

## JAMA Professionalism

## Is Excessive Resource Utilization an Adverse Event?

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## Case Summary

A primary care physician referred a case to the hospital medicine patient safety committee for evaluation of excessive testing and medical management involving a patient who had been hospitalized. The



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Author Audio Interview



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patient was a 54-year-old woman with advanced multiple sclerosis who was bed-bound and nonverbal and lived at home with a full-time caregiver. Her mother was her surrogate decision maker and had stated that the patient would not want aggressive medical procedures or cardiopulmonary resuscitation but would want some reversible illnesses treated. The patient was admitted to the medical teaching service at the hospital where she received all of her care after her caregiver noted that she had become increasingly somnolent during the previous day. On presentation, the patient had a fever, tachycardia, leukocytosis ( $20 \times 10^3/\mu\text{L}$ ), markedly elevated liver function findings, and computed tomography (CT) of the abdomen and pelvis showing cholecystitis. Antibiotic treatment was initiated and the surgery service was consulted.

Because of concern about the elevated liver enzymes, the nighttime house staff team ordered acetaminophen and aspirin level testing to evaluate for toxicity, serologies for autoimmune disease, and a viral hepatitis panel and consulted the hepatology service. Neurology was consulted to assess how the patient's multiple sclerosis might affect her mental status. The CT revealed a hip dislocation, so an orthopedic surgery consultation was obtained even though this bed-bound patient did not have associated symptoms. The patient's primary care physician practiced at this medical center and was not consulted until after much of this workup was initiated.

The patient underwent an uncomplicated laparoscopic cholecystectomy for acute cholecystitis. Given her goals of care and functional status, no intervention was performed for her hip dislocation. She recovered to her baseline condition and was discharged home 10 days later.

The hospital medicine patient safety committee was charged with reviewing the quality of care delivered by hospitalists and house staff involving suspected medical errors, adverse events, and near misses. However, this case was referred explicitly to determine if the inpatient team members fulfilled their professional obligation to avoid potential harms related to excessive testing and consultation as well as to act as good stewards of health care resources. This committee was uncertain regarding the suitability of this case for its review because the committee assesses adverse events, and the referral focused exclusively on resource utilization.

## What Should the Patient Safety Committee Do Next?

1. Decline to review the case because the patient experienced no overt harm and appropriate resource utilization is beyond the scope of the committee's charge.

2. Review the case to determine which, if any, aspects of the care plan may have represented low-value and excessive diagnostic testing and treatment even though this is beyond the scope of the patient safety committee's charter.
3. Expand the scope of the patient safety committee to include inappropriate resource utilization in addition to adverse events.

## Consider the Options

Patient safety reviews focused on improving the quality of care and identifying systems errors are mandated by national accreditation organizations.<sup>1</sup> Reviews of this type "to continuously self-assess and improve the quality of care" are considered a core part of medical professionalism.<sup>2</sup> However, even though there is general agreement that health care costs are excessive and that clinicians should be stewards of resource utilization, it is not always clear who should intervene when low-value care occurs and if overuse should be evaluated in the same manner as a typical case review of adverse events.

1. **Decline to Review the Case.** Aside from diverting attention away from the committee's core responsibility, its entry into utilization review may be perceived as elevating overuse to the same level of concern as medical error in the health care system. Additionally, the patient safety committee has limited resources because each selected case requires hours of chart review, clinician interviews, and thoughtful analysis. Given this intense investment, an argument can be made for focusing efforts on cases with the worst outcomes or at least with significant and obvious harms and not reviewing care that was simply inefficient. Defining overuse can be quite dependent on an individual clinician's perspective and responsibility. Nevertheless, even if there are no overt complications, excessive testing and consultation can result in physical, emotional, and financial harm to patients<sup>3,4</sup> (Audio at time 6:45). Based on the potential for inappropriate resource utilization to result in harm, it is reasonable for the committee to conclude that overuse is a very real, if underappreciated, patient safety issue.
2. **Perform a Complete Assessment of Overutilization.** Every medical test and procedure involves some risk of harm. The worst possible scenario is when unnecessary tests result in treatments for conditions not likely to affect a patient's overall health. The committee could justify reviewing the case to look for potential harms that the testing and consultations could have caused. Even if overuse does not result in direct patient harm, evaluating the case for low-value care can still be instructive and offers opportunities to improve care delivery in the future, as low-value care ultimately reduces the availability of resources for other patients, whether in access to consultants or to needed studies or procedures.
3. **Expand the Patient Safety Committee's Charge to Include Resource Overuse.** If the committee did review the case and concluded that instances of overuse were potentially harmful, the committee members may decide to extend the scope of the committee to include overutilization. Currently, complications in the

hospital receive substantial attention and considering wasted resources as a complication of treatment would likely elevate this problem in a way that would lead to an appropriate amount of action. The committee could consider incorporating house staff education into its activities to facilitate educating new clinicians about the importance of resource stewardship,<sup>5</sup> similar to educational initiatives that have previously focused on patient safety and medical error. The committee's analysis of wasted resource utilization could help educate trainees regarding the need to avoid wasting resources when evaluating a differential diagnosis.

## Discussion

Overuse is a major problem affecting the US health care system. An estimated one-third of care delivered in the United States is considered wasteful<sup>6</sup> (Audio at time 0:00). Patients are subject to direct harms from overuse, such as radiation from excessive CT scans, complications from unneeded procedures, and *Clostridium difficile* infections resulting from antibiotics. Much of this waste results from well-intentioned physicians who, in seeking to provide excellent care to their patients, conflate "the best care" with "the most care," much like in this patient's case. As evidence increases about the harms from health care overuse, physicians have a professional obligation to reduce these events on both an individual patient level and across health care systems.<sup>7</sup> Overuse may need to be considered equal to adverse events and reviewed in the same context. By including cases of overuse in patient safety committees and other associated infrastructure, health care systems will be signaling the importance of addressing this insidious problem and will take the initial steps to foster a culture and training environment that supports high-value care.

## Resolution

The committee ultimately reviewed this case of overuse and agreed that the correct diagnosis had been made within an appropriate period and that some of the ordered testing was appropriate given the ambiguity of the patient's presentation. However, a more stepwise approach was recommended that focused on working up the most likely causes for the patient's sepsis and promptly addressing the symptoms that would result in the greatest morbidity. The commit-

tee believed that testing for less likely diagnoses (eg, autoimmune hepatitis) could have been delayed until after the acute problems were addressed. Because the patient improved after her cholecystectomy, much of the diagnostic testing that had been done would not have been necessary because her abnormal liver function resolved postoperatively.

The committee concluded that several of the tests sent, such as for human immunodeficiency virus infection, salicylate level, and serum IgG, should not have been obtained. The patient's care would have been significantly improved by communicating with her primary care physician earlier, who would have been a critical asset for the inpatient team by further clarifying the patient's expressed goals of care as well as her baseline clinical condition. Systemwide reforms were also recommended, such as having an automated process to contact primary care physicians on admission and to use them as key consultants throughout the hospital stay. Additional house staff training was recommended via curriculum changes and an increased emphasis on immediate feedback from their supervising attending physicians regarding the delivery of high-value care and the potential harms of overuse.

## Audio and CME

Listen to the accompanying audio program for more information about consideration of resource utilization as an adverse event. In some instances, the answers to CME questions are in the audio and not the text of the article (Audio at time 15:30). Take the quiz at <http://jamanetwork.com/learning/article-quiz/10.1001/jama.2017.0698>.

### Bottom Line

1. Overuse is inconsistent with professionalism because of the associated patient and societal harms and should receive equal attention as adverse events in health systems.
2. Timely communication by inpatient specialists with primary care clinicians who know a patient well is essential to reduce harm from overuse.
3. Promoting a culture of high-value care in training programs is fundamental to developing physicians who are cognizant of the harms of overuse.

## ARTICLE INFORMATION

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