Given the remarkable advances that have been made in the last 50 or so years in pharmaceuticals, medical devices and surgical procedures, it’s not a surprise that people want more, and more invasive, care than they have had in the past. Just as it’s hard to do nothing when you’re ill, it’s sometimes hard to do less than the maximum when there are different treatments to choose from.

Unfortunately, doing more often does no good. Sometimes, it even leads to harm.
In the United States, when it appears that someone might be in trouble, emergency medical services are dispatched. Many patients die from an out-of-hospital cardiac arrest, but steps taken out in the field can make a difference. Basic life support, the kind you might be taught in a CPR class — involving the use of bag valve masks, cardiopulmonary resuscitation and automated external defibrillators — can absolutely save a life.

Advanced life support, usually requiring a trained paramedic, involves much more. Trained providers may put in endotracheal breathing tubes; start intravenous lines; deliver sophisticated cardiac drugs; and defibrillate patients manually.

We’ve assumed, for the most part, that advanced life support is better than basic life support — so much so that in most areas where both options are available, advanced life support is almost always used. But a recent study in *JAMA Internal Medicine* brings this assumption into question. Researchers examined Medicare patients who were billed for either advanced life support or basic life support before admission to the hospital from 2009 through most of 2011. They looked at how often patients survived to hospital discharge, and then months later.

What they found was that about 13 percent of patients who received basic life support survived and were discharged versus 9 percent of patients who received advanced life support. More patients who received basic life support lived for 90 days after discharge, too (8 percent versus 5 percent). Basic life support patients also had better neurological outcomes.

Now, of course, this is not a randomized controlled trial. It’s possible that sicker patients received advanced life support and that people who didn’t appear as sick received basic life support. But the authors called all of the
state agencies, and they reported that this can’t really happen. After all, a
911 dispatcher can’t tell if it’s a “mild” or “severe” heart attack from a third
party on the phone with no medical training. Dispatchers send out
advanced life support if it’s available, and basic life support if it’s not.

It’s also possible that there could be differences in bystander CPR
administration until help arrives. But the authors attempted to control for
that, too. They conducted a number of sensitivity analyses, and in none of
them did advanced life support outperform basic life support.

It would also be easier to dismiss this finding if it weren’t corroborated in
many other studies. In 2004, results from the Ontario Prehospital
Advanced Life Support Study were published in the New England Journal
of Medicine. This was a multicenter controlled trial in 17 cities in Canada
comparing advanced life support with basic life support. They found that if
an instance of cardiac arrest were witnessed by a bystander, the chance of
survival significantly improved. They also found that CPR administered by
bystanders improved survival, and so did rapid defibrillation. These are all
components of basic life support. The addition of advanced life support,
however, made no difference in survival.

A 2007 study conducted in
Taipei also found that
advanced life support did not
improve survival to discharge.
Even the main components of
advanced life support have
failed to show results in
studies. A 2008 systematic
review showed no efficacy for
emergency intubation. A
2010 cohort study found
advanced airway methods —
basically, putting in an airway
tube rather than using a bag
mask — to be associated with decreased survival compared with basic life
support methods, as did a 2013 study in Japan.
A 2012 JAMA study found that the use of epinephrine was associated with worse outcomes, and a 2008 New England Journal of Medicine study found that adding vasopressin (another drug that, like epinephrine, constricts blood vessels to raise blood pressure) didn’t improve things. A randomized controlled trial of these drugs, published in 2009 in JAMA, found that their use didn’t improve survival either.

The evidence is compelling. Advanced life support does not seem to provide any benefits in the randomized controlled trials, and it’s often associated with worse outcomes in the cohort studies. How can this be so? Some theorize that the things that work have already been incorporated into basic life support. All that the advanced life support may be doing is slowing things down in the field, distracting people from the useful basic life support measures, and delaying the time until a patient can get to the hospital.

It’s hard not to do more if we can, though. We see this in all sorts of areas of care. A few months ago, a study was published in JAMA that examined the outcomes of women with stage 0-III unilateral breast cancer who underwent breast conserving surgery with radiation compared with those who had a unilateral mastectomy and those who had a bilateral prophylactic mastectomy. The 10-year survival differences between the groups were negligible. Breast conservation therapy is more tolerable, is much less invasive and costs less.

In fact, breast conservation therapy has become a “standard of excellence” in
breast cancer care. But a study published even more recently showed that from 1998 through 2011, the odds of a woman eligible for breast conservation therapy receiving a mastectomy increased. Rates of bilateral mastectomy went up over this time period as well, from 2 percent in 1998 to 11 percent in 2011.

And based on the data from many randomized controlled trials, we know that women who have radiation therapy for early breast cancer do well with less of it. The use of “hypofractionated” whole breast irradiation, which consists of fewer treatments with higher levels of radiation, has been shown to be equally effective for women without any excess side effects. It’s cheaper, easier and just as good. Hypofractionated whole breast radiation has been endorsed by the American Society for Radiation Oncology for women who satisfy certain criteria since 2011.

But a study published a month ago that looked at the use of radiation in women with early stage breast cancer found that in 2013, only about a third of women who qualified for hypofractionated radiation therapy were getting it. The rest got more, but not better, care.

The reasons for this are varied. With respect to the radiation therapy, it’s hard not to lay some of the blame on economics. After all, in a fee-for-service system, more visits and more treatments mean more money. Research shows that twice as many women want hypofractionated radiation therapy as want conventional therapy, but only half of radiation oncologists offer it.

But it’s not all money. It’s also probably fear. Many radiation oncologists are concerned that doing fewer treatments will lead to worse outcomes. That’s most likely the concern of women who choose much more invasive
surgery than necessary as well.

It’s certainly the rationale for why advanced life support is so prevalent. The Ontario Prehospital Advanced Life Support Trial was supposed to be a randomized controlled trial, but the paramedics evidently refused to do it because they felt that holding back advanced life support was unethical. This was in spite of the lack of evidence that it was effective.

More is expensive. More sometimes does no good. Sometimes, more is even harmful. When our policies and care ignore these facts, we all suffer.

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