

Who Believes That Medical Error Is the Third Leading Cause of Hospital Deaths?

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Cause of Death: Medical Error?

While medical error is not a new topic, it is still a difficult one to address, in large part owing to the lack of both a succinct definition and data on the frequency and consequences of error in healthcare. Death certificates don't have a checkbox for "medical error" as a cause or contributing factor in a patient's death.

In 1999, the Institute of Medicine (IOM) published a landmark report^[1] on error in healthcare, concluding that medical care was responsible for 44,000-98,000 deaths annually in the United States. In the intervening years, several analyses have suggested that the IOM's figures rather significantly underestimated the problem. Studies^[2-5] published after 1999 estimate that 130,000-575,000 annual inpatient deaths are attributable to medical error.

Using studies published since the 1999 IOM report, Makary and Daniel extrapolated annual inpatient death rates from those reports to the total number of US hospital admissions in 2013, publishing their findings in the *British Medical Journal*.^[6] They calculated that 251,454 inpatients (9.5%) die annually as a result of medical error.^[7] "If medical error was a disease," they concluded, "it would rank as the third leading cause of death in the United States," after heart disease and cancer.

Medscape Medical News covered this analysis with the headline "[Medical Error is Third Leading Cause of Death in US.](#)" Subsequently, more than 500 Medscape readers expressed everything from frank disbelief to admonishment for dissemination of the study's findings. Readers who found the study results credible and thought-provoking were decidedly in the minority. And although the comments often drifted into the realm of "everything that is wrong with healthcare today," the debate shines a light on a critical healthcare issue. [Note: Comments have been edited for clarity and length.]

Everything but the Kitchen Sink

Makary and Daniel noted that a "medical error" may or may not cause harm to the patient and defined an error as:

- An unintended act (either of commission or omission);
- An act that does not achieve its intended outcome;
- The failure of a planned action to be completed (an error of execution);
- The use of a wrong plan to achieve an aim (an error of planning); or
- Deviation from the process of care.

However, for this analysis, Makary and Daniel focused not on all medical error but on preventable *lethal* events.

The most frequent—though diametrically opposed—opinions offered by those who commented was that Makary and Daniel's definition of medical error was either too broad or not broad enough. An orthopedic surgeon wrote, "Just like the original *To Err is Human*, we are failing to properly distinguish between an error and a complication." This was echoed by an anesthesiologist, who wrote, "Hospital-acquired infection and pulmonary embolism were considered medical errors. While some can be attributed to care, many of these complications are unavoidable patient-related comorbidities." Likewise, a surgeon said, "There is a world of difference between error, bad results, and unintended consequences." A plastic surgeon agreed, writing that "what they considered errors are maloccurrences and complications with disappointing results that are unavoidable."

Others pointed out that the term "medical error" is misleading, because it implies "physician error." They argue that a more appropriate term is "healthcare error," because many different types of healthcare providers commit errors. Several readers believe that the category of medical error should be expanded to include "patient error." One physician wrote, "If medical error should be listed as a cause of death, then so too should patient error, or lifestyle error—namely, inhaled nicotine, overeating, sedentary living, and alcohol ingestion."

A pain management physician agreed, asking,

How much morbidity and mortality can be explained by the patients themselves? How much bad behavior leads to cardiovascular disease and cancer? How many die from guns and drugs? You will quickly learn that the main source of patient mortality is from the decisions and actions patients take that result in their own demise.

One physician suggested that "medical procedures should be like Olympic diving where they assign a 'degree of difficulty' to each attempt. There is a big difference between attempting something difficult on a risky patient (when something could go wrong) and making a bone-headed belly flop and amputating the wrong leg."

An anesthesiologist asks, "If a patient presents with acute coronary syndrome in cardiogenic shock, is taken immediately to the cath lab, and receives appropriate stenting, but because of the severity of the disease and limitations of current technology, the patient expires, is that considered a medical error?"

A neonatologist concurred with this logic. "That was one of the problems with the original IOM report—they overcounted causality, based simply on the presence of error."

A cardiologist maintained that the known complications of surgeries and procedures should not be classified as medical errors, saying:

Clearly, surgery on the wrong part of the body, receiving the incorrect medication, or missing a diagnosis that is evident on a lab test or imaging study is a medical error. But what about the complications from a procedure? Consider this scenario: A patient with infection risk factors of poorly controlled diabetes and end-stage renal disease on hemodialysis underwent a life-saving procedure, developed an infection, became septic, and succumbed to the infection. Should this be considered a medical error? Unless there is an egregious fault in thinking or performance, or a trend for a certain practitioner or facility to have a significantly higher rate of complications, then I find it difficult (and irresponsible) to label these events "medical errors."

Utter Nonsense

Among the words we can publish that were used to describe Makary and Daniel's study findings were: "garbage," "tripe," "extrapolated hogwash," and "bogus." Still others described them as "outrageous," "absurd," "insulting," and "a joke."

An internal medicine physician from Europe wrote, "The time has come when people won't die from their disease anymore—suddenly everyone will die from medical error? This is nonsense. From this article, you would think that doctors in the United States are dragging healthy people in off the streets and finishing them off."

A surgeon speculated that the investigators were "fishing for funding" with their study, and another physician believes that "starting a witch hunt to root out medical error is misguided at best, and patently dangerous."

An internist questioned both the credibility and the gravity of the findings, saying:

These numbers are total nonsense. It has been shown repeatedly (curiously left out of this article) that patients dying as a result of "error" are almost uniformly frail, weak patients whose life expectancies are short (ie, 6 months or less). These are not healthy individuals dropping dead from medical error. And the large majority would die from their conditions if it were not for major ongoing medical care. Moreover, any

hospital-acquired infection or fall is considered an error. While I agree that reducing these events as much as possible is laudable, it defies common sense and practicality that these can be eliminated entirely. This is not a call to mediocrity, but an indictment of the methods used to calculate these results. Too often people want a grabby headline but don't present the whole, more complicated story. In the meantime, we lose patient trust. I urge a bit more responsibility.

An oncologist criticized the study as "just another example of the endless ways to demean medical personnel. What a piece of hooey. I've seen plenty of people 'saved' from dying only to perpetuate their misery. Just walk through your local intensive care unit to witness it firsthand. The authors would have us believe that without medical errors, no deaths would occur—ever."

Sarcasm also crept into more than a few other comments, like this one: "I guess people should stop going to the doctor so they don't risk getting cut down in their prime." And there were comments from those who view the study findings as just more fodder for the legal profession.

Still others simply did not believe the results because they didn't live with personal experience. An emergency medicine physician wrote, "I have been in medicine for 45 years and have not seen this to be even remotely true."

Doctors in Denial?

Although few in number, some Medscape readers accept that Makary and Daniel's findings may be valid and believe that physicians who think otherwise are in denial about the scope of the problem.

A pediatrician wrote:

Medical errors are hard to accurately quantify. They are hugely underreported and sometimes it's very hard to tell whether an error caused significant harm. I do want to point out the Dunning-Kruger effect^[8] that plagues medicine in certain areas where people are practicing at the edge of their scope and not appropriately asking for guidance. Be careful of the ego and try to be aware of what you don't know.

A registered nurse was saddened reading some of the comments made about the study, saying, "Instead of asking what we can do about this problem, most are variations on exclamations of denial." Another healthcare provider concurred, saying, "Errors and complications are frequently faced by patients, even if doctors refuse to admit it. Why do so many women die from heart attacks after being sent home from the emergency department with a proton pump inhibitor or an antianxiety medication after being seen for chest pain?"

Error is a consensus and it is not always preventable

Many physicians acknowledged that medical error is common but they disagreed that all errors are preventable, and many were disinclined to place the responsibility for errors on the shoulders of clinicians.

A general practice physician wrote:

Cognitive-proximity biases; the Dabner-Ross sequence of denial and anger; the psychological need to assign blame; the risks associated with procedural management of cancer or cardiovascular disease in an unstable, aging population; and retrospective cause-and-effect attributions are all driving factors in random catastrophic lethal events being attributed inappropriately to healthcare provider-caused errors.

Preventable systematic lethal or egregious human errors do occur, but overall they are relatively small in number compared with random, unpreventable events. Oversight efforts to prevent these errors (eg, electronic health records) can have the opposite unintended consequence of increased random events, because quality provider-patient clinical 'face time' is reduced.

Another clinician acknowledged that many people die or are injured because of medical errors, but the true number is unknown. "While the issue deserves attention, the 'global warming-esque' hyperbole is not helpful and is in fact counterproductive."

System, not Humans Cause Error

Other clinicians from the "error happens" camp believe that systems, not humans, are largely to blame for errors. A registered nurse explained, "System errors, not people intent on making mistakes, are the main culprit. Tort reform is much needed because many family members who feel the pain of loss are eager to punish someone for a loved one's death."

Another healthcare professional expressed the view that the label "medical error" is unfortunate. "Medical error is more than physician error—these results don't point the finger at physicians. Physician defensiveness is not warranted, but these high rates suggest systems problems, and root-cause analysis is indicated."

A physician agreed with this statement and responded:

You bring up a valid point that a lot of doctors are missing because they see this headline as a direct threat to them and their livelihood. Errors are not the fault of physicians but of systems. Human disease and top causes of death have changed from acute infections to chronic problems, but the mindset that drugs and interventions that worked so well in the past are also the solution in today's world is wrong. It is a sign that medicine needs to change with the times. We should be putting more emphasis on preventive medicine, holistic approaches, and physiological nutrition, because the drugs and interventions are doing nothing to stop the top killers.

Labeling the Messenger

Medscape was in for a share of the criticism, by virtue of reporting Makary and Daniel's findings as news. Some readers took Medscape to task for reporting on an inflammatory study that gives ammunition to the uneducated public and personal injury lawyers. A physician assistant pointed out that the study's title and the Medscape news headline were misleading since the study actually focused only on deaths that occurred in the hospital, not all deaths.

An oncologist called the story "an irresponsible and provocative statement." That sentiment was echoed by a cardiologist who wrote, "Another irresponsible article is going to create more panic and mistrust of the medical profession. There are no data; mere suppositions and extrapolations of extrapolations. But once you launch a figure like 200,000 deaths, it will be impossible to cancel it from public opinion."

They were not the only readers who voiced concerns about the effect of wide dissemination of these findings on the public who may only read the attention-grabbing headlines. A neurosurgeon observed that "looking at four studies performed 5-13 years earlier and extrapolating to 2013 to claim that 251,454 deaths stem from medical error is not statistically sound. This type of fear-mongering is dangerous sensationalism." Another physician agreed. "Clearly, the study does not show causation. There is no way to prove that the errors led to deaths. Publishing this without real foundation will cause unnecessary panic."

Not all readers agreed that the findings of Makary and Daniel were invalid, and many were astonished at the reactions and comments made by their peers.

A pharmacist wrote:

It is appalling how cavalier many practitioners seem from their comments, instead of taking this deadly issue seriously. Crowned men and women, with advanced medical and allied health degrees, are sniffing and discounting the reality of healthcare-induced harm when we all know it exists. Perhaps this study is not the Holy Grail, but don't kill the messenger just because you don't like the message.

A family physician concurred. "Oh... let's really study this. Healthcare is far from perfect. Instead of getting angry and dismissing the study, we need to take a good, hard look."

A similar sentiment was expressed by another reader in response to the many comments from peers who dismissed the study out of hand. "One would hope that a study that exposes the high rate of medical error would

generate a physician drive to investigate, confirm or deny the findings, and seek solutions. It is very disappointing to see an unwillingness to acknowledge a potentially serious problem."

A family physician recounted some personal experiences in support of the study's findings.

I recently sat at the bedside of friends who were hospitalized. It was a terrible, eye-opening experience. I saw equipment not working properly, arrhythmias and anoxia ignored, and delirium completely missed. I saw a large glass of juice given to a patient an hour before a surgical procedure, with the rationale that "It's OK because the patient's blood sugar is low." I saw incompatible medications being given together, with the justification that "If the patient goes into tach, it's OK; she's in the hospital." On and on it went. My friends are dead now. I just hope your loved ones don't end up in the hospital so you can see for yourself just how bad it can get.

Another physician commended the study for "directing attention to a part of the problem that really needs attention," but argued that it "fails to address the root causes of the problem of medical errors." A pediatrician who found the headline divisive also acknowledged that "the article opens a very important line of discussion and further study," adding, "I have no doubt that many deaths are due to clinician, nursing, and pharmacy error. Yet nowhere is it accounted for that the population as a whole is horribly sick from their own devices."

One family physician did not doubt Makary and Daniel's findings and believes the source to be the EHR:

"I hate to say it, but I see errors all the time. The amount of inaccurate information in the EHR is both astounding and frightening. Looking at hospital records the other day, I saw three different discharge doses of the same drug. I saw a patient with severe angioneurotic edema from an ACE inhibitor that was listed on the "continue these meds" discharge order. The EHR is overwhelming healthcare providers in the trenches with extraneous nonsense."

A family physician encourages reflection rather than fault-finding, saying, "As healthcare becomes more complex, the risk for error increases greatly. Physicians often overestimate the benefit of a treatment or test and underestimate the potential harm. This study should remind us to be better informed and more thoughtful."

And finally, this insight came from a pathologist: "To measure the present value of the healthcare system, we would need to know the death rate from no medical care."

What is your opinion of Makary and Daniel's analysis and conclusions about medical error?

- ☐ The analysis is valid and illustrates a realistic concern
- ☐ While medical error is an important concern, this analysis is flawed and inaccurate
- ☐ The analysis is inherently flawed and overinflates the issue of medical error
- ☐ The issue of healthcare-associated error deserves continuing study using a more valid methodology than that used by Makary and Daniel
- ☐ I'm not able to form an opinion on the basis of the information contained in the news article
- ☐ No opinion

Should Medscape have published a news story about the analysis?

- ☐ Yes
- ☐ Yes, although the coverage should have been more nuanced
- ☐ No
- ☐ No opinion



Editor's Recommendation

Medical Error Is Third Leading Cause of Death in US

Better Handoffs Cut Medical Errors 30% in Multicenter Trial

Medical Error in Public Eye at Geriatrics Meeting

References

Medscape