

Defensive Medicine: "Glowing" with Pain

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The Case

A 31-year-old man presented to the emergency department (ED) complaining of abdominal pain and vomiting. The patient was well known to the ED staff (a "frequent flyer") as he had presented multiple times in the previous 2 years with similar complaints, always requesting intravenous hydromorphone (Dilaudid) for the pain. In fact, he had been seen in the ED 2 days earlier by the same physician who was on duty. At that time, the patient's examination was benign, and a computed tomography (CT) scan of his abdomen and pelvis was normal. He was discharged home with a prescription for hydrocodone/acetaminophen (Vicodin).

On this visit, the patient stated that his abdominal pain and vomiting had not significantly improved over the prior 2 days. His vital signs were normal, and his abdominal exam was unremarkable, with no tenderness, guarding, or masses. The ED physician ordered laboratory tests and a CT scan of the abdomen and pelvis, all of which were normal. Because of his persistent symptoms, the patient was admitted to the hospital. An evaluation by a gastroenterologist failed to reveal a clear cause for the symptoms, and the patient was discharged to home after 2 days in the hospital feeling somewhat better.

As part of a targeted review of intravenous hydromorphone use in the ED, the Medical Director came across this case. When she looked back over the prior 2 years, the patient had been seen in the ED 12 times for abdominal complaints and had received 12 CT scans of the abdomen and pelvis. All of them were completely normal. When she reviewed the clinical details for each of the 12 presentations to the ED, she felt strongly that most, if not all, of the CT scans were not clinically indicated. When she discussed the patient with the providers involved, many of the physicians expressed that the CT scans (and many other tests) were ordered out of "fear of getting sued"—as a safeguard against possible malpractice liability. The Medical Director was frustrated and wondered about the costs—to the health care system and to patients—of practicing this "defensive medicine."

The Commentary

The intriguing case above describes a 31-year-old man who was subjected to multiple abdominal CT scans during emergency department (ED) visits. Although one could debate the clinical indications for CT scanning in this scenario, the case provides an appropriate backdrop to discuss defensive medicine more broadly and outline the associated costs and consequences for patient safety.

Defensive Medicine: An Issue of Cost and Safety

In 2007, total national health care spending was \$2.3 trillion (representing 16% of our Gross Domestic Product [GDP]) and rose by approximately twice the Consumer Price Index.⁽¹⁾ Health care spending in the United States is expected to continue to increase at similar levels, potentially reaching 20% of GDP by 2016.⁽²⁾ There are many drivers for the rapidly increasing cost. One component of the growing health care bill may be the expenses associated with unnecessary medical tests, treatments, and procedures spurred by physicians' fears of malpractice litigation. In a recent address to Congress on health care reform, President Obama acknowledged that these practices may be contributing to health care inflation.⁽³⁾

Defensive medicine is defined as medical practices that may exonerate physicians from liability without significant benefit to patients.⁽⁴⁾ Defensive medicine can be divided into two distinct entities: positive and negative.⁽⁵⁾ *Positive defensive medicine*, as in this case, occurs when physicians provide excess diagnostic testing, treatment, hospitalization, or consultation. *Negative defensive medicine* occurs when physicians curtail services to avoid high-risk patients or procedures. A powerful example of negative defensive medicine can be found in the field of neurosurgery where many hospitals refuse to treat closed head injuries given the high risk of medical liability involved.

How common is the practice of defensive medicine? While prevalence varies in the literature, it is clear that defensive medicine is commonplace.⁽⁶⁾ For example, a 1994 comprehensive study performed by the US Congressional Office of Technology Assessment revealed that approximately 8% of all diagnostic tests ordered by physicians were purely defensive.⁽⁴⁾ Furthermore, a recent survey of Pennsylvania physicians in a range of specialties indicated that more than 92% were actively practicing defensive medicine.⁽⁷⁾ In that cohort who reported defensive practices, nearly all of them practiced "positive" defensive medicine (92%) including ordering additional tests, performing unnecessary diagnostic procedures, or excessively referring patients for consultation. Interestingly, 42% reported that they had taken steps to restrict their practice in the previous 3 years because of liability concerns ("negative" defensive medicine), and 49% stated that they were likely to do so in the next 2 years.

Research has also indicated that defensive medicine is costly.⁽⁸⁾ Many attempts at quantifying or estimating the sum cost of defensive medicine have been made. For example, a study of defensive medicine published by the Massachusetts Medical Society in 2008 demonstrated an annual cost to the state of Massachusetts of over \$1.8 billion annually.⁽⁸⁾ While no national study has been conducted, Reynolds and colleagues published one of the first credible estimates in JAMA in 1987.⁽⁹⁾ The group estimated that total costs of the malpractice system for physician services in 1984 were between \$12.1 and \$13.7 billion, accounting for 15% of health care at that time.⁽⁹⁾ In 1993, a Lewin group report argued that the US health care system could save nearly \$36 billion over 5 years by taking steps to eliminate defensive medicine.⁽¹⁰⁾

Defensive medicine is not only expensive; it is unsafe for patients. For instance, patients subjected to unnecessary radiological imaging are exposed to the risks of radiation and possible anaphylactic reactions to contrast dye. The patient in this case received 12 abdominal CT scans—equal to or greater than the amount of radiation exposure received by those in Hiroshima and Nagasaki. A recent study found that the use of CT scans has increased threefold since 1993 and estimated that the 72 million CT scans performed in the United States in 2007 could lead to approximately 30,000 future cancers.⁽¹¹⁾ Moreover, other research revealed that radiation doses from typical CT scans are higher and exposure more variable than commonly noted.⁽¹²⁾ A typical CT scan of the abdomen and pelvis can have enough radiation to increase future cancer risk, and clinicians may not consider this risk when deciding whether to use CT imaging.

Evidence suggests that rates of some major surgical procedures, such as Caesarean sections, have increased because of liability concerns.⁽¹³⁾ In complex patients, vaginal delivery may increase the risk of injury to the mother or fetus; injuries in this setting often lead to malpractice claims. Many obstetricians will choose to avoid potential risk by performing a Caesarean delivery, even when it is not indicated. For example, one study demonstrated that obstetricians who practice in areas with high malpractice claim frequency were 32% more likely to perform a Caesarian delivery than similar doctors practicing in lower risk environments.⁽¹³⁾

In addition, given high rates of malpractice claims, many specialists have closed their practices, stopped performing high-risk procedures (e.g., spine or neck surgery), or reduced their care of high-risk patients (patients who are perceived by the physician to present challenging diseases and are more likely to suffer complications).⁽¹⁴⁾ This increasing avoidance behavior (negative defensive medicine) is contributing to a situation in which many smaller towns and cities have little or no access to medical specialists. For example, more than 48% of Massachusetts physicians surveyed in 2007 reported that they currently alter or limit their day-to-day practice activities because of the fear of being sued.⁽¹⁴⁾

Considering the case presented and the data mentioned above, defensive medicine is likely quite common, contributes substantially to rising health care costs, and is a threat to patient safety in multiple ways. How can physicians stem the tide of defensive medicine and practice medicine and surgery in a patient-centered fashion based on the evidence? One might consider Clinical Practice Guidelines (CPGs). In 1989, the predecessor to the Agency for Healthcare Research and Quality (AHRQ) was created within the Department of Health and Human Services (DHHS). Among other things, its purpose was to promote the development and certification of CPGs. Since then, the profession has witnessed an explosion of guidelines from many different sources. A full discussion of developing and employing practice guidelines is beyond the scope of this commentary. Nonetheless, implementing such guidelines within health care systems may allow providers to follow clear pathways for diagnostic tests and treatments.

Perhaps if the patient in this case was treated according to an official CPG or national standard of care (consider the American College of Radiology Appropriateness Criteria ^[15] as an example), the physicians involved would not have felt the need to practice defensive medicine, and the patient would have obtained only one abdominal scan as opposed to 12. One can envision an environment in which a patient with abdominal pain but no other findings (of an infection or other abdominal catastrophe) could be reassured and managed with pain control, the physicians protected from liability through their guideline-concordant practice, and the patient protected from a clinically unnecessary CT scan. Such a world is unlikely to be

seen soon, but creating it will be a key intervention if we are to promote safe and efficient health care.

Take-Home Points

- Defensive medicine is a major driver of increasing health care costs.
- 80%-90% of doctors practice defensive medicine.
- Defensive medicine is a threat to patient safety: the patient in this case received doses of radiation similar to those who survived the atomic bomb.
- The creation of national CPGs and the creation of a national standard of care offer a powerful strategy to avoid the practice of defensive medicine.

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