

July 2016

The Medical Error Problem

Stephen Kamelgarn, MD

On May 3, 2016, the *BMJ* reported that medical errors are now the third leading cause of death in US, just behind heart disease and cancer.¹ This is not a new finding, although the news media treated it like it was earthshaking news.

Ever since 1999, when the Institute of Medicine released “To Err is Human,”² and they found that there was a huge number of medical errors in the hospital, patient safety has been on the front burner of discussions about American healthcare. The Institute of Medicine and conventional wisdom have proclaimed that the problems in hospital care were “systemic” in nature: “More commonly errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them.”³

And they have a point, up to a point. We all know that the weak link in any collective endeavor is human error. So we must design our systems to be robust enough to accommodate human error. In a strange way, we must reduce the human input as much as possible to eliminate error, and rely on automatic “systems” that can detect human error and eliminate it to run smoothly. When we can’t do this, such as in an institution as human dependent as a hospital, then our error checking systems must be particularly robust. Every time we add an extra person into the equation, the possibility for error increases exponentially and our systems must be more complete and “cybernetic” to correct error.

Most hospital care is provided by teams of professionals: nurses, anesthetists, physical and respiratory therapists, radiologists, all relying on each other. This systemic approach has

given birth to an array of initiatives to reduce patient harm, virtually all of them aimed at hospitals or teams working inside them. They include using safety checklists for basic procedures, hand-washing campaigns and urging medical team members to speak up when they see problems. However, even with all these new measures, hospital complications remain stubbornly constant; more than 200,000 unnecessary hospital deaths per year.⁴

In fact, it is estimated that hospital errors now account for ~400,000 unnecessary deaths per year, the nation's third leading cause of death.^{5,6,7} These numbers are inexact and estimates range from 210,000 to 440,000 excess deaths per year, but everyone agrees that these numbers are way too high. These deaths account for one-third to one-half of the ~800,000 hospital deaths in the US in 2010. (Of note there was a total of 2.5 million deaths in the US in 2010.)⁸ Most of the problems are from medication errors, but also misdiagnosis, under and over treatment, and surgical mishaps play a huge role in medical errors. Medical errors are also associated with extremes of age, new procedures, urgency of care, and the severity of the medical condition being treated. These numbers also include the 75,000 deaths from the 722,000 hospital acquired infections that occur annually.⁹ It appears, that with all of our tinkering, we haven't been able to override human error.

I personally feel that increasing "medical fragmentation," adding more and more physicians to an individual's care, is an under-appreciated cause of medical errors today. Our "systems" just can't cope with the addition of more and more people into a patient's care. Here's an example:

Recently, my brother-in-law was hospitalized at a major university medical center, and spent six days in the ICU with both cardiac and neurological problems. He was seen by several different medical teams, and had a wide range of studies and interventions. However, *no one* was

in overall charge of his case, and during the entire six days in the ICU he was given *no food or water!* He didn't even have an IV in place! No one had bothered to write a diet or fluid order. "It was some other guy's responsibility." While he was being treated with all sorts of high-tech interventions, he could have died of dehydration or starvation. We treat prisoners in Guantanamo better than he was treated; at least they're given food and water. Part of the tragedy of this situation is that there were no safeguards on that unit to insure that someone write diet or fluid orders. This should have been part of the admitting protocol—a systems response to human error.

The available number of medications, diagnostic tests, imaging technologies, and other interventions have increased astronomically since I was in training. While this enables us to "do more" for the patient, it also increases the number of people involved in the patient's care. With the addition of each new team member, the patient's complexity of care increases exponentially, as well as the possibility of "medical mishap."

Our jobs have now been parsed among a variety of specialists. Jerald Winakur, MD, in a not too exaggerated scenario opined: "Many new career opportunities have opened up as the role of the old primary care attending physician has been crushed and splintered in this postmodern medical age. The shards sparkle with possibility: hospitalists care for sick inpatients and are charged with rapid throughput by their administrative overlords; nocturnists do this job as well — but at night; intensivists take over when work in a critical care unit is required; transitionalists step in when the patient is ready to be moved on to rehabilitation (physiatrists) or into a skilled nursing facility (SNFists). Almost at the end of the line are the post-acuteists in their long-term care facilities and the palliativists — tasked with keeping the patient home and comfortable — while ending the costly cycle of transfers back and forth to the hospital."¹⁰

Once upon a time, not so very long ago, I did all these tasks myself, and practiced across

all these varied settings. I was there whenever and wherever my patients needed me. But those days are long gone, for better or worse, never to return. Unfortunately, as the number of people involved in patient care increases, the likelihood of medical error increases proportionately. Especially, the more we transfer patients between doctors, the more the possibility of medical error arises.

I don't see this fragmentation into assembly line medicine changing anytime soon, but it is imperative that we find a more efficacious way of transferring patient care from one physician to another. As our systems become more mechanized and computerized we tend to relax our vigilance, feeling that the "machine will take care of it." But the "machine" doesn't take care of it well. More often than not, data gets put into the EMR, never to see the light of day again. One physician may write a note, but no other physician will read the note or the study. However, when one physician calls another and engages in conversation about a patient, those all-important details and ideas aren't forgotten. We still need to talk to one another—that's the one thing that our checklists don't seem to address.

Ironically, it seems that if we decrease our dependence on computer systems and actually talk to one another, we may decrease the error rate.

Notes

1. Martin A Makary "Medical error—the third leading cause of death in the US" *The BMJ* BMJ 2016;353:i2139 doi: 10.1136/bmj.i2139 (Published 3 May 2016)
2. "To Err Is Human: Building a Safer Health System" *Institute of Medicine: Shaping the Future for Health* November 1999.
<http://iom.nationalacademies.org/~media/Files/Report%20Files/1999/To-Err-is-Human/To%20Err%20is%20Human%201999%20%20report%20brief.pdf>
3. Marshall Allen and Olga Pierce "Making the Cut: Why choosing the right surgeon matters even more than you know" *Pro Publica* July 15, 2015

<https://www.propublica.org/article/surgery-risks-patient-safety-surgeon-matters>

4. Ibid

5. “Survive your hospital stay: Medical errors are linked to 440,000 deaths each year. Our new Ratings can help you find a safe hospital.” *Consumer Reports* March 2014,
<http://www.consumerreports.org/cro/magazine/2014/05/survive-your-hospital-stay/index.htm>

6. Ilene MacDonald “Hospital medical errors now the third leading cause of death in the U.S.” *FierceHealthcare* Sept 20, 2013
<http://www.fiercehealthcare.com/story/hospital-medical-errors-third-leading-cause-death-dispute-to-err-is-human-report/2013-09-20>

7. “How Many Die From Medical Mistakes In U.S. Hospitals?” *Health News from NPR* Sept 20, 2013
<http://www.npr.org/blogs/health/2013/09/20/224507654/how-many-die-from-medical-mistakes-in-u-s-hospitals>

8. Margaret Jean Hall, Ph.D.; Shaleah Levant, M.P.H.; and Carol J. DeFrances, Ph.D. “Trends in Inpatient Hospital Deaths: National Hospital Discharge Survey, 2000–2010” *U.S. Department of Health and Human Services: Centers for Disease Control and Prevention; National Center for Health Statistics* March 2013 <http://www.cdc.gov/nchs/data/databriefs/db118.pdf>

9. “Healthcare-associated Infections” *CDC Data & Statistics* Jan 12, 2015
<http://www.cdc.gov/HAI/surveillance/>

10. Jerald Winakur “In America, the art of doctoring is dying” *The Washington Post* February 12, 2016