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Overuse as a Patient Safety Problem

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Perspective

Nearly half of primary care physicians in the United States believe that patients cared for in their own practice receive too much medical care.(1) Overuse is not only expensive, it leads to serious patient harms and downstream consequences. Unnecessary antibiotics place patients at risk for dangerous infections, such as *Clostridium difficile* colitis.(2) Nevertheless, 71% of patients with acute bronchitis—a condition that does not routinely warrant antibiotic treatment—were prescribed antibiotics between 1996–2010, and that rate is on the rise.(3) Computed tomography (CT) scans expose patients to levels of radiation associated with increased rates of cancer, yet the use of CT scans has soared in the US and across the world.(4) The sobering reality is that more than one-third of health care delivered today may not make patients any healthier (5), and a substantial portion of that unnecessary care may itself cause harm.

In 1998, the Institute of Medicine identified three categories of quality issues: underuse, misuse, and overuse.(6) Since that time, although significant improvements have been made to address underuse of appropriate care, there has been relatively little progress in curbing overuse.(7) The reasons for this are manifold. Emanuel and Fuchs have described a "perfect storm of overutilization," formed from the confluence of many reinforcing drivers, including a physician culture that rewards perceived thoroughness, a fee-for-service payment system that encourages overutilization, and direct-to-consumer pharmaceutical advertising.(8) In addition, many patients believe that "more care must be better."

But as most clinicians know, that is often not the case. Nearly every test, medication, or procedure has the potential to cause adverse effects. In fact, patients who live in regions with more intensive care patterns have been shown to undergo more tests, more procedures, more visits with specialists, and more hospitalizations. Not only do such patients not have better outcomes, in many instances they seem to do worse.(9) For the population overall, more care has led to greater levels of worry, pain, and restricted activity days, with no gains in functional status.(10)

Medical care may cause harm directly via complications of treatments or indirectly by generating excess diagnoses or additional treatments, which in turn creates "more to do" and ultimately can lead to mistakes

and adverse events.(10) In addition, some kinds of testing routinely produces false-positive results, which can have profound, often long-lasting, psychological impacts on patients.(11) To make matters worse, false-positive tests typically lead to further testing or invasive procedures. The snowball effect builds up rapidly.

The harms of overuse can been seen most starkly in the intensive care unit. Although most patients with serious illness say that they would prefer to die at home, the majority of them die in hospitals, often receiving aggressive therapies that don't match their preferences.(12,13) This aggressive care causes further adverse events and diminishes the quality of life for patients in their final weeks or days.(14)

The physical and emotional harms of overtesting and overtreatment are clear. My colleagues and I have advocated for considering the financial harms of wasteful care.(15) Others have invoked the "financial toxicity" of chemotherapeutics and have encouraged clinicians to consider out-of-pocket costs as side-effects of treatments.(16) Decreasing medical overuse can have the dual benefit of enhancing quality of care and simultaneously reducing health care costs.

How Can We Address Medical Overuse?

Perhaps the first step in starting to address medical overuse is shining a spotlight on the problem. Recently, the American Board of Internal Medicine Foundation's *Choosing Wisely* campaign and *JAMA Internal Medicine's* "Less is More" series have brought international attention to the harms of health care overuse. The Do No Harm Project, which began at the University of Colorado School of Medicine, collects clinical vignettes written by medical trainees that illustrate cases of overuse leading to patient harm. This model has been adapted into a new series in *JAMA Internal Medicine* called "Teachable Moments."(17) The American College of Physicians' High Value Care Curriculum addresses the overuse of medical resources, and teaches trainees how to consider medical costs in decision-making (available for free at http://hvc.acponline.org/).

Moving from awareness to action, there are multiple attempts on national and local levels to change clinician behaviors. For instance, to tackle widespread antibiotic overuse, the Centers for Disease Control and Prevention has recommended mandated antimicrobial stewardship programs across health care settings.(2) The American College of Radiology created appropriateness criteria for medical imaging during the 1990s, and more recently the US Food and Drug Administration launched an initiative to reduce unnecessary radiation exposure.(18) At UCSF, the hospital medicine group has formed a high-value care committee that seeks to root out our own wasteful health care practices, such as blood transfusions that are given outside of current evidence-based best practices.(19)

The development of quality indicators that measure overuse is a vital step toward improvements on a national scale. This is the subject of active research, largely trying to overcome the many challenges in defining accurate and meaningful measures.(20) Lastly, payment reforms, such as bundled payments for episodes of care, and the promotion of Accountable Care Organizations, may help incentivize systemic solutions for coordinating care and lead to the avoidance of medical care overuse.

Conclusion

Currently, medical care in the US is characterized by widespread overuse, which leads to countless direct and indirect harms. Confronting such a large problem will require the efforts of individual clinicians as well as systemic transformations. Although there was little focus on overuse as a patient safety problem during the early years of the patient safety field, today it is an emerging issue that is gathering momentum. Curbing medical overuse is part of the professional responsibility of clinicians and the systems in which they work to "first, do no harm."

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