior or Senior Clinical Nurse</td>
<td>Health Assistant</td>
<td>Assistant Clinical Nurse</td>
</tr>
<tr>
<td></td>
<td>Chief Staff Nurse</td>
<td></td>
<td>Assistant Public Health Nurse</td>
</tr>
<tr>
<td>Israel</td>
<td>Licensed, Registered, Graduate, or Qualified Nurse</td>
<td>Practical Nurse</td>
<td>Midwife</td>
</tr>
<tr>
<td>Lebanon</td>
<td>Registered Nurse or Technical Superior</td>
<td>Technical Nurse</td>
<td>Psychiatric Nurse Midwife</td>
</tr>
<tr>
<td>Nepal</td>
<td>Registered Nurse</td>
<td></td>
<td>Auxiliary Nurse Midwife</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Auxiliary Nurse Midwife and Midwife</td>
</tr>
<tr>
<td>Peru</td>
<td>Registered General Nurse</td>
<td>Auxiliary/Midwife</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>Nurse</td>
<td>Assistant Nurse</td>
<td>Midwife</td>
</tr>
<tr>
<td>Ukraine</td>
<td>Medical Sister</td>
<td>Medical Sister in the Specialty of Pediatrics</td>
<td>Feldchers</td>
</tr>
</tbody>
</table>

on Development of Standards for Nursing Education and Practice and Competencies for the Generalist Nurse are used by countries as a benchmark to set their curricula and to measure their comparability to recommended standards. ICN has described the scope of preparation and practice to enable the generalist nurse to have the capacity and authority to competently practice primary, secondary and tertiary health care in all settings and branches of nursing. Completion of a country’s initial nursing education identifies one as a registered nurse (RN, licensed nurse, professional, or qualified nurse). An RN is defined as one who (a) has successfully completed a program of education approved by the nursing board/council, (b) has passed the examination established by the nursing board/council (if appropriate), and (c) continues to meet the standards of the nursing board (ICN, 2003).

### Second-Level Nurses

The defining factors differentiating professional nursing from vocational/practical nursing are the educational requirements for admission to the nursing program, the educational program requirements, the curriculum, and the stan-
Vocational Nursing Programs

Vocational programs consist of theoretical courses in science and nursing competencies along with clinical experience. The length of the program varies from 12 to 18 months. Vocational education has a greater concentration on clinical experience than professional nursing. It does not incorporate the social sciences, research, management and autonomy of practice that professional nursing programs include.

Not all countries recognize vocational nursing or have a licensure or registration process for such graduates. Ironically, some countries that have labeled their nurses as first level have educational programs that are quantified by the United States and other countries as second level (vocational) because they do not occur post-secondary or their curriculum is not comparable to that of a first level nurse. When graduates of these programs immigrate to other countries, such as the United States, they are deemed to be practical or vocational nurses. This has been a frequent occurrence for nurses educated in Mexico, Eastern Europe, and Taiwan.

Professional Nursing Programs

Professional nursing education programs are conducted at the post-secondary level. The students’ nursing education is conducted after the 11th or 12th grade. Nursing courses are separate from the secondary or high school curriculum, which is documented by a diploma, certificate or examination. Use of these three terms varies depending on the country of education and language.

Associate degree (AD) nursing programs are conducted at the community college level. The AD nurse is primarily a Western phenomenon, with very few AD programs located outside the United States. Korea has an associate degree program that is 3 years in length. China uses the title “associate degree” for programs that would be considered diploma programs elsewhere.
Several AD programs have begun in the Philippines; however, like practical nursing programs, they have not been accredited by the Commission on Higher Education (CHED) or approved by the Professional Regulation Commission (PRC). A number of the AD programs in the Philippines have sought affiliations or partnerships with U.S. community colleges or accredited AD programs to ensure recognition of their nurse graduates. One such program started in 2009 as a partnership with Fresno City College in California. After completing a year of study in the Philippines, the nurse attends Fresno’s AD program and earns a dual diploma.

Prior to 2000 most nursing programs in Mexico were considered to be comparable to second level U.S. programs. Since then, the nursing profession and academic and health officials in Mexico have worked to scale up nursing education and the nursing workforce in that country. The ultimate goal is baccalaureate prepared nurses. However, many of its existing nursing programs are 2−3 years plus one year of community service. Those programs are seeking to be recognized as comparable to the U.S. associate degree.

Professional nursing programs may differ in the theoretical and clinical courses that are taught. In certain provinces in India male nursing students are not permitted to provide maternal/infant care (obstetrics). This effectively is a barrier to migration as obstetrics is considered a cornerstone of basic nursing education, and a receiving country such as the United States would find the education deficient. The male would have to return to school to acquire the requisite education to be eligible to be licensed as a nurse in the United States. Certain countries in the Middle East have prohibited women from attending nursing school, so their graduates are men. The result is that a significant number of male nurses from those countries have migrated to the United States. Recently, women-only nursing schools have been started in Jordan.

Community/Military Service

In a number of countries, service requirements must be met before a nurse’s education is considered complete and a license is granted. Such program requirements are considered as a citizenship responsibility. In some countries, that service is payback for the student’s public funding of education. Nurses in Mexico must complete a 1-year community service before they are granted licensure. Other countries, such as Egypt, Eritrea, and Israel, may require a period of military service before the nurse’s education is deemed complete. The nurse will not be registered until service requirements are fulfilled.

Alternate Educational Pathways

Historically, the United Kingdom and its former colonies (e.g., Nigeria) allowed alternative education paths for those wanting to be nurses. A student
could enroll in a generalist program, either diploma or university based, and upon completion of the program be eligible to provide general nursing care to patients across the continuum of life.

A second alternative was the specialist path, through which the student chose to be educated as a psychiatric or pediatric nurse or a midwife. Students received little or no education in general nursing or in the areas outside their chosen specialty. Upon graduation, the student was licensed and registered as a specialist. If the student desired to be a generalist (first-level) nurse, additional education and licensure were required. In some countries these alternative programs are on the decline, in part as a response to the ICN Guidelines and the expectations of the global nursing community. It should be noted that in the United States specialization in nursing is at the graduate level rather than at entry level programs.

Some countries have combined nursing specialist programs with general nursing. In addition to the specialist courses in pediatric, psychiatric/mental health or community health nursing or midwifery, the student is required to take general nursing courses in addition to, and concomitantly with, their specialty courses. Graduates of the program can practice as general, first level nurses and/or as specialists. Several nursing schools in Germany have combined their pediatric nursing specialist program with general nursing. Graduates meet the requirements to practice as first level nurses as well as pediatric nurses. The Ukraine has established midwifery programs that incorporate general nursing courses in medical, surgical, pediatric and psychiatric nursing. Graduates are midwives but are not limited to just providing care to pregnant women.

**Physician to Registered Nurse Programs**

The worldwide nursing shortage, demand for first-level nurses, and recruitment of foreign-educated nurses have spawned a recent phenomenon—physician to registered nurse programs. In some countries many physicians are unemployed or underemployed and may work alternatively as nurses. One such country is Kazakhstan. A graduate of a medical college in that country who is granted the qualification of obstetrician will also be allowed to be employed as a Registered Nurse of General Practice.

Physicians who want to find employment overseas often discover that their medical education does not meet the criteria for medical practice in the country of intended migration. For this reason many physicians have sought to be recognized or licensed as nurses in countries experiencing nursing shortages. Although physicians and nurses may take the same science courses and have similar clinical exposure, medicine and nursing are distinct disciplines with different orientations and cultures. In most countries, including the United States, the physician cannot become a nurse de facto as desired without supplemental education. The distinct and different regulatory expectations of the two disciplines in the United States increase this complexity.
Typically, the physician will need 12–18 months to complete nursing science and clinical courses. In the United States these programs are modeled after the accelerated RN to BSN tract. Other models are specific to physicians. Physician-to-RN programs tend to be located in states with large, recent-immigrant populations. Immigrant physicians who have not met the criteria to practice medicine in the United States have been viewed as excellent candidates for accelerated nursing programs, which increases nursing numbers and diversity representation.

St. Petersburg University in Russia has a specific Physician-to-RN program that is marketed internationally as a way to facilitate migration and with the promise of economic security. The courses are taught in English. In the Philippines a large number of nursing schools now offer nursing programs for physicians with the physician being given transfer credit for previous education. The Philippines has significant unemployment of nurses which suggests that the incentive for these programs is migration.

Mexican physicians have been attracted to Physician-to-RN nursing programs developed by U.S. recruiters affiliated with hospitals in Southwest Border States. Health care professionals who are bilingual and have cultural competency skills are aggressively recruited by employers where there are significant Spanish speaking populations. Reportedly, there is underemployment of physicians in Mexico—and nursing offers economic security and migration opportunities. Because Mexico is part of the North American Free Trade Agreement (NAFTA), visa quotas do not limit nurses and this provides an added incentive for physicians to pursue the nursing profession.

Two Physician-to-RN programs that have been successful in the United States are conducted by Lehman College in New York, part of the State University of New York (SUNY) system, and Florida International University, in Miami, Florida. Programs such as these demonstrate unique responses to the global nursing shortage. Because these programs are a new phenomenon, there has been no measurement to date of the integration of these graduates into the culture of nursing in the United States.

**MIGRATION AND THE GLOBAL NURSING WORKFORCE**

**Globalization of Nursing**

Migration is the movement of people across borders, usually for the purpose of acquiring a new residence and employment. It can occur within countries (internal) or across national borders (external)—through daily commuting, seasonal relocation, particularly from colder to warmer climates, rural/urban shifts, and internationally (Davis and Richardson, 2009). The annual flow of international migration has continued to increase over the past decades—to the point that in the early 21st century it is estimated that 1 out of every 35 individuals worldwide is an international migrant (Kingma, 2006).
U.S. immigration policy is shaped by both political factors and the concerns of the health care community. It has evolved over time to respond to the country’s need not only for various labor skills but also for health care delivery. Foreign-educated nurses have been a part of the U.S. workforce since World War II. However, their recruitment has ebbed and waned as the health care system has been challenged by demographic, economic and workforce changes, as well as changing immigration laws (Nichols et al., 2009). Thus, the flow of foreign-educated nurses into the U.S. workforce is unpredictable and shaped by multiple, dynamic international and national forces. The absence of a national system to monitor inflow patterns further complicates the understanding of the impact of foreign-educated nurses on the U.S. health care workforce.

Cumulative CGFNS data from 1978 to 2000 indicate that the majority of foreign-educated nurses seeking to migrate to the United States were educated in the Philippines (73 percent), followed by the United Kingdom (4 percent), India (3 percent), Nigeria (3 percent), and Ireland (3 percent). That profile has now changed. Although nurses educated in the Philippines continued to be in the majority in 2008, their overall percentage declined from 73 percent to 59 percent—while the percentage of nurses educated in India increased from 3 percent to 19 percent. Canada (5 percent) and the Republic of Korea (3 percent) are now among the top countries of education of nurses seeking an occupational visa, while the number of nurses coming from the United Kingdom and Ireland has declined (Nichols et al., 2009).

Factors Affecting Migration

Nurses and other allied health professionals have many reasons for migrating—reasons usually identified as push factors (reasons for leaving their own country) and pull factors (reasons for choosing a host country). Push factors may include such things as poor wages and working conditions, poverty, civil war, little opportunity for advancement, and other factors that make living and working in a country difficult. Pull factors are those that make a host country desirable and include such things as better living conditions, higher wages, greater professional opportunities, and better work environments (Davis and Richardson, 2009).

In a CGFNS International survey (2007), foreign-educated nurses in the United States most frequently cited poor wages and few jobs (due to the nursing shortage, underutilization of nurses and maldistribution of nurses) as the primary reasons for leaving their home countries (push factors). The United States was identified as the destination country of choice because of such pull factors as better wages and working conditions, an improved way of life, and greater op-

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8 In 1977 the U.S. Departments of State, Labor, Health Education and Welfare, and the Immigration Service mandated that CGFNS be created to assess the education and licensure credentials of foreign-educated nurses seeking employment in the United States.
portunity for advancement. Many of the nurses had friends and family members living in the United States, another pull factor.

The world is seeing a sharp increase in the number of highly skilled workers moving across international borders (Kingma, 2006). Health care professionals, including nurses, make up a significant portion of that increase. Workforce planning is essential if the global migration of nurses is to be addressed effectively. Such workforce planning, however, requires not only data on the number of nurses entering a country, but also on the number of nurses leaving the country, the number of new nurse graduates, and the effect of internal migration, such as the movement of nurses from state to state and from rural to urban areas (Buchan and Sochalski, 2004).

The 2004 National Sample Survey of Registered Nurses (BHP, 2004) indicated that the number of RNs who received their education outside of the United States increased by about 1.3 percent between 2000 and 2004. Nearly 90 percent (89,860) of foreign-educated RNs were employed in nursing, with the majority concentrated in a handful of states in 2004. Almost 70 percent of foreign-educated RNs worked in six states: California (28.6 percent), Florida (10.7 percent), New York (10.4 percent), Texas (7.5 percent), New Jersey (6.9 percent), and Illinois (5.6 percent). The survey also found that foreign-educated RNs (64.7 percent) are more likely than the U.S. registered nurse population overall (56.2 percent) to be employed in hospitals and more likely to be staff nurses (72.6 versus 59.1 percent of employed RNs overall).

CGFNS International (2002) conducted a survey of foreign-educated nurses to generate baseline data that might better guide policy and inform both the profession and the public about the trends in nurse migration to the United States. The findings from this study are summarized below and place the nurse immigrating to the United States within the larger framework of global migration. Results were based on a sample of 789 foreign-educated nurses (461 U.S. registered and 328 non-U.S. registered) through a 76-question telephone interview. The survey revealed pertinent data on the immigration, education, licensure, and employment characteristics of foreign-educated nurses in the United States and provides one of the few such databases in the United States.

**Foreign-Educated Nurses in the U.S. Workforce**

Registered nurses entering the United States for purposes of employment tend to be female, younger than their U.S. counterparts, and educated in either diploma or baccalaureate programs in their home countries. They are generally licensed in their home countries and have worked for a number of years before migrating to the United States (CGFNS, 2002).

Nearly two thirds of those who responded to the survey worked for some time as nurses in their home countries and most continued to hold a current foreign nursing license after entering the United States. Work experience ranged
from a low of 1 to 5 years to a high of 16 years and longer—but did not figure into job placement or promotion in the United States.

The overwhelming majority worked as staff nurses in a hospital setting in the United States, with the most common specialty areas being adult health and critical care. Seventy percent of the employed registered nurses worked in hospital settings, and 15 percent worked in nursing homes or extended care facilities. Less than 5 percent worked in community health despite the emphasis on that area in many nursing programs internationally. This may be due to the fact that community health nursing in the United States requires that the nurse function more independently than in a hospital setting; have an in-depth understanding of the U.S. health care system; have the communication skills necessary to bridge diverse populations; and be well acclimated to U.S. nursing practice. Since it takes foreign-educated nurses approximately 12 months to become fully acclimated, most tend to work in hospital and long term care facilities.

Eighty-one percent of the employed registered nurse respondents reported feeling moderately or extremely satisfied with their jobs as registered nurses, with most reporting that their nursing experience in the United States had met their expectations. The overwhelming majority indicated that it was certain or likely that they would be employed in nursing 5 years from the date of the survey.

Since graduating from their basic nursing education programs, 188 of the 789 survey participants, or 24 percent, had gone on to complete a formal academic program—161 completing a program in nursing. Forty percent of the 188 respondents obtained a baccalaureate degree, 26 percent an associate degree, and 13 percent a master’s degree.

Most of the participants spoke at least one language in addition to English. Overall, 15 percent reported using a non-English language on the job, with Spanish being the most common. The majority indicated that they had experienced no difficulty speaking or understanding English in their work setting. Of those who did experience difficulty, telephone situations presented the greatest challenge. Almost two thirds of those who noted difficulty in speaking or understanding English had taken steps to improve their language proficiency.

Transitioning to the United States workforce presented numerous challenges for respondents, particularly related to immigration, licensure and entry into practice. Information on the U.S. health care system and on nursing in the United States, facilitation of the immigration process, and an in-depth, culturally sensitive orientation were methods suggested by respondents for easing their transition.

Comparison to the 2000 National Sample Survey of Registered Nurses

Overall foreign-educated nurses in the CGFNS sample were approximately 10 years younger than participants in the 2000 National Sample Survey. A higher percentage of U.S. licensed foreign nurse graduates were educated in diploma (43.4 percent) and baccalaureate programs (38.8 percent) than in the NSSRN, in
which 29.6 percent of registered nurses were educated at the diploma level and 29.3 percent in baccalaureate programs. Although associate degree programs are not common internationally, 12.6 percent of respondents in the CGFNS survey did indicate that they completed a two-year nursing program. This is far less than the 40.3 percent of nurses in the NSSRN. Foreign nurse graduates were more likely to hold a baccalaureate degree as their basic nursing preparation than their U.S. counterparts.

Registered nurse participants in the CGFNS survey tended to have a higher employment rate overall (87.5 percent) compared to participants in the National Sample Survey (81.7 percent). A greater percentage of foreign nurse graduates worked full time as registered nurses as compared to the National Sample Survey of Registered Nurses (NSSRN), while the rate of part-time employment was higher among participants in the NSSRN. The most common work setting for nurses in both samples was the hospital. A greater percentage of foreign-educated nurses worked in long-term-care settings compared to nurses in the National Sample Survey. Interestingly, fewer foreign-educated nurses reported working in a community health setting in the United States than respondents in the NSSRN, despite the fact that much of nursing practice internationally tends to be in the community.

Participants in the CGFNS survey (30 percent) were more likely to complete additional academic nursing or nursing-related preparation following their basic nursing education than participants in the NSSRN (18.6 percent). As in the NSSRN, the highest level of academic preparation most often achieved by foreign nurse graduates was the baccalaureate degree. When these data were categorized by ethnic/racial group, those who identified themselves as Asians and Hispanics in the CGFNS survey were more likely to hold a baccalaureate degree than those who identified themselves as Black/African and Caucasian. In the NSSRN, Asians and Black/African Americans were more likely than Hispanics and white (non-Hispanics) to hold a bachelor’s degree (CGFNS, 2002).

There are no data documenting the number of U.S.-born nurses who attend nursing schools outside the United States. CGFNS is aware of nurses who were educated in countries such as Germany because their parents were military or government employees. Those nurses are treated as foreign-educated nurses who were born outside the United States and must go through an educational credentialing process to ensure the comparability of education. A positive bonus is that they are English proficient and often multilingual.

A recent phenomenon is the establishment of offshore schools, such as St. Kitts International School of Nursing, which are recruiting U.S. students who have not been able to enroll in U.S. nursing programs because of the shortage of faculty and seats. Reportedly, there are Filipino students who are U.S. born or permanent residents who are returning to their parents’ country where there are an abundance of nursing schools to enroll in a nursing program with the intent of returning to the United States to be licensed and to practice. Enrollment data
also show that there are significant numbers of nursing students who are immigrants enrolled in U.S. nursing schools. This is especially reflected in schools that have a high number of international students. Howard University’s nursing school reportedly has had enrollments of over 50 percent of its students who were immigrants.

**Transition to U.S. Practice**

In an effort to augment descriptive data about foreign-educated nurses in the United States, CGFNS International investigated challenges the nurses confront in their transition to U.S. practice by surveying members of the American Organization of Nurse Executives who employed foreign-educated nurses. The study’s outcomes indicated that employers recognize the need to address the transition issues of foreign-educated nurses. Precepting, clinical assessment, and a more extensive orientation were the most common measures put in place by nurse executives working in hospitals that employed foreign-educated nurses. Precepting was the measure identified by nurse executives as the most critical to a successful transition (Davis and Kritek, 2005).

Additional services provided to aid in the transition were English language classes, temporary housing assistance, classes on medical slang and idioms, and assertiveness training. Cultural workshops for staff, orientation to the U.S. health care system, and cultural and regional socialization activities, such as welcome and support groups, also were cited as measures introduced to facilitate transition to practice (Davis and Kritek, 2005). Many nurse executives indicated that personal interaction with the nurse prior to coming to work in the hospital helped to make the foreign-educated nurse more comfortable in the new surroundings. Personal interaction included formal “buddy” and pen pal programs through which staff corresponded with foreign-educated nurses prior to their arrival.

The cost of orienting a foreign-educated nurse is generally comparable to that of a new graduate but is influenced by a number of factors: the similarity of the health care system in the nurse’s home country to that of the United States; the similarity of the nurse’s scope of practice to that of U.S. nurses; the nurse’s command of the English language; the amount of clinical experience the nurse had prior to entering practice in the United States; and the amount of orientation to the United States and its health care system by the recruiting firm, if one is used.

**Challenges During Transition to Practice**

Although most foreign-educated nurses look forward to working in the United States, their adjustment to practice can be affected by several factors, such as the health care system of the nurse’s home country, language competence, knowledge of medications and their administration, and familiarity with technology (Edwards and Davis, 2006).
Variations in Health Care Systems: The more similar a nurse’s health care system is to that of the United States, the easier the transition and the more comfortable the nurse is in the clinical setting, focusing more on specific practice needs than on the transition process itself. Foreign nurse graduates consider receiving information about the U.S. health care system as the most necessary component of clinical orientation. Because health care systems vary greatly from country to country, they believe it is essential to have an understanding of how the U.S. system works in order to function competently within that system.

Orientation to the health care system should include a description of the health team, its members, and their roles. Information on how the system is accessed by patients and the nurse’s role in management of care also should be included. Although nurses educated outside the country will not come to understand the system thoroughly until they work within it, preliminary knowledge helps to make the transition to U.S. practice less stressful (Davis and Kritek, 2005).

Language Competency: Nurses for whom English is a second language have repeatedly indicated to CGFNS that perception of their nursing competence by patients and health care personnel is tied to their ability to speak English as a native English speaker. Employers cite language competence as the most critical skill that foreign-educated nurses need during their first year of practice in the United States (Davis and Kritek, 2005).

Knowledge of Medications and Pharmacology: Western medicine relies heavily on drugs to treat patient illness, many of which are not used in other countries. Some of these medications are available internationally but have different trade names, while others are not yet known internationally, making it difficult for the nurse entering U.S. nursing practice. Medication administration can be intimidating, mainly because of the volume of medications given on a daily basis in the United States and the various medication routes. Most of the errors made by foreign-educated nurses in their first year of practice are related to medication administration (Davis and Kritek, 2005).

Proficiency in Technology: The U.S. health care system relies heavily on technology for diagnostic, preventive, and palliative care—much more so than other countries around the world. Because foreign-educated nurses tend to work in adult health and critical care units in hospitals, they are confronted with technology on a daily basis as they transition to U.S. practice. However, foreign-educated nurses participating in a joint CGFNS/Excelsior College study on their perception of readiness for practice in the United States indicated that technology was one of the areas in which they felt least prepared (Edwards and Davis, 2006).
Acculturation to the United States

Acculturation—the process of adapting or learning to take on the behaviors and attitudes of another group or culture—is an essential aspect of working in a host country. For nurses transitioning to practice in the United States, it generally takes 4 to 6 months to become fully productive and 12 months to feel fully acclimated to the new setting (Adeniran et al., 2005).

Acculturation can be divided into four phases: acquaintance, indignation, conflict resolution, and integration. Familiarity with the process of acculturation helps foreign-educated nurses know what to expect within their first year of practice in a new culture and new work environment. It also helps employers to plan an orientation that addresses the foreign nurse graduate’s needs when entering practice in a host country.

The “acquaintance phase” of acculturation occurs from entry into the culture to 3 months post arrival. It is the stage of initial contact, during which time there is excitement about the new life and new place of employment. This is the time that foreign-educated nurses become oriented not just to the practice environment but also to the community—the time during which they begin to develop a supportive social network of both colleagues and friends (Adeniran et al., 2005).

The “indignation phase” occurs 3–6 months after arriving in a host country. The feelings of excitement about the new position and the new environment give way to feelings of anxiety, which can lead to a sense of isolation and psychological discomfort. Understanding the U.S. health care system and their role in it, and determining what is expected of them and how quickly it is expected, can become overwhelming for foreign-educated nurses. It is during this time that a preceptor is critical. The support that preceptors provide is invaluable because they have knowledge of the system and contacts within and outside of the system. This also is the time that the foreign-educated nurse needs to rely on family, friends and colleagues for support, especially those who have been through a similar experience (Adeniran et al., 2005).

Now also is the time for foreign-educated nurses to seek out regional support groups designed to help immigrants adapt to their new life. Such support groups are generally comprised of individuals with the same ethnic background who have been through the same immigration and transition processes and are willing to share their experiences with those who are new to this country (Nichols et al., 2009).

The “conflict resolution phase” generally occurs 6–9 months after arrival in a host country. This is the time when foreign-educated nurses need to clarify their new roles, gain insight into problem solving, and make personal and professional decisions about their new workplace and community. During this phase they may feel that they are a part of two cultures—their native culture and its work values and the culture of the U.S. health care system and U.S. nursing (Adeniran et al., 2005).
It is in this phase that preceptors and colleagues should help foreign-educated nurses determine what values and beliefs are essential to them. What values and knowledge from their own culture make them comfortable as a nurse in the United States? Which of the values of the new culture and the new workplace can they incorporate into their practice as a nurse? What aspects of nursing practice in the United States do they find difficult to adopt—and why? Exploring these issues with a preceptor, or someone familiar with the process of adapting to a new culture and work environment, will be invaluable to the adjustment of the foreign-educated nurse (Nichols et al., 2009).

The “integration phase” of acculturation occurs 9 to 12 months after arrival. Foreign-educated nurses now experience renewed enthusiasm for their work and their new country, have reconciled the differences between their native culture and their host culture, and are confident in their ability to practice as a nurse in the new culture. It is a time when foreign-educated nurses know they made the right decision to migrate—a time when they will have a sense of belonging to the new culture and, most importantly, a sense of the skills and knowledge that they bring to the profession (Nichols et al., 2009). Because acculturation can take up to a year, preceptors should be available to foreign-educated nurses during that entire time.

Foreign-Educated Nurses and Safe Practice

Foreign-educated nurses generally demonstrate safe practice within 6 months of entering practice. Employers report that there are few, if any, differences in practice after that time. Most errors made by foreign-educated nurses occur during the first 6 months of practice. They usually are errors in medication administration, and tend to occur after preceptorship has been concluded. Nurse executives report that the error rate of foreign-educated nurses is comparable to that of new U.S. graduates. Overall, the experiences of hiring foreign nurse graduates are viewed as positive—mainly due to the characteristics of the nurses themselves (Davis and Kritek, 2005).

Summary

During the last 10 years CGFNS International has conducted studies in an effort to provide data that may assist the U.S. health care community with integrating the foreign-educated nurse into the health care delivery system. These studies provide a glimpse of the overriding concerns and issues that have particular impact on recruitment and utilization best practices. The findings, however, are best understood within the context of the diverse education and licensure systems of foreign-educated nurses, since this diversity has significant impact on the skill mix of the U.S. nursing workforce.

The following sections of the paper provide an overview of the education...
(entry level) and regulatory systems in two groups of countries: those that traditionally have provided registered nurses to the U.S. nursing workforce and those countries that are emerging as sources of migrating nurses. Summary tables are provided to better make comparisons among the supplier countries.

**HISTORIC SUPPLIERS OF REGISTERED NURSES TO THE U.S. WORKFORCE**

Nurses entering the United States for purposes of employment must undergo a federal screening program as part of the visa process to ensure that their credentials are valid, that their education and licensure is comparable to that of a nurse educated in the United States, and that they are proficient in written and spoken English. CGFNS International was named in the 1996 immigration law as an agency to provide such screening, thus, the CGFNS VisaScreen Program is one of the requirements for nurses seeking an occupational visa to work in this country. CGFNS is an immigration neutral organization and does not make decisions on who actually receives a visa nor does it have oversight of foreign-educated nurses entering the country (see Appendix A, About CGFNS International, Inc.). CGFNS VisaScreen® data indicate that from 2005 to 2009, the top countries of education of applicants were the Philippines, India, Canada, the Republic of Korea, and nurses born outside of, but educated in, the United States (CGFNS, 2010a).

**Philippines**

*Overview*

The Philippines has traditionally been considered a source country, one that prepares nurses for the global market. Filipino nurses can be found in almost all countries around the world. However, the majority of nurses educated in the Philippines have usually migrated to the Middle East, the United Kingdom, Canada, Australia, and the United States. CGFNS VisaScreen data, 2005–2009, indicate that nurses educated in the Philippines and seeking an occupational visa to practice in the United States most frequently identified their intended states of practice as California, New York, Texas, Florida, Illinois, and Vermont (CGFNS, 2010b). It should be noted that some states, such as Vermont and California, are considered “gateway” states. Nurses often obtain licensure in these states because requirements are viewed as less burdensome and then endorse into the actual state of intended practice.

*Nursing Education*

Prior to 1984, nursing education in the Philippines was at the diploma and baccalaureate level. Currently, there is only one type of nursing education
program, the Bachelor of Science in Nursing, which is housed in colleges and universities and is 4 years in length. Candidates can apply after completion of 10 years of primary (6 years) and secondary (4 years) education.

Nursing education in the Philippines is modeled after that of the United States and includes courses in the humanities and social sciences, as well as in mathematics and the natural sciences. Nursing content focuses on the four major areas of nursing (adult health, maternal/infant, psychiatric/mental health nursing and nursing of children), as well as community health, nursing research and nursing administration. Nursing courses contain both theory and clinical content, with clinicals being termed “related learning experiences” (CGFNS, 2009).

The number of clinical hours may vary from school to school. Some schools have integrated courses so that certain areas such as psychiatric/mental health nursing and adult health nursing are not individual tracts—a practice in U.S. programs as well. With the advent of technology more programs are integrating simulation to provide clinical experience. Because of the nursing shortage some facilities cannot accommodate students, and those that do, often are unable to accommodate all the students in the clinical areas. Consequently, more and more programs are using simulations to meet the objectives of the related learning experiences.

Accreditation

Education in the Philippines is overseen by two agencies: the Commission on Higher Education (CHED), which is responsible for baccalaureate and higher education programs, and the Technical Education and Skills Development Authority (TESDA), which oversees any program below the baccalaureate level. The Philippine government is promoting the concept of “ladderization” of education. The ladder concept would apply to nursing in the following manner: If an individual entered a nursing program and left at any given point in that education, they would be employable based on the most recent semester completed and certificate achieved according to the following schema:

- At completion of first semester: caregiver certificate. Graduates are able to provide basic care to children, the elderly and the disabled in the home or in an institution—may include course in home management.
- At completion of second semester: nurse aide certificate. Graduates function under the supervision of a registered nurse. Job skills are comparable to nurse aides in the United States.
- At completion of third semester: nursing assistant certificate. Graduates function under the supervision of a registered nurse. Job skills are comparable to a certified nursing assistant in the United States.
- At completion of fourth semester: practical nurse certificate (certified by TESDA). Graduates are able to assist physicians and nurses and are
responsible for direct patient care in hospitals, nursing homes, physician offices, clinics and community agencies.

- At completion of third year: midwifery certificate. Graduates are certified as midwives rather than nurse midwives. Midwives are responsible for the health of both mother and child, only referring to obstetricians if there are medical complications. By law they must have a named supervisor of midwives to ensure safe practice. Midwives work in multidisciplinary teams in both hospital and, increasingly, community health care settings.

- At completion of fourth year: professional nurse degree (must complete Board of Nursing examination given by the Professional Regulation Commission). Four-year education is under the oversight of CHED.

If a school is ladderized, both TESDA and CHED are involved in the educational oversight; if the school is not ladderized, only CHED has oversight. Schools have the option of ladderizing—as of September 2008, 40 percent of schools were ladderized (Personal communication between Nona Ricafort, PhD, Officer-in-Charge, CHED and Barbara Nichols and Catherine Davis, CGFNS, September 17, 2008).

There has been a moratorium on opening professional nursing programs in the Philippines, due primarily to (1) the proliferation of poor quality nursing programs whose graduates are not able to pass the Philippine licensure examination; (2) the high unemployment rate of nurses in the Philippines—it is estimated that over 400,000 Philippine nurses are not able to find jobs; and (3) U.S. immigration retrogression, which has made it more difficult for Philippine nurses to obtain U.S. visas.9

In an effort to bolster Philippine nursing education, CHED, in June 2008, mandated a new, 5-year baccalaureate curriculum that would increase both theory and clinical throughout the program. The schools were to implement the curriculum, which is competency based and introduces nursing in the first semester, by the end of 2009 (Personal communication between Hon. Eufemia F. Octaviano, RN, EdD, Chairperson, Philippine Board of Nursing and Barbara Nichols and Catherine Davis, CGFNS, September 17, 2008). Because of opposition to the 5-year program from various factions, including students, prospective students, and their parents, the program is under review and a hold has been placed on implementation.

**Regulation**

Once the nursing program is completed, the baccalaureate graduate is allowed to sit for the nurse licensure examination, which is administered by the

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9Immigration retrogression is a U.S. State Department process that limits the number of visas issued when the number of applicants exceeds the number of available visas.
Professional Regulation Commission (PRC). The examination is given two times a year and consists of five parts: Community Nursing; Maternal and Child Nursing; Medical Surgical Nursing; Fundamentals of Nursing; and Psychiatric Nursing. Questions for the examination are written by the Board of Nursing.

Passing the licensure examination enables the graduate to take the nursing oath, which is required to enter work as a registered nurse in the Philippines. The oath ceremony occurs after successful completion of the licensure examination and is administered by the Board of Nursing or a government official authorized to administer oaths. The nursing license is national in scope and allows the holder to work in all provinces in the Philippines.

The PRC does not recognize or regulate vocational nursing programs, practice or graduates (Personal communication between Hon. Ruth Padilla, Chairperson, Professional Regulation Commission and Barbara Nichols and Catherine Davis, CGFNS, September 17, 2008).

Licensure Renewal

Prior to 2000, registered nurses were required to renew their licenses every three years. As of 2000, registered nurse licensure is valid until either revoked or suspended and does not have to be renewed. However, renewal fees will accrue. Should the nurse require license validation at some time, such as when applying for a visa, he/she must satisfy those back fees before the validation will be performed by the PRC (CGFNS, 2009). Nurses who leave practice and who wish to reenter may do so by paying back fees.

Scope of Practice

According to Philippine law, a person shall be deemed to be practicing nursing when he/she “singly or in collaboration with another, initiates and performs nursing services to individuals, families and communities in any health care setting and across the life span. As independent practitioners, nurses are primarily responsible for the promotion of health and prevention of illness. As members of the health team, nurses collaborate with other health care providers for the curative, preventive, and rehabilitative aspects of care, restoration of health, alleviation of suffering, and when recovery is not possible, towards a peaceful death” (Congress of the Philippines, 2002).

Nurses are expected to provide care through use of the nursing process. Nursing care includes, but is not limited to, “traditional and innovative approaches, therapeutic use of self, executing health care techniques and procedures, essential primary health care, comfort measures, health teachings, and administration of written prescription for treatment, therapies, oral, topical and parenteral medications, internal examination during labor in the absence of antenatal bleeding and delivery” (Congress of the Philippines, 2002).

The scope of practice further allows nurses to “establish linkages with com-
munity resources and coordination with the health team and provide health educa-
tion to individuals, families and communities. They may undertake consultation
services; engage in such activities that require the utilization of knowledge and
decision-making skills of a registered nurse; and undertake nursing and health
human resource development training and research, which shall include, but is
not limited to, the development of advance nursing practice” (Congress of the
Philippines, 2002).

The nurse is duty-bound to observe the Philippine Code of Ethics for Nurses
and uphold the standards of safe nursing practice. The nurse also is required to
maintain competence through continued professional education to be provided by
the accredited professional organization or any recognized professional nursing
organization.

Supply and Demand in the Philippines

Supply exceeds demand for nurses in the Philippines, with over 400,000
registered nurses unable to find employment in their home country as there were
only 60,000 nursing jobs available (Nowhere to train, 2008). The recent immigra-
tion restrictions in the United States and the United Kingdom, two of the choice
destination countries for Philippine nurses, have further exacerbated the num-
bers of unemployed nurses in the Philippines. Compounding that problem is the
graduation of approximately 100,000 nurses each year, over 40 percent of whom,
in recent years, have been unable to pass the Philippine licensure examination.
Pass rates have declined from 54 percent in December of 2005 to 39.7 percent
in November of 2009.

Issues and Challenges

- **Employment Patterns:** To be eligible to leave the Philippines for em-
  ployment overseas, nurses must have at least 2 years of work experience
  in a tertiary hospital. Because of the oversupply of nurses, these types
  of clinical experiences are not always available to those who seek over-
  seas employment. Consequently, many volunteer to work for experience
  rather than pay—and still others take non-nursing positions in such areas
  as call centers and medical transcription. Still others enter family busi-
  nesses (Mateo, 2008).

- **Physician Retraining:** A phenomena that has emerged in recent years is
  the retraining of physicians to become nurses so that they can emigrate
  under the Philippine government’s export policy. Government-regulated
  health care salaries are so low that it is estimated that 100,000 nurses
  work outside the profession or migrate to increase their earning capacity
  (Gorman, 2007). For the same reason physicians are now retraining to
become nurses so that they can migrate to countries in which health care salaries are higher.

- **Remittances**: The remittances sent back home by nurses who have migrated to countries in which the salaries are higher than in the Philippines have had a substantive effect on the Philippine economy and have supported the local population. Remittance refers to the portion of migrant income that, in the form of either funds or goods, goes back into the home country, primarily to support families back home, to cut poverty, and to improve education and health within the family (Focus Migration, 2006). Until 5 years ago, this transfer of funds was thought to be minor. However, nurse remittances alone increased from less than $2 billion in 1970 to over $70 billion in 1995 (Seago, 2008).

- **Practical Nurse Programs**: Because of the moratorium on baccalaureate programs, practical nurse programs have proliferated in the Philippines—with one estimate being as high as 200 programs. Practical nurse programs can be part of the four year baccalaureate curriculum (ladderized) or can stand alone. The stand-alone programs must show that the graduate is eligible to matriculate to a 4-year program or that there is an affiliation with a school abroad for completion of the four year baccalaureate program. Practical nurses are not licensed under the PRC but are certified by TESDA.

As of 2008 there was no standardized curriculum for practical nurse programs and considerable use of simulation to meet clinical assignments (Personal communication between Nona Ricafort, PhD, Officer-in-Charge, CHED and Barbara Nichols and Catherine Davis, CGFNS, September 17, 2008). Graduates of these Philippine practical nurse programs, for the most part, do not meet U.S. state requirements for practical nurses and would most likely be identified as nursing assistants or home health aides in most states. However, each state makes this determination based on their rules and regulations for licensure.

Presently, the Professional Regulation Commission, which regulates health care professions in the Philippines, does not recognize, license or regulate practical nursing. It has not established standards for practical nursing education or licensure, nor does the PRC approve practical nursing schools. The major nursing organizations and the Board of Nursing are opposed to the practical nurse programs as well as to ladderization. They have opposed all attempts to change the law regulating nursing to include practical nurses, mainly because of the high unemployment rate of registered nurses in that country (Personal communication between Hon. Ruth Padilla, Chairperson, Professional Regulation Commission and Barbara Nichols and Catherine Davis, CGFNS, September 17, 2008).
India

Overview

India, in recent years, has been considered a source country for migration, supplying nurses to the workforces of countries such as the United States and the United Kingdom, as well as to the Middle East. Nurses educated in India form the second largest cohort of nurses seeking occupational visas to practice in the United States (CGFNS, 2010a).

Data from the National Council of State Boards of Nursing (NCSBN) also indicate that India is second to the Philippines in the number of nurses taking the U.S. licensure examination, although the numbers are much smaller. From January through September of 2009, 11,854 nurses educated in the Philippines sat for the NCLEX-RN® examination compared to 1,086 educated in India (NCSBN, 2009b). CGFNS VisaScreen data, 2005-2009, indicate that nurses educated in India and seeking an occupational visa to practice in the United States most frequently identified their intended states of practice as Vermont, Florida, California, New York, and Texas (CGFNS, 2010b).

Nursing Education

Nursing education in India is at both the diploma and baccalaureate level. Diploma programs, housed in schools of nursing affiliated with teaching hospitals, are generally 3–3 1/2 years in length and post-secondary in nature, following completion of 12 years of primary and secondary education. Graduates are awarded a Diploma in General Nursing and Midwifery. This enables the graduate to sit for the State Nursing Council Examination and to become registered as a nurse and midwife in India. Three Board examinations are conducted, one at the end of each year. The successful candidate is registered as a nurse and midwife by the respective state nursing council (Current Nursing, 2010).

The course in general nursing and midwifery consists of two years general nursing, one year in community health nursing and midwifery, and a 6-month internship that includes courses in nursing administration and nursing research. India is in the process of phasing out these programs and replacing them with baccalaureate programs. This modeling after the Western Hemisphere is not limited to nursing but is also being experienced in the allied health fields such as physical and occupational therapy.

The Bachelor of Science in Nursing is a generic, 4-year, university-based program entered after completion of 12 years of primary and secondary education. Successful completion of the program allows the graduate to sit for the University Examination and, ultimately, apply for registration with the State Nursing Council.

The 4-year program includes courses in the humanities and social sciences, as well as the physical and biological sciences. Nursing content focuses on the
four major areas of nursing (adult health, maternal/infant, psychiatric/mental health and nursing of children), community health, nursing research, administration and teaching.

The Bachelor of Nursing (post-basic) is a 2-year RN-to-BSN program for those holding a Diploma in General Nursing and Midwifery. The goal of the program, which leads to the Bachelor of Science in Nursing, is the preparation of a generalist nurse. Candidates for the program must be registered nurses who have 2 years of experience and a working knowledge of English (Indian Nursing Council, 2009a).

**Accreditation**

The Indian Nursing Council is the accrediting body for nursing education in India. The Council is an autonomous governmental body constituted by law in 1947 to establish uniform standards of training for nurses, midwives and health visitors. The Council approves nursing programs and is advisory to the individual state nursing councils and examining boards (Indian Nursing Council, 2009b).

**Regulation**

Nursing registration in India varies from state to state. Each state has a nursing council comparable to a state board of nursing in the United States, which is responsible for the registration of its nurses. Most Indian states do not require registration renewal. Those that do, require renewal every 3–5 years.

**Scope of Practice**

India subscribes to the ICN definition of nursing, viewing nurses as qualified and authorized to provide nursing services for the promotion of health, the prevention of illness and the care of the sick. The entitlement to practice as a nurse and/or midwife is determined by the law for nursing and midwifery; that is, the Indian Nursing Council Act of 1947 (ANMC, 2009).

The Bachelor of Science in Nursing Syllabus and Regulations of the Indian Nursing Council, established in 1981, defines the essential elements of nursing practice in India as those that are related to “maintaining or restoring life functions, assessing the physical and emotional state of patients, assessing environmental factors, and formulating and implementing a plan for the provision of nursing care based on scientific principles” (Indian Nursing Council, 2009c).

**Supply and Demand**

India has experienced what has been termed a significant drain on its nursing labor force due to circular migration. Circular migration is a term used to describe a phenomenon whereby nurses, motivated by higher salaries and better
working conditions work abroad temporarily then return to their country of origin. It should be noted that circular migration often is mandated in agreements between the host and source countries. For example, Cuba allows its nurses to go to Trinidad/Tobago for a period of 2 years after which time they must return home.

Circular migration also may be a matter of public policy to ensure that there is a continuous feed of health care professionals to provide care to the country’s citizens or it can be an agreement negotiated by recruiters with a country in order to function in that country. Some utilize such a policy as an educational development model so that the professional returns with international experience, which is then shared with his/her colleagues at home and enhances the quality of education.

Hawkes and colleagues (2009) found that Indian nurses who engaged in circular migration tended to be female and older than the nursing average, with more work experience and greater seniority than the general nursing population in India. It has been argued that circular migration does not produce the same degree of loss to a country’s skilled labor force as permanent migration. However, the Hawkes and colleagues (2009) study indicated that the collective labor time spent outside of the country suggests temporary migration may have a profound and underestimated impact on the Indian nursing workforce. They found that the median time of working outside of India was 6 years, a period of time that allowed the nurses to sufficiently increase their incomes. Hawkes and colleagues (2009) further estimated that up to one-fifth of the nursing labor force in India may be lost to wealthier countries through circular migration.

**Issues and Challenges**

- **Recruitment of Nurses:** As the demand for nurses rises worldwide, commercial recruiters have become increasingly interested in exporting nurses from India to countries experiencing shortages. At present India does not have enough professional nurses to meet its own domestic needs and has a lower ratio than the recommended international norm of 2:1 to 3:1 for nurse/physician ratios. Shortages in rural areas are the most urgent (Khadria, 2007).

  Recruitment has focused on Indian nurses because of their education and their ability to speak English. Delhi-based agencies tend to focus on the U.S. market while those in Kochi and Bangalore mainly facilitate the migration of nurses to the Gulf countries, Australia, New Zealand, Singapore, and Ireland. Thus, India is faced with the double challenge of producing more nurses for immigration and at the same time filling more vacancies within India (Khadria, 2007).
Canada

Overview

Canada is considered both a source and a host country for migration. Many Canadian nurses choose to work in the United States under the North American Free Trade Agreement (Trade NAFTA), either living in Canada and crossing the border daily or moving to the United States temporarily. Canada also may be considered a host country, receiving nurses from such countries as the Philippines, India, Russia and the Caribbean to mitigate its own nursing shortage.

Approximately 10 percent of Canadian nurses seeking entry into the United States under Trade NAFTA are born outside of Canada (CGFNS, 2007). CGFNS VisaScreen data, 2005–2009, indicate that nurses educated in Canada and seeking to practice in the United States most frequently identified their intended states of practice as California, Michigan, New York, Texas, and Arizona (CGFNS, 2010b).

Education

Education and health care are provincial responsibilities under the Canadian constitution. Thus the systems of education are ones in which the decision-making authority is provincial; however, through organizations such as the Canadian Nurses Association (CNA), national coordination is achieved through promulgation of guidelines and standards. CNA is a federation of 11 provincial and territorial nurses’ associations and colleges representing more than 136,200 registered nurse and nurse practitioner members, which is approximately 53 percent of employed nurses. Quebec is not a member of CNA.

Nursing education programs in Canada require completion of 12 years of primary and secondary education for entry. There are three types of programs for registered nurses: 3-year diploma programs, which are being phased out, 4-year generic baccalaureate programs and post-basic baccalaureate programs for nurses holding a diploma in nursing that are 2–3 years in length. Alberta and British Columbia also offer entry level psychiatric nursing diploma, certificate and degree programs. Graduates of these programs are not considered general nurses, are licensed under a college or association separate from nursing, and are prepared to work only in the field of mental health.

CNA began advocating for degree preparation of nurses in 1982 and has worked with the provinces to achieve that goal. In 2004 the Canadian Association of Schools of Nursing (CASN) and CNA issued a joint position paper that recommended a baccalaureate degree in nursing as the educational entry-to-practice standard for registered nurses in Canada (CASN and CNA, 2004).

Today, the majority of provinces require the baccalaureate for entry into the profession. Students in Alberta, Manitoba, Quebec, and the Territories can still...
choose either a diploma or a degree program to prepare for a career in nursing but they must be aware of the trend toward a university level of education. In all other provinces students must obtain a baccalaureate degree in nursing to prepare for a nursing career. In all provinces the change to the degree as a minimum requirement for entry into practice applies only to new entrants and has no effect on the eligibility of currently registered diploma nurses for continuing registration (CNA, 2009a).

**Accreditation**

The Canadian Association of Schools of Nursing is officially recognized as the national agency responsible for the accreditation of nursing programs throughout Canada. Accreditation in Canada is a voluntary process, comparable to that of the United States in that it requires a self evaluation report (including information on the nursing program, administration, faculty, students, curriculum, learning resources and graduates) as well as an on-site visit (CASN, 2009). In addition to profession-specific accreditation processes, nursing programs may be reviewed as part of periodic quality review processes established by provincial authorities for universities and colleges.

**Regulation**

The regulatory system for nursing in Canada reflects the country’s federal and provincial/territorial government structure. Health care delivery is the responsibility of the provincial and territorial governments, as is the regulation of all health care professions. Provinces and territories grant responsibility for nursing regulation to professional colleges and/or nursing associations. Therefore, a nurse seeking to practice nursing in a specific province or territory must apply to be licensed and registered by the college and/or association in that province or territory. There is no national license in Canada; each province or territory licenses nurses within the individual jurisdiction (CNA, 2010). The licensure fee, except in Ontario and Quebec, includes both licensure registration and membership in the provincial and national nurses association.

All provinces, with the exception of Quebec, require licensure candidates to take the Canadian Registered Nurse Examination (CRNE) developed by CNA. The CRNE is a multiple choice examination that is competency based and reflects a primary health care nursing model. The examination consists of approximately 300 multiple-choice questions, about 40 percent of which are independent questions and 60 percent are case based.

The framework developed to identify and organize the competencies in the CRNE is designed to assess Professional Practice (accountability for safe, competent and ethical nursing practice); Nurse-Person Relationship (therapeutic partnerships established to promote the health of the person); Nursing Practice: Health and Wellness (recognizing and valuing health and wellness as a resource);
and Nursing Practice: Alterations in Health (care across the lifespan for the person experiencing alterations in health that require acute, chronic, rehabilitative or palliative care) (CNA, 2009b).

The Québec Ordre des Infirmières et Infirmiers du Québec (OIIQ) grants licensure to nurses in Quebec. Two components must be met to obtain a registered nurse license in that province:

- Successful completion of a licensure examination. The Quebec licensure examination, offered twice a year, is a comprehensive examination that includes a written section (short answer) and an objective, structured clinical evaluation section.
- Proof of proficiency in the French language. Quebec law requires that candidates possess a working knowledge of the French language and have proficiency in verbal and written French. Candidates are required to pass a language examination unless they can show completion of 3 years of full-time instruction in a French, post-primary school (OIIQ, 2009).

**Licensure/Registration Renewal**

License renewal in Canada varies by province, but is generally on an annual basis. Most provinces have continued competency requirements that must be met annually for registration renewal. The Code of Ethics and Standards of Practice of the jurisdiction form the basis of continued competency programs and are the framework that nurses use to reflect on their practice in order to maintain competence throughout their careers (CNA, 2000).

For example, when nurses apply to the College and Association of Registered Nurses of Alberta (CARNARNA for a registered nurse practice permit, they must assess their practice by reflecting on the CARNANA Nursing Practice Standards (NPS), collect feedback about their practice, identify their learning priorities and report the NPS indicator(s) that they will focus on for the coming year or remainder of the current practice year. Continuing Competence Program (CCP) activities are reported annually. Competence conditions are imposed on a member’s practice if the member does not provide evidence of having met the continuing competence program requirements. Members applying for, or renewing, RN practice permits report selected indicators for professional development for the upcoming practice year. At registration/renewal for the subsequent practice year, members report on the implementation of the completed year’s learning plan(s) and any influence the learning had on their nursing practice (CARNAN, 2009).

**Scope of Practice**

The activities that registered nurses are authorized to perform are set out in legislation by each province/territory and based on the definition of nursing
within that jurisdiction. While each scope of practice is specific to the respective province/territory, there are similarities. Most address health promotion, illness prevention, and provision of care—with many also focusing on teaching and coordination of care.

Ontario’s scope of practice statement, for example, indicates that the “practice of nursing is the promotion of health and the assessment of, the provision of care for, and the treatment of health conditions by supportive, preventive, therapeutic, palliative and rehabilitative means in order to attain or maintain optimal function (CNO, 2009). Nova Scotia’s definition of practice, contained within the Registered Nurses Association Act of 1985, also addresses health promotion, illness prevention and the provision of care. It defines nursing as “the application of professional nursing knowledge or services for compensation or the purpose of assisting a person to achieve and maintain optimal health through (1) promoting, maintaining and restoring health; (2) preventing illness, injury or disability; (3) caring for the sick and dying; (4) health teaching and health counseling; or (5) coordinating care (CRNNS, 2009).

Supply and Demand

The Canadian Nurses Association estimates that there was a shortage of nearly 11,000 full-time equivalent (FTE) registered nurses in Canada in 2007, a shortage that is expected to increase to almost 60,000 FTEs by 2022 if no policy interventions are implemented. CNA identified short-term policy solutions to address the shortage that include increasing registered nurse productivity and reducing absenteeism. Long-term solutions focus on reducing registered nurse exit rates, reducing attrition rates in entry-level education programs, increasing enrollment in registered nurse programs, and reducing international in-migration. The combined effects of the policy solutions are believed to be sufficient to eliminate the registered nurse shortage in Canada within 15 years (CNA, 2009c).

Issues and Challenges

- **Aging Nursing Workforce**: Canada, like the United States, is experiencing an aging of its nursing workforce. Recent figures from Canada reveal that registered nurses between age 50 and 54 years make up 17 percent of the workforce, compared to 11 percent in 1994 (Canadian Institute for Health Information, 2008). Over the next 10–15 years both Canada and the United States will experience a large exodus of nurses from their workforces as nurses retire—at a time when demand for nursing and health care is on the rise due to the growth in the older population.

  This trend, if left unaddressed, is set to deepen the current shortage of employed nurses, especially if there continues to be a shortfall of new
nurses entering the labor market. It also will affect developing countries where the age profile is often very different but where aggressive international recruitment efforts may drain the supply of nurses in active practice (ICN, 2008). CNA, as noted previously, has taken the lead in recommending short and long term policy solutions for eliminating the nursing shortage in Canada within 15 years.

**United Kingdom**

**Overview**

The United Kingdom has served as both a source and host country for migration. As a host country, the United Kingdom experienced an increase in in-migration in the last decade, particularly from India, Australia, the Philippines and sub-Saharan Africa, so that in the early to mid-2000s, there were more overseas nurses entering the country than nurses graduating from U.K. schools.

Nurses educated in the United Kingdom have traditionally migrated to Australia, the United States, New Zealand, and the Republic of Ireland, and also have been recruited to the Caribbean. CGFNS VisaScreen data, 2005–2009, indicate that nurses educated in the United Kingdom and seeking an occupational visa to practice in the United States most frequently identified their intended states of practice as California, Arizona, Florida, New Mexico, and New York (CGFNS, 2010b).

Today, the United Kingdom does not consider nursing a shortage profession and has, in fact, tightened its immigration requirements for overseas nurses. Nurses from the European Union countries may enter the United Kingdom for purposes of employment. While their numbers are not large, they are rising, with most nurses coming from Poland, Romania, Bulgaria, and Germany (NMC, 2009a).

The Nursing and Midwifery Council (2009) reports that the number of overseas nurses entering the Register (excluding nurses from the EU countries) declined significantly from 14,122 overseas entries in 2004 to 2,309 overseas entries in 2008. There was a small corresponding increase in the number of EU educated nurses entering the Register during that same time period—from 1,033 entries in 2004 to 1,872 entries in 2008 (NMC, 2009a).

**Education**

Prior to the early 1990s, nursing education programs in the United Kingdom were 3 years in length and located in hospital-based schools. Currently, all nursing programs are located in, or affiliated with, university settings. This transition from hospital setting to university began with Project 2000, an initiative to make
nursing a more professional career and to move nursing education into higher education.

Education programs are comprised of a 12-month Common Foundation Programme (CFP) and a 2-year Branch Program in one of the following specialty areas: adult nursing, mental health nursing, learning disability nursing or children’s nursing. All students are required to take the Common Foundation Programme for 12 months and then select one of the Branch Programs. Both the CFP and Branch Programs contain 50 percent clinical and 50 percent theory. The Branch Program also allows a period of clinical practice of at least three months towards the end of the program to enable students to consolidate their education and competence in practice. At completion of the program the graduate is awarded a Diploma of Higher Education in Nursing or, if they have completed a degree program, a Bachelor of Science in Nursing (NMC, 2009b).

**Regulation**

The Nursing and Midwifery Council (NMC) was established under the Nursing and Midwifery Order of 2001 as the successor to the United Kingdom Central Council for Nursing, Midwifery and Health Visitors (UKCC) and the four National Boards for Nurses, Midwives and Health Visitors for England, Northern Ireland, Scotland and Wales. The NMC registers all nurses, midwives and specialty community public health nurses and ensures that they are properly qualified and competent to practice in the United Kingdom. The NMC also establishes the standards of proficiency to be met by applicants to different parts of the register, the standards it considers necessary for safe and effective practice.

By law (Nursing and Midwifery Order 2001), the Register is divided into individual sections with each section having a designated title indicative of different qualifications and education. The registrant is entitled to use the title corresponding to that part of the NMC Register in which he/she is listed. Currently, there are three parts to the Register: Nurses, Midwives, and Specialist Community Public Health Nurses. Each profession has its own education, registration and practice standards (Statutory Instruments, 2002).

To become a registered nurse, an applicant must complete a 3-year program at a school or college of nursing approved by the NMC and linked to a university. Once completed, the graduate must apply for the NMC registry. The NMC evaluates the graduate’s credentials and if approved, the graduate may practice as a nurse. Under the Nurse’s part of the register the nurse selects the field of practice that corresponds to the Branch Program chosen: adult nurse, mental health nurse, learning disabilities nurse, or children’s nurse (NMC, 2009c).

Midwifery programs are 3 years in length, unless the applicant is already on the NMC Register as a registered (adult) nurse, in which case the program is 18 months in length. Midwifery programs also are linked to universities. Specialist community public health nurse programs are 52 weeks in length beyond initial
registration as a nurse or midwife. The NMC established a part of the Register for specialist community public health nurses because it believed that this form of practice has distinct characteristics that require public protection. These characteristics include working with both individuals and a population, which may mean making decisions on behalf of a community or population without having direct contact with every individual in that community. Specialist community public health nursing aims to reduce health inequalities by working with individuals, families, and communities promoting health, preventing ill health and in the protection of health. The emphasis is on “partnerships that cut across disciplinary, professional and organizational boundaries that impact on organized social and political policy to influence the determinants of health and promote the health of whole populations” (NMC, 2009d).

Renewal

Registration must be renewed every 3 years and a retention-of-registration fee paid annually. Those seeking renewal also must submit a signed Notification of Practice form, through which they attest that they have met the Post-Registration Education and Practice (PREP) requirements and are of good health and good character. PREP is a set of Nursing & Midwifery Council standards that are designed to help nurses keep up to date with new developments in practice and encourage them to reflect on their practice. PREP also provides a framework for continuing professional development (CPD), which, although not a guarantee of competence, is a key component of clinical governance in the United Kingdom (NMC, 2009e).

There are two separate PREP standards that must be met for registration renewal: Practice and Continuing Education. To meet the PREP Practice Standard, nurses must have worked in some nursing capacity for a minimum of 450 hours, or have successfully taken an approved return to practice course, within the preceding 3 years. To meet the PREP Continuing Professional Development Standard, nurses must have undertaken and recorded continuing professional development related to their practice over the 3 years prior to registration renewal (NMC, 2009e).

Scope of Practice

The Royal College of Nursing defines nursing as “the use of clinical judgment in the provision of care to enable people to improve, maintain, or recover health, to cope with health problems, and to achieve the best possible quality of life, whatever their disease or disability, until death” (RCN, 2003).

The NMC, which develops the standards of proficiency, recognizes that there is comparability between the standards achieved by all nursing students, and that it is through the application of these standards to practice within the different con-
texts of nursing that defines the scope of professional practice. The standards of proficiency define the overarching principles of being able to practice as a nurse; the context in which they are achieved defines the scope of professional practice. Applicants for entry to the nurses’ part of the register must achieve the standards of proficiency in their chosen specialty area (NMC, 2009b).

For example, adult nursing standards of proficiency require the care of adults, from 18 year olds to elder people, in a variety of settings for patients with wide ranging levels of dependency. Adult nursing is patient centered and acknowledges the differing needs, values and beliefs of people from ethnically diverse communities. Adult nurses engage in and develop therapeutic relationships that involve patients and their care givers in ongoing decision making that informs nursing care. They also must have the skills to meet the physical, psychological, spiritual and social needs of patients, supporting them through care pathways and working with other health and social care professionals to maximize opportunities for recovery, rehabilitation, adaptation to ongoing disease and disability, health education and health promotion (NMC, 2009b).

Supply and Demand

In 2008 the United Kingdom determined that it no longer had a nursing shortage and suspended the immigration of overseas nurses. At the same time the government implemented a points-based system for assessing immigration applications, which changed the way individuals from outside the European Union and the European Economic Area can work, train or study in the United Kingdom. The points based system has five tiers ranging from highly skilled individuals who contribute to growth and productivity to youth mobility and temporary workers (UKBA, 2009).

Issues and Challenges

- **Immigration Reform:** Individuals immigrating to the United Kingdom must gain points to qualify for a specific tier before they can apply for permission to enter or to remain in the country. The number of points required and the way the points are awarded depend on the tier the migrant is applying under and will reflect his/her qualifications, experience, age, previous earnings and language competence.

  Under the points based system the United Kingdom Border Agency (UKBA) decides who is admitted to or allowed to stay in the United Kingdom. In order to assess this, the migrant nurse will need to provide evidence of a sponsor in the United Kingdom who is licensed by the UKBA. If an overseas qualified nurse has a job offer from a U.K. employer, he or she may be able to apply to work in the United Kingdom as a sponsored skilled worker (UKBA, 2009).
• Aging Nursing Workforce: The United Kingdom, along with Canada, the United States, and a number of European States, is facing the challenge of an aging nursing workforce and an aging population. In the United Kingdom an estimated 180,000 nurses will reach retirement age over the next decade (RCN, 2006). In the European Union, concerns about the sustainability of pensions, economic growth and the future labor supply have stimulated a range of policy recommendations to promote the health and working capacity of workers as they age; to develop the skills and employability of older workers; to examine raising the pension age; and to provide suitable working conditions as well as employment opportunities for an aging workforce (European Foundation for the Improvement of Living and Working Conditions, 2007).

Summary

The historic suppliers of nurses to the United States—the Philippines, India, Canada, and the United Kingdom—generally have education and regulatory systems comparable, but not equivalent to, that of the United States. For the most part, they have moved nursing education into institutions of higher learning, have formal licensure and/or registration systems in place, and have scopes of practice that focus on health promotion and maintenance and the provision of care to the sick. Table J-3 provides a profile of the countries that have been historic suppliers to the U.S. workforce.

Emerging Suppliers of Registered Nurses to the U.S. Workforce: China

Overview

China is viewed as an emerging source country for the migration of nurses. However, because nurses educated in secondary school nursing programs make up the majority of nurses in the workforce in China, they do not easily meet licensure requirements in many host countries. The international migration of Chinese nurses began in the early 1990s when the government organized groups of English speaking nurses to work in Singapore and Saudi Arabia. Today, hundreds of Chinese nurses work in these countries every year under a government arranged contract. The Chinese government charges 10–15 percent of the nurses’ annual salary as a handling fee for such an arrangement. These contracts usually last about 2–3 years, and then most nurses return to work in their original hospitals. In many cases, returning is required and clearly stated in their contracts (Fang, 2007).

There has been a similar increase in the number of nurses migrating to Australia, with lesser numbers going to the United States. CGFNS VisaScreen data, 2005–2009, indicate that nurses educated in China and seeking to practice in the
### TABLE J-3 Historic Suppliers of Registered Nurses to the U.S. Workforce

<table>
<thead>
<tr>
<th>Education for Entry</th>
<th>Philippines</th>
<th>India</th>
<th>Canada</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baccalaureate</td>
<td>Diploma in General Nursing</td>
<td>Baccalaureate Diploma (Quebec)</td>
<td>Diploma Baccalaureate</td>
</tr>
<tr>
<td></td>
<td>Baccalaureate</td>
<td>Bachelor of Science in Nursing</td>
<td></td>
<td>Moved from hospitals to universities</td>
</tr>
<tr>
<td>Education Requirements for Entry into Nursing Programs</td>
<td>10 years primary and secondary education</td>
<td>10 years for diploma programs</td>
<td>12–13 years based on province</td>
<td>11 years primary/secondary education</td>
</tr>
<tr>
<td></td>
<td>12 years for Bachelor degree programs</td>
<td></td>
<td>11 years for diploma programs in Quebec</td>
<td></td>
</tr>
<tr>
<td>Licensure</td>
<td>Examination</td>
<td>Board Examination for diploma programs</td>
<td>Examination</td>
<td>Registration</td>
</tr>
<tr>
<td>Licensure Renewal</td>
<td>No, license valid for life</td>
<td>No, most states do not require renewal</td>
<td>Yes</td>
<td>Yes, to maintain registration</td>
</tr>
<tr>
<td>Title</td>
<td>Registered Nurse</td>
<td>Registered Nurse and Midwife</td>
<td>Registered Nurse</td>
<td>Registered Nurse (Sister)</td>
</tr>
<tr>
<td>Types of Nursing Education in Country</td>
<td>BS in Nursing Practical Nursing MD to BSN program Master of Arts in Nursing Master of Science in Nursing Doctor of Philosophy</td>
<td>Diploma BS Masters Doctor of Philosophy</td>
<td>Diploma Baccalaureate Practical Nursing MS in Nursing Doctorate in Nursing</td>
<td>University-based diploma and baccalaureate programs Advanced practice programs</td>
</tr>
<tr>
<td>Number of Nurses in Workforce</td>
<td>Graduate approximately 100,000/year (25% enter nursing workforce)</td>
<td>300,000</td>
<td>230,300 (6% foreign-educated)</td>
<td>500,000 (8% foreign-educated)</td>
</tr>
</tbody>
</table>
## APPENDIX J

<table>
<thead>
<tr>
<th>Number of Nurses and Midwives per 10,000 population: 2000-2007</th>
<th>Philippines</th>
<th>India</th>
<th>Canada</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>61</td>
<td>13</td>
<td>101</td>
<td>128</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nursing Shortage</th>
<th>In rural areas</th>
<th>Possibly developing</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Source/Host Country for Migration</th>
<th>Source</th>
<th>Host/Source</th>
<th>Source, Host status is suspended</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>In-Country Nursing Issues</th>
<th>Unemployment of nurses/ inability to secure work experience needed to migrate</th>
<th>Quality of schools Shortage of nurses to meet in-country needs, especially in rural areas</th>
<th>Aging workforce Under staffing in rural areas</th>
<th>Immigration of overseas nurses Aging workforce Vulnerability to out-migration Health sector reform Immigration reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable accreditation and standardization of schools</td>
<td>Proliferation of nursing schools</td>
<td>Chronic low pass rates on PRC nurse licensure exam</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|-------------------|---------------------------------------------------------------|-------------------------------------------------|----------------------------|-------------------------------------------------|

<table>
<thead>
<tr>
<th>Challenges and Issues</th>
<th>Prepares nurses for export, which fuels proliferation of low-quality nursing schools</th>
<th>Circular migration creates temporary loss of experienced RNs</th>
<th>Nursing shortage Aging of the nursing workforce</th>
<th>Aging of the nursing workforce EU directives and migration of nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prepares nurses for export</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
United States most frequently identified their intended states of practice as California, New Mexico, New York, Michigan, and Pennsylvania (CGFNS, 2010b).

**Education**

Nursing education programs in China are at the certificate (mid-associate degree), associate degree, and baccalaureate levels and are approved by the Ministry of Education in that country. Mid-associate degree programs are 2–3 years in length and administered by secondary nursing schools that accept candidates who have completed 6 years of primary education and 3 years of junior middle education, usually at 15–16 years of age. The majority of new recruits to nursing enter at this level. However, nurses graduating from these programs would not meet entry requirements to practice nursing in most developed countries unless they completed a separate secondary school education or its equivalent (Fang, 2007).

Associate degree programs are generally 3 years in length and post-secondary in nature. These programs accept candidates who completed 6 years of primary education, 3 years of junior middle education and 3 years of senior middle education. At completion of the program, graduates are awarded a diploma comparable to a nursing diploma in the United States.

The Bachelor of Science in Nursing is a 4–5-year degree program entered after completion of 12 years of primary and secondary education. These programs are administered by medical universities and colleges and government approved.

The national basic nursing education curriculum includes courses in Chinese medicine (i.e., acupuncture), mathematics, Chinese and foreign languages as well as the physical and biological sciences. Nursing content includes pediatric, obstetric and adult health nursing and infectious diseases. Psychiatric nursing became part of the curriculum in the mid-1990s (Fang, 2007).

Future trends in nursing indicate an increase in overall enrollments, particularly in those types of programs that produce nurses who qualify for employment outside of China (Fang, 2007).

**Regulation**

Since 1994, first-level nurses who graduate from mid-associate and associate degree programs are all required to pass a national registration examination to become licensed. Graduates of baccalaureate programs, until recently, were exempt from this requirement and were granted an automatic license. However, in 2007 the Ministry of Education reviewed this process and determined that graduates of all programs should take the licensure examination. The directive was implemented in May 2009 (Personal communication between Dr. Feng Li, Director, Health and Human Resources Development and Training, Ministry of Health and Barbara Nichols, CGFNS, December 10, 2007).
Renewal

All nurses must renew their license every 2 years. Continuing education courses are required for renewal.

Scope of Practice

China’s 1994 Nurses Act described nursing practice as including care that focuses on clinical observation; assisting physicians to complete treatment and administer drugs; implementing care plans through use of the nursing process; patient rehabilitation and education; and quality assurance. Nurses working in public health areas have responsibility for health management along with general practitioners in the community and public health education. Nursing education, administration and research also are nursing functions allowed under the 1994 Act (ANMC, 2009).

Supply and Demand

There is a nursing shortage as well as a high level of unemployment and underemployment of nurses in China. Overall, China has not invested in nurses to meet the health care needs of the public. In fact, the supply of physicians exceeds that of nurses. There is approximately one nurse for every thousand people in China compared to one nurse for every one hundred people in the United States (Fang, 2007). As more funds are invested in health services in China, the health care system will require more nurses and a closer look at their distribution.

Issues and Challenges

- **Enhancement of the Profession:** As a result of limited job opportunities, low salary, and low job satisfaction, many Chinese nurses intend to leave nursing or work outside China (Fang, 2007). Commercial recruiters have expressed a strong interest in recruitment of nurses in China, but to date there are few examples of successful ventures. Fang (2007) suggests that even if the Chinese government were to implement health care financing reforms that led to an increase in nursing jobs and improved work conditions, some level of surplus will remain.

  China’s nursing education system is huge in size (about 500,000 nursing students in 2005), but weak in quality and career development (Fang, 2007). In addition, nurses in China have to carry a heavy workload and are faced with 10 times the population responsibility compared to U.S. nurses. Hospital demand is for younger nurses, as they are paid less and can handle more physically demanding work loads. As a result, age discrimination is a problem—and it is not unusual to find hospitals dismissing most nurses older than 45 years of age (Fang, 2007).
Future issues for nursing in China include the upgrading of education and the requiring of a baccalaureate degree for entry into the profession; expanding nursing’s research base; increasing the globalization of nursing; and creating new cooperative programs worldwide (Smith and Tang, 2004).

Sub-Saharan Africa

Overview

Sub-Saharan Africa is a geographical term used to describe the area of Africa that lies south of the Sahara. Many of the countries in sub-Saharan Africa are considered sources for the migration of nurses, particularly Nigeria in the West, Kenya and Ethiopia in the East, and South Africa. During the nursing shortage in the United Kingdom in the last decade, nurses from sub-Saharan Africa provided a significant increase in that country’s nursing workforce.

Nurses educated in sub-Saharan Africa also migrate to the United States to improve their working conditions and salaries. Using Nigeria as a prototype, CGFNS VisaScreen data, 2005–2009, indicate that nurses educated in that country and seeking an occupational visa to practice in the United States most frequently identified their intended states of practice as Texas, California, New York, Maryland, Illinois, and Pennsylvania (CGFNS, 2010b).

Education

Most formal nursing education programs began in sub-Saharan Africa in the 1900s. Initial nursing programs educated auxiliary or enrolled nurses, a classification that is comparable to practical nurses in the United States. Entrance requirements generally included 9 years of primary and middle school education. Many countries in sub-Saharan Africa have phased out these enrolled nurse programs; however, faith-based hospitals in some countries have kept enrolled as well as hospital-based professional nurses (Munjana et al., 2005). Generally, countries that eliminate the position of enrolled nurse offer bridge programs for those individuals who seek to transition to professional nursing. Individuals who do not transition often work as nurse aides or health aides.

Professional nurse (RN) education requires completion of a full primary and secondary education (12 years) and 3 years of nursing education. Most schools are hospital based and federally or state funded. There also are university based programs in sub-Saharan Africa: 4-year generic programs that lead to a Bachelor of Nursing degree and 2–3-year post-basic RN-to-BSN programs. Post-basic programs require 2 years of work experience prior to entry.

The nursing curriculum in many parts of sub-Saharan Africa is framed around the medical model, which is considered by some as too westernized for nursing and midwifery requirements in Africa. Opponents of the medical model argue that a different model is necessary to address the unique health needs of the African population.
model believe that there should be a greater focus on community nursing and primary health care—and that the curriculum should be more culturally sensitive (Munjana et al., 2005). There also is a need for faculty with higher qualifications to teach in the programs, since many of the higher educated nurses leave the country through migration.

**Regulation**

The Nursing Councils of each country are the statutory bodies that develop standards for the profession and regulate the practice of nurses and midwives in their respective countries. They also license and register those nurses who meet the educational requirements, with some countries, such as Nigeria, requiring licensure by national examination.

**Licensure Renewal**

Licensure renewal is determined by the individual country. Not all countries require renewal of registration; however, when countries do require renewal, it is on an annual or biennial basis.

**Scope of Practice**

The scope of nursing practice varies by country. In Nigeria, for example, a nurse is a person who has received authorized education, acquired specialized knowledge, skills and attitudes, and is registered and licensed with the Nursing and Midwifery Council to “provide promotive, preventive, supportive and restorative care to individuals, families and communities, independently, and in collaboration with other members of the health team. The nurse must provide care in such a manner as to enhance the integrity of the profession, safeguard the health of the individual client/patient and protect the interest of the society” (NNMC, 2009).

In South Africa, the scope of practice is informed by a competency framework that supports an outcomes-based approach to nursing education and training—rather than a listing of activities that nurses are allowed to perform (South African Nursing Council, 2004). The Acts governing nursing in several African countries, for example Zambia, South Africa, Ghana and Nigeria, allow nurses to enter private practice, with each country setting its own requirements and standards for such practice (Munjana et al., 2005).

**Supply and Demand**

Sub-Saharan Africa has a smaller number of nurses per population compared to other continents—and these small numbers are inadequate to meet the health needs of the population (see Table J-3). Nursing is predominantly a female pro-
profession at the caregiver level but disproportionately male at the administration level. With the epidemic nature of HIV/AIDS in sub-Saharan Africa there has been an increased loss of nurses due to illness and a loss of nurses who, as females, provide care to their own families that have been ravaged by AIDS. The absenteeism caused by the AIDS epidemic, coupled with the nursing shortage caused by migration and the under-funding of the health sector, has led to an overwhelming increase in the workload of those nurses who continue within the profession (Munjana et al., 2005).

Issues and Challenges

- **Shortage of Health Professionals:** The most significant factor affecting the nursing workforce of sub-Saharan Africa is the shortage of health professionals, especially nurses. This is due in part to a number of factors: migration; the limited supply of new graduates; under-funding of the health sector; attrition due to HIV/AIDS; limited career opportunities; and inefficiencies in the recruitment and retention of nurses. The decision to eliminate the category of auxiliary/enrolled/subprofessional nurses also has exacerbated the shortage of nurses in sub-Saharan Africa because there are not enough professional nurses to meet the health needs of the population (Munjana et al., 2005).

Caribbean

Overview

Generally the Caribbean has been both a source and host country for migration. Because most nurses are educated in English and proficient in spoken English, they have been recruited for positions in both the United States and Canada. To remedy this loss of nurses, many Caribbean countries have had to recruit nurses, primarily from Cuba, Nigeria, the United Kingdom, and other English-speaking countries. Some have resurrected long disbanded diploma programs that subscribed to a traditional diploma curriculum. Using Jamaica as a prototype, CGFNS VisaScreen data, 2005–2009, indicate that nurses educated in that country and seeking an occupational visa to practice in the United States most frequently identified their intended states of practice as Arizona, New York, Florida, and Georgia (CGFNS, 2010b).

Education

Nursing education programs are approved/accredited by the government, the Ministry of Education. Accreditation is a two-part process that consists of a self-evaluation report and a site visit. There are three types of entry-level nursing
programs in the Caribbean: diploma, associate degree and baccalaureate. However, not all Caribbean countries have nursing schools nor do all schools have each type of program. Bermuda is one such country without a nursing program on the island; however, the Nursing Council of Bermuda is currently in consultation with various nursing organizations regarding development (Personal communication between Gaylia Landry, Chief Nursing Office Bermuda Nursing Council and Donna Richardson, CGFNS, by conference call on October 23, 2009).

Diploma programs are 3 years in length and hospital based. In some Caribbean countries, such as Trinidad and Tobago, these had been replaced by associate degree programs. However, because of the severe shortage of nurses, they were reopened and the education funded by the government in an effort to produce more nurses.

Associate degree programs are 2–3 years in length, with the third year being devoted primarily to clinical experiences. Baccalaureate degree programs are 4 years in length. One such baccalaureate program, the International University of Nursing in St. Kitts, includes six semesters of education in St. Kitts and two semesters at an affiliated school in either the United States or Canada. Graduates of the programs earn a dual degree that allows them to take licensure examinations in two countries, provided that state/provincial/territorial requirements are met.

**Regulation**

The Nursing Council of the individual country is responsible for conducting site visits at schools of nursing for quality checks and to verify the curriculum, including clinical hours, as well as for the licensure and registration of registered nurses and midwives. It serves as the gate keeper to the Caribbean Regional Licensure Examination. Passing the 2-day regional examination permits nurses to practice in any of the Caribbean Community (CARICOM) countries, which include Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago (Reid, 2000).

The examination allows for standardization of nursing education and reciprocity for nurses among the countries in the region. Guyana, although a member of CARICOM, does not require the regional examination for registration. Countries that are not members of CARICOM have their own processes for the registration of nurses and midwives (World Bank, 2009).

**Scope of Practice**

The Nursing Councils in the individual Caribbean countries set the standards for nursing practice. The Regional Examination for Nurse Registration in the Caribbean is based on mutually agreed upon competencies for the registered nurse to practice in the region. The treatment of test items, assembling and conducting of
the examinations, scoring of the examination, and student notification of results is the responsibility of each General Nursing Council. The 13 General Nursing Councils with responsibility for Schools of Nursing meet annually as a regional committee to prepare the examinations (Reid, 2000).

Supply and Demand

Although the countries of the Caribbean have a similar history and culture and share common socioeconomic goals, they are highly diverse with respect to health care delivery. The vast majority of nurses work in the public sector (World Bank, 2009).

The Caribbean is in the midst of a critical nursing shortage due primarily to the out-migration of its nurses. On average 42 percent of nursing positions in the Caribbean countries are vacant. Low pay, poor career prospects, and lack of educational opportunities are among the reasons nurses resign (Salmon et al., 2007). Many of these nurses look outside the region for job opportunities in Canada, the United States, the United Kingdom and other countries. Compounding the situation is the lack of resources to prepare nurses to fill the vacancies.

To remedy this situation, nursing and other leaders in the Caribbean created regional strategies for addressing the challenges they face in delivering basic health care within their countries. The region-wide Managed Migration Program, a multilateral, cross-sector, multi-interventional, long-term strategy for developing and maintaining an adequate supply of nurses for the region, is one of the results of that effort (Salmon et al., 2007).

Issues and Challenges

- **Nursing Shortage:** The worldwide AIDS epidemic has taken its toll in the Caribbean, increasing the need for health professionals, especially nurses. This coupled with the loss of nurses to migration has caused a severe shortage of nurses in the Caribbean. While most nurses who have left the country to work in the United States and Canada have traditionally stayed there permanently, some Caribbean countries, such as Trinidad and Tobago, are seeing more circular migration, with nurses returning home after several years abroad. Jamaica has been able to make up for some loss of its nurses by recruiting skilled nurses from inside the region, for example from Cuba and Guyana, as well as outside the Caribbean from such countries as India, Ghana, Burma, Russia, and Nigeria (Salmon et al., 2007).

  The Managed Migration Program discussed previously allows governments and stakeholders to work together to ensure that migration is managed so that costs are minimized and benefits maximized to the
countries and to the nursing professionals. There are now several models of migration management in place in the Caribbean:

− **Educating for Export**: Nurses are hired by U.S. partners and the government of the Caribbean country is reimbursed for each nurse. The funds received are to be reinvested in upgrading nursing education (St. Vincent Model).

− **Temporary Migration**: Nurses work for a portion of the time in the host country and the remainder of the time in the Caribbean country. Because nurses pay their own travel costs, the host country is usually close by. For example, Jamaican nurses work for 2 weeks per month in Miami and 2 weeks in Jamaica, gaining additional skills and increasing their earnings while at the same time meeting Jamaican staffing needs.

− **Regional Cooperation**: Countries with the capacity to absorb additional students into their nursing education system have reached agreement with countries that either do not have schools of nursing or the capacity to educate the needed number of nurses. Grenada and Antigua entered into such an agreement through which students from Antigua go through nursing education in Grenada at a minimal cost. The Regional Examination for Nurses Registration and the Common Nursing Education Standards in the Caribbean allow the Grenadian educated nurse to then return and practice in Antigua.

− **International Partnerships**: These partnerships include establishment of an off shore school of nursing to meet the needs of the global market. The International University of Nursing is one such school, originally established to meet the worldwide need for baccalaureate-prepared nurses.

− **Homecoming Programs**: These programs are designed for nurses who have emigrated to give back to their home countries (brain gain) in the Caribbean by working and sharing their nursing expertise. For example, a team from the Guyana Nurses Association in the United Kingdom runs a yearly screening test for hearing in Guyana. The Caribbean Overseas Nurses Association works closely with national nurses associations to explore possibilities for joint programs in developing nursing education and practice.

− **Health and Tourism Model**: In this model, nurses would be recruited from developed countries, such as Canada and the United States, and invited to work in the Caribbean for 6−12 months—with the advertised goal of achieving greater work–life balance.

− **Temporary Movement of Skilled Nursing Professionals**: Bilateral proposals are created to provide incentives for nurses to return to the Caribbean and disincentives to overstay in the host
country. These types of proposals would address the nursing shortage through regional and national socioeconomic development agreements and promote nursing as an independent service activity (Salmon et al., 2007).

- **Practical Nurse Programs:** Graduates of Jamaican practical nurse programs are being considered by the Canadian government for a recruitment initiative to address its shortage of Practical Nurses in the face of an aging population. The Canadian proposal requires the Jamaican educated practical nurse to pass its licensing exam. The participants would be monitored for success and encouraged to enroll in ladder programs leading to associate or baccalaureate degree (Taylor, 2007).

### Mexico

**Overview**

Mexico is seen as a source country for migration, primarily supplying nurses to the United States to meet shortages. They have especially been recruited to Southwestern Border States. However, because many of the nurses had their nursing education at the secondary school level and in Spanish, they have found it challenging to pass both the CGFNS Qualifying Exam® (a prerequisite for licensure in a number of states) and/or the U.S. licensure examination, the NCLEX-RN® examination. Consequently, a number of initiatives were put in place by schools and recruiters that assist the nurses in language development and in the knowledge of nursing as it is practiced in the United States. CGFNS VisaScreen data, 2005–2009, indicate that nurses educated in Mexico and seeking to practice in the United States most frequently identified their intended states of practice as Texas, California, and New Mexico (CGFNS, 2010b).

**Education**

Formal nursing education in Mexico began in the early 1900s with hospital-based programs whose curricula were validated by medical schools. Physicians were in charge of determining the duration of the education, the curriculum, and the admission requirements (CGFNS, 1996). Today, the nursing profession is taking a more active role in self-regulation and standard setting.

As nursing education progressed, two types of programs emerged: diploma and baccalaureate programs. Diploma programs were combined with secondary school, which the individual entered after 9 years of primary and middle school education. Graduates were considered to be first level nurses in Mexico and were given the title of Technical Nurse; however, they were viewed as second-level or practical nurses by institutions in the United States and Canada (CGFNS, 1996). The majority of nurses in Mexico were educated in these programs.
Baccalaureate programs emerged at a later date, are post-secondary in nature, and 4 years in length. Graduates also are considered first-level nurses in Mexico, and their education is considered comparable to registered nurses in the United States and Canada.

Today there are still two types of nursing programs in Mexico: 3-year diploma programs and 4-year degree programs. However, both are now post-secondary in nature and require 12 years of primary and secondary education for entry. One year of community service must be completed before graduates are eligible to be licensed.

**Regulation**

Students graduating from 3- and 4-year programs must show evidence of having completed all subjects successfully, of having completed their community service, and of having passed their school-administered, professional examination to be licensed. The examination can be taken in groups or independently upon completion of community service.

Students choosing to take an individual examination must prepare a thesis under the guidance of an advisor. Their examination consists of two sections, one oral and one practical. The oral examination is taken before three examiners appointed by the academic department. The practical examination is taken at a hospital, with the department and patient chosen by the examiners. The group examination, prepared by faculty in the nursing schools, consists of a written exam whose content is divided into areas of knowledge. It consists of 1,000 questions and students are allotted 8 hours for completion (CGFNS, 1996).

Once candidates are successful on their chosen examination, they are awarded their degree or diploma. They may then apply for a license (cédula) to practice nursing in Mexico, which is issued by the federal government. The General Professions Directorate (DGP), a branch of the Public Education Secretariat (SEP) is in charge of regulating the practice of profession. The profession of nursing in Mexico is not self-regulating (CGFNS, 1996).

**License Renewal**

A nursing license in Mexico is good for life and does not have to be renewed. Licenses are granted once and can be cancelled only if the licensee breaches any law regulating the profession.

**Scope of Practice**

Legislation regulating professional nursing practice in Mexico is by means of general professional legislation. The ICN Code of Ethics and the Code adopted by the Pan American Federation of Nursing Professionals are frame-
works recognized by nurses in Mexico and other Latin American countries (Malvarez and Agudelo, 2005).

Supply and Demand

Approximately 65.1 percent of the nursing workforce in Mexico consists of registered nurses (graduates of diploma and baccalaureate programs). The remainder are considered Auxiliary Nurses, a title that is comparable to that of a nurse aide in the United States. Mexico does have some maldistribution of nurses, with fewer working in rural than urban areas (Siantz, 2008).

Mexican officials have sought to upgrade nursing education by requiring completion of a full primary and secondary education prior to entering any nursing program, thus making Mexican-educated nurses more competitive in the global market than they had been when the majority of nurses were educated at the secondary school level. The United States, in particular, recruits Mexican nurses to meet the health and communication needs of its large Hispanic patient population.

Issues and Challenges

- **Nursing Autonomy:** For many years, nursing associations and organizations in Mexico have worked internally and through international organizations and processes, for example ICN, the Pan American Health Organization (PAHO), and the Trilateral Initiative for North American Nursing, to establish the autonomy of nursing over its educational and practice standards and regulation.

  Studies show that nursing is a human resource in high demand in developed countries in Latin America, yet, at the same time, suffers from a reduction in collective bargaining power, reduced salaries, cuts in overtime pay, closure of government-level nursing departments, the absence of safety measures in the workplace, loss of professional autonomy, and work overload (Malvarez and Agudelo, 2005). Consequently, to improve their working conditions and their salaries, many nurses educated in Mexico leave to obtain positions in the United States. Table J-4 presents a profile of countries that are seen as emerging suppliers to the U.S. workforce.

Summary

The emerging suppliers of nurses to the United States—China, sub-Saharan Africa, the Caribbean, and Mexico—are moving toward education and regulatory systems comparable, but not equivalent, to that of the United States. Generally, nursing education is in institutions of higher learning, formal licensure, and/or
# APPENDIX J

## TABLE J-4 Emerging Suppliers of Registered Nurses to the U.S. Workforce

<table>
<thead>
<tr>
<th>Education for Entry</th>
<th>China</th>
<th>Sub-Saharan Africa</th>
<th>Caribbean</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education for Entry</td>
<td>Secondary school programs (mid-associate)</td>
<td>Diploma (3 years)</td>
<td>Diploma Baccalaureate</td>
<td>Diploma Baccalaureate Secondary School Program (selected states)</td>
</tr>
<tr>
<td>Post secondary school programs (Diploma/AD Program)</td>
<td>Baccalaureate Diploma Midwifery and Psychiatric Nursing (3 years)</td>
<td>Baccalaureate</td>
<td>Baccalaureate</td>
<td></td>
</tr>
<tr>
<td>Education Requirements for Entry into Nursing Programs</td>
<td>12 years primary and secondary school</td>
<td>11 years primary and secondary school</td>
<td>11 years primary and secondary school</td>
<td>12 years primary and secondary school</td>
</tr>
<tr>
<td>Licensure</td>
<td>Yes: Examination</td>
<td>Yes: Examination depending on country</td>
<td>Yes: Regional examination if members of CARICOM If not, individual country licensure</td>
<td>Yes: School exit examination or thesis and hospital clinical examination</td>
</tr>
<tr>
<td>Licensure Renewal</td>
<td>Yes, every 2 years</td>
<td>Country specific; if required, 1−2 years</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Title</td>
<td>Professional Nurse</td>
<td>Registered Nurse</td>
<td>Registered Nurse General Nurse in Jamaica</td>
<td>Technico Enfermeria (2-year degree) Licentura en Enfermeria (4-year degree)</td>
</tr>
<tr>
<td>Types of Nursing Education in Country</td>
<td>Secondary school Associate Degree (diploma) Baccalaureate Masters Doctorate</td>
<td>Diploma Baccalaureate Specialty Masters</td>
<td>Diploma Baccalaureate</td>
<td>Secondary Diploma Baccalaureate Master’s Doctorate</td>
</tr>
<tr>
<td>Number of Nurses in the Workforce</td>
<td>1.4 million</td>
<td>Nigeria: 128,918 Kenya: 128,918</td>
<td>Jamaica: 4,374</td>
<td>88,678</td>
</tr>
</tbody>
</table>

*continued*
TABLE J-4 continued

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>Sub-Saharan Africa</th>
<th>Caribbean</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Nurses and Midwives per 10,000 population: 2000–2007</strong></td>
<td>10</td>
<td>South Africa: 41 Botswana: 27 Nigeria: 17 Zimbabwe: 7 Ethiopia: 2</td>
<td>Jamaica: 17</td>
<td>9</td>
</tr>
<tr>
<td><strong>Nursing Shortage</strong></td>
<td>Yes (due to under-utilization of workforce)</td>
<td>Yes: Botswana, Zimbabwe, South Africa No: Nigeria</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Source/Host Country for Migration</strong></td>
<td>Source (beginning)</td>
<td>Source</td>
<td>Source/Host</td>
<td>Source (Limited)</td>
</tr>
<tr>
<td><strong>In-Country Nursing Issues</strong></td>
<td>Underinvestment in health workforce Underutilization of nursing workforce</td>
<td>Unemployment of nurses Poor working conditions AIDS Emigration</td>
<td>Lack of nursing schools in certain countries Inadequate funding of nursing programs Accreditation of schools AIDS</td>
<td>Physicians working as nurses and pursuing nursing education Maldistribution of nurses Nursing Autonomy</td>
</tr>
<tr>
<td><strong>Official Language</strong></td>
<td>Chinese (Mandarin)</td>
<td>African Languages Colonial languages of English, French, Portuguese and Spanish</td>
<td>Spanish English French</td>
<td>Spanish</td>
</tr>
<tr>
<td><strong>Challenges and Issues</strong></td>
<td>Lack of fluency in English</td>
<td>Brain drain</td>
<td>Low pass rates on licensure exam Shortage of tutors High migration rates</td>
<td>Lack of fluency in English</td>
</tr>
</tbody>
</table>

registration systems are in place, and scopes of practice focus on health promotion and maintenance in the provision of care.

The overview of both historic and emerging countries supplying nurses to the U.S. workforce provides a kaleidoscope of compelling issues that must be addressed to successfully integrate foreign-educated nurses into the U.S. nursing workforce. The capacity of the United States to deal with issues associated with this migration will have significant impact on nursing education, nursing practice, service delivery, and health policy. In particular, the need to recognize the positive contribution of the migrating nurse to patients who share with the nurse a country, language, or culture of origin is relevant. The rapid emergence of trade and mutual recognition agreements must be taken into account, as they directly affect nurse migration patterns, possibilities, and challenges.

**TRADE AND MUTUAL RECOGNITION AGREEMENTS**

The migration of nurses in many parts of the world has been influenced by the development of regional and international trade and mutual recognition agreements. The Office of the U.S. Trade Representative (OTR) reports that the international mobility of business professionals providing services has become an important aspect of competitive markets for both suppliers and consumers. Trade agreements that provide for the movement of goods and services across country boundaries have facilitated the migration of nurses for decades. The Agreement that has most affected the nursing profession in the United States is NAFTA.

**North American Free Trade Agreement (Trade NAFTA)**

Trade NAFTA provides for the movement of goods and services across the borders of Canada, Mexico and the United States. The health professions listed under NAFTA include nurses, clinical laboratory scientists, physical therapists and occupational therapists.

In 1994, Trade NAFTA eased immigration requirements for nurses educated in Canada and Mexico, allowing them to more easily cross the borders of the United States for purposes of employment. There was no restriction on the number of Canadian nurses who could enter. The number of Mexican nurses, however, was capped at 5,500 per year for 10 years. Trade NAFTA was renewed in 2004 and the cap lifted.

To enter the country under Trade NAFTA status the nurse must be a citizen of either Canada or Mexico, have a written job offer from a U.S. employer, and hold a nursing license in Canada or Mexico as well as in the U.S. state of intended practice. Nurses who migrated to either Canada or Mexico from such countries as India, Jamaica, the Philippines, and the United Kingdom and became citizens of either country are eligible for TN status if they meet the qualifications (Richardson and Davis, 2009).
Canadian Nurses

The majority of nurses holding TN status are from Canada and are not required to have a visa to enter the United States. Many TN nurses commute between Canada and the states of Michigan, Maine, and Minnesota on a daily basis. The Canadian nurse only needs to show proof of citizenship, a letter of intended employment, the required licenses, and the CGFNS VisaScreen Certificate at the Canadian port of entry, which can be at a border crossing or an airport.

Mexican Nurses

The TN process for Mexican nurses is more complex. It requires a visa, consular processing, a labor certification filed by the employer, and an I-129 petition for nonimmigrant workers. Mexican nurses also must present a CGFNS VisaScreen Certificate as part of the visa process. The educational comparability requirement of the VisaScreen Program has been difficult to meet for Mexican-educated nurses because nurse educators in the United States and Canada consider the majority of nursing education programs in Mexico to be at the vocational level (Richardson and Davis, 2009).

Since 2005, CGFNS and the International Bilingual Nurses Alliance have worked with the Mexican nursing community, the Mexican consulate, the Mexican Overseas Program, and the Secretaría de Educación Pública (SEP—Public Education Secretariat) to develop consistent nursing education standards and ensure licensure validation processes in an effort to minimize the challenges for Mexican nurses who wish to migrate. Mexican nurses also have the challenge of English language proficiency, which is generally not an issue for Canadians entering under TN status (Richardson and Davis, 2009).

Duration of Trade NAFTA Status

Initially, TN status duration was for a 1-year period and nurses were required to renew it annually. In October 2008, the Department of Homeland Security extended the duration for up to 3 years. The number of renewals that a nurse may apply for is currently unlimited; however, opponents to Trade NAFTA believe that renewal of TN status should be limited and not be used as a permanent form of temporary status. A benefit of TN status is that it is not affected by external factors such as immigration retrogression, which limits the number of visas issued when the number of applicants exceeds the number of available visas (Richardson and Davis, 2009).
Trilateral Initiative for North American Nursing

The 1995–1996 Trilateral Initiative for North American Nursing, funded by a grant from the Kellogg Foundation, was the first effort by the nursing profession to systematically compare and contrast nursing standards across North America. It came as a response to Trade NAFTA, which specifically urged the professions—including nursing—to develop mutually acceptable standards for licensing and certification that would permit greater mobility of professionals across the borders of Canada, Mexico and the United States.

NAFTA offered tremendous opportunity for nurses from the three countries to collaborate on education, research and practice across borders. The hope was that by strengthening the nursing profession through cross border collaboration and exchange, nursing and health care also would be strengthened. The goals of the Trilateral were:

- To encourage the development of mutually acceptable standards for education, program approval and accreditation, licensure/registration and specialty certification among Canada, Mexico, and the United States in order to advance the nursing profession across North America.
- To establish a lasting, viable network of key nursing organizations and professionals across North America.
- To create a methodology that would demonstrate how other professional groups in the three countries could consult, develop goals and programs, and institute policies to increase cross-border cooperation (CGFNS, 1996).

An in-depth analysis was considered crucial by the 40 key nursing organizations participating in the project because not only did the educational standards vary among the three countries but also the level of autonomy in standards development. For example, in Canada, nursing has autonomy in the development of education standards and the approval of nursing education programs. In the United States this is a government function that is delegated to the profession. In Mexico, the standards that govern nursing education are general standards, that is, they are not specific to nursing, but rather govern education as a whole. They are developed by the government and the schools.

There also were differences in accreditation systems and pathways into practice among the countries. The accreditation systems in Canada and the United States were considered comparable while nursing in Mexico was in the process of developing an accreditation system. In each of the three countries there were various pathways to entry into nursing practice and different competencies associated with each pathway. Regulatory systems and nursing specialty certification were more comparable in the United States and Canada (CGFNS, 1996).

Because of the variance among the three countries, participants recognized
the need for more in-depth understanding of the programs and systems operating in the three countries. While Phase II of the Trilateral did not come to fruition due to lack of funding for the project, a number of nursing organizations and researchers since then have examined the effect of regulation and specialty certification on health outcomes and have attempted to coordinate trilateral research efforts. Mexican nursing organizations have used the preliminary work of the Trilateral to upgrade nursing and to increase participation in standard setting for the profession in Mexico (CGFNS, 1996).

**General Agreement in Trade and Services (GATS)**

The General Agreement of Trade in Services (GATS), established in January 1995, addresses the areas of service delivery that are considered barriers to trade. GATS is a World Trade Organization (WTO) agreement among 140 countries, the goal of which is to remove restrictions and governmental regulations in agreements covering international trade in services. The GATS has two parts: (1) general rules and disciplines and (2) specific commitments on access to individual countries’ domestic markets by foreign suppliers. Each country decides which services are to be included and the degree of operation. There are four methods of service trade:

- Services supplied as “cross-border supply” (international phone calls),
- Consumers use of services in another country (tourism/medical tourism),
- Company subsidiaries or brands, and
- Individuals traveling from their own country to supply services in another. This “movement of natural persons” would include professionals in specialty occupations, nurses and other health care workers.

Governments that make commitments to allow foreign suppliers to provide education or health services in their markets can enforce the same standards for the protection of the public on foreign suppliers as on nationals, and can indeed impose additional requirements if they so choose. GATS supports utilization of professional standards of licensure. There is no exemption from regulations that are required of a country’s citizens. Licensing requirements are not considered burdensome in the provision of quality service or a restriction on the supply of service, if they are based on objective and transparent criteria such as competency and capability (WTO, 2010).

**Singapore/Chile Agreement**

The Free Trade Accords of the Americas (FTAA), initiated between 2002 and 2005, involve 34 Western Hemisphere countries. The United States has signed
agreements with Singapore and Chile with the goal of lowering perceived trade barriers, such as visas, licensing, testing and intellectual property rights—even though the general philosophy of GATS regarding professional standards and licensure does not support the perceived contention that they are barriers to trade (Bruno et al., 2004).

**Mutual Recognition Agreements**

Mutual recognition agreements exist within the larger context of globalization to address barriers to mobility, such as the differences between the standards and procedures imposed by national regulatory authorities in different countries. The process of mutual recognition is complex and requires a comparison of frameworks developed in different cultural, social, and economic contexts. The greater the degree of differences between the parties to a mutual recognition agreement (e.g., educational systems, standards, approaches to regulation, level of development, etc.), the more challenging it is to achieve success in the process (ICN, 2009b).

Mutual recognition requires that the countries in question have in place a system for regulating professionals. It is based on the notion of equivalence or comparability, through which it is understood that the host country’s regulatory goals also are addressed by home country regulation. When aspects of the host country’s regulation are not met (e.g., differences in nursing knowledge, differences in scope of practice), the host country is permitted to set additional requirements for recognition (ICN, 2009b). There are several mutual recognition agreements in nursing:

- **The European Union (EU):** There has been a reciprocal recognition of nursing qualifications designed to facilitate the mobility of nurses in the European Community for over 30 years. Through the 2007 *Directive on Mutual Recognition of Professional Qualifications* (2005/36/EC), the EU reformed its system for recognition of professional qualifications in order to make labor markets more flexible, further liberalize the provision of services, encourage more automatic recognition of qualifications, and simplify administrative procedures (European Commission, 2009a).

  Seven professions were covered by a series of “sectoral” directives: physician, general nurse, midwife, veterinary surgeon, dental surgeon, pharmacist and architect. The resulting directives provide for the harmonization of minimum training requirements and the automatic recognition of professional qualifications for these professions (European Commission, 2009b). The directive for general nurses sets out the minimal competency requirements that nurses must meet before they can practice across the borders of Europe’s member states. It also stipulates
that programs leading to registration as a nurse should be at least 3 years in length or of 4,600 hours duration (Hakesley-Brown, 2009).

These directives on nursing education reflect the ongoing work of the Bologna Process in Europe. The education of nurses in Europe varies by country, ranging from vocational education and training, which is not part of higher education, to baccalaureate education for nurses. Most nurses in Europe are educated at the diploma level (Hakesley-Brown, 2009).

To carry out the policies of the Bologna Process, Europe launched the Tuning Project in 2000. The Nursing Project Group was one of the first health care related groups to be set up, with the task of facilitating the design/redesign, development, implementation and evaluation of nursing education programs for each of the Bologna cycles: undergraduate, graduate, and doctoral-level work. In an attempt to preserve the uniqueness and diversity of European education, the group examined the comparability of coursework, expressed in terms of learning outcomes and competencies. Today, developing a European model of nursing education remains a work in progress (Hakesley-Brown, 2009).

- **Trans-Tasman Mutual Recognition Agreement (TTMRA):** MRA that applies to New Zealand and all Australian states and territories, except Western Australia. It recognizes equivalent nursing registration and provides a streamlined registration process for nurses migrating between the countries.

- **The Caribbean Community and Common Market (CARICOM):** Created Regional Examination Nurse Registration (RENR), which has enabled the movement of registered nurses among signatory countries of the region.

- **Internal Mutual Recognition Agreements:** In-country agreements between states, provinces and territories that provide for the mobility of the nursing workforce in that country. The Nurse Licensure Compact in the United States and the Mutual Recognition Agreement of the Registration Bodies for Registered Nurses in Canada are two examples (ICN, 2009b).

- **The Eastern, Central and Southern African College of Nursing (ECSACON):** Agreement on scopes of practice, standards for practice, competencies, and core content and standards for education among 14 countries in east, central, and southern Africa. The focus is on health policy, nursing and midwifery practices, and health care delivery (Ndlovu et al., 2003).

Trade and Mutual Recognition Agreements are designed to ensure public protection; increase public confidence; make care more accessible; and facilitate
the mobility of health professionals. However, the emergence of such agreements also raises such questions as:

- How will the scope of nursing practice in a global marketplace be defined and determined?
- Is global licensure for nurses inevitable?
- How will the cooperation and recognition needed to ensure competency of nurses across borders be gained? Who will bear the cost?
- How will disciplinary actions be addressed?

### Educational Agreements

In addition to trade and mutual recognition agreements, agreements also have been negotiated between foreign and U.S. nursing schools to provide clinical experience, internships and language proficiency programs. For example, the International University of Nursing in St. Kitts attracts international students for nursing. It uses U.S. faculty in its program and has signed agreements with universities in the United States and Canada to provide part of the student’s theory and clinical education, thus giving the graduate a dual degree.

In 2005 more than 40,000 qualified students were turned away from U.S. nursing schools because of capacity limitations. At that time, through an agreement between agencies in the Ukraine and South Carolina, nursing schools in the Ukraine agreed to educate U.S. students in English. The education was to be subsidized by hospitals in South Carolina with the intent that the graduating nurses would return to South Carolina to enter practice. Implementation of the program has stalled.

Schools of nursing in Korea have negotiated internships with U.S. schools of nursing and U.S. hospitals are working with schools of nursing in Mexico to provide clinical and language orientation for nursing students. La Universidad Autonomade in Guadalajara, Mexico provides bilingual nursing programs—programs in Spanish for those staying in Mexico and in English for nurses intending to migrate.

### Summary

Nursing in the United States has been a leader in international nursing and thus any initiatives made by nursing leadership to shape the future of nursing in the United States has a disproportionate impact on the global nursing community. This paper has documented several current challenges that globalization has created for nursing internationally. It also has documented the complexity of those challenges. As the Committee moves towards its recommendations, accelerating globalization makes it clear that these recommendations must be framed within an understanding of their international implications and impact. The authors of
this paper have identified some key international issues that might influence domestic deliberations and planning.

IMPLICATIONS FOR THE U.S. NURSE WORKFORCE

The Global Nursing Shortage

“The issues surrounding nursing shortages and global nurse migration are inextricably linked. Global nurse migration has become a major phenomenon impacting health service delivery in both developed and developing countries. The phenomenon has created a global labor market for health professionals and has fueled international recruitment. International migration and recruitment have become dominant features of the international health policy debate” (Nichols, 2007).

The global nurse shortage is supported by the escalating demands from developed countries, such as the United States, to meet patient care needs. International nurse recruits are viewed as options to balance a country’s national nursing supply and demand. The dependence of hospitals and health systems in developed countries on nurses educated outside of their borders is substantive and enduring. With the aging of populations in developed countries, the need for health care services is increasing. Moreover, changing technology and rising consumer expectations place further demand on health care systems. Since the domestic source of nurses in many developed countries is not keeping up with the increased demand for nurses, the gap has been, and will continue to be, filled by foreign-educated nurses. In short, for myriad reasons, in both developed and developing countries there is increasing difficulty in attracting and retaining nurses.

The Immigration Policy Center of the American Immigration Council notes that immigrants comprise more than one-quarter of all physicians and surgeons in the United States, and roughly one-fifth of all nursing, psychiatric and home-health aides. In the case of doctors and nurses, recent projections indicate that even if medical school and nursing school rates rise among the native populations, this will not be sufficient to prevent shortages, at least in the near term (Immigration Policy Center of the American Immigration Council, 2009).

The flow of foreign-educated nurses has remained constant, affected only by immigration policies, which are being reconsidered in the United States, Canada, the United Kingdom, France, and Italy because of high rates of unemployment, political opposition and the economy. The number of migrating nurses generally increases in response to the demands from health care employers. Other external factors appear to have little or no influence.

Experience has shown that even when natural disasters have occurred, such as in India, Indonesia, and Haiti, nurses from those countries continue to pursue migration. After the events of September 11, 2001, some assumed and worried that the fear of terrorism and conflict in the United States would reduce the inter-
est of foreign-educated nurses in coming to this country. Quite the contrary—CGFNS, which screens foreign-educated nurses for immigration purposes, saw only a handful of nurses cancel their plans. Indeed, what the nurses shared was that they were not strangers to such instances of violence and upheaval. Although the size and impact of 9/11 was horrific, the nurses saw it as a rarity compared to the more frequent conflicts they were exposed to in their home countries. Nursing in the United States remains attractive to foreign-educated nurses personally, professionally, and economically because of the opportunities and quality of life it provides.

The United States has the largest professional nurse workforce in the world; yet, according to a study by Buerhaus et al. (2009) there will be a projected shortfall of nurses developing around 2018. As a result of these projections, it is likely that the demand for registered nurses educated in other countries will increase. In other words, foreign-educated nurses will be a permanent feature of the U.S. nursing workforce for the foreseeable future.

It should be noted that the downturn in the world economy in 2009 has affected the health care workforce internationally. Hospitals have revised plans to expand their facilities, have closed beds and units that were not producing revenue, and have restructured their workforce. Those that have collective bargaining agreements are seeking to revise salaries and benefits. These changes, for example, meant that in 2009 large urban hospitals in Philadelphia reported having no vacancies for new graduate nurses; however, hospitals in smaller cities in the northeastern part of the state did have vacancies and were actively seeking nurses. The demand for experienced, specialty nurses continues to increase. Critical care, emergency care and the operating room are areas for which hospitals are recruiting.

Despite the downturn in the economy, the migration of nurses across international borders is expected to be ongoing. Therefore, the successful adjustment of foreign-educated nurses to U.S. practice is critical. The 2004 National Sample Survey of Registered Nurses estimated that, in terms of workforce diversity, 82 percent of U.S. nurses are white (non-Hispanic), and African Americans and Hispanics are under-represented in relation to their proportion to the U.S. population. Foreign-educated nurses, however, are more likely to be Asian. Hence, the international migration of nurses to the United States, historically, has not mirrored the under-represented minority populations of black and Hispanic. The cultural lack of fit between patient and provider has been adequately documented and is germane to this issue.

Health Policy Workforce Planning Issues

Good workforce planning should focus on increasing investment in the supply of nurses and other health professionals to meet the demands of all countries. A major challenge for all countries is to establish workforce planning
mechanisms that effectively address the demands for health care and provide workforce stability.

In 2004, when examining the policy implications of nurse migration, Aiken and colleagues highlighted that, “The most promising strategy for achieving international balance and health workforce resources is for each country to have an adequate and sustainable source of health professionals,” which includes the need for developed countries to be more diligent in exploring actions to stabilize and increase the domestic supply of nurses (Aiken et al., 2004, p. 75). They go on to add that, “Developed countries growing independence on foreign-trained nurses is largely a system of failed policies and underinvestment in nursing.”

Similar arguments were noted in the conclusions from a research and policy retreat entitled, Human Resources for Health: National Needs and Global Concerns, which identified national self-sufficiency as a goal (Penn Consortium for Human Resources in Health, 2006). Attaining self-sufficiency also was noted in two key international policy documents: The Joint Learning Initiative Report and the ICN report: The Global Nursing Shortage: Priority Areas for Intervention. The ICN Report (2006, p. 12) notes that building national self sufficiency to manage domestic issues of supply and demand, in rich and poor countries alike, is critical.

Planning efforts should require that the United States establish a national system that monitors the inflow of foreign nurses, their countries of origin, the states and settings in which they work, and their impact on the nursing shortage. In order to ensure that the nursing care needs of the public are met, a broader workforce policy is needed that balances foreign nurse recruitment and domestic needs.

Much of the work done on workforce planning has yet to be fully integrated with emergent technologies, in particular, telehealth and tele-education. While countries work to establish, maintain and improve regulatory practices and policies, upgrade educational programs and improve patient care, health care and health care education are systematically transcending national and international boundaries, creating global communities. These technologies have the potential to create new approaches to harmonizing curricula, coordinating international policy, and tracking migrating nurses throughout the world. Experts in these technologies will be essential resources for the future of nursing in the United States.

Ethical and Moral Challenges

Perhaps the most daunting aspect of creating a plan for the future of nursing in the United States, shaped by a deep understanding of globalization, involves the ethics of choice. Many issues surrounding the global nursing shortage, the impact of globalization, the goal of international standards, and the establishment of diverse trade and related agreements have ethical and moral dilemmas imbedded within them. It requires that the Committee examine human rights issues and issues of equity.
Because globalization and migration have dramatically increased the multicultural characteristics of the health workforce, in general, and the nursing workforce, in particular, this country will, more and more, consist of people from different ethnic backgrounds who need to be fully integrated into the workplace in a way that respects diversity.

As has been noted by current studies on immigration, our present patterns of immigration in the United States are different from the past. The United States, built largely on immigrants from European countries, now attracts immigrants from the African, Arab and Asian nations—a much more diverse array of cultures and countries. As the United States increasingly becomes a more multiethnic, pluralistic and linguistically diverse society, the possibilities for misunderstandings, mixed messages, and errors in communication are inevitable.

To address and/or prevent the disruptiveness of these factors while delivering care, cultural competence and cultural sensitivity must be added to the knowledge and skills needed for nursing practice in the future. Continuing health policy should be developed that proactively manages a well-prepared, multicultural, multilingual, multiethnic, and multireligious workforce and fosters the development of intercultural workplaces. Such policies will need to address not only the challenges associated with integrating the foreign-educated nurse into the U.S. workforce, but also the challenges faced by co-workers experiencing the introduction of new cultures.

As the population ages, a greater demand for nurses with the skills necessary to provide safe, effective care to the elderly, as well as the ability to apply new technologies, also will be needed. In short, changing U.S. demographics will require that nurses have knowledge and skill in cultural competence, care of the elderly, and use of technology.

As competition and demand for skilled nurses increase, ethical recruitment practices must balance the rights of individuals to migrate and at the same time prevent adverse effects on source countries’ health systems. The United Nations Declaration of Human Rights (1948) underscores that point. There has been considerable critique of the migration of nurses from less developed to developed countries as irresponsible brain drain. However, numerous factors relate to the migration of health workers from developing countries resulting in insufficient numbers in the source country’s workforce. These include in-country weakness in policies and restrictions related to wages, recruitment, deployment, transfer, and promotion (Vujicic et al., 2009). Kingma (2006) notes that since most nurses work in the public sector, failure of governments to fill vacant positions may cause in-country unemployment and encourage migration. Governmental policies on remittances and return migration also are factors that encourage nurses to seek employment in other countries. As this paper demonstrates, the brain drain assumption can be an oversimplification of a profoundly complex issue. While developed countries continuing to recruit professional workers from developing countries is a serious ethical issue, the rights of professionals to find a better life in another country is equally compelling as an ethical issue.
Efforts have emerged to address the dilemma of balancing the rights of individuals to migrate with the potential loss of essential health care services in source countries. In 2004 WHO issued a resolution urging member states to develop strategies to mitigate the adverse effects of international migration and develop an international code of practice. The International Council of Nurses, Sigma Theta Tau International, and the Commonwealth Secretariat have issued codes that provide guidelines and methods to improve the ethical recruitment and treatment of health care workers.

The United States, in 2009, issued *The Ethical Code for Recruitment of Foreign-Educated Nurses*, a voluntary code for ethical recruitment practices developed by an Advisory Council of stakeholders that was convened by AcademyHealth, a private-sector health policy organization. The stakeholders were composed of representatives of unions, hospitals, nursing organizations, regulatory bodies, credentials evaluators, recruiters, staffing agencies and immigration attorneys. The goal was to reduce the harm and increase the benefits of international nurse recruitment for source countries, host countries, U.S. patients, and migrant nurses.

The task force has evolved into the Alliance for Ethical International Recruitment Practices. Subscribers to the Code will agree to abide by it. Nurses will be able to refer possible violations of the Code to the Alliance, which will then assist in resolution of the infractions or refer to advocacy or government bodies. This work is essential as it focuses on the actual practices of greatest concern—aggressive, predatory recruitment practices that are abusive to nurses seeking a better life for themselves and their families. U.S. nursing leaders will need to proactively implement these guidelines and continue to monitor abuses that may emerge.

The WHO Code of Practice on the International Recruitment of Health Personnel was adopted at the 63rd World Health Assembly in Geneva, Switzerland in May, 2010. The Code is voluntary, global in scope, and directed at health workers, recruiters, employers, health professional organizations and relevant regional and/or global entities. The Code provides principles applicable to the international recruitment of health personnel in a manner that promotes an equitable balance of interests among health workers in source and destination (host) countries (WHO, 2010).

In conclusion, it is the hope of the authors that this paper provides helpful information to guide the Committee’s deliberations and decisions. Our effort to synthesize a massive amount of information demonstrates an honest endeavor to place the future of nursing in the United States within an international context, sensitive to the impact of escalating globalization. U.S. nurse leaders will continue to play a central role in the future of nursing internationally. It is our hope that the work of this Committee will encourage their collaborative endeavors with international governments, communities, nursing organizations and nurses to enhance the profession of nursing worldwide.
REFERENCES


ABOUT CGFNS INTERNATIONAL

CGFNS International is an immigration neutral, internationally recognized authority on credentials evaluation and verification pertaining to the education, registration and licensure of nurses and health care professionals worldwide. The mission of CGFNS International is to serve the global community through programs and services that verify and promote the knowledge-based practice competency of health care professionals. CGFNS International protects the public by ensuring that nurses and other health care professionals educated in countries other than the United States are eligible and qualified to meet licensure, immigration and other practice requirements in the United States.

CGFNS International and its divisions provide products and services that validate international professional credentials and support international regulatory and educational standards for health care professionals. The organization focuses on four key objectives:

1. To develop and administer a predictive testing and evaluation program for internationally educated nurses
2. To provide a credentials evaluation service for internationally educated and/or internationally born health care professionals
3. To serve as a clearinghouse for information on the international education and licensure of health care professionals
4. To conduct and publish studies relevant to internationally educated health care professionals

The major CGFNS programs used by internationally educated health care professionals are the VisaScreen Program®, which is the leading health care worker certification program for immigration and for obtaining occupational visas in the United States; the Credentials Evaluation Service, which provides a course-by-course comparison of international education to U.S. standards for licensure, education and employment; and the Credentials Verification Service for New York State, which is required of internationally educated registered and practical nurses, occupational therapists and assistants, and physical therapists and assistants seeking licensure in New York State.

CGFNS International celebrated its 30th anniversary in 2007. It has reviewed and/or certified the credentials of over 500,000 internationally educated nurses and other health care professionals for U.S. licensure and immigration.

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The paper is based on published international literature in the field; documents from CGFNS International files; research studies; trends in the nursing labor market, including globalization and demographic changes; increased use of complex technologies; and the authors’ personal observations and participation in relevant national and international conferences and meetings on the subject.

The authors are responsible for the content of the paper.

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Index*

A

Academic careers (see also Faculty)
case study, 184-185
educational attainment of RNs in, 25
first degree at entry into the profession and, 183-186
incentives for, 187, 188
RN workforce, 24, 388
salary disparities, 13, 186-187

Academy of Medical-Surgical Nurses, 325, 364

Access to care, 27
regulatory barriers, 99, 102, 106, 107, 463
technology and, 64

Accountable care organizations (ACOs), 9, 30, 95, 131, 132, 148, 255-256, 277, 375-376, 380-381, 389-390, 391, 396, 559

Accreditation Commission for Midwifery Education, 325, 328 n.3, 340 n.11, 341 n.13, 362, 364

Accreditation Council for Graduate Medical Education, 201

Acute care (see also Hospitals), 37
Agile Team Model, 414-415
practice transformation, 29-30

quality of, 27, 300, 485
recommendations, 416-417
technology and, 30, 415-417
workforce, 386-387, 388-389

Acute Care Forum on the Future of Nursing highlights, 316-318
interdisciplinary collaboration, 301
key themes, 317
safety and quality of care, 300
site visits and solutions session, 317-318
technology, 300
testimony questions, 300-301

Admissions, inpatient
avassessments by APRNs, 10, 278, 444, 473
care management programs and, 27, 377, 378, 379-380, 390, 395-396
graduation of nurses coordinated with, 264
to hospice or skilled nursing facility, 274, 278, 444, 473
palliative care models and, 425
readmissions, 27, 66, 70, 71, 379-380, 395-396, 416, 421
telehealth services and, 416, 421
Advanced dental hygiene practitioner, 107, 110

*Pages 375-642 are not printed in this report but can be found on the CD-ROM in the back of this book.
Advanced Practice Nursing Consensus Work Group, 327

Advanced practice registered nurses (APRNs) (see also Certified registered nurse anesthetists; Certified nurse midwives; Clinical nurse specialists; Consensus model for APRN regulation; Nurse practitioners)


Affordable Care Act (ACA)


Aging population, 48, 66
AIDS (see HIV/AIDS)
Alabama, 157, 356, 357, 358, 359
Alaska, 157
Alliance for APRN Credentialing, 341, 343
n.14, 344 n.17
Alper, Robyn, 176
Ambulatory care, 3, 23, 24, 25, 38, 43, 91,
119, 204, 205, 331, 382, 383, 386,
387, 388, 389, 390, 393, 471, 486,
490, 537
American Academy of Family Physicians,
110-111, 134, 455 n.8, 557
American Academy of Hospice and Palliative
Medicine, 424
American Academy of Nurse Practitioners
(AANP), 325, 336, 358, 359, 362
American Academy of Nurse Practitioners
Certification Program, 325, 344
n.17, 358, 359, 361, 362, 366
American Academy of Nursing, 245
American Academy of Pediatrics, 134, 457,
458
American Association of Colleges of Nursing
(AACN), 121, 123, 135, 170, 171-172,
182, 188, 194-195, 198 n.15, 200, 206,
224, 245, 287, 325, 343-344, 358, 359,
361, 364, 366, 496, 507, 509, 510, 511,
512, 513, 519, 528, 532, 533, 544, 552,
561
American Association of Colleges of
Osteopathic Medicine, 206
American Association of Colleges of
Pharmacy, 206
American Association of Critical-Care Nurses
(AACN), 325, 358, 359
American Association of Critical-Care Nurses
Certification Corporation, 325, 344
n.17
American Association of Legal Nurse
Consultants, 325
American Association of Nurse Anesthetists,
325, 358, 359, 361, 362, 364, 366
American Association of Retired Persons
(AARP), 106, 251, 286
American Board of Internal Medicine
Foundation, 557
American Board of Nursing Specialties
(ABNS), 325, 328 n.4, 337 n.6, 340
n.10, 358, 362, 364
Accreditation Council, 359
American College of Nurse-Midwives
(ACNM), 325, 344 n.17, 358, 359,
361, 362, 364
Division of Accreditation, 364
American College of Nurse Practitioners, 325,
358, 362, 364
American College of Physicians, 557
American Dental Association, 107, 110, 206
American Holistic Nurses Association, 325,
358, 364
American Immigration Council, 630
American Indians/Alaska Natives, 128, 129,
208
American Medical Association (AMA), 105,
110, 455 n.8, 457, 458 n.7
American Midwifery Certification Board, 197,
325, 358, 359
American Nurses Association (ANA), 27, 109,
171, 208, 245, 325, 329, 338, 344,
354, 358, 361, 362, 364, 366, 371
American Nurses Credentialing Center
(ANCC), 196, 325, 336, 344, 358,
359, 362, 364, 366
Magnet Recognition Program, 171, 244
American Organization of Nurse Executives
(AONE), 171-172, 235, 245, 358,
359, 361, 362, 364, 366, 485, 528,
531, 586
American Psychiatric Nurses Association, 325,
358, 362, 364, 366
American Recovery and Reinvestment Act
(ARRA), 133, 137, 375, 472
American Society of Anesthesiologists, 110,
457, 458
Anesthetists/anesthesiology (see Certified
registered nurse anesthetists)
Arizona, 120, 157, 211, 599, 603, 614
Arkansas
Aging Initiative, 226-227
practice regulations, 157
State Board of Nursing, 325, 355, 356,
357, 359
Armenia, 575
Ascension Health, 211
Asian or Native Hawaiian/Pacific Islander,
128, 129
Association of Academic Health Centers, 169,
394, 462-463, 552, 560
Association of American Medical Colleges
(AAMC), 203, 206, 287
Association of Schools of Public Health, 206
Association of Teachers of Preventive Medicine, 560

Associate’s degree in nursing advantages, 489
barriers to program admission, 166
BSN graduates relative to, 505-506
case studies, 180-181, 232
costs, 168, 370-371, 489
data needs, 482, 508
earnings, 43, 171, 172
employment settings, 25
ethnic minorities, 207, 208, 232
faculty, 187, 188, 371
foreign programs, 578-579
geographic differences, 178
and leadership positions, 247
licensure exam, 372, 488-489
physician opinions of, 171
practice regulations, 371
qualified applicants not accepted, 182
recommendations, 508
roles and responsibilities, 43
state preferences for investment in, 488-489, 506
statistics, 167, 171, 178, 182, 186, 372
transition to higher degree programs, 7
12, 39, 40, 44, 130, 166, 173, 174-175, 177, 183-186, 187, 208, 281, 488-489, 506, 507
Association of Faculties of Pediatric Nurse Practitioners, 325, 344 n.17, 362, 364, 366
Association of Women’s Health, Obstetric, and Neonatal Nurses, 325, 358, 359, 362, 364, 365
Austin, Mary, 69
Australia, 190, 192, 573, 590, 598, 603, 607, 628
Ayers, Lisa, 62-63

Bachelor’s of science in nursing (BSN; see also Undergraduate education)
accelerated, second-degree program, 44, 165, 168, 233, 369, 371, 406, 484, 507, 523
ADN graduates relative to, 505-506
ADN transition to, 7, 12, 39, 40, 44, 130, 166, 171, 173, 174-175, 177, 183-186, 187, 208, 281, 406, 487, 488, 506, 507
applications for admission, 31, 193
barriers to meeting educational needs, 166, 179-193
capacity building for, 176-178, 180-181, 196, 210-211, 482, 484, 538, 539
case studies and profiles, 60-63, 73-74, 174-176, 180-181, 184-185, 192-193, 204-205, 232-233
community college programs, 173, 174, 175-176, 177-178, 180-181, 371, 406, 482, 489, 492, 505, 519, 538, 539-540
community health curriculum, 122
costs, 168, 371
data needs, 482
Diploma nursing program transition, 12, 44, 166, 171, 173, 187, 281, 370, 518, 597
earnings, 43, 171, 172, 187
economic value to institutions, 485-486
education/preparation, 40-41, 43, 44, 165, 369, 371, 512, 524, 608, 612
employment settings, 25, 171, 175
faculty, 173, 179, 182-188, 210, 211, 371, 440, 480, 484, 486, 487-488, 489
foreign requirements and programs, 489, 567, 568-569, 571, 572, 576, 579, 583, 584-585, 590, 591, 592, 595, 596, 599, 600, 608, 610, 612, 615, 617, 618, 620, 628
funding for programs, 12, 175-176, 281, 482, 484-489, 492
gender diversity, 507
geographic differences, 178
leadership training, 224
licensure exam, 372

Baby Boom generation, 48, 125, 259, 387, 424
Baccalaureate degree (see Bachelor’s of science in nursing; Undergraduate education)

B

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INDEX

as minimum requirement to practice, 169-178, 287, 371, 409-410, 412, 435, 479, 485, 524, 553, 568-569
minorities, 130, 207, 208, 232-233, 585
need for, 169-178
nursing school capacity, 487
physician opinions of, 171
prerequisites, 524
qualified applicants not accepted, 130, 182, 193, 487, 537
and quality and outcomes of care, 169-170, 406, 485-486, 505-506, 512, 538
recommendations, 12, 13, 281-282, 412, 481, 482, 484, 508, 524, 559
roles and responsibilities, 41, 43, 67, 170
school nurses, 435
shortage-related impacts, 485, 486-489
standardizing education, 489
statistics, 166-167, 178, 186, 196, 372
titles of nurses from other countries, 577
transition to higher degree programs, 7, 12, 13, 39, 40-41, 43, 44, 123-124, 130, 170, 173-176, 177, 181, 185-186, 204-205, 208, 281, 282, 480, 484, 487, 488-489, 506-507, 518, 523, 524, 538, 597
trends, 166-167, 196
workforce goal and plans for achieving it, 172-177, 212, 412
Basin, Basilia, 174-175
Becnel, Tina, 74
Benign prostatic hyperplasia, 51
Benner, Patricia, 287
Bessent, Hattie, 208
Best on Board, 243
Beverly, Claudia J., 225
Blue Cross Blue Shield of Michigan Foundation, 204
Board of Certification for Emergency Nursing, 358, 359, 364
Bologna Process, 569, 572-573
Boston College, 88
Brazil, 577
Breakthrough to Nursing initiative, 232
Bronx Community College, 247
Brown, Gordon, 287
Bureau of Indian Affairs, 103
Bureau of Primary Health Care, 430
Burke, Sheila, 246-247
Bush Administration, 133, 247

C

Caceres, Billy, 233
California
nurse workforce, 61, 211, 382, 383, 583, 590, 596, 599, 610, 612
nursing education, 176, 181, 265
On Lok program, 65
scope-of-practice regulation, 111, 157
California Medical Association, 111
California Society of Anesthesiologists, 111
Cameroons, 573
Campaign for Nursing’s Future, 125
Campbell, Margaret, 425
Canada, 203, 485, 553, 568, 569 n.5, 572, 574, 575, 577, 580, 582, 590, 599-603, 607, 608-609
Care in the Community Forum
highlights, 124, 318-320
key themes, 318-319
site visits and solutions session, 319-320
testimony questions, 302-303
Care management models (see also Health coaches)
accountable care organizations, 9, 30, 95, 131, 132, 148, 255-256, 277, 375-376, 380-381, 389-390, 391, 396, 559
impact of health care reform, 376-381
information technology and, 378, 381, 382, 384-386
patient-centered medical homes, 94, 117, 132, 134-135, 248, 377-379, 381, 511
payment policy and, 378, 380, 386, 389, 392
recommendations, 391-396
successful features of programs, 377
transitional care, 24, 27, 37, 66, 67, 70-71, 86, 94, 121, 124, 132, 148, 199, 276-277, 375, 378, 380, 381, 388, 389, 390, 393, 395-396, 541, 545, 557, 559
Caribbean, 614-618
Caribbean Community and Common Market, 628
Capps, Lois, 247
Carmona, Richard, 247
Carnegie, Elizabeth, 228-229

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INDEX

Carnegie Foundation, 121, 164-165, 287, 386, 395, 480, 484, 512, 517, 523, 536, 537, 538, 541, 542, 544, 545, 546, 551
Carondelet Health Network, 120, 211
Cedars-Sinai Medical Center, 120, 146-147
Center for Collaborative Intervention Research, 184
Center for the Health Professions, 199
Center for Medicare and Medicaid Innovation, 11, 131, 279, 379, 392, 462
Center to Advance Palliative Care, 424, 425
Center to Champion Nursing in America, 176, 251, 286
Centers for Disease Control and Prevention, 418
Centers for Medicare and Medicaid Services, 12, 27, 105, 111, 238, 246, 247, 279, 280 (see also Medicare)
Care Transitions Project, 379-380
education funding, 124, 471, 490-491
National Provider Indicator data, 262
recommendations for, 9, 10
reimbursement system, 115
and scope-of-practice restrictions, 5, 9, 111, 145
technology development incentives, 137
testing payment and service delivery models, 131
Centura Health At Home, 420-421
Certification programs, evaluation criteria and APRNs, 349-353
Certified nurse midwives, 23, 327 (see also Advanced practice registered nurses)
and access to care, 116, 506
case study, 56-58
certification, 196, 197, 336
cost containment, 88, 90
demand for, 506
earnings, 43, 188
education and training, 43, 44, 196, 333, 340 n.11, 509
licensure, 332, 333, 338
malpractice insurance, 58
as Medicaid primary care case managers, 471
opposition to independent practice, 111
primary care, 381-382
public awareness of, 455
regulations, 96, 108, 248, 328, 330, 331, 332, 333, 338
reimbursement rates/policies, 58, 104, 116
safety and quality of care, 28, 56-58, 97, 443, 533
scope-of-practice, 26, 41-42, 43, 96, 112, 116, 248, 331
support for expanded scope of practice, 112
workforce size and distribution, 26, 257, 381-382
Certified nursing assistants (CNAs), 38, 75, 591
Certified registered nurse anesthetists (CRNAs), 23, 88 n.2, 327 (see also Advanced practice registered nurses)
certification, 196, 197, 336
earnings, 43, 188
education and training, 43, 44, 196, 197, 339, 509
licensure, 101, 330, 332, 333, 336
Medicare/Medicaid regulations, 109, 111, 471
opposition to independent practice, 457, 458
practice settings, 41
public awareness of, 455
regulations, 96, 101, 108, 109, 111, 327, 328, 330, 332, 333, 335, 444, 448, 454
reimbursement for services, 471
safety and quality of care, 97, 533
scope-of-practice, 26, 41, 43, 96, 108, 109, 111, 443, 444, 448, 454, 455
specialty area, 335
workforce size, 26

CGFNS International
creation, 582 n.8
Credentials Evaluation Service, 640
Credentials Verification Service, 640
description of, 640
joint CGFNS/Excelsior College study, 587
Qualifying Exam®, 574, 618
survey/study data, 566-567, 568, 582, 583, 584, 585, 589
Validity Studies, 574
VisaScreen Program, 590, 596, 599, 603, 607-608, 612, 613, 618, 624, 631, 640
Changemaker program, 130
INDEX

Charge to committee, 2, 3
Chater, Shirley, 247
Chief nursing officers (CNOs), 8, 52, 69, 133, 134, 235-238, 251, 410
Children’s Health Fund, 419
Children’s Hospitals and Clinics of Minnesota, 424
Children’s Memorial Hospital, Chicago, 230
China, 566, 575, 578, 607, 610-612, 620, 621-622
Chow, Marilyn, 91
Christopher, Mary Ann, 236-237
Christus St. Michael Health System, 226
Chronic disease management (see also Home health; Hospice; Palliative care; Transitional care) access to care, 27, 483 accountable care organizations and, 132 APRNs and, 86, 121, 124, 332, 418-420, 452 challenges, 47-48 community health services, 237, 246, 272, 318, 319, 389, 418-420, 450 continuity of care, 402 coordination of care, 66, 87, 94, 97, 483, 484, 486, 556, 557 costs of, 248 education of nurses for, 170, 175, 200, 213, 395, 485, 540, 543 guided care, 94-95 information technology and, 415-416, 420-421 intensive primary care, 419 medical/health homes, 133, 377-379 models, 376-381, 418-422, 452 nurse-managed health centers, 139, 420 patient-centered care, 86 recommendations, 421 residency programs, 121, 124, 545 self-management, 95, 428-429 team approach, 97, 206, 378, 428-429, 521, 554, 557 transitional care, 276-277, 380, 389, 395-396 VA services, 91
Cigna, 93
City University of New York, 176
Clinical nurse leaders (CNLs), 44, 72, 135, 180
Clinton Administration, 247
Clostridium difficile, 70
Coleman’s Care Transitions Model, 380 Collaboration (see Interprofessional collaboration)
Colleagues in Caring, 401
Colorado, 75, 141, 157, 359, 420, 430, 463
Columbia, 575, 577
Columbia University, 532
Commission on Collegiate Nursing Education (CCNE), 12, 13-14, 203, 281, 282, 325, 328 n.3, 341 n.13, 344 n.17, 359, 362, 364, 366, 509, 510, 513
Commonwealth Fund, 251
Commonwealth Secretariat, 634
Community and public health care (see also Care in the Community Forum; Primary care) access to care, 28, 30, 64 case study, 62-63 chronic disease management, 237, 246, 272, 318, 319, 389, 418-420, 450 competencies needed to practice, 6, 39 defined, 59 economic value of nurses, 62-63, 64 education, 25, 40 essential community providers, 473 evidence-based models, 438 foreign-educated nurses, 576 growth in, 381-382 home visitation programs, 73-75, 438-439 leadership, 234-235 need for, 59, 62-64 nurses, 6, 25, 40, 28, 30, 39, 55, 59, 62-63, 64, 234-235 practice settings, 23, 24, 39, 59 principles for change, 59, 62-64 safety and quality of care, 6, 64 telehealth services, 64

Copyright © National Academy of Sciences. All rights reserved.
VA programs, 64
workforce and infrastructure, 24, 59, 62-
64, 119, 382
Community and public health settings, 3, 23,
24, 38, 64, 122, 131, 133, 257, 319,
382, 430, 490
Community Care of North Carolina, 379
Community Health Center, Inc., 124
Community college programs
ADNs, 40, 44, 166, 232, 247, 370-371,
553, 578, 579
attrition/completion rates, 212
BSNs, 173, 177-178, 180-181, 371, 482,
489, 492, 505, 519, 538, 539-540
cost of education, 370-371
curriculum standardization, 406, 407,
479, 539-543
Diploma programs, 44
funding for nursing education, 489, 491,
492
importance of, 538
international affiliations with, 579
internship/residency, 122
interprofessional collaboration barriers,
522
length of programs, 523
LPNs, 39, 44
recommendations, 538, 539-540
RNs, 23, 39, 44, 166
university partnerships with, 173, 174-
175, 406, 479, 505, 519, 536, 538,
539-540
Community Health Accreditation Program,
12, 280
Community health centers, 133
Como Convivir Con Su Artritis (How to Live
With Your Arthritis), 428-429
Compensation/reimbursement policies, 22
ACA and, 10, 278
APRNs, 9, 10, 71, 115
bundled payments, 116
CNMs, 58, 104, 116
CRNAs, 471
fee-for-service, 10, 92, 103, 115, 116,
278, 465
global payments, 116
Medicaid, 471
NPs, 102-103, 104, 110 n.17, 115, 116-
117, 389, 431, 464, 465, 471
primary care, 10, 117
state variation in, 4, 102-103
Competencies
clinical performance, 14
community and public health, 6
geriatrics, 6
for leadership roles, 6, 8, 223-224,
226-227
policy related, 6
traditional, 24
Competency-based education
assessing competencies, 32, 201-202
career transition program, 204-205
continuing education, 13-14, 32, 202,
204-205
core competencies, 31, 200-201
evaluation of programs, 14
interprofessional education, 7, 13, 14, 31,
32, 203, 206
lifelong learning and continuing
competence, 13-14, 31, 202-206
recommendations, 13-14
Congress, recommendations to, 9-10, 278
Congressional Budget Office, 92, 377
Congressional Nursing Caucus, 247
Connecticut, 157
Connecticut Hospice, 423
Consensus model for APRN regulation
accreditation of education programs,
339-340
APRN Consensus Group, 341, 343-345
APRN Joint Dialogue Group, 327, 341,
345-346, 361
certification, 340, 349-353
certified nurse-midwife, 327, 328, 330,
331, 332, 333, 338, 340 n.11
certified nurse practitioner, 328-329,
330, 332, 333-334, 335, 336, 338,
339
certified registered nurse anesthetist,
327, 328, 330, 332, 333, 335, 336,
339
clinical nurse specialist, 327, 328, 330,
331, 332, 333, 334, 335, 338, 339
communication strategies, 341
definition of APRN, 329-332
education requirements, 106, 334-335,
340-341
debate endorsing organizations, 325-326
essential elements, 329, 346
evidence-based models, 428-430
foundational requirements, 338-341
goals, 106
INDEX

grandfathering, 338
historical background, 342-346
implementation strategies, 338-342
invited organizations, 362-363
LACE structure and processes, 341-342
licensure, 338-339
NCSBN APRN Committee, 342-343, 355-357
NCSBN APRN Roundtable Organization, 358-360
overview, 328-329
participating organizations, 364-366
process example, 367
recommendations, 430-431
roles and population foci, 337
roundtable organization attendance lists, 358-360
specialties, 335-336, 354
timeline for implementation, 342
titling, 332, 334
underlying assumptions, 345-346
Work Group meetings, 366
Consortium for Children with Complex Medical Needs, 230
Continuity of care, 402
Convenient care clinics (see Retail/convenient care)
Cooper, Barbara Medoff, 143
Coordination of care (see also Care management)
and access to care, 27, 30
acute care settings, 66
case studies, 68-71
chronic disease management, 66, 87, 94, 97, 483, 484, 486, 556, 557
education in, 556-559
innovations by nurses, 94
Medicare Coordinated Care Demonstration program, 66
Medicare Prescription Drug Act and, 377
nursing practice model and, 386
principles for change, 65-66
Staff Nurse Care Coordination model, 65-66
teamlet model, 558
Transitional Care Model, 66, 70-71, 276-277, 380, 557
Cost of nursing education, 168-169, 370-371
Council for Higher Education Accreditation, 328 n.3, 334, 337, 341
Council on Accreditation of Nurse Anesthesia Educational Programs, 325, 328 n.3, 340 n.11, 341 n.13, 344 n.17, 358, 359, 362, 364, 366
Council on Certification of Nurse Anesthetists, 359
Council on Recertification of Nurse Anesthetists, 359
Coyne, Patrick, 425
Critical care nurses, 39, 146, 425, 584, 587, 631
Curran, Connie, 243
Curriculum
community health, 122
coordination of care, 556-559
dedicated education units, 190, 192-193, 211, 410, 412, 513, 544
development, 7, 13, 190-191
global health, 567, 570
health policy, 412, 560, 559-562
innovations, 409-413
international models, 567, 569-570
interprofessional/transdisciplinary, 410, 555, 558, 559
for leadership development, 8, 11, 14, 241-244, 494-504
recommendations, 411-412
science and research as part of, 411, 412
standardization, 406, 407, 479, 489, 539-543, 569-570
technology-infused, 410, 411-412

D

Daines, Richard, 23
Dartmouth Institute for Health Policy and Clinical Practice, 380
Data for workforce planning
gaps in, 8-9, 259-263
HRSA registered nurse sample survey, 15
infrastructure, 9, 14-15, 255, 256, 262, 265, 283
key message, 4, 8, 29, 33-34, 255
priorities, 9
recommendations, 14-15, 393-394, 283
standards, 15
state collection of, 14-15
Delaware, 157
Demographic challenges, 124-131
aging workforce, 125-127
INDEX

Denmark, 571, 573
Department of Defense, 392
Department of Education, 13, 281, 328 n.3, 334, 337, 341 n.13, 470, 491, 492
Department of Health and Human Services, 71, 131, 171, 247, 280, 392, 491
Department of Justice Antitrust Division, 10, 279
Department of Labor, 13, 14, 15, 282, 283, 284, 486, 582 n.8
Department of Veterans Affairs
analysis of workforce needs, 256
community care, 64, 91, 132-135
nursing practice transformation, 72, 91-92, 132-135
quality of care, 170
Dermatology Nurses Association, 325, 364
Dermatology Nursing Certification Board, 325
Detroit Receiving Hospital, 425
DeVry, 405
Diabetes, 47, 51, 65, 67, 68, 70, 92 n.6, 94, 112, 114, 134, 139, 184, 249, 376, 418, 420, 432
Diagnosis-related groups, 247
Diploma nursing programs
advantage, 370
data needs, 508
demographic characteristics, 178, 370
earnings, 43, 171, 172, 187
education/preparation time, 43, 44, 165, 369, 523, 572, 599, 615
employment settings, 25
faculty, 187
foreign-educated nurses in U.S., 583, 584-585, 608, 621
freestanding schools of nursing, 523
funding, 12, 124, 176, 280, 491, 520
hospital-based, 124, 166, 369, 491, 518, 522, 615
licensure exam, 372, 573-574, 608
LPNs, 166, 372
minorities, 208, 370
number of programs, 166-167
phasing out, 12, 175-176, 280
practice regulations, 574, 580
proportion of nurses, 503
recommendations, 12, 280, 281, 508
roles and responsibilities, 43
and transition to higher degree programs, 12, 44, 166, 171, 173, 187, 281, 370, 518, 597
Disaster services, 28, 235
Discharge nurses, 93-94
Diversity of population, 48
Doctoral degrees in nursing
accelerated programs, 265, 322, 405, 482, 484, 488, 489
and access to care, 195
barriers to meeting educational needs, 199, 518-519
clinical training, 197, 199
costs, 168
Doctor of Nursing Practice (DNP), 7, 42, 43, 44, 168, 183, 188, 194-195, 196, 197, 411, 412, 480, 508-510, 511, 519-520, 532, 559
Doctor of Philosophy in Nursing (PhD), 7, 42, 43, 44, 130, 168, 183, 188, 194, 195, 196, 265, 403, 411, 480, 484, 487-488, 489, 517-521, 532, 561-562
earnings, 43, 172, 186-187, 282, 529
education/preparation time, 41, 43, 44, 187, 194-195, 196, 197, 199, 509-510, 532, 599
enrollments, 532
faculty, 13, 164, 170, 179, 183, 185, 188, 194, 195, 196, 265, 276, 282, 480, 484, 487-488, 489, 519, 520-521, 529
foreign-educated nurses, 568, 608, 621, 628
funding for programs, 13, 282, 481, 484, 520
health policy curricula, 560, 561-562
internships, 183
interprofessional collaboration, 555
need for, 164, 170, 212, 411
pathways/transition to, 7, 13, 44, 282, 480, 482, 484, 488, 489, 507, 509-510, 518
prerequisites, 409
INDEX

Dole, Robert, 246
Dominican Republic, 575
Donald W. Reynolds Institute on Aging, 224
Drexel University, 138-139, 320
Duke Translational Nursing Institute, 532-533
Dumas, Rhetaugh, 247
Dworkin, Darren, 147

E

Eastern, Central and Southern African College of Nursing, 628
Eastern Europe, 572, 575, 578
Economic value of nurses
accounting practices and, 445
BSNs, 485-486
community and public health nurses, 62-63, 64, 75
patient-centered care, 54, 57
seamless, coordinated care, 65

Edge Runner program, 245
Education and training (see also Competency-based education; Curriculum; Education Forum on the Future of Nursing; Graduate nursing education; Undergraduate nursing education; International education models)
accreditation criteria, 470
capacity building, 7, 264-265
Carondolet Health Network, 211
challenges, 390, 484-484
chronic disease management, 170, 175, 200, 213, 395, 485, 540, 543
consortium programs, 7
cost-effectiveness, 485-486
diversity issues, 7, 12, 207-209
employment settings by, 23, 25
entrepreneurial professional development, 11
federal funding, 10, 13, 484, 490-491, 492
HEET program, 211-212
incentives for continuing, 12, 31, 173, 187, 212, 304, 305, 438, 440, 482, 484, 489, 492, 520, 524
interdisciplinary, 406
interprofessional care, 6, 7, 13, 14, 31, 32, 165, 198, 200, 201, 203, 206, 270, 276, 281, 282, 390, 396, 479, 480, 481, 482, 496, 508, 513, 517, 521-523, 539, 540-541, 545, 551, 552, 553-556, 558, 561, 563
interstate collaborations, 406-407
key message, 4, 6, 29, 30-32, 34, 163
for leadership roles and opportunities, 8, 12, 14
need for, 4, 6-7
partnerships for, 401-407, 412, 527-529, 537, 579
pathways, 6, 7, 12
policy priorities, 483-493
recommendations, 10, 12-14, 407, 411-412, 484, 508, 511, 513-514, 528-529, 559
research, 198, 276
and safety and quality of care, 568
service delivery models, 527-529
technology applications, 7, 12
transformational partnerships, 404-408
Veterans Affairs Nursing Academy, 210-211

Education Forum on the Future of Nursing forum questions and discussions, 304-305
highlights of forum, 320-322
key themes, 320-321
site visits and solutions session, 321-322
testimony questions, 304-305

Egypt, 579
Electronic health records (EHRs), 94, 124, 134, 137, 140, 141, 142, 143, 381, 384, 385, 386, 402, 415, 419, 438, 472, 513, 558
11th Street Family Health Services, 138-139, 320
Emergency Nurses Association, 325, 358, 359, 362, 364
Emergency room visits, 28, 54, 55, 69, 227, 237, 248, 378, 379, 425, 430
End-of-life care, 37, 39
Engelberg Center for Health Care Reform, 380, 462
Environmental health, 39, 62, 63, 64
Eritrea, 579
Ethiopia, 577
European Higher Education Area, 569 n.4
European Union, 569, 572-573, 627-628
Evans, Lois, 229
Excelsior College, 209, 587
Expenditures for health care, 2, 22, 131, 145, 169, 248, 483, 490

F
Faculty (see also Academic careers)
aging of, 7, 31, 127, 179, 182-188, 486
appointment and promotion criteria, 529-530
capacity-building initiatives, 13, 31, 265, 282, 484, 488
certification, 529
continuing professional development, 14
demand projections, 187-188
education pathways, 43, 44, 179, 183, 185, 188, 194, 265, 412, 484, 487-488
foreign shortages, 572
impacts of BSN shortages on, 486, 487-488
loan forgiveness incentives, 488
need for, 164
recommendations, 282, 484
salaries, 13, 282, 488, 518, 529
Family Health and Birth Center (FHBC), 28, 54, 56-58, 229
Federal Employees Health Benefits Program, 5, 10, 105, 279, 472
Federal government
and practice-related reforms, 103-105
Federal Trade Commission (FTC), 5, 10-11, 105, 145, 279, 470
Federally qualified health centers, 124, 138-139, 430, 472
Federation of State Medical Boards, 459
Ferrell, Betty, 424
Flinter, Margaret, 124
Florida, 64, 157, 177, 180-181, 228, 229, 382, 383, 492, 583, 590, 596, 603, 614
Florida International University
Foreign-educated nurses in U.S. workforce (see also International models of nursing; International nurse migrations; specific countries)
acclimation/acculturation, 584, 588-589
aging of workforce, 602-603, 607
baccalaureate education, 489, 567, 568-569, 571, 572, 576, 579, 583, 584-585, 590, 591, 592, 595, 596, 599, 600, 608, 610, 612, 615, 617, 618, 620, 628
curriculum, 567, 569-570
education issues and challenges, 568-573, 585-586
educational investment in, 567, 568, 585-586
employment settings and patterns, 583-584, 585, 594
English language proficiency, 569 n.7, 584, 586, 587
job satisfaction, 584
medication/pharmacology knowledge, 587
monitoring and tracking system, 567-568, 570
NCLEX examination statistics, 575
origins, 582, 590-621
racial/ethnic differences, 585
recruitment of, 598
remittances, 66, 595, 633
safe practice, 589
technology proficiency, 587
titles of nurses, 576, 577
transition to U.S. practice, 586-587
variation in health care system and, 587
workforce size and distribution, 583-586
Forums on the Future of Nursing
acute care, 300-301, 316-318
care in the community, 302-303, 318-320
education, 304-305, 320-322
Fragmentation of health care system
proposals to address, 116
and realizing value of nurses, 115
INDEX

Free Trade Accords of the Americas, 627-628
Freidson, Eliot, 97 n.15, 452 n.7, 455
Freire, Paulo, 418
Fresno City College, 579
Front-line nurses, leadership roles, 234

G
Geisinger Health System, 91, 92-93, 95, 131, 380
Gender diversity, 127-128, 209
General Agreement of Trade in Services, 626
General Undifferentiated Medical Practice (GUMP), 453
George Foundation, 265
George Washington University, 197, 240-241, 288, 358, 364
Georgetown University, 247
Georgia, 158, 229, 614
Geriatric Resources for Assessment and Care for Elders (GRACE), 378-379
Geriatrics, 6, 41, 66, 97, 168, 190, 197, 226-227, 233, 256, 332, 387, 478, 540-541, 555, 558
Germany, 578, 580, 585, 603
Gerontological Advanced Practice Nurses Association, 325
Gerrity, Patricia, 138-139
Goldmark Report, 286
Gordon and Betty Moore Foundation, 242, 265
Government Accountability Office, 14, 15, 54, 257, 283, 284
Governance Institute, 236
Graduate nursing education (see also Master’s degree; Doctoral degrees)
APRN preparation, 196-197
barriers to, 31, 179
competencies, 31
degree statistics, 194-196
and employment settings, 25
funding, 13, 470-471, 484, 489, 490-491
recommendations for, 13
for researchers, 197-199
Great Society Program, 490
Guided care model, 94-95, 378
Gulf Coast Health Services Steering Committee, 183, 264-265

H
Hall-Long, Bethany, 246
Hampton-Penn Center to Reduce Health Disparities, 429
Hancock, Ray, 146-147
Haney, Kenya D., 232-233
Hansen-Turton, Tine, 249
Harambee Nursing Center, 128-129, 130
Hartford Center of Geriatric Nursing Excellence, 225
Harvard University, 247
Hawaii, 158, 176, 406, 539
Health, defined, 37
Health care defined, 37
spending, 50
Health Care and Education Affordability Reconciliation Act (see Affordable Care Act)
Health care delivery reforms (see also Practice transformation; Principles for change)
aging population and, 48, 49
anticompetitive behavior monitoring, 470
best practices model, 468-469
care management models, 11, 376-381
care versus cure debate, 446
challenges, 47-48, 49, 386-396
chronic conditions and, 47-48
c omparative effectiveness research, 484, 485
competencies of nurses, 6, 24-25
and demand for nurses, 376-386
dimensions of the problem, 444-460
diversity of nursing practice and, 444-445
diversity of population and, 48
economic factors, 50, 62, 63-64, 445
educational pathways to licensure and, 445-446, 470-471
federal role in reforms, 5, 103-105, 466-472
health disparities and, 48
ideal system, 466-468
impediments to change, 451-460
incentives for states, 469-470
innovator role of nurses, 66, 67, 72, 87
Institute of Medicine reports, 461
interprofessional collaboration, 49
legislative inertia and scope of practice fatigue, 456-457
linguistically and culturally relevant, 48, 49, 54
national priorities, 468
nurse-specific contextual factors, 444-446
Pew Commission report, 461
policies and process in workforce skill mix changes, 393
primary care capacity building, 381-382, 383, 463
public awareness, 455-456, 468
and quality of care, 49
RAND Corporation study, 463-466
recommendations, 391, 393-394, 395
reimbursement policies, 4, 9, 10, 71, 102-103, 115, 378, 380, 386, 389, 392, 446, 449
role of nurses in, 22-28
“safe and effective abilities” focus, 459-460
support for, 460-466
technology support for, 382, 384-386
Health Care Financing Administration, 110, 247
Health care system challenges, 47-48
defined, 38
foreign-educated nurses’ adjustment to variation in, 587
nurses’ role in transforming, 2-4
vision for, 1-2, 22
Health Care Truth and Transparency Act of 2010, 111
Health coaches, 30, 51, 66, 67, 73-75, 76, 94, 95, 132, 380, 405, 465, 558
Health disparities, 48, 55, 128, 136, 138-139, 239, 289
Health information technology accountable care organizations and, 381, 391
acute care scenarios, 415-416
adoption of, 382, 384-386
and chronic disease management, 415-416, 420-421
design and implementation by nurses, 11, 94, 143-144, 146-147, 280
education-related, 7, 190, 203, 206, 211, 290, 410, 513
electronic health records, 94, 124, 134, 137, 140, 141, 142, 143, 381, 384, 385, 386, 402, 415, 419, 438, 472, 513, 558
funding for, 137, 382, 384
interoperable digital networks, 137, 385, 389, 417
national infrastructure, 143, 376
outcome measuring, 141
patient-centered medical homes and, 378
practice transformation, 30, 93, 94, 137, 140, 142-143, 376, 384, 391
proficiency of foreign-educated nurses, 587
and quality, efficiency, and outcomes of care, 140-142, 386, 391
recommendations, 416-417
regulatory barriers, 451
remote patient monitoring, 137, 140, 385
research needs, 11, 275
telehealth services, 64, 136-137, 227, 236, 237, 276, 385-386, 402, 420-421, 451, 631
workforce roles and skill mix, 385, 391, 395
Health Information Technology Policy Committee, 472
Health policy (see also specific policies)
compensation/reimbursement, 4, 102-103, 559-580
curriculum, 412, 560, 559-562
education priorities, 483-493
nurses’ role in making, 246-250, 424, 441, 560
recommendations, 562
Health Students Taking Action Together (HealthSTAT), 229-230
Healthcare Integrity and Protection Data Bank, 109
Healthy Neighborhoods, 63
Healthy People 2010, 61
Healthy People Curriculum Task Force, 560
Hewitt Associates, 462
Hill, Connie, 230-231
## INDEX

<table>
<thead>
<tr>
<th>Page</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>657</td>
<td>Hill, Martha, 429</td>
</tr>
<tr>
<td>54</td>
<td>HIV/AIDS, 64, 231, 247, 429, 555, 614, 616, 622</td>
</tr>
<tr>
<td>54</td>
<td>Hollinger, Paula, 247</td>
</tr>
<tr>
<td>54</td>
<td>Home health aides, 227, 595</td>
</tr>
<tr>
<td>54</td>
<td>Home health care services, 10, 38, 40, 55, 62, 64, 114, 227, 230, 274, 278, 382, 416, 428, 447, 472–473</td>
</tr>
<tr>
<td>54</td>
<td>Home health nurses, 24, 25, 39, 41, 55, 93, 94, 119</td>
</tr>
<tr>
<td>54</td>
<td>Home visitation programs, 73-75, 382</td>
</tr>
<tr>
<td>54</td>
<td>Hospice and palliative care, 10, 37, 87, 93, 100, 204, 236, 274, 278, 423-427, 430, 446, 447, 472–473</td>
</tr>
<tr>
<td>54</td>
<td>Hospice and Palliative Nurses Association, 325, 362, 424</td>
</tr>
<tr>
<td>54</td>
<td>Hospice nurses, 39, 93, 425</td>
</tr>
<tr>
<td>54</td>
<td>Hospital Employee Education and Training (HEET) program, 211-212</td>
</tr>
<tr>
<td>54</td>
<td>Hospitals (see also Admissions) educational attainment of RNs in, 25 performance measures, 27 RN workforce, 24, 119</td>
</tr>
<tr>
<td>54</td>
<td>Howard University, 586</td>
</tr>
<tr>
<td>54</td>
<td>I</td>
</tr>
<tr>
<td>54</td>
<td>Idaho, 158, 355, 356, 357, 358, 359</td>
</tr>
<tr>
<td>54</td>
<td>Illinois, 105, 158, 359, 470, 583, 590, 612</td>
</tr>
<tr>
<td>54</td>
<td>Immigration Policy Center, 630</td>
</tr>
<tr>
<td>54</td>
<td>India, 566, 568, 569, 574, 575, 579, 582, 590, 596-598, 599, 603, 607, 608-609, 616, 623, 630</td>
</tr>
<tr>
<td>54</td>
<td>Indiana, 158, 378</td>
</tr>
<tr>
<td>54</td>
<td>Informaticians, 30</td>
</tr>
<tr>
<td>54</td>
<td>Information technology (see Health information technology)</td>
</tr>
<tr>
<td>54</td>
<td>Initiative on the Future of Nursing, 2</td>
</tr>
<tr>
<td>54</td>
<td>Innovative Care Models website, 95</td>
</tr>
<tr>
<td>54</td>
<td>Inouye, Daniel, 247</td>
</tr>
<tr>
<td>54</td>
<td>Institute for Healthcare Improvement (IHI), 52, 53, 67, 72, 231, 495, 496, 512, 561</td>
</tr>
<tr>
<td>54</td>
<td>Insurance company policies (see also Compensation) and nursing practice transformation, 116-117 and patient-centered care, 51</td>
</tr>
<tr>
<td>54</td>
<td>Insurance coverage (see also Compensation/reimbursement) ACA and, 1-2, 21, 49, 257, 269, 272 and access to care, 49</td>
</tr>
<tr>
<td>54</td>
<td>Integrated Nurse Leadership Program, 242</td>
</tr>
<tr>
<td>54</td>
<td>Interdisciplinary Nursing Quality Research Initiative (INQRI), 65-66, 90, 239</td>
</tr>
<tr>
<td>54</td>
<td>Intermountain Healthcare Medical Group, 378-379</td>
</tr>
<tr>
<td>54</td>
<td>International Council of Nurses (ICN), 570, 571, 576-577, 578, 580, 597, 619, 620, 632, 634</td>
</tr>
</tbody>
</table>
regulation, 570-571, 573, 592-593, 597, 600-601, 604-605, 610, 613, 615, 619
scope of practice, 592-593, 597, 601-602, 605-606, 611, 613, 615-616, 619-620
second-level nurses, 576, 577-578
Tuning Project, 569
vocational nursing programs, 578
International nurse migrations (see also Foreign-educated nurses)
educating for export, 617
educational agreements and, 629-630
ethical and moral challenges, 632-634
factors affecting, 582-583
Free Trade Accords of the Americas and, 627-628
General Agreement of Trade in Services and, 626
globalization of nursing, 565, 566, 571, 581-583
health and tourism model, 617
immigration reforms and, 606
international partnerships, 617
issues and challenges, 567, 594-595, 598, 602-603, 606-607, 611-612, 614, 616-618, 620
monitoring and tracking, 570 (see also CGFNS International)
mutual recognition agreements and, 617-619
NAFTA and, 581, 599, 623-624, 625
national policies, 566
regional cooperation, 617
return to home countries, 568, 617
supply and demand, 594, 597-598, 602, 606, 611, 613-614, 616, 620, 630-631
temporary migration, 617-618
trends, 566-567
Trilateral Initiative for North American Nursing and, 625-626
U.S. policy, 582
workforce planning issues, 631-632
and workforce shortages, 259, 630-631
International Society of Psychiatric Nurses, 325
Interprofessional collaboration
Agile Team Model, 414-415
barriers to, 482, 522
case studies, 226-227
chronic disease management, 97, 206,
378, 428-429, 521, 554, 557
community-based health teams, 132
data collection needs, 270, 283
education, 6, 7, 13, 14, 31, 32, 165, 198,
200, 201, 203, 206, 270, 276, 281,
282, 390, 396, 479, 480, 481, 482,
496, 508, 513, 517, 521-523, 530-
531, 539, 540-541, 545, 551, 552,
553-556, 558, 561, 563
importance in transforming health care delivery, 87, 131, 388
in leadership, 225, 226-227, 229, 239,
244, 480
licensure exam component, 481
NPs, 92-93, 97, 133, 134-135, 429, 508,
521
principles for change, 72, 76
quality improvement projects, 479
recommendations, 417, 523, 530-531
research priorities, 275
research teams, 195, 239
and retention of nurses, 72
and safety and quality of care, 49, 72,
223, 261
simulation training, 190, 203, 206, 211,
290, 410, 513
skill balancing, 72, 76
and turnover of nurses, 120
VA, 91, 210, 211
vision for health care, 22
Interprofessional Education Collaborative, 201, 206
Iowa, 107, 108-109, 158
Ireland, 571, 573, 582, 598, 603, 604
Israel, 577, 579

J
Jamaica, 575, 576, 578, 582, 598, 603, 604
Japan, 573, 574
Jemmott, Loretta Sweet, 429
Johns Hopkins Children’s Center, 52
Johns Hopkins University, 90, 184, 185, 290,
429-430
Johnson & Johnson, 125, 209, 242
Johnson, Eddie Bernice, 247
Johnson, Jean, 197
Joint Commission on Accreditation of Healthcare Organizations, 5, 12, 26-27, 117, 120, 141, 203, 280, 470, 544
Jones, Cheryll, 108-109
Jordan, 579
Josie King Foundation, 52

**K**
Kaine, Timothy, 246
Kaiser Family Foundation, 251
Kaiser Permanente, 91, 93-95, 131, 316, 380
Kansas, 135, 158, 355, 356, 357, 358, 359
Kaplan, 405
Kazakhstan, 580
Kentucky, 105, 128, 158, 355, 356, 358, 359, 365, 425, 470
King, Sorrel, 52, 53
Korea, 566, 573, 578, 582, 590, 629
Krumm, Sharon, 184

**L**
La Universidad Autónoma de, 629
Larry Combest Community Health and Wellness Center, 418-419
Leadership by nurses
case studies, 226-227, 248-249
chief nursing officers, 235-238
collaborative environment, 3, 7-8, 11, 13, 29, 32-33, 224, 225
community nurses, 234-235
competencies for, 8, 223-224, 226-227
education/preparation, 8, 11, 14, 241-244, 494-504
entrepreneur network, 229
front-line nurses, 234
information technology development, 11
key message, 4, 7, 29, 32-33, 34, 221
knowing how to gain knowledge, 501-502
levels of, 225, 228
management skills, 502
mentorship, 8, 14, 222, 228, 234, 241, 243, 244-245, 251
nurse researchers, 11, 238-239
partnerships outside nursing, 8, 13, 14, 250-251
perceptions of opinion leaders, 223-224, 239, 240
personal skills, 406-502
in policy making, 8, 14, 23, 32-33, 246-250
professional organizations, 14, 239-241
profiles of leaders, 230-233, 236-237
psychology knowledge, 500-501
public health, 440
recommendations, 11, 14, 279-280, 282-283, 503
research needs, 11, 33, 277
shortages in, 401, 437
social context for, 8, 228-241
student nurses, 229-234
style changes, 222-228
systems knowledge, 497-498
variation knowledge, 498-500
Leadership University, 230
LEAP (Linking Education and Practice for Excellence in Public Health Nursing), 122, 439-440
Lebanon, 577
Lehman College, 581
Levin Group, 115, 211
Licensed practical nurses/licensed vocational nurses (LPNs/LVNs)
aging of workforce, 127
demand for, 38-39
earnings, 43
education and training, 39, 43, 44, 166, 168, 208, 372
foreign-educated nurses, 576, 577, 578, 579, 591-592, 595, 608, 612, 618, 640
interprofessional team, 414-415
licensure, 39
racial/ethnic diversity, 208
roles and responsibilities, 23, 38-39, 43, 72, 76, 94, 107, 166
transition to higher degree programs, 7, 39, 44, 166, 174-175
Licensure
CGFNS Qualifying Exam, 574, 618
examination and certification, 100, 165
n.2, 167, 574, 575
foreign programs and requirements, 571, 573-575, 576, 578, 579, 580, 582
n.8, 583, 584, 589, 590, 592-593, 594, 595, 596, 600, 601, 607, 608, 609, 610, 613, 615, 618, 620-621, 622, 624, 625, 626, 627, 628, 629, 629, 640
state variation in, 100-103, 574

trends in new licenses, 260

Living Independently for Elders (LIFE), 66, 68-69, 319


Lorion, Cindy, 193

Louisiana, 73, 75, 134, 158, 444, 454

Loyola University, 359

Lubic, Ruth Watson, 56-58, 229

M

Macy Foundation, 164, 287

Magnet Recognition Program, 171, 244

Maine, 116, 158, 624

Male nurses, 25, 127, 209, 233, 370, 507, 572, 579, 614 (see also Gender diversity)

Malone, Beverly, 247

Marts, Luwana, 74-75

Maryland, 158, 355, 612

Massachusetts, 105, 116-117, 146, 159, 204, 356, 358, 375, 381, 439, 463, 465-466, 470, 486, 508

Master’s of science in nursing (MSN) accelerated program, 265, 371

ADN graduates relative to, 506

APRNs, 23, 41-42, 196-197, 334, 337, 340, 445, 480, 507, 506

bypassing, 488

costs, 168

earnings, 25, 43, 172, 186-187, 265

education/preparation, 41-42, 43, 509, 511, 533, 555, 558, 559, 560, 561, 568, 584, 621

employment settings, 25, 42, 265, 533

faculty, 43, 179, 183, 185, 188, 194, 265, 412, 487-488, 489

fellowships, 247

foreign-educated nurses, 568, 584, 621

funding for programs, 13, 282, 481, 484, 490

health policy curricula, 560, 561, 562

interprofessional curricula, 555, 558, 559

pathways/transition to, 7, 13, 44, 170, 174-175, 177, 181, 185, 187, 208, 282, 287, 487, 488, 489, 506-507, 509, 518, 523

and quality and outcomes of care, 486, 533, 559

and racial/ethnic minorities, 207, 208

recommendations, 403, 480, 481, 484, 511, 559, 562, 563

researchers/scientists, 488, 517

roles and responsibilities, 7, 41-42, 43, 135, 180, 194, 533

statistics, 186, 194-196, 207, 208, 487, 506-507

trends, 196, 510, 517

workforce demand for, 487

McCarthy, Carolyn, 247

McClellan, Mark, 115

McPartland, Ellen, 70, 71

Mead, Cathy, 192-193

Meals-on-Wheels, 95

Medicaid (see also Centers for Medicare and Medicaid Services)

coverage of APRN services, 10, 71, 271, 471

Primary Care Case Managers, 471


Medical–surgical nurses, 30, 62

Medicare (see also Centers for Medicare and Medicaid Services)

Coordinated Care Demonstration program, 66

coverage of APRN services, 9, 104, 471-472

fee-for-service program, 92

Hospital Conditions of Participation, 473

Payment Advisory Commission (MedPAC), 65, 116, 201, 246-247

Physician Group Practice demonstration program, 380

Physician Hospital Organization program, 380

Quality Improvement Organizations, 379

Medicare Prescription Drug Improvement Modernization Act of 2003, 377

Meningococcal meningitis, 61

Mental and behavioral health, 37

Mentoring, 8, 26, 41, 122, 129, 130, 157, 183, 198, 208, 222, 228, 234, 241, 243, 244-245, 251, 277, 283, 331, 369, 410, 513, 526
INDEX

Methods and information sources

<table>
<thead>
<tr>
<th>Method/Source</th>
<th>Page References</th>
</tr>
</thead>
<tbody>
<tr>
<td>acute care–related questions, 300-301</td>
<td></td>
</tr>
<tr>
<td>commissioned papers, 290-291</td>
<td></td>
</tr>
<tr>
<td>committee meetings, 288-289</td>
<td></td>
</tr>
<tr>
<td>community care–related questions, 302-303</td>
<td></td>
</tr>
<tr>
<td>education-related questions, 304-305</td>
<td></td>
</tr>
<tr>
<td>expertise, 285-286</td>
<td></td>
</tr>
<tr>
<td>literature review, 286-287</td>
<td></td>
</tr>
<tr>
<td>public agenda, 292-299</td>
<td></td>
</tr>
<tr>
<td>RWJF Nursing Research Network, 287-288</td>
<td></td>
</tr>
<tr>
<td>site visits, 289-290</td>
<td></td>
</tr>
<tr>
<td>testimony questions, 300-305</td>
<td></td>
</tr>
<tr>
<td>Mexico, 568, 573, 578, 579, 581, 618-620, 621-622, 623, 624, 625, 626, 629</td>
<td></td>
</tr>
<tr>
<td>Michigan, 61, 159, 181, 204, 205, 425, 434-435, 599, 610, 624</td>
<td></td>
</tr>
<tr>
<td>Michigan State University, 204-205</td>
<td></td>
</tr>
<tr>
<td>Middle East, 572, 579, 590, 596</td>
<td></td>
</tr>
<tr>
<td>Midwives/midwifery (see also Certiﬁed nurse midwives)</td>
<td></td>
</tr>
<tr>
<td>case study of patient-centered care, 56-58</td>
<td></td>
</tr>
<tr>
<td>foreign programs, 572, 573, 576, 577, 580, 592, 596, 597, 604-605, 608, 609, 612, 613, 615, 621, 622, 637, 628</td>
<td></td>
</tr>
<tr>
<td>Migrant health clinics, 28</td>
<td></td>
</tr>
<tr>
<td>Migrant Health Services, Inc., 420</td>
<td></td>
</tr>
<tr>
<td>Military Nurse Detailee fellowship program, 247</td>
<td></td>
</tr>
<tr>
<td>Millennium Development Goals, 566</td>
<td></td>
</tr>
<tr>
<td>Minnesota, 159, 359, 420, 424, 439-440, 624</td>
<td></td>
</tr>
<tr>
<td>Minnier, Terry, 52, 53</td>
<td></td>
</tr>
<tr>
<td>Minority Fellowship Program, 208-209</td>
<td></td>
</tr>
<tr>
<td>Mississippi, 144, 159, 356, 357, 358, 359</td>
<td></td>
</tr>
<tr>
<td>Missouri, 159</td>
<td></td>
</tr>
<tr>
<td>Mitchell, Alison, 108</td>
<td></td>
</tr>
<tr>
<td>Mobile Healthcare Project, 237, 419-420</td>
<td></td>
</tr>
<tr>
<td>Monroe, Tamela, 180-181</td>
<td></td>
</tr>
<tr>
<td>Montana, 159, 355, 356</td>
<td></td>
</tr>
<tr>
<td>Monterey Peninsula College, 209</td>
<td></td>
</tr>
<tr>
<td>Morris, Sheri, 204, 205</td>
<td></td>
</tr>
<tr>
<td>Mount Hood Community College, 174, 175</td>
<td></td>
</tr>
<tr>
<td>Mullan, Fitzhugh, 462</td>
<td></td>
</tr>
<tr>
<td>Mutual Recognition Agreement of the Registration Bodies for Registered Nurses in Canada, 628</td>
<td></td>
</tr>
</tbody>
</table>

**N**

- National Academy of State Health Policy, 463
- National Advisory Committee on Institutional Quality and Integrity, 470
- National Advisory Council on Nurse Education and Practice, 171, 485
- National Aeronautics and Space Administration, 321, 421
- National Association of Community Health Centers, 133, 382, 463
- National Association of Neonatal Nurses, 325, 362, 365
- National Association of Orthopedic Nurses, 326, 365
- National Association of Pediatric Nurse Practitioners, 326, 358, 359, 362, 365
- National Association of School Nurses (NASN), 60-61, 362
- National Board for Certification of Hospice and Palliative Nurses, 326, 358, 362
- National Board on Certification & Recertification of Nurse Anesthetists, 197, 326
- National Center for Health Statistics, 469
- National Center for Workforce Analysis, 9, 256, 262
- National Certification Corporation, 326, 344 n.17, 358, 359, 362, 365, 366
- National Coalition of Ethnic Minority Nursing Associations, 208, 245
- National Commission for Certifying Agencies, 328 n.3, 337 n.6, 340 n.10
- National Committee for Quality Assurance (NCQA), 102, 117, 132, 139, 472
- National Consensus Project for Quality Palliative Care, 424
- National Council Licensure Examinations (NCLEX-RN and NCLEX-PN), 166 n.2, 167-168, 372, 523, 553, 574, 575, 596, 618
INDEX

National Council of State Boards of Nursing (NCSBN), 405-406
APRN Committee, 342-343, 345, 355-357, 361
APRN definition, 329
APRN Roundtable Organization, 350-360
competency assessment, 201, 202
and Consensus Model for APRN Regulation, 324, 325, 326, 327, 341, 342-343, 344 n.17, 345, 361, 362, 365, 366, 445
criteria for APRN certification programs, 340, 349-353
licensing exam, 17, 167-168, 372, 574, 596
Model Nursing Practice Act and Model Nursing Administrative Rules, 10, 278
transition-to-practice model, 121, 513, 544
National Database of Nursing Quality Indicators, 27
National Gerontological Nursing Association, 326, 363
National Health Care Workforce Commission (NHWC), 9, 14, 255, 256, 262, 265, 283
National Hospice and Palliative Care Organization, 423, 424
National Institute of Mental Health, 247
National Institute of Nursing Research, 239, 429, 492, 520
National Institutes of Health, 239, 256, 276, 392
National League for Nursing (NLN), 171-172, 179, 182, 188, 189-190, 198 n.15, 203, 224, 245, 326, 363, 365
National League for Nursing Accrediting Commission (NLNAC), 12, 13-14, 224, 281, 282, 326, 328 n.3, 341 n.13, 358, 359, 361, 363, 365, 366, 513
National Organization of Nurse Practitioner Faculties, 326, 343-344, 359, 361, 363, 365, 366, 509
National Quality Forum, 27, 392, 470, 557
National Sample Survey of Registered Nurses (NSSSRN), 26, 30, 128, 178, 195 n.12, 369, 382, 487, 583, 584-586, 631
National Student Nurses Association, 230, 232, 233, 234
National Voluntary Consensus Standards for Nursing-Sensitive Care, 27
Naylor, Mary D., 66, 70-71, 90, 275-276, 277, 380, 557
Nebraska, 159
Nepal, 573, 577
Nevada, 159, 357
New Hampshire, 116, 159
New Jersey, 159, 166, 236-237, 265, 370, 419-420, 583
New Mexico, 159, 176, 603, 610, 618
New York University, 233
New Zealand, 571, 598, 603, 628
Nigeria, 575, 579, 582, 612, 613, 614, 616, 621, 622
Nightingale, Florence, 87, 369, 401, 483
North American Free Trade Agreement, 581, 599, 623-624, 625
North Dakota, 160, 355, 371, 420, 505
Northwest Colorado Visiting Nurse Association, 430
Northwest Health Foundation, 204
Nurse–Family Partnership (NFP), 28, 73-75, 438-439
Nurse Licensure Compact, 628
Nurse practitioners (NPs; see also Advanced practice registered nurses) and access to care, 106-107, 108-109, 375-376, 382, 430, 463
case studies and profiles, 60-61, 68-69, 108-109, 134-135, 226-227
certification/certified, 197, 328-329, 330, 332, 333-334, 335, 336, 338, 339, 508
complexity of services, 90
cost containment, 430, 464, 465
consumer designation as provider, 465
doing care, 66, 67, 68-69, 92-93, 378-379
data needs and collection on, 9, 262, 508
demand for, 381-382, 384, 508, 510
demographic characteristics, 127
earnings, 43, 186-187, 188
education and training, 43, 44, 98, 124, 130, 169, 196, 197, 342, 367, 403, 406, 480, 482, 506, 508, 509, 510, 511, 516
funding, 403, 510
as health coaches, 67, 465
interprofessional collaboration, 92-93, 97, 133, 134-135, 429, 508, 521
leadership roles, 92, 117, 134-135, 429
licensure, 338
Medicare/Medicaid regulations, 103, 104, 115, 471, 472-473
nurse-managed health centers, 102, 117
opposition to independent practice, 110-111, 113, 457
palliative care consultants, 425
in patient-centered medical homes, 102, 117, 134-135
public awareness of, 112, 455
recommendations, 430, 431, 435, 480, 482, 508, 511
researchers, 92
residency, 124
in retail-based health clinics, 112
safety and quality of care, 97, 428, 429, 510, 533
at school-based health centers, 59, 60-61, 130, 433-434, 435
specialties, 41, 98, 197, 335, 336, 367, 508
support for expanded scope of practice, 112-114, 287, 457, 458, 462, 463, 464, 552
Veterans Administration, 91-92, 133
workforce size and distribution, 26, 88, 89, 91, 106-107, 257, 381, 466, 508, 533
Nurse Practitioners in Women’s Health, 326, 328 n.3, 341 n.13, 344 n.17, 358, 362, 363, 365, 366
Nursing Alliance for Quality Care, 240-241
Nursing assistants (NAs), 38, 43, 107, 146, 271, 591, 595
Nursing care providers
practice settings, 38
types, 38-44
workforce projections, 258-259
Nursing Education Loan Repayment Program, 529
Nursing Educational Xchange, 406
Nursing for Life, 204-205
Nursing home/extended care facilities, 23, 24, 25, 119, 425
Nursing practice (see also Practice transformation)
continuum of care, 4, 23-24
Nursing Quality Research Initiative, 239
Nursing specialties, ANA criteria for recognition of, 354 (see also individual specialties)

O
Obama administration, 75, 91, 109, 247, 375, 382-383
Obesity, 40, 48, 61, 409
O’Brien, Ruth A., 75
Occupational/employee health nurses, 24, 28, 39, 119
Office of Personnel Management (OPM), 5, 10, 105, 145, 279, 472
Office of Technology Assessment, 97, 427
Ohio, 160, 166-167, 370
Oklahoma, 160
O’Neil, Edward, 199
On Lok program, 65, 558
Oncology nurses, 40, 184, 185, 333, 335, 339
Oncology Nursing Certification Corporation, 326, 358, 359, 363, 365, 366
Oncology Nursing Society, 326, 363, 365
INDEX

100,000 Lives Campaign, 67, 495-496
Oregon
  education innovations, 173, 174-176, 190, 200, 406, 488, 505, 519, 537, 539-540
  scope-of-practice regulations, 160
  State Board of Nursing, 357
Oregon Consortium for Nursing Education, 173, 174-176, 200, 505, 537, 539-540
Oregon Health & Science University, 174-176
Orthopedic Nurses Certification Board, 326
Overton Brooks VA Medical Center, 134
Overton-McCoy, Amyleigh, 226-227

P

Pain management, 444, 448
Palliative care (see Hospice and palliative care)
Palliative Care Center of the Bluegrass, 425
Palliative Care Leadership Centers, 425
Pappas, Mary, 60
Partners Investing in Nursing’s Future, 204
Partnerships outside nursing, 250-251
Patient-centered care
  access to care and, 51, 54
  barriers to, 27-28
  case studies, 51, 52-53, 56-58
  committee vision, 2, 21, 22
  core nursing practice, 39
  economic value of, 54, 57
  information technology and, 51, 54
  models of, 11, 51, 52-53, 56-58
  need for, 1, 50, 86
  nurses and, 4, 6, 8, 26, 27-28, 29, 30, 54, 56-58
  principles for change, 50, 51-54
  Proclamation for Change, 30
  and quality of care, 51
  responsibility for achieving, 15
  Transforming Care at the Bedside, 52-53, 120, 231, 416, 561
Patient-centered medical homes, 94, 117, 132, 134-135, 248, 377-379, 381, 449, 511
Patient examination and treatment, 101
Patient preferences, 51
Patient self-management, 51, 378, 428-429
Patient Protection and Affordable Care Act (see Affordable Care Act)
Pauly, Mark, 239
Pediatric Nursing Certification Board, 326, 344 n.17, 358, 359, 363, 365, 366
Pelosi, Nancy, 247
  Chamber of Commerce, 250
  Geisinger Health System, 91, 92-93, 95, 131, 380
  Rx for PA, 112, 247, 248-249, 250
  State Board of Nursing, 365
Perkins funds, 482, 491, 492
Perioperative/operating room nurses, 40, 631
Peru, 575, 577
Pew Health Professions Commissions, 551
Taskforce on Health Care Workforce Regulation, 461, 465
Philippines/Filipinos, 566, 568, 571, 573, 574, 575, 579, 581, 582, 585, 590-595, 596, 599, 603, 607, 608-609, 623
PhotoVoice, 231
Physical therapists, 110
Physician services, definition of, 472
Physicians
  aging of workforce, 125
  definition of, 472
  Medicare reimbursement policies, 104
  resistance to change, 110-111
  RN programs for foreign physicians, 580-581
  supply of, 125-126, 257, 594-595
Physicians Foundation, 552
Pileggi, Joanne, 146, 147
Poland, 573, 577, 603
Policy (see Health policy)
Practice transformation (see also Health care delivery reforms)
  and access to primary care, 29, 88-90
  accountable care organizations, 9, 30, 95, 131, 132, 148, 255-256, 277, 375-376, 380-381, 389-390, 391, 396, 559
  acute care, 29-30
  aging workforce and, 4, 5, 125-127
APRNs, 86, 88, 92, 95, 96, 97, 98-103, 106, 107, 108-109
barriers to, 4-5, 25-26, 95-131
care management models, 11, 376-381
case studies, 108-109, 134-135, 138-139, 146-147
community health centers, 133
demographic challenges, 5, 124-131
Department of Veterans Affairs, 91-92
examination and certification, 100
examples of redesigned roles, 91-95
fragmented health care system and, 5, 114-116
Geisinger Health System, 92-93
gender diversity, 4, 127-128
importance, 86-95
insurance company policies and, 116-117
Kaiser Permanente, 93-95
key message, 4, 29-30, 34, 85
medical/health homes, 132-133, 134-135
need for, 28-34
non-APRN nurses, 107
nurse-managed health centers, 133, 136, 138-139
opposition of professionals to, 4, 107, 110-114, 457-460
patient-centered medical homes, 94, 117, 132, 134-135, 248, 377-379, 381, 511
patient examination and treatment, 5, 101
prescriptive authority, 5, 101-102
racial and ethnic diversity, 4, 128-130
recommendations, 9-11, 278-280, 484
referrals and orders, 5, 100-101
regulatory barriers, 4, 5, 29, 96-107
research priority, 274
residency (transition-to-practice) programs, 5-6, 11-12, 120-124
and safety and quality of care, 3, 22, 24-25, 90, 92, 97
state licensure, 100-103
support for, 106, 112-114
technology and, 30, 93, 94, 136-137, 140-144
turnover rates and, 5, 117-120
value of nurses, 3, 115
Prenatal care, 28 (see also Certified nurse midwives)
Prescription for Pennsylvania, 112, 247, 248-249, 250
Prescriptive authority, 101-102
Prevention and health promotion, 37
Primary care services, 3, 37 (see also Community and public health)
access to, 49, 55, 88-90, 99, 102, 108-109, 136
ACO model, 9, 30, 95, 131, 132, 148, 255-256, 277, 375-376, 380-381, 389-390, 391, 396, 559
capacity building, 381-382, 508-511
case studies, 60-61, 108-109
complexity of care, 88, 90
culturally relevant care, 54, 61
defined, 54, 472
education needs, 508-511
functions and hallmarks of, 54
guided care model, 94-95, 378
and health disparities, 55
impacts of health care reform, 375-376, 381-382
information technology and, 51, 54
intensive, for chronic disease management, 419
nurses and, 27-28, 30, 55, 59, 60-61, 88-90, 108-109, 382, 486
and population health, 37, 55
principles for change, 54-55, 59
reimbursement rates, 10
school-based health centers, 28, 40, 60-61, 64, 235, 246, 432-436, 561
settings for, 55
shortages of providers, 7, 54, 55, 88
team approach, 92-93
testimony questions, 302-303
workforce, 59, 61, 88, 108, 116, 194,
248, 256, 257-258, 262, 369, 382,
383, 389, 390, 463, 464, 490, 507,
508
Principles for change
community and public health care, 59,
62-64
interprofessional collaboration, 72, 76
primary care services, 54-55, 59
role reconceptualization for
professionals, 66-67, 72
seamless, coordinated care, 65-66
Professional organizations, leadership roles,
239-241
Program of All-Inclusive Care for the Elderly
(PACE), 65, 66, 69, 558
Providence St. Vincent Medical Center, 192,
193
Psychiatric/mental health nurses, 40, 41, 97-
98, 333, 576, 577, 580, 591, 593,
596-597, 599, 610, 621, 630
Public health (see also Community and public
health care)
education models, 439-440
infectious disease prevention and control, 439
infrastructure and workforce, 59, 62-64
leadership development, 440
movement, 37
nurses/nursing issues, 59, 62-63, 437-438
political influence of nurses, 441
recommendations, 440-441
spending, 50
workforce and infrastructure, 59
Public Health Management Corporation, 249
Public Policy Institute, 251

R
Racial and ethnic diversity, 122, 128-130,
207-209
Recommendations
available evidence and, 272-273
for Centers for Medicare and Medicaid
Services, 279
collaborative improvement efforts, 279
considerations informing, 270-277
for Congress, 9-10, 278
costs associated with, 273-274
data collection and analysis
infrastructure, 14-15, 283-284
for Department of Justice Antitrust
Division, 10, 279
education of nurses, 12-14, 281-282
faculty recruitment and retention, 13
for Federal Trade Commission, 10, 279
implementation of, 274-277
leadership opportunities for nurses, 11,
12, 14, 279-280, 282-283
for Office of Personnel Management, 279
residency programs, 280
scope and focus of report and, 271-272
scope of practice, 9-11, 278-280
for state legislatures, 10, 278
technology development, 11
workforce capacity building, 13, 281-282
Raise the Voice campaign, 245 n.13
RAND Corporation, 463-466
Raphael, Carol, 122
Rasmussen, Helen, 134, 135
Referrals and orders, 100-101
Registered nurses (RNs; see also Advanced
practice registered nurses; degree
programs and specialties)
and access to care, 27-28
acute care, 389-390
aging of, 125-127, 204-205, 369, 370,
387
career transition program, 204-205
earnings, 43, 386
education, 23, 25, 39, 40-42, 43, 44, 166,
186, 370, 491, 571-572
employment settings, 23, 24, 25, 30, 119,
386
foreign-educated, 577, 583
gender diversity, 370
licensure, 23, 39, 327

Q
Quality and Safety Education for Nurses
(QSEN) project, 496, 531
Quality Interagency Coordination Task Force,
392
Quality of care (see Safety and quality of care)
<table>
<thead>
<tr>
<th>INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>physician-to-RN programs for foreign doctors, 580-581</td>
</tr>
<tr>
<td>primary care, 55, 94, 382, 383</td>
</tr>
<tr>
<td>racial/ethnic diversity, 128, 129, 370</td>
</tr>
<tr>
<td>residencies, 123-124</td>
</tr>
<tr>
<td>scope of practice, 39, 43, 94, 107</td>
</tr>
<tr>
<td>specialties, 39-40</td>
</tr>
<tr>
<td>workforce size, 59, 61, 258, 369, 382, 383, 387</td>
</tr>
<tr>
<td>regulation of scope of practice (see also Consensus model for APRN regulation; Health care service delivery reforms; Practice transformation) and access to care, 99, 450</td>
</tr>
<tr>
<td>barriers to practice transformation, 4, 29, 96-107, 444, 446-451</td>
</tr>
<tr>
<td>continuing competence, 570-571</td>
</tr>
<tr>
<td>costs of dysfunctional system, 450-451</td>
</tr>
<tr>
<td>economic costs of, 451</td>
</tr>
<tr>
<td>examination and certification of patients, 100, 447, 473</td>
</tr>
<tr>
<td>examination and treatment of patients, 101, 448</td>
</tr>
<tr>
<td>expanding, 106-107, 108-109</td>
</tr>
<tr>
<td>federal reforms, 103-105</td>
</tr>
<tr>
<td>Federation of State Medical Boards guidelines, 459</td>
</tr>
<tr>
<td>historical context, 96-98, 451-452</td>
</tr>
<tr>
<td>impediments to removal of restrictive provisions, 451-460</td>
</tr>
<tr>
<td>and innovation in care delivery, 450</td>
</tr>
<tr>
<td>licensure, 100-103</td>
</tr>
<tr>
<td>medical practice acts and, 96-97, 451-453, 458-459</td>
</tr>
<tr>
<td>Medicare, 444</td>
</tr>
<tr>
<td>monitoring for anticompetitive effects, 5, 10-11, 105, 145, 279, 470</td>
</tr>
<tr>
<td>non-APRN nurses, 107</td>
</tr>
<tr>
<td>nurse practitioners, 5, 98-103, 157-161</td>
</tr>
<tr>
<td>prescriptive authority, 101-102, 448-449</td>
</tr>
<tr>
<td>opposition to change, 107, 110-114, 457-460</td>
</tr>
<tr>
<td>recommendations for legislatures, 10, 278</td>
</tr>
<tr>
<td>referrals and orders, 100, 448</td>
</tr>
<tr>
<td>state variation, 5, 98-103, 157-161, 444, 446-450, 453-454</td>
</tr>
<tr>
<td>and workforce shortages, 450</td>
</tr>
<tr>
<td>Rehabilitation nurses, 40</td>
</tr>
<tr>
<td>Reimbursement (see Compensation/reimbursement policies)</td>
</tr>
<tr>
<td>Rendell, Edward, 112, 248-249, 250</td>
</tr>
<tr>
<td>Rescue agents, 141</td>
</tr>
<tr>
<td>Researcher/scientist nurses</td>
</tr>
<tr>
<td>competencies, 6</td>
</tr>
<tr>
<td>education, 164, 194, 195, 197-198, 276, 412, 517-521, 532</td>
</tr>
<tr>
<td>leadership roles, 238-239</td>
</tr>
<tr>
<td>nursing education research, 198</td>
</tr>
<tr>
<td>nursing science research, 23, 198-199</td>
</tr>
<tr>
<td>recommendations, 519-521</td>
</tr>
<tr>
<td>shortages of, 7, 517-521</td>
</tr>
<tr>
<td>Research priorities care management models, 11, 391-396</td>
</tr>
<tr>
<td>comparative effectiveness research, 484, 485</td>
</tr>
<tr>
<td>education, 276</td>
</tr>
<tr>
<td>interagency innovations research collaborative, 392</td>
</tr>
<tr>
<td>leadership, 11, 277</td>
</tr>
<tr>
<td>residencies, 274</td>
</tr>
<tr>
<td>scope of practice, 274</td>
</tr>
<tr>
<td>teamwork, 275</td>
</tr>
<tr>
<td>technology, 11, 275</td>
</tr>
<tr>
<td>value of reforms, 275</td>
</tr>
<tr>
<td>Residencies and internships (transition-to-practice) programs</td>
</tr>
<tr>
<td>accreditation standards, 121</td>
</tr>
<tr>
<td>barriers to practice transformation, 5-6, 31, 120-124</td>
</tr>
<tr>
<td>chronic disease management, 121, 124, 545</td>
</tr>
<tr>
<td>cost, 121</td>
</tr>
<tr>
<td>dedicated education units, 190, 192-193, 211, 410, 412, 513, 544</td>
</tr>
<tr>
<td>desired features, 545-546</td>
</tr>
<tr>
<td>evaluation of, 12, 123</td>
</tr>
<tr>
<td>funding, 12, 122, 124</td>
</tr>
<tr>
<td>Joint Commission recommendation, 5-6, 120-121</td>
</tr>
<tr>
<td>models, 543-546</td>
</tr>
<tr>
<td>need for, 513</td>
</tr>
<tr>
<td>outside acute care, 6, 121-123, 545</td>
</tr>
<tr>
<td>recommendations, 5-6, 11-12, 120-124</td>
</tr>
<tr>
<td>regulatory model, 121</td>
</tr>
<tr>
<td>in rural and critical access areas, 12</td>
</tr>
<tr>
<td>salary during, 124</td>
</tr>
<tr>
<td>success of, 6, 12, 123-124</td>
</tr>
<tr>
<td>and turnover rates, 6, 12, 120-121</td>
</tr>
<tr>
<td>UHC/AACN model, 121, 123, 544</td>
</tr>
</tbody>
</table>
Resistance of professionals to change, 107, 110-114
Return to Care, 416
Rhode Island, 260, 356, 357, 358, 360
Rick, Catherine, 133, 134-135
Ridge, Tom, 250
Riverside Medical Center, 94
Riverside Proactive Health Management Program (RiPHM)™, 94
Robert J. Dole VA Medical Center, 135
Robert Wood Johnson Foundation
Colleagues in Caring, 401
Executive Nurse Fellows Program, 225, 243, 401-402
Health Policy Fellows Program, 243-244, 247
INQRI, 65-66, 90, 239
Investigator Awards Program, 243-244
Nursing Alliance for Quality Care, 240-241
Nursing for Life initiative, 204
Nursing Quality Research Initiative, 239
partnership with IOM, 2, 22
Transforming Care at the Bedside initiative, 52-53, 120, 231, 416, 561
vision for health care, 22
Rockefeller Foundation, 286
Rush University, 360, 528
Russia, 575, 581, 599, 616

S

Safety and quality of care
ACOs and, 9, 30, 95, 131, 132, 148, 255-256, 277, 375-376, 380-381, 389-390, 391, 396, 559
CNMs, 28
Condition H, 52-53
continuous improvements in, 49, 67, 94
coordination of services and, 65
educational attainment and, 169-170, 406, 485-486, 505-506, 512, 538, 568
innovations in, 90
Inpatient Quality Indicators, 238
interprofessional collaboration and, 49, 72
leadership of nurses in, 238
medical errors, 52
Medicare’s fee-for-service, 93
National Database of Nursing Quality Indicators, 27
NPs, 92, 97, 428, 429, 510, 533
patient-centered care and, 51, 52-53, 57, 120, 231, 416, 561
performance measures, 26-27, 142, 194, 431, 470
physician type and length of preparation and, 111
practice transformation and, 3, 24-25, 86, 87, 90, 91, 92-93, 94, 95, 97, 111, 112, 113
Transforming Care at the Bedside, 52-53, 120, 231, 416, 561
Salaries, 25, 43, 171, 172, 186-187, 188, 265, 486
Sampson, Deborah, 88
Sandoval, Carolina, 60-61
Sanofi Pasteur, 61
Saudi Arabia, 574, 607
Saunders, Cicely, 423
Schenectady County Public Health Services, 62
School nurses and school-based health centers, 28, 40, 60-61, 64, 235, 246, 432-436, 561
Schwarzenegger, Arnold, 111
Scope of Practice Partnership, 110, 458 n.17
Selecky, Mary, 235
Sermo.com, 112
Service Employees International Union, 211
Sharp, Jamie, 192-193
Shinseki, Eric, 134
Sigma Theta Tau International, 634
Simulation Innovation Resource Center, 189-190
Singapore, 573, 598, 607, 626-627
Skilled nursing facilities/care, 10, 101, 204, 274, 278, 448, 473
Smith, Dorothy, 229
Smith Hughes Act, 372
Social Security Administration, 247
Society of Hospital Medicine, 557
South Carolina, 160, 629
South Dakota, 160, 360
INDEX

Southern Adventist University, 185
Spain, 571, 573
Specialties (see Nursing specialties; individual specialties)
St. Kitts International School of Nursing, 405, 585, 629
St. Louis Community College, 232
St. Petersburg College (U.S.), 180
St. Petersburg University (Russia), 581
St. Vincent’s Nurse-Managed Health Center, 419
Staff Nurse Care Coordination model, 65-66
Stanford Self-Management Model, 428-429
Stange, Kevin, 88
State practice regulations (see Regulation of scope of practice; individual states)
State University of New York (SUNY), 581
States (see also individual states)
workforce data collection, 14-15
Statewide Nursing Consortia Curriculums, 406
Steele, Glenn, 92
Strumpf, Neville, 229
Student nurses and leadership, 229-234
Sub-Saharan Africa, 612-614 (see also specific countries)
Sullivan Commission on Diversity in the Healthcare Workforce, 207
Sullivan-Marx, Eileen M., 68, 69
SUTTP Alliance (Stepping Up to the Plate for Managing Transitions in Care), 557

T
Taiwan, 573, 578
Tanner, Christine A., 175-176
Tavenner, Marilyn, 246
Tax Relief and Health Care Act of 2006, 379
Teamwork (see Interprofessional collaboration)
Technology (see Health information technology)
Telehealth services, 64, 136-137, 227, 236, 237, 276, 402, 420-421, 451, 631
TelEmergency, 144
Tennessee, 160, 356, 357, 360
Texas Nurse Practitioners, 108
Texas Nurses Association, 365
Texas Tech University Health Sciences Center, 418
Texas Woman’s University, 265, 321
Thailand, 573
Third-party payers, 10
Tibbetts, Jackie, 204, 205
TIGER (Technology Informatics Guiding Education Reform) Initiative, 143
Torregrossa, Ann S., 248, 249
Torres, Colette S., 135
Trans-Tasman Mutual Recognition Agreement, 628
Transformacion Para Salud Program, 418-419
Transforming Care at the Bedside, 52-53, 120, 231, 416, 561
Transition to practice (see Residencies)
Transitional Care Model (TCM), 66, 70-71, 276-277, 380, 557
Tri-Council for Nursing, 171-172
Trilateral Initiative for North American Nursing, 625-626
Tuning Project, 569
Turnover rates, 5, 6, 27, 53, 86, 96, 117-120, 121, 123, 223, 235, 237, 270, 288

U
Ukraine, 568, 575, 577, 580, 629
Uncles, Lisa Betina, 58
Undergraduate nursing education (see also Associate’s degree; Bachelor’s of science; Community college programs; Diploma nursing programs; Faculty) application trends, 31 barriers to meeting needs, 31, 179-193, 486-489 case studies, 174-176, 180-181, 192-193 clinical placement opportunities, 31-32, 189-190 costs, 168-169, 370-371 curriculum development, 7, 13, 190-191 degree distribution, 166-167 funding for, 12, 13, 484
goals and implementation plan for, 7, 172-177
licensed practical nurses, 7
licensing exam, 167-168
international differences, 579
off shore schools, 405, 585-586
and outcomes of patients, 169-178
overview of current education, 165-169
partnerships, 405
pathways, 7, 12, 165-166, 369-373
rationale for all-BSN workforce, 168-179
recommendations, 12-13, 524-525
standardization of curriculum, 406, 407, 479, 539-540, 569-570
transition to higher degree programs, 7, 30, 32, 505-507
United Arab Emirates, 574
United Kingdom, 203, 566, 568, 569 n.5, 571, 572, 573, 574, 575, 576, 579-580, 582, 590, 594, 596, 603-607, 613, 630
Universities, community college partnerships with, 173, 174-175, 479, 505, 519, 536, 538, 539-540
University of Hawaii, 406
University HealthSystem Consortium (UHC), 121, 123, 513, 544
University of Arkansas for Medical Sciences, 224, 225
University of California, San Francisco, 199, 406
University of Colorado, Denver, 75
University of Florida, 229, 528
University of Houston, 264
University of Kansas School of Nursing, 27
University of Louisville, 128, 130
University of Medicine and Dentistry of New Jersey, 237, 419-420
University of Michigan, 88
University of Mississippi, 144
University of Missouri, St. Louis, 232
University of Pennsylvania
  Center for Biobehavioral Research, 143
  New-Courtland Center for Transitions and Health, 71
School of Nursing, 69, 143, 319
University of Phoenix, 405
University of Pittsburgh Medical Center, 51, 52-53
University of Portland, 190, 192-193
University of South Florida, 180, 181
University of Texas, 265, 321, 419
University of Virginia, 185
University of Wisconsin, Milwaukee, 231
Urban Institute, 177, 506
U.S. Army, Navy, and Air Force, 171
U.S. Nurse Licensure Examinations, 165 n.2, 167, 574
U.S. Public Health Service, 171
Utah, 161, 355, 356, 357, 358, 363, 365, 378, 433

V
Value of nurses, 25, 28, 115 (see also Economic value)
Vermont, 61, 161, 590, 596
  Board of Nursing, 356, 357, 359, 360, 433
Veterans Affairs Nursing Academy, 183, 210-211
Veterans Health Administration, 392
Versant, 6, 121, 123
Vietnam, 572
Virginia, 161, 246, 355, 356
Virginia Commonwealth University, 425
Visiting Nurse Association of Central Jersey, 236-237
Visiting Nurse Service of New York, 64, 122, 143
Voices of Meningitis Campaign, 61

W
Wakefield, Mary, 247
Wald, Florence, 423
Wald, Lillian, 64
Warner, Joanne, 192
Washington state, 96, 161, 181, 235, 452
Washington State Board for Community and Technical Colleges, 211
Washington State Hospital Association, 211
Wehrwein, Terrie, 204
WellPoint, 93
Wenzel, Jennifer, 184-185
West Virginia, 161
Western Governors University, 200, 405
Wharton Fellows Program in Management for Nurse Executives, 242
Wilensky, Gail, 115
Wiley, Elizabeth, 462
Wisconsin, 122, 161, 439-440
Wisconsin Center for Nursing, 122

Workforce (see also Foreign-educated nurses)
- acute care, 29, 388-389
- aging, 4, 25, 59, 125-127, 259, 486
- assessing demand, 263
- capacity building, 9, 12, 25, 386-396
- demand for nurses, 376-386, 486, 568
- foreign-educated nurses, 259, 566, 583-586
- gaps in data, 8-9, 33-34, 259-263, 583
- gender diversity, 4, 7, 12, 25, 127-128, 209
- geographic distribution, 12, 583-586
- global perspective, 566, 567
- Gulf Coast Health Services Steering Committee initiatives, 264-265
- health care reform and, 375-386
- infrastructure for data collection, 14-15, 29, 262
- key message, 4, 8, 29, 33-34, 255
- leadership shortages, 401, 437
- modeling, 393-394
- nursing projections, 15, 258-259
- nursing segment of, 2, 23, 24
- physician shortages, 102, 107, 108, 490, 508
- by practice setting, 24, 30
- planning and policymaking, 29, 388-389, 390-391, 484, 491-492, 567, 583
- public health, 437-438, 438
- racial and ethnic diversity, 4, 7, 12, 25, 128-130, 207-209
- recession-related layoffs and attrition, 59, 259
- recommendations, 391-396
- research coordination on, 15, 391-392
- researcher/scientist nurses, 517-521
- skill mixes, 9, 15, 283, 284, 376, 382, 384, 385, 389, 391, 392-393, 394-395, 537, 567, 568, 570, 571, 589
- turnover rates, 5, 6, 27, 53, 86, 96, 117-120, 121, 123, 223, 235, 237, 270, 288
- Workplace wellness programs, 382
- World Health Assembly, 572, 634
- World Health Organization (WHO)
  - Code of Practice on the International Recruitment of Health Personnel, 634
  - definition of health workers, 566 n.2
  - Task Force on Global Standards in Nursing and Midwifery Education, 572
- World Health Report, 566, 570
- Wortock, Jean, 180, 181
- Wound, Ostomy and Continence Nurses Society, 326, 363, 363, 365
- Wound, Ostomy and Continence Nursing Certification Board, 326, 359, 365, 366
- Wyoming, 161