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## The Paradoxes of Defensive Medicine

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# THE PARADOXES OF DEFENSIVE MEDICINE

*Michael J. Saks and Stephan Landsman*<sup>†</sup>

## ABSTRACT

For decades, “defensive medicine” has been the leading argument driving reforms of medical malpractice laws throughout the United States. Defensive medicine is the presumed practice of administering excessive tests and treatments as a stratagem for reducing healthcare providers’ risk of malpractice liability, despite the absence of any expected benefit for the patient. The practice is widely believed to exist throughout American healthcare as a response to fears of malpractice litigation, and thought to be enormously wasteful of healthcare dollars. In consequence, it has become a justification for law reforms insulating the healthcare industry from tort liability. These claims are promoted by the healthcare industry even though they imply that most providers routinely engage in healthcare fraud and violate their own ethical rules. We review the evidence behind these beliefs—including direct physician surveys, clinical scenario studies, and multivariate analyses of actual case data—and find little support and numerous paradoxes. The validity *vel non* of the defensive medicine narrative has implications for law and legal policy, as well as healthcare economics and patient safety.

## CONTENTS

ABSTRACT .....	25
CONTENTS .....	25
INTRODUCTION .....	26
I. A CONTRIVANCE FOR ADVOCACY? .....	27
A. <i>Healthcare Expenditures and Revenues</i> .....	27
B. <i>Iatrogenic Injuries and Deaths</i> .....	29
C. <i>Making an Excellent Situation Better</i> .....	34
II. WHY COMMIT AND WHY ADMIT? .....	37

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A. *Why Engage in Defensive Medicine?* .....37  
B. *When is Defensive Medicine Actually Defensive?*.....41  
C. *Why Would Anyone Admit to Engaging in Defensive Medicine?* .....44  
III. DOES DEFENSIVE MEDICINE ACTUALLY OCCUR? .....49  
A. *Direct Physician Surveys*.....53  
B. *Clinical Scenario Surveys* .....59  
C. *Multivariate Statistical Analyses* .....62  
    1. *Studies and Their Findings: Cesarean Sections* ...65  
    2. *Studies and Their Findings: Cardiac and Other Medical Procedures* .....66  
    3. *One “Almost Quasi-Experiment”* .....73  
DISCUSSION .....75

## INTRODUCTION

Risks of harm to patients present a broad array of problems and possible solutions to the existing law and current healthcare system.<sup>1</sup> Aside from medical malpractice litigation itself, perhaps nothing is as controversial as “defensive medicine.” Defensive medicine is almost universally regarded as a dreadful problem: a bane of the healthcare system, an evil committed by healthcare providers, suffered by patients, paid for by all of society, and blamed on the tort system.<sup>2</sup> Its causes and consequences, as well as its existence, are widely accepted with little question.<sup>3</sup>

In general terms, defensive medicine can be thought of as the practice of ordering medically unnecessary tests and performing needless procedures for purposes unrelated to the well-being of patients. Rather, it is “employed explicitly for the purposes either of averting a possible lawsuit or [if a lawsuit were filed] of providing appropriate documentation that a wide range of tests

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1. *See, generally*, MICHAEL J. SAKS AND STEPHAN LANDSMAN, CLOSING DEATH’S DOOR: LEGAL INNOVATIONS TO STEM THE EPIDEMIC OF HEALTHCARE HARM (forthcoming).
  2. *See, e.g.*, M. Sonal Sekhar & N. Vyas, *Defensive Medicine: A Bane to Healthcare*, 3 ANNALS MED. HEALTH SCI. RES. 295, 296 (2013).
  3. *See e.g.*, Laura D. Hermer and Howard Brody, *Defensive Medicine, Cost Containment, and Reform*, 25 J. OF GEN. INTERNAL MED. 470, 470 (2010).

and treatments has been used in the patient's care."<sup>4</sup> One needn't be a medical expert to recognize this as a "deviation from sound medical practice."<sup>5</sup>

A generation ago, during a panel discussion about "public discontent" with tort law, one participant asked, "[W]hat about the problem of defensive medicine? The general counsel of a New York hospital told me that from 15 percent to 25 percent of their services are done solely to provide a possible defense in a lawsuit."<sup>6</sup> In response, another panelist posed the naked emperor question: "I would like to know where can we go for documentation of defensive medicine? Where are the independent studies that show us what defensive medicine really is—beyond a catch phrase, what it means in reality, and how we can evaluate it? Where can we go beyond the assertions of interested parties?"<sup>7</sup>

Indeed. How do we actually know anything about it? How was the phenomenon of defensive medicine discovered? By whom? What is the evidence for it, for its costs, that it even exists? Do we have answers yet? How do we know that defensive medicine is an economic and behavioral discovery, rather than a rhetorical discovery?

## I. A CONTRIVANCE FOR ADVOCACY?

### A. *Healthcare Expenditures and Revenues*

That "defensive medicine" is a useful trope for healthcare industry lobbyists can be readily understood. Beyond this, as will be demonstrated, little else about defensive medicine is clear. The

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4. Laurence R. Tancredi & Jeremiah A. Baroness, *The Problem of Defensive Medicine*, 200 SCI. 879, 879 (1978); *Medicine*, STEDMAN'S MEDICAL DICTIONARY (28th ed. 2005) ("[D]iagnostic or therapeutic measures conducted primarily as a safeguard against possible malpractice liability"); Frank A. Sloan & John H. Shadle, *Is There Empirical Evidence for "Defensive Medicine"? A Reassessment*, 28 J. HEALTH ECON. 481 (2009) (describing defensive medicine as care for which expected cost exceeds expected benefit).
  5. David M. Studdert et al., *Defensive Medicine Among High-Risk Specialist Physicians in a Volatile Malpractice Environment*, 293 JAMA 2609, 2609 (2005).
  6. Richard Abel et al., *Public Discontent: The Debate Goes Beyond Tort Law; It's About Lawyers*, 81 ABA J. 70, 72 (1995) (quoting Philip Howard).
  7. *Id.* (quoting Stephen Daniels).

lobbyist's goal is to bring about changes in law that advantage the client industry by increasing its revenues or reducing its costs. From that perspective, the chief problem with the medical-malpractice system is that its direct economic cost is relatively small. The total amount of malpractice insurance premiums collected (from doctors, hospitals, and other providers) reflects most of the costs required for the defense of any and all claims: compensation payments, legal fees, profits for insurance companies, administrative costs, and anything else.<sup>8</sup> That total represents one quarter of one percent of all expenditures on healthcare; that is, \$9.2 billion out of \$3.5 trillion.<sup>9</sup> Placed in the context of liability insurance for all U.S. industries, that \$9.2 billion constitutes only 2.4% of all the liability insurance premiums paid for all activities in the U.S.<sup>10</sup> At the same time, the healthcare industry collects 17.9% of our nation's GDP while causing more serious accidental injuries and deaths than all other human activity combined.<sup>11</sup>

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8. We say "most of the costs" because some very large healthcare organizations, and some government facilities, self-insure; thus, their liability expenditures are not reflected in the insurance data we cite. See *Understanding Medical Malpractice Insurance*, INS. INFO. INST., <https://www.iii.org/article/understanding-medical-malpractice-insurance> [<https://perma.cc/PY22-ZRF2>] (last visited Nov. 6, 2019) ("Medical professionals employed by federal agencies, such as the U.S. Department of Veterans Affairs, do not need malpractice coverage since the federal government self-insures against liability claims. State and local governments in some instances may also provide liability protection for medical employees.").
  9. Data from 2017; malpractice premiums from *Best's Rankings U.S. Property/Casualty – 2018 Direct Premiums Written by Line*, A.M. BEST (June 18, 2019), [http://www.ambest.com/review/displaychart.aspx?Record\\_Code=274410](http://www.ambest.com/review/displaychart.aspx?Record_Code=274410) [<https://perma.cc/H2Q9-24RS>] [hereinafter *Best's Rankings*]; healthcare expenditures from *NHE Fact Sheet*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html> [<https://perma.cc/3APU-HURR>] (last updated Apr. 26, 2019).
  10. *Best's Rankings*, *supra* note 9.
  11. LINDA T. KOHN ET AL., TO ERR IS HUMAN: BUILDING A SAFER HEALTH SYSTEM 26 (2000). The 17.9% figure comes from *NHE Fact Sheet*, *supra* note 9. All else being equal, one might expect an industry that constitutes 17.9% of the economic activity of society to cause approximately 17.9% of the damage and pay approximately 17.9% of the cost of those damages (by way of its

Regarding cost, the U.S. healthcare industry charges more (while delivering poorer outcomes) than its counterparts in other modern nations.<sup>12</sup> For example, “spending began soaring [after 1980] beyond that of other advanced nations, but without the same benefits in life expectancy.”<sup>13</sup> Americans now pay thousands for the same services that cost hundreds to citizens of other advanced societies. We spend more than twice as much per capita than the average of all other modern nations, while our “health system generally delivers worse health outcomes than any other developed country.”<sup>14</sup> According to Elisabeth Rosenthal, formerly an emergency physician and currently editor-in-chief of Kaiser Health News, “[i]n the past quarter century, the American medical system has stopped focusing on health or even science. Instead it attends more or less single-mindedly to its own profits.”<sup>15</sup> Reforms prompted by notions of defensive medicine are part of that effort.

### *B. Iatrogenic Injuries and Deaths*

Despite the enormous expenditures Americans make for healthcare, preventable medical error and injury have emerged as extremely serious problems in the United States. Though the Centers for Disease Control and Prevention (CDC) does not make

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liability insurance). Yet, according to the numbers, the healthcare industry generates far more than its share of the damage—while paying only a bit more than a tenth of its “share” of victim reimbursement costs for those harms.

12. See, e.g., ELIZABETH DOCTEUR & ROBERT A. BERENSON, HOW DOES THE QUALITY OF U.S. HEALTH CARE COMPARE INTERNATIONALLY? TIMELY ANALYSIS OF IMMEDIATE HEALTH POLICY ISSUES 10 (2009); Irene Papanicolas et al., *Health Care Spending in the United States and Other High-Income Countries*, 319 JAMA 1024, 1025 (2018); NAT’L RESEARCH COUNCIL & INST. OF MED., U.S. HEALTH IN INT’L PERSPECTIVE: SHORTER LIVES, POORER HEALTH 91 (Steven H. Woolf & Laudan Aron eds., 2013).
13. Austin Frakt, *Medical Mystery: Something Happened to U.S. Health Spending After 1980*, N. Y. TIMES (May 14, 2018), <https://www.nytimes.com/2018/05/14/upshot/medical-mystery-health-spending-1980.html> [<https://perma.cc/VBM7-EEVY>].
14. ELISABETH ROSENTHAL, AN AMERICAN SICKNESS 3 (2017).
15. *Id.* at 1.

a point of separately counting deaths due to iatrogenic injuries<sup>16</sup> in its monitoring of the “leading causes of death in the United States,” if it did, annual deaths due to medical error by itself, separate from other causes of accidental death, would rank third after heart disease and cancer.<sup>17</sup> Makary and Daniel, combining major studies of several types,<sup>18</sup> calculated “a mean rate of death from medical error of 251,454 a year.”<sup>19</sup> The patient chart reviews employed in those studies resemble a net with holes large enough for many actual instances of adverse events<sup>20</sup> to slip through. Studies using more intensive approaches found that the number of serious injuries and deaths were fifteen-to-twenty times as great as found using only chart reviews.<sup>21</sup> Another technique, the Global Trigger, found as many as ten times the number of adverse events, and more than twice as many deaths, as the earlier records reviews.<sup>22</sup> Upon reviewing the four major Global Trigger studies available, James concluded in 2013 that deaths from “preventable

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16. STEVEN PEGALIS, *AMERICAN LAW MEDICAL MALPRACTICE* 130 (3rd ed. 2019) (“An iatrogenic injury is an injury produced in response to the physician/health care provider’s therapeutic effort.”).
  17. See Martin Makary & Michael Daniel, *Medical Error—The Third Leading Cause of Death in the U.S.*, *BMJ* (May 2016).
  18. See, e.g., KOHN ET AL., *supra* note 11, at 1.
  19. Makary & Daniel, *supra* note 17.
  20. “Adverse event” is the prevailing term of art in patient-safety research. An adverse event is defined as “an injury that was caused by medical management (rather than the underlying disease) and that prolonged the hospitalization, produced a disability at the time of discharge, or both.” Troyen A. Brennan et al., *Adverse Events and Negligence in Hospitalized Patients*, 324 *NEW ENG. J. MED.* 370, 370 (1991).
  21. See, e.g., Lori B. Andrews et al., *An Alternative Strategy for Studying Adverse Events in Medical Care*, 349 *LANCET* 309, 312-13 (1997); Lori Andrews, *Studying Medical Error in Situ: Implications for Malpractice Law and Policy*, 54 *DEPAUL L. REV.* 357, 357, 361-62 (2004); Knight Steel et al., *Iatrogenic Illness on a General Medical Service at a University Hospital*, 304 *NEW ENG. J. MED.* 638 (1981).
  22. See David C. Classen et al., ‘Global Trigger Tool’ Shows that Adverse Events in Hospitals May Be Ten Times Greater than Previously Measured, 30 *HEALTH AFF.* 581, 584 (2011).

adverse events” numbered somewhere between 210,000 and 440,000 per year.<sup>23</sup>

All of the above studies and reviews are limited to what happens to inpatients in non-federal, acute-care hospitals. Beyond those patients were others receiving diagnoses, treatments, and surgery in various other hospital and non-hospital settings, such as doctors’ offices, outpatient clinics, free-standing-surgical centers, skilled-nursing facilities, rehabilitation hospitals, and nursing homes. Regarding what happens in those settings, the research is far more limited. But a few facts provide clues. First, surgical visits occur as frequently—or perhaps more frequently—in outpatient settings as in hospitals.<sup>24</sup> Though surgeries in hospitals would, in the aggregate, involve more serious and risky conditions, the sheer number of surgeries that take place outside of hospitals<sup>25</sup> offers ample opportunity for preventable errors to occur. Second, approximately 1.8% of patients in skilled-nursing facilities died as a result of the care that they received, or needed but did not receive, in such facilities.<sup>26</sup> This would add approximately 90,000 deaths to the total.<sup>27</sup> Third, an IOM study of medication-related injuries concluded that three times as many harmful medication errors occur in healthcare delivered outside

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23. John T. James, *A New, Evidence-based Estimate of Patient Harms Associated with Hospital Care*, 9 J. PATIENT SAFETY 122, 127 (2013).
  24. Karen A. Cullen et al., *Ambulatory Surgery in the United States, 2006*, NAT’L HEALTH STATS. REP. NO. 11, at 5 (Sept. 4, 2009), available at <https://www.cdc.gov/nchs/data/nhsr/nhsr011.pdf> [<https://perma.cc/2WPZ-B67Q>]; See also, Judy Mathias, *AHRQ Releases Stats on Outpatient, Inpatient Surgeries*, OR MANAGER (June 2, 2017), <https://www.ormanager.com/briefs/ahrq-releases-stats-on-outpatient-inpatient-surgeries/> [<https://perma.cc/GB3Z-H9QQ>].
  25. NAT’L QUALITY FORUM, FINAL REPORT: NQF-ENDORSED MEASURES FOR SURGICAL PROCEDURES, 2015–2017, at 5 (2017) (“In 2006, an estimated 53.3 million surgical and nonsurgical procedures were performed in U.S. ambulatory surgery centers, both hospital-based and freestanding. In 2010, 51.4 million inpatient procedures were performed in nonfederal hospitals in the United States.”).
  26. OFF. OF INSPECTOR GEN., OEI-06-11-00370, ADVERSE EVENTS IN SKILLED NURSING FACILITIES: NATIONAL INCIDENCE AMONG MEDICARE BENEFICIARIES, at 19 (2014).
  27. *Id.*



of hospitals as inside them.<sup>28</sup> Fourth, nearly as many payments to compensate patients for iatrogenic harms were made for injuries that incurred in outpatient settings as in hospitals, two-thirds of which were for major injury or death.<sup>29</sup> The leading type of error in the outpatient setting is diagnostic.<sup>30</sup> Medication errors in the outpatient setting accounted for 1 out of 131 deaths compared to only 1 out of 854 inpatient deaths.<sup>31</sup> In light of these facts, however incomplete, a conservative estimate would be that as many preventable deaths and serious injuries occur in healthcare settings outside of hospitals as occur inside of hospitals.<sup>32</sup>

Finally, there is the problem of unnecessary care—subjecting patients to surgeries, tests, scans, medications, and treatments that offer patients no benefit while exposing them to risks of harm. The vast majority of these unnecessary treatments would not be captured by any of the studies designed to detect adverse events. Even unnecessary surgery, in and of itself inherently injurious, would be overlooked unless it resulted in an adverse event. The line dividing beneficial from useless testing and treatment is a difficult one to draw. But the work of the Dartmouth Institute, and other researchers, has found that about thirty percent of healthcare spending in the U.S. is *worthless* because it offers patients no benefit.<sup>33</sup> That implies that an enormous quantity of harmful or risky tests and procedures have gone uncounted by the usual studies of iatrogenic injury.<sup>34</sup>

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28. INST. OF MED., PREVENTING MEDICATION ERRORS (2006).
29. Tara Bishop et al., *Paid Malpractice Claims for Adverse Events in Inpatient and Outpatient Settings*, 305 J. AM. MED. ASS'N 2427, 2429 (2011).
30. *Id.* at 2427.
31. *Id.* at 2430.
32. Needless to say, all of those deaths and injuries create enormous costs. *See, e.g.*, John C. Goodman et al., *The Social Cost of Adverse Medical Events, And What We Can Do About It*, 30 HEALTH AFF. 590, 590 (2011).
33. Nicole Cafarella Lallemand, *Reducing Waste in Health Care*, HEALTH AFF. (Dec. 13, 2012), available at <https://www.healthaffairs.org/doi/10.1377/hpb20121213.959735/full/> [<https://perma.cc/C2D5-JD6C>].
34. *See generally id.*

In an effort to stimulate some appreciation of what those numbers mean, patient-safety experts have sometimes illustrated the incidence of preventable deaths resulting from medical errors in terms of jumbo-jet crashes.<sup>35</sup> Why? Because sudden concentrations of deaths attract the attention of the news media, government officials, and the public, while people dying quietly, one at a time, spread across the nation's healthcare systems, apparently are easy to overlook.<sup>36</sup> By that more unsettling measure, we could be seeing six or more jumbo jets crashing each day, every day of every year. Even the very lowest estimates would translate to one jumbo jet crashing approximately every third day.

Donald Berwick, former administrator of the Centers for Medicare and Medicaid Services (CMS) was quoted saying, “[i]n almost no other field would consumers tolerate the frequency of error that is common in medicine.”<sup>37</sup> Mark Chassin, President and CEO of the Joint Commission (formerly the Joint Commission on Accreditation of Healthcare Organizations (JCAHO)), made a similar point:

If the performance of certain high-reliability industries, whose standards of excellence we take for granted, suddenly deteriorated to the level of most health care services, some astounding results would occur. At a defect rate of 20 percent, which occurs in the use of antibiotics for colds, the credit card industry would make daily mistakes on nine

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35. A Boeing 747-400 with a three-class layout can hold 416 passengers plus crew. The first to use this analogy in the patient safety context was Lucian L. Leape, *Error in Medicine*, 272 JAMA 1851, 1851 (1994).
  36. For example, fear of terrorism within our borders has captivated our media. We pay close attention to those risks and we invest large sums to prevent that source of harm to our citizens. The number of fatalities from terrorism, inside the U.S., from 2002 through 2016, however, was just 190 people. See ERIN MILLER & MICHAEL JENSEN, FACT SHEET, AMERICAN DEATHS IN TERRORIST ATTACKS, 1995–2016, NAT’L CONSORTIUM FOR THE STUDY OF TERRORISM AND RESPONSES TO TERRORISM (Nov. 2017), available at [http://www.start.umd.edu/pubs/START\\_AmericanTerrorismDeaths\\_FactSheet\\_Nov2017.pdf](http://www.start.umd.edu/pubs/START_AmericanTerrorismDeaths_FactSheet_Nov2017.pdf) [<https://perma.cc/P99W-7QLU>].
  37. Reed Abelson, *In Bid for Better Care, Surgery with a Warranty*, N.Y. TIMES (May 17, 2007), <https://www.nytimes.com/2007/05/17/business/17quality.html> [<https://perma.cc/PZ4Z-4REN>].

million transactions; banks would deposit 36 million checks in the wrong accounts every day; and deaths from airplane crashes would increase one thousand-fold.<sup>38</sup>

As Hyman and Silver comment, “[a]n error rate of 20% would be intolerable in the business settings identified, but error rates as high as 79% have been observed in health care.”<sup>39</sup>

In sum, the incidence of iatrogenic injury and death is enormous, while the cost to the healthcare industry (in terms of compensation of the victims) is remarkably modest. Can such a favorable gain-loss profile be made even better?

*C. Making an Excellent Situation Better*

Ironically, an industry that pays proportionately so little to insure itself against the cost of accidents is the same industry that generates more accidental death and injury (as a byproduct of its work) than the combined total of all other human activity in the nation.<sup>40</sup> If the industry causing the harm isn’t paying for the losses that it negligently produces, then who is? The bulk of these losses are externalized onto victims and their families, first-party health insurers, and taxpayers, through government insurance programs.

How can a lobbyist persuade a legislature to help make this already highly favorable situation even more favorable to the industry? Answer: By turning the relatively small cost of the malpractice liability system into a far larger number. In order to accomplish this, lobbyists turn to the concept of defensive medicine. Healthcare providers, mostly physicians and hospitals—so the argument goes—are so afraid of becoming defendants in malpractice lawsuits that they lard needless tests

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38. Mark R. Chassin, *Is Health Care Ready for Six Sigma Quality?*, 76 THE MILBANK Q. 565, 566–67 (1998); *See also* Mark R. Chassin, *High-reliability Health Care: Getting There from Here*, 91 THE MILBANK Q. 459, 480 (2013).

39. David Hyman & Charles Silver, *The Poor State of Health Care Quality in the U.S.: Is Malpractice Liability Part of the Problem or Part of the Solution?*, 90 CORNELL L. REV. 893, 949 (2005) [hereinafter *Hyman & Silver—2005*].

40. Katherine Baicker & Amitabh Chandra, *Defensive Medicine and Disappearing Doctors?*, 28 REG. 24, 28 (2005) [hereinafter *Baicker & Chandra—Disappearing Doctors*].

and procedures onto the nation's healthcare bill.<sup>41</sup> No one knows how much all of these wasteful tests and procedures really cost us, but speculative amounts are offered by proponents who, given the nature of their assignment, reach for the largest numbers they can assert short of triggering disbelief or laughter. The most extreme of those imaginary numbers transforms the approximately one-quarter of one percent of healthcare costs into something a legislator might be persuaded to worry about.

Various estimates have been advanced. Philip Howard, founder of Common Good, an organization which promotes the idea of removing medical malpractice disputes from conventional courts, floated the figure of \$100 billion in 2003.<sup>42</sup> In 2018 dollars,<sup>43</sup> that number grows to \$137 billion. His estimate was flayed as "grossly exaggerated" by Hyman and Silver.<sup>44</sup> Undeterred, others outbid him. A 2003 Health and Human Services (HHS) report gave figures of \$70–126 billion,<sup>45</sup> which is a range of \$96–173 billion in 2018 dollars. The American Tort Reform Association asserted annual-defensive-medicine expenditures of \$200 billion,<sup>46</sup> which is \$210 billion in 2018 dollars. Topping that, in 2014, the

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41. *See, e.g.*, Tancredi & Baroness, *supra* note 4, at 879; Defensive Medicine and Medical Malpractice: Hearing before the Committee on Labor and Human Resources, United States Senate, 98th Cong., 2nd Sess. (July 10, 1984); R.E. Anderson, *Billions for Defense: The Pervasive Nature of Defensive Medicine*, 159 ARCHIVES OF INTERNAL MED. 2399, 2399 (1999).
  42. Philip K. Howard, *Legal Malpractice*, WALL ST. J. (Jan. 27, 2003), <https://www.wsj.com/articles/SB1043634286859254944> [<https://perma.cc/XXC9-WYQV>].
  43. *Inflation Calculator*, U.S. INFLATION CALCULATOR, <https://www.usinflationcalculator.com/> [<https://perma.cc/E2PE-M7NL>] (last visited Nov. 24, 2019).
  44. David A. Hyman & Charles Silver, *Believing Six Improbable Things: Medical Malpractice and Legal Fear*, 28 HARV. J.L. & PUB. POL'Y 107, 113–14 (2004).
  45. U.S. DEP'T HEALTH HUM. SERVS., ADDRESSING THE NEW HEALTH CARE CRISIS: REFORMING THE MEDICAL LITIGATION SYSTEM TO IMPROVE THE QUALITY OF HEALTH CARE 11 (2003), available at <https://aspe.hhs.gov/system/files/pdf/72871/medliab.pdf> [<https://perma.cc/AAN8-8TWZ>].
  46. *Health Cost Containment and Efficiencies*, NAT'L CONF. OF ST. LEGIS. (Oct. 2011), <http://www.ncsl.org/portals/1/documents/health/MedicalMalReform-2011.pdf> [<https://perma.cc/ZD99-FCZT>].

healthcare economics firm BioScience Valuation put the amount above \$480 billion annually.<sup>47</sup> And Jackson Healthcare, a healthcare organization based in Miami, did even better, with a figure of \$650–\$850 billion,<sup>48</sup> which could be as little as \$713 billion, or as much as \$933 billion, in 2018 dollars. For policymakers looking for a solution to America’s exorbitant healthcare costs, these numbers attract attention.<sup>49</sup>

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47. Wayne Oliver & Jeffrey Segal, *To Reduce Healthcare Costs Eliminate, Don't Reform, the Malpractice System*, THE HILL (Oct. 23, 2014), <http://thehill.com/blogs/congress-blog/healthcare/221533-to-reduce-healthcare-costs-eliminate-dont-reform-malpractice> [<https://perma.cc/Z9WR-ZJ22>].
48. *See Physician Study: Quantifying the Cost of Defensive Medicine*, JACKSON HEALTHCARE, <https://jacksonhealthcare.com/media-room/surveys/defensive-medicine-study-2010> [<https://perma.cc/76BJ-2A3N>] (last visited Nov. 8, 2019) [hereinafter *Jackson Healthcare Study #1*]; *Physicians on Medical Liability Reform Options: An Online Quantitative Research Study*, JACKSON HEALTHCARE (Dec. 5, 2012), [https://jacksonhealthcare.com/wp-content/uploads/2018/PDF/phys\\_on\\_med\\_liability\\_reform\\_112612\\_weighted\\_by\\_specialty.pdf](https://jacksonhealthcare.com/wp-content/uploads/2018/PDF/phys_on_med_liability_reform_112612_weighted_by_specialty.pdf) [<https://perma.cc/T44C-XK2T>] [hereinafter *Jackson Healthcare Study #2*]. Their figures were arrived at by asking doctors to “guestimate” what percentage of the procedures that they and their colleagues order were motivated by concerns about malpractice litigation. Their average responses were twenty-six to thirty-four percent, which, when multiplied by the total national healthcare bill, produces those numbers. This guestimate was picked up by then-Congressman (and later, Secretary of HHS, briefly in 2017) Tom Price and repeated in a press release. Tom Price, *Gallup: 26% of Health Care Dollars Spent to Fend Off Trial Bar*, REPUBLICAN STUDY COMM. (Feb. 22, 2010), <https://rsc.woodall.house.gov/news/document/single.aspx?DocumentID=171421> [<https://perma.cc/L2G5-GCUU>] (“[P]hysicians estimated that 21 percent of everything they do can be attributed to the practice of defensive medicine.”).
49. Healthcare industry leaders and lobbyists have already had considerable success persuading legislatures to adopt a variety of malpractice tort reforms. Most of these reforms are aimed at reducing the number of patients who can bring claims, making the traditionally tiny proportion of injury victims who do so even tinier, and to reduce the amount of compensation that can be received by those whose claims prevail. Overall, the reforms have succeeded in cutting the number of malpractice claims by nearly two-thirds over the past several decades. *See* Myungho Paik et al., *The Receding Tide of Medical Malpractice Litigation: Part I – National Trends*, 10 J. EMPIRICAL LEGAL STUD. 612, 612 (2013); *See also*, Michelle Mello et al., *The Medical Liability Climate and Prospects*

As explained in the margin, those numbers come from shaky foundations. But if defensive medicine actually exists in something like the form and extent usually asserted, then it not only wastes vast resources, it also adds to the dangers confronting patients: they are subjected to needless tests, radiation, medication, sometimes surgery, and other low-value (or no-value) medical care. By calming doctors' fears, medical malpractice reform would arguably prevent hundreds of billions of dollars of worthless healthcare expenditures and protect patients from the risks associated with unnecessary and excessive healthcare.

## II. WHY COMMIT AND WHY ADMIT?

The reasons for engaging in defensive practices seem obvious at first. The healthcare industry is organized in a way that loads as much as possible of the insurance-cost burden of iatrogenic injuries onto physicians, even when much of the cause and the capability to prevent is within the control of larger organizational units. If you are a provider on whom that burden personally falls, then you understandably want to do something to lighten—or avoid—the burden.

### A. *Why Engage in Defensive Medicine?*

Imagine that you could reduce the chances of your house burning down by (1) spending someone else's money (for example, your clients', their insurers', or the taxpayers' money), and (2) paying yourself a bonus for taking the trouble to spend those other people's money. Some or many homeowners would probably do this. For medical malpractice, the analogy proceeds like so: The greater a physician perceives the risk of a malpractice lawsuit

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*for Reform*, 312 JAMA 2146 (2014). A review of the empirical research on the effects of these reforms found that damage caps have had the greatest impact: They have been found to produce “substantial savings” on payments to victims and to have imposed a “modest restraint on growth of malpractice premiums.” Allen Kachalia & Michelle M. Mello, *New Directions in Medical Liability Reform*, 364 N. ENG. J. MED. 1564, 1568 (2011). More than half of the states have adopted limitations of one form or another on awards of non-economic damages; some have done so for total damages (economic as well as so-called non-economic). These caps have reduced mean payment per claim by as much as forty percent. See FRANK A. SLOAN & LINDSEY M. CHEPKE, *MEDICAL MALPRACTICE* (2008).

to be and the more tests and other procedures that the physician orders, then the more money the physician and the industry get to charge and the more the risk of being sued is reduced.<sup>50</sup> The desirability of that practice, at least for the practitioner, seems beyond debate. Wouldn't it be crazy not to?

But perhaps the self-serving benefits of defensive medicine are not as clear as they first seem. To begin with, how are physicians to know which actions actually will be protective? There is little or no empirical evidence as to *which* actions that are medically useless for patients will nevertheless reduce the risk of a malpractice claim being initiated.

Moreover, how can defensive practices help when one of the most-cited reasons for defensive practices is said to be that patients and the litigation process are highly unpredictable?<sup>51</sup> Paradoxically, it appears that engaging in defensive practices bespeaks a belief in the existence of patient and legal-system predictability—the alleged absence of which is a major reason for engaging in defensive practices. Alternatively, if the defensive practice is effective at reducing the risk of lawsuits by reducing the risk of harmful error, then it's not a defensive practice—it's good medical care.

Perhaps defensive practices are the product of superstition, both in a psychological and anthropological sense. Superstitious behavior is found in all societies and cultures.<sup>52</sup> The noted anthropologist Bronislaw Malinowski, while studying the people of the Trobriand Islands, made a discovery about the causes of superstitious behavior.<sup>53</sup> Malinowski observed that the islanders

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50. Ann G. Lawthers et al., *Physicians' Perceptions of the Risk of Being Sued*, 17 J. HEALTH POL. POL'Y & L. 463, 470, 476, 478 (1992).

51. See, e.g., David M. Studdert and Michelle M. Mello, *When Tort Resolutions Are "Wrong": Predictors of Discordant Outcomes in Medical Malpractice Litigation*, 36 J. LEGAL STUD. 547 (2007) ("This pronouncement of the tort system's inaccuracy in matching compensation awards to the merits of claims has become a staple in policy debates over medical liability reform. Assertions that the system is a lottery in which compensation awards are little better than random are commonly heard from the medical community and others who advocate far-reaching reforms").

52. BRONISLAW MALINOWSKI, *MAGIC, SCIENCE, AND RELIGION* 29–32 (Joseph Needham ed., 1925).

53. *Id.* at 30.

had no superstitions associated with performing activities in which the relation of actions to outcomes was predictable.<sup>54</sup> Activities that were unpredictable and carried the risk of harm or loss, however, were accompanied by superstitious practices.<sup>55</sup> Fishing in the lagoons yielded a predictable amount of fish and was safe, and to this activity no magic or superstitions were attached.<sup>56</sup> Fishing in the ocean, on the other hand, offered the chance of making an especially large haul of fish, but also the risk of coming home empty-handed (or not coming home at all): Ocean fishing was accompanied by superstitions and magic.<sup>57</sup> George Gmelch identified a similar pattern in our own society: the rituals of baseball.<sup>58</sup> According to Gmelch, baseball players tend not to have superstitions in connection with fielding (which they accomplish successfully 98.4% of the time); their superstitions cluster around the less predictable activity of batting (which they accomplish successfully only 24.8% of the time).<sup>59</sup>

Perhaps something similar is true of the doctors who engage in defensive medicine. Because lawsuits against doctors are so rare relative to the number of patient contacts—and still rare even when a doctor has, in fact, committed actionable-medical negligence<sup>60</sup>—a doctor might correlate *almost any behavior* (albeit in an illusory way) with the prospect of not being sued.<sup>61</sup> For

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54. *Id.* at 31.

55. *Id.*

56. *Id.* at 32.

57. *Id.*

58. George Gmelch, *The Rituals of Baseball*, WASH. POST (July 16, 1978), <https://www.washingtonpost.com/archive/opinions/1978/07/16/the-rituals-of-baseball/520382d5-2b17-4480-8574-442f380a6c00/> [https://perma.cc/684K-XUUE].

59. *See id.* The percentages are the overall averages for all players on all teams in major league baseball for the 2018 season, and they roughly correspond to Gmelch's findings. *Cf.* 2018 MLB Team Statistics, BASEBALL REF., <https://www.baseball-reference.com/leagues/MLB/2018.shtml> [https://perma.cc/WKGG-2PXB] (last visited Feb. 21, 2020).

60. *See* Ashley M. Votruba & Michael J. Saks, *Medical Adverse Events and Malpractice Litigation in Arizona: By-the-Numbers*, 45 ARIZ. ST. L. J. 1537, 1551 (2013).

61. According to KevinMD, a well-known weblog for and curated by medical residents and physicians, doctors harbor many



example, ordering an extra CT scan might seem to keep lawsuits away; then again, so might wearing a protective necklace of garlic bulbs. But coincidence is not even correlation: errors and harm that sometimes produce a malpractice lawsuit most of the time do not.<sup>62</sup> And a lawsuit, whatever its disposition, is a dreaded experience. Nothing is dependably known (that is, evidence-based) to reduce that very small risk to an even smaller risk.<sup>63</sup> So, perhaps, defensive practices arose to provide a *feeling* of control over an uncontrollable situation. That is what all humans tend to do when faced with high stakes and uncontrollable risks—not just Trobriand Island fishermen and baseball players.<sup>64</sup>

Though evidence that defensive practices reduce lawsuits is quite scarce, *belief* that defensive practices fend off lawsuits is said to be common.<sup>65</sup> Eventually, perhaps, defensive practices

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superstitions indeed. See Elizabeth Breuer, M.D., *Medical resident superstition and black clouds*, KEVINMD (Oct. 22, 2010), <https://www.kevinmd.com/blog/2010/10/med> [<https://perma.cc/VLT5-HZ5Q>]; See also 911Doc, MD, *7 favorite ER superstitions*, KEVINMD (Dec. 12, 2010), <https://www.kevinmd.com/blog/2010/12/favorite-er-superstitions.html> [<https://perma.cc/GX3E-XTMM>].

62. PAUL C. WEILER ET AL., A MEASURE OF MALPRACTICE: MEDICAL INJURY, MALPRACTICE LITIGATION, AND PATIENT COMPENSATION 73 (1993) (finding that, on average, fewer than three legal claims are filed for every 100 negligent adverse events); See PATRICIA M. DANZON, MEDICAL MALPRACTICE: THEORY, EVIDENCE, AND PUBLIC POLICY 22, 23 (1985); Marlynn L. May & Daniel B. Stengel, *Who Sues Their Doctors? How Patients Handle Medical Grievances*, 24 LAW & SOC'Y REV. 105, 118 (1990) (studying why negligently injured patients rarely sue); TOM BAKER, THE MEDICAL MALPRACTICE MYTH 3 (2005) (reviewing similar findings).
63. The first (and perhaps only) study to find any protective effect for providers is said to be that of Anupam B. Jena et al., *Physician Spending and Subsequent Risk of Malpractice Claims: Observational Study*, 351 BMJ h5516 (2015); See Molly Walker, 'Defensive Medicine' Pays Off, Study Suggests, MEDPAGE TODAY (Nov. 5, 2015), <https://www.medpagetoday.com/practicemanagement/medicolegal/54498> [<https://perma.cc/8JR9-PBVQ>].
64. See generally STUART VYSE, BELIEVING IN MAGIC: THE PSYCHOLOGY OF SUPERSTITION (2013).
65. Aaron Carroll, *Defensive Medicine Isn't So Cut and Dry*, THE INCIDENTAL ECONOMIST (Feb. 8, 2013, 8:55 AM), <https://theincidentaleconomist.com/wordpress/defensive-medicine-isnt-so-cut-and-dry/> [<https://perma.cc/8LX6-KWN6>].

become part of the folklore of the healthcare industry, and not just something that a few individuals decide to do of their own accord. Physicians and other providers are advised by teachers or colleagues, and are also inundated with reading materials, suggesting that one or another kind of self-protection might help.<sup>66</sup>

Furthermore, lawyers sometimes advise physicians on how to legally practice “safe” medicine. A number of years ago, one of your authors attended a meeting of a medical school and its teaching hospital on the topic of medical malpractice. At this large, well-attended gathering, one of the speakers was the hospital’s lawyer, who previously had been that state’s attorney general. One piece of “advice” that he offered to the assembled medical students, faculty, and staff was that, if in doubt, they should deliver babies by cesarean section. Why? *Simple*, he explained: *I’d much rather defend a lawsuit for a needless cesarean in which the baby came out healthy, than a case for the failure to perform one that resulted in a damaged baby.*<sup>67</sup>

*B. When is Defensive Medicine Actually Defensive?*

Perhaps the logic of diagnosis and treatment<sup>68</sup> teaches a doctor that some actions will almost certainly reduce the risk of harm, and in turn, the risk of a lawsuit. But such obvious benefits to the patient—which, logically, are benefits to the doctor—make those actions strange candidates for inclusion in the category of defensive medicine. Keeping patients safe and healthy should be

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66. OFF. OF TECH. ASSESSMENT, OTA-H-602, DEFENSIVE MEDICINE AND MEDICAL MALPRACTICE, at 34 (July 1994), available at <https://ota.fas.org/reports/9405.pdf> [<https://perma.cc/AZU7-DHG7>] [hereinafter OTA-H-602].

67. C-sections carry their own risks to the mother, including postoperative adhesions, incisional hernias (which could require further surgery), and wound infections, with the rate of adverse outcomes being slightly greater than that of vaginal deliveries. See Aaron B. Caughney et al., *Safe Prevention of the Primary Cesarean Delivery*, AM. J. OF OBSTETRICS & GYNECOLOGY 179, 179–80 (Mar. 2014). Professor Saks waited in vain for someone in the audience to stand up and say something like: *We are the doctors, not you. We work for the patients, not for you. We are not going to practice medicine in a manner calculated to make life easier for our insurers and our lawyers.* But, no one uttered a word.

68. For a discussion on the diagnostic process, see generally IMPROVING DIAGNOSIS IN HEALTH CARE 119 (Erin Balogh et al. eds., 2015).

the central goal of the healthcare industry. Recall that the essential definition of defensive medicine is that it helps the doctor while doing little or no good for the patient. Where is the line that divides well-intended, low-value care from self-dealing and defensive practices?

Atul Gawande tells of the time that his own child, who had fallen down some stairs, was taken to an emergency room, examined, given a CT scan, observed, and cleared to go home. Gawande explains that he “bullied the doctor into admitting him” to the hospital for 24 hours and obtaining a repeat scan the next day; as expected, “the scan and the patient were fine.”<sup>69</sup>

Suppose that the ER doctor had ordered the extra care himself, without pressure from Gawande to do so (some in fact do<sup>70</sup>). Was the supposedly excessive caution “defensive”; or, was it the kind of care that a doctor would prefer for the doctor’s own family, but which is presumably cost-ineffective and therefore normally foregone? The inherent cost-ineffectiveness might make it wasteful, but can it be said to be “defensive”? Gawande’s story reminds us that nervous patients or families—even doctors themselves—sometimes want more care than what is thought to be necessary; and doctors sometimes comply with the patients’ wishes. But is *that* defensive medicine?

Gawande shared another example. Another surgeon was scheduled to remove a patient’s thyroid because it contained microcarcinoma—tiny, slow-growing cells that could, but were very unlikely to, become cancerous.<sup>71</sup> The patient wound up in Gawande’s office because the original surgeon was attending to his own health issues.<sup>72</sup> Gawande suggested an alternative course of treatment to the patient: the risk of cancer was minimal, the risks of harm from the surgery were significant, and life without

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69. Atul Gawande, *The Cost Conundrum*, NEW YORKER (May 25, 2009), <https://www.newyorker.com/magazine/2009/06/01/the-cost-conundrum> [<https://perma.cc/C6G5-LVG5>].

70. See, e.g., Perry Hookman, *In Defense of Defensive Medicine?*, DR. PERRY HOOKMAN BLOG (June 28, 2009), <http://drperryhookman.blogspot.com/2009/06/> [<https://perma.cc/65QB-Q4AH>].

71. Atul Gawande, *Overkill*, NEW YORKER (May 4, 2015), <https://www.newyorker.com/magazine/2015/05/11/overkill-atul-gawande> [<https://perma.cc/9QF8-CHUQ>] [hereinafter *Gawande—Overkill*].

72. *Id.*

a thyroid could be unpleasant.<sup>73</sup> Additionally, he explained that her thyroid could be monitored and, if the cells started to grow, could always be removed later.<sup>74</sup>

At this point in the narrative, one might begin to think that the patient was lucky to have crossed Gawande's path because, surely, he has convinced her to avoid a needless surgery. But the punchline of the story is that the patient couldn't bear the thought of even a miniscule risk of cancer and had her thyroidectomy anyway.<sup>75</sup>

Or consider this question, which one of us posed to his law-school seminar: What should a doctor do when a patient asks for a medication that the doctor knows will be useless for the patient's condition, but the patient is not convinced and insists on trying the drug anyway? A medical student (who was also a law student) in the class said that she would write the prescription that the patient wanted. The student explained that the patient will go elsewhere and find another doctor to write the prescription, so it would be better to keep the patient's business and try to guide the patient over time to more beneficial treatments. The student's response demonstrates that unnecessary treatment, with its waste and risks of harm, might not always be the doctor's fault—or desire. Indeed, patients sometimes manage to put themselves at risk and waste healthcare dollars, and their doctors merely go along.

While some presumptively defensive practices seem to benefit (or at the very least do not harm) patients, other defensive actions impose potential or actual harm, such as radiation, infection, falls, and harmful drug reactions. By increasing the risk of harm, these defensive practices increase the potential for a lawsuit—the very thing the doctor was hoping to avoid. So, from the provider's viewpoint, a tradeoff is being made: the same actions that might decrease the risk of a lawsuit in some ways simultaneously increase the risk in other ways.<sup>76</sup> Presumably, the tradeoff is seen by the provider as favoring the interests of the provider, otherwise the defensive action would not be taken.

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73. *Id.*

74. *Id.*

75. *Id.*

76. Nested within this cost-to-benefit judgment there is, no doubt, another query: the patient's benefit-to-risk judgement.

*C. Why Would Anyone Admit to Engaging in Defensive Medicine?*

It is one thing to engage in defensive practices, but quite another to admit to the deed. Why do so? After all, defensively ordering tests or treatments when the doctor believes that the procedures offer no, or minimal, prospect of benefitting the patient—but serve only the doctor’s self-interests—can be illegal as well as unethical. Billing for needless services is a form of healthcare fraud. The Medicare claim form, for example, requires providers to certify that the services shown on the form were medically indicated and necessary for the health of the patient.<sup>77</sup> If the services are, in the belief of the doctor, not medically necessary, the claim is false.

The principal gain of defensive medicine for the provider (i.e., protection from a lawsuit) is arguably a fraudulently-obtained benefit. A prosecutor who has evidence of such behavior could easily see criminality in it. If the prosecutor wanted to act, an obvious charge would be criminal fraud.<sup>78</sup> If the procedure exposes the patient to risk of injury, then the physician might also be charged with reckless endangerment.<sup>79</sup> If the defensive practice subjects the patient to wounds or radiation, then the prosecutor might see the crime of assault and battery—because the patient

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77. *CMS-1500, Health Insurance Claim Form*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://www.cms.gov/Medicare/CMS-Forms/CMS-Forms/Downloads/CMS1500.pdf> [<https://perma.cc/86U2-MSMP>] (last visited Feb. 24, 2020).

78. Fraud is a “knowing misrepresentation or knowing concealment of a material fact made to induce another to act to his or her detriment.” *Fraud*, BLACK’S LAW DICTIONARY (10th ed. 2014); see David A. Hyman, *Health Care Fraud and Abuse: Market Change, Social Norms, and the Trust “Reposed in the Workmen”*, 30 J. OF LEGAL STUD. 531 (June 2001); U.S. GOV’T ACCOUNTABILITY OFF., GAO-12-820, HEALTH CARE FRAUD: TYPES OF PROVIDERS INVOLVED IN MEDICARE, MEDICAID, AND THE CHILDREN’S HEALTH INSURANCE PROGRAM CASES (2012), available at <https://www.gao.gov/assets/650/647849.pdf> [<https://perma.cc/HNR2-EWZK>] [hereinafter GAO-12-820].

79. The crime of reckless endangerment consists of a perpetrator recklessly exposing a victim to a substantial risk of imminent death or physical injury. A needless biopsy, surgery, or perhaps even exposure to radiation could be viewed as constituting the requisite risk of harm. See, e.g., ARIZ. REV. STAT. §13-1201 (2019). A needless biopsy, surgery, or, perhaps, unnecessary exposure to radiation could constitute the requisite risk of harm.

was subjected to injury without having granted valid informed consent.<sup>80</sup>

Leaving aside civil or criminal liability, defensive medicine violates the principles of medical ethics.<sup>81</sup> According to the American Medical Association's (AMA) Code of Medical Ethics, one ethical precept of medicine is that, "[a] physician shall . . . be honest in all professional interactions."<sup>82</sup> Moreover, physicians are duty bound to report "to appropriate entities" colleagues they find "engaging in fraud or deception."<sup>83</sup> Most important, the model code instructs that "[a] physician shall, while caring for a patient, regard responsibility to the patient as paramount."<sup>84</sup> Defensive medicine turns all of this on its head: the interests of the physician are set above the interests of the patient by an act of fraud.

So, again, why admit to engaging in defensive medicine? If you were a physician and you realized that you routinely, intentionally practiced in ways that were unethical, illegal, universally condemned as wasteful of precious healthcare resources, a "deviation from sound medical practice,"<sup>85</sup> and potentially harmful to the patients who placed their trust in you—would *you* take every opportunity to proclaim your misdeeds from the rooftops and the op-ed pages?

In fact, there was a time not very long ago when doctors did not take kindly to the suggestion that they were practicing defensive medicine. The accusation was regarded as an insult, an accusation of misconduct, and the response was denial, not enthusiastic affirmation. Medical commentary in the early 1970s spoke of "the spectre of defensive medicine, with the connotation

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80. For valid informed consent, a physician would transparently divulge to the patient that the procedure the physician wishes to perform is expected to have no benefit to the patient but might benefit the doctor if patient care goes badly. *See* *Mohr v. Williams*, 104 N.W. 12, 13 (Minn. 1905).

81. *See generally* *AMA Principles of Medical Ethics*, AMA, <https://www.ama-assn.org/about/publications-newsletters/ama-principles-medical-ethics> [<https://perma.cc/J6VQ-7TQV>] (last visited Feb. 24, 2020).

82. *Id.*

83. *Id.*

84. *Id.*

85. Studdert et al., *supra* note 5, at 2609–2610.

that actions were motivated primarily by the desire to avoid malpractice liability,” and argued that it was not happening.<sup>86</sup>

Physician and attorney Don Harper Mills was part of an AMA Board of Trustees conference on medical costs in 1964.<sup>87</sup> It was his task to attempt to determine how much the malpractice litigation system was contributing to the costs of health care.<sup>88</sup> He found it easy “to establish the cost of [liability] insurance as a direct effect of malpractice litigation on health care, but . . . much more difficult to consider the indirect costs that physicians might induce through the mechanism of defensive medicine.”<sup>89</sup> He surveyed physicians and learned that about twenty-five percent of X-rays were, in the view of the doctors, unnecessary.<sup>90</sup> But the doctors said that they performed them not because of malpractice concerns, but in response to pressure from patients who had been injured in accidents and whose lawyers were preparing cases against motorists or others alleged to be responsible for the injuries.<sup>91</sup> As to laboratory tests, he found that no more than five percent were thought by doctors to be unnecessary, and of those, only a fraction were being ordered out of “medicolegal considerations.”<sup>92</sup>

Another study found “medicolegal factors” to be involved in only one percent of laboratory tests. Of those, defensive practice was not the main factor said to motivate the tests being ordered. The authors of that research added that, “this study was conducted shortly after a large increase in professional liability insurance costs . . . which was accompanied by extensive public and professional debate on the problem of malpractice litigation,”<sup>93</sup> to further support their conclusion that malpractice fears did not cause doctors to order needless tests.

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86. Frank W. Kiel, *Medical Malpractice Claims Against the Army*, 75 MIL. L. REV. 1, 9 n. 22 (1977).

87. Don Harper Mills, *Information Please*, 6 J LEGAL MED. 255, 256–257 (1985).

88. *Id.* at 257.

89. *Id.*

90. *Id.*

91. *Id.*

92. *Id.*

93. Bradley G. Wertman et al., *Why Do Physicians Order Laboratory Tests?*, 243 JAMA 2080, 2081 (1980).

A 1971 paper reviewed the literature of defensive practices, finding “the most significant allegation” to be that “the threat of malpractice litigation raises the cost of medical care by inducing physicians to overutilize diagnostic and treatment procedures.”<sup>94</sup> Citing half of a dozen studies, the review concluded that “the allegation that a physician responds to the increased threat of a malpractice suit by practicing defensive medicine has not been verified.”<sup>95</sup> Its own studies of physicians in North Carolina and California (conducted by asking physicians to respond to hypothetical scenarios) concluded that some defensive medicine was detected, but that “the practice is not extensive and does not have as significant an impact as previously alleged.”<sup>96</sup> Most of those engaged in what appeared to be defensive practices argued that whatever protection a test or treatment might offer the doctor was outweighed by the medical benefits it provided to patients. One interesting defensive practice that developed in response to the perceived threat of malpractice litigation was to keep more “detailed records of examinations and treatments.”<sup>97</sup> Most of the doctors in the study felt that the innovation of keeping careful patient records had medical as well as legal-defense benefits. Indeed, a 1974 article in the *Journal of the American Medical Association* argued that “[d]efensive medicine is good medicine.”<sup>98</sup> In short, doctors said they didn’t do it—until they started saying they do.

Today, the existence, magnitude, cost, and evils of defensive medicine are touted widely and loudly by the healthcare industry. In fact, most doctors *now* insist they and their colleagues *are* practicing defensive medicine; in reporting its survey findings, one large healthcare organization concluded that “[n]ine out of 10 physicians reported practicing defensive medicine . . . in an effort to avoid lawsuits.”<sup>99</sup> A follow-up study, by the Gallup Organization, found that 73 percent of physicians acknowledged

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94. Duke Law J. Editorial Bd., *The Medical Malpractice Threat: A Study of Defensive Medicine*, 1971 DUKE L. J. 939, 942 (1971).

95. *Id.* at 943.

96. *Id.* at 956–57.

97. *Id.* at 963.

98. Richard P. Bergen, *Defensive Medicine Is Good Medicine*, 228 J. AM. MED. ASS’N 1188, 1189 (1974).

99. *Jackson Healthcare Study #1*, *supra* note 48.



that “they had practiced some form of defensive medicine in the past 12 months,” and that such “[p]hysicians attribute 26 percent of overall healthcare costs to the practice of defensive medicine.”<sup>100</sup> In another study of 824 specialists in surgery, obstetrics, neurosurgery, emergency medicine and others, 93 percent reported practicing defensive medicine, such as ordering unnecessary CTs, biopsies, and MRIs, and prescribing excessive antibiotics.<sup>101</sup> A more recent study found that 91 percent of physicians believe that defensive medicine exists, resulting in the administration of “more tests and procedures than necessary.”<sup>102</sup> In a broader study of drivers of healthcare costs, many physicians—of various specialties—“identified defensive medicine as their primary reason for ordering additional tests, estimating that it was responsible for 20–50 percent of their orders.”<sup>103</sup> These facts don’t confirm whether or not physicians *actually* practice defensively on such a scale; they do, however, indicate that physicians seem to think that they do, or at least are eager to say that they do.

The spokespersons and lobbyists for the healthcare industry promote the existence and the impact of defensive medicine and do not hesitate to emphasize how terrible it is. They argue that among its worst evils is that it imposes a major burden on society by wasting healthcare dollars. They do not wonder whether it exists or not. Industry lobbyists insist that it does and, what’s more, they have a solution for it. Their remedy is (more) malpractice liability reforms to ease doctors’ fear of lawsuits, which will enable them to wean themselves from their defensive ways.<sup>104</sup>

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100. *Jackson Healthcare Study #2*, *supra* note 48.

101. Studdert et al., *supra* note 5, at 2612.

102. Tara Bishop et al., *Physicians’ Views on Defensive Medicine: A National Survey*, 170 ARCHIVES OF INTERNAL MED. 1081, 1081 (2010).

103. Jonas B. Green, *The Malpractice Muddle*, 29 HEALTH AFF. 2355, 2355 (2010) (aggregating results from various specialties, included surgeons, internists, anesthesiologists, family physicians, emergency physicians, and medical subspecialists).

104. *See* Anderson, *supra* note 41, at 2399–2400.

### III. DOES DEFENSIVE MEDICINE ACTUALLY OCCUR?

For serious researchers, the defensive-medicine hypothesis presents a challenging mystery: Does it now, or did it ever, actually exist? What has emerged from their research is a mosaic of inconsistent and contradictory findings, with most of the tiles in the mosaic simply missing. The main questions to be asked are: (1) Do healthcare providers really engage in defensive medical practices? (2) If so, *how much* is it done and how much *waste and harm* does it generate? And, if that amount is substantial, then (3) what effective and efficient steps could be taken to reduce the problem?

Currently, the best answer to the first two questions is that there is no answer, at least not any based on sound and sufficient data. As will become evident from our review of the research, *infra*, thoughtful researchers regard the answers as being remarkably elusive.<sup>105</sup> Their consensus belief is that, if defensive medicine exists, whatever its extent, the dollar cost of wasteful procedures attributable to defensive medicine is a thin shadow of what the industry's campaigners argue it is. Consequently, reforms of tort law are unable to make much of a contribution to bringing down America's unusually high healthcare costs.

Let's unpack those findings and conclusions. The essential challenge to researchers is that because multiple motives overlap and overlay each other, the research must find a way to disentangle a set of confounded motives. When a doctor orders a test or recommends a procedure, what has driven that choice? As discussed above, it could be self-protection, serving the needs of the patient, or the desire to make money. Under the fee-for-service model that has dominated American healthcare, it is axiomatic that the more services provided, the more services for which the industry can bill. As countless researchers, policy analysts, reformers, and commentators have pointed out, all of the incentives in the healthcare system—not just money, but medical training, professional norms, patient desires, and almost

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105. Yet, many of those same researchers emerge from their work exactly where they started—pretty sure that defensive medicine occurs; based, obviously, on something other than sound research evidence. It is as if they are saying “it's got to be there; we just can't find good evidence of it.” See Michael Frakes, *Defensive Medicine and Obstetric Practices*, 9 J. EMPIRICAL LEGAL STUD. 457, 461–62 (2012).

everything else—point toward doing more: test more, scan more, treat more.<sup>106</sup> Defensive medicine is only one of a number of causes of excessive and unnecessary care. How is one to separate the motivation of lawsuit fear from the numerous other forces that all push towards the same outcome?

How exactly does one define defensive medicine? If healthcare providers feel pressured to do medically desirable things to avoid malpractice—wash their hands, follow good medical practices, keep accurate patient records—is that “defensive”? Some believe that it is. If this is the case, however, then one could argue that the malpractice system is working as intended and producing desirable effects, since it has incentivized effective and safe medical practices. This can also work the other way around: Practices that have little value for patients, but that seemingly protect the doctor, might become routine practices. In that case, many practitioners would not realize that these were originally defensive tactics. Doctors using such procedures might think they are not acting defensively, but are instead just following standard practice, although what they are doing could still be understood as defensive practice. What if a doctor realizes that a given diagnostic or treatment procedure has potential value for the patient—and a potentially defensive benefit for the doctor? Is that dual-premised benefit “defensive,” or not?

In 1994, the congressional Office of Technology Assessment (OTA) proposed the following oft-employed definition of defensive medicine: “Defensive medicine occurs when doctors order tests, procedures, or visits, or avoid high-risk patients or procedures, primarily (but not necessarily solely) to reduce their exposure to malpractice liability.”<sup>107</sup> Others have developed polar definitions such as “positive” defensive medicine—“assurance behavior,” taking extra steps—and “negative” defensive

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106. See, e.g., *Gawande—Overkill*, *supra* note 71; Ity Shurtz, *Malpractice Law, Physicians’ Financial Incentives, and Medical Treatment: How Do they Interact?*, 57 J. L. & ECON. 1 (Feb. 2014) (finding that physicians are performing fewer procedures that incur expenses and increasing services that are deemed more profitable to execute; and, when procedures become more profitable to perform, the financial incentives tend to offset the malpractice liability concerns of providing the service); Jonathan Bergman et al., *Service Intensity and Physician Income: Conclusions from Medicare’s Physician Data Release*, 175 J. AM. MED. ASS’N: INTERNAL MED. 297, 298 (2015).

107. OTA-H-602, *supra* note 66, at 13.

medicine—“avoidance behavior,” refraining from treating certain patients or using certain procedures. Other factors in some definitions include whether the defensive practice is conscious or unconscious, or whether the action is taken solely or primarily for the doctor’s benefit rather than the patient’s.<sup>108</sup> The clearest definition is Sloan and Shadle’s purely economic analysis: “only care for which expected cost exceeds expected benefits” counts as defensive medicine.<sup>109</sup> Whether conduct is “defensive” or not will sometimes, or often, depend on the definitional lens through which the behavior is being viewed. Thus, one might want to take note of a researcher’s conceptual and operational definitions of defensive medicine as part of assessing whether a study and its findings succeed in answering policy questions of concern.

The studies that have been undertaken fall into three basic groupings. The first, “direct physician surveys,” simply ask providers what they do and why they do it.<sup>110</sup> The second, “clinical scenario surveys,” ask doctors how they would treat patients who present with various symptoms and histories. The doctors choose from a set of options what clinical actions they would take and to indicate what factors led to their choices. The third consist of “multivariate statistical analyses,” an assortment of complex analytics<sup>111</sup> of existing datasets. These tests might be able to reveal the impact of malpractice risk on actual utilization of medical services.

Each of these types of research, owing to its own particular strengths and limitations, has fallen short of providing sufficiently

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108. DIANE E. HOFFMAN & BRADLEY HERRING, REPORT TO THE MARYLAND HEALTH SERVICES COST REVIEW COMMISSION ON DEFENSIVE MEDICINE, at 3 (Feb. 15, 2015), available at <https://hscrc.maryland.gov/Documents/commission-meeting/2015/03-11/Defensive-Medicine-Final-Report-3-16-15.pdf> [<https://perma.cc/VDR6-H76B>].

109. Sloan & Shadle, *supra* note 4, at 481.

110. For example, “Does fear or threat of malpractice liability influence whether you use additional diagnostic or therapeutic procedures?” or, “How often do you practice defensive medicine?” *See, e.g.*, HAROLD J. BURSZTAJN ET AL., FEAR OF MALPRACTICE LIABILITY AND ITS ROLE IN CLINICAL DECISION MAKING (1991); *Jackson Healthcare Study #2*, *supra* note 48.

111. *See* O. Paliy & V. Shankar, *Application of Multivariate Statistical Analyses of Existing Datasets*, 25 MOL. ECOL. 1032, 1083 (2016) (demonstrating various multivariate statistical analyses in Box 1).

sound and complete answers to the most important questions about defensive medicine. One general problem that can haunt any type of study is the “file drawer problem.”<sup>112</sup> This problem is a consequence of an important type of publication bias wherein studies that find no effects—the data do not show that X causes Y—are less likely to be accepted for publication than those finding a measurable effect—the data support a conclusion that X causes Y. To illustrate the file drawer problem, imagine that a researcher hypothesizes that singing in the shower prevents cancer. The researcher carries out seventeen studies, all of which fail to show a protective relationship between singing and cancer. Those results wind up in the “file drawer”—if not the wastebasket. The eighteenth test yields the hypothesized results; they find a home in a journal. When others search the research literature to see whether singing protects against cancer, the one positive study will be found. The seventeen null findings will not be found. This kind of selection bias also means that the one finding that did get published likely was a false conclusion resulting from type I error.<sup>113</sup> When other researchers try to replicate the finding that singing prevents cancer, and they cannot replicate it, we have an instance of replication failure.<sup>114</sup>

For present purposes, the file-drawer problem means that, of equally well-done studies, those that find a measurable effect are more likely to have become part of the literature than those not finding an effect. Dim and potentially distorted as the light might be that this body of research casts, it is all that anyone has with which to answer the questions.

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112. Robert Rosenthal, *File Drawer Problem and Tolerance for Null Results*, 86 PSYCHOL. BULL. 638, 638 (1979).
113. In statistical-hypothesis testing, “type I error” is a rejection of the null hypothesis when the null hypothesis is true. In other words, it is a research conclusion that suggests that a relationship exists, when in reality it does not exist. *Type 1 Error*, STAT TREK, [https://stattrek.com/statistics/dictionary.aspx?definition=type\\_i\\_error](https://stattrek.com/statistics/dictionary.aspx?definition=type_i_error) [<https://perma.cc/L9MP-BHZG>] (last visited Nov. 23, 2019).
114. Theodore D. Sterling, *Publication Decisions and Their Possible Effects on Inferences Drawn from Tests of Significance—or Vice Versa*, 54 J. AM. STAT. ASS'N 30 (1959). This problem likely is one of the reasons for the “replication crisis” that is being experienced in biomedical, economic, and other areas of research, where published findings cannot be replicated. Research communities in various fields are hard at work trying to solve it.

*A. Direct Physician Surveys*

As we have seen, several decades ago, physicians responded to surveys asking about their defensive practices by denying that they engaged in them. Rather, they said, they ordered tests and procedures for reasons of sound medical practice. Sometime during the 1970s their answers began to turn around. Today, the same professional populations overwhelmingly insist that they *do* engage in defensive practices, generating high rates of reported defensive medical practice that, as noted earlier, sometimes reach above ninety percent.<sup>115</sup>

What such percentages mean is a bit mysterious. Perhaps the leap from low numbers to high numbers describes the reality of different times and different behavior. Or, perhaps, what has changed is the politically correct answer to the question. For strategic reasons, what was once a badge of shame has arguably become a badge of honor.<sup>116</sup> But their actual and reported actions—and their actual and reported rationales—are not always in synch. Survey respondents are quite capable of answering consequential questions strategically—often in line with their tribe’s current norms—rather than offering genuinely candid responses.<sup>117</sup> In the research business, this is known as “social

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115. See, e.g., Studdert et al., *supra* note 5, at 2612 (finding that ninety-three percent of physicians in high-risk specialties during a period of increasing insurance costs in one state reported that they engaged in defensive practices; one third of whom even admitted recommending unnecessary and invasive procedures); *Jackson Healthcare Study #1*, *supra* note 48 (finding ninety-two percent in an earlier survey conducted by Jackson alone); MASS. MED. SOC’Y, INVESTIGATION OF DEFENSIVE MEDICINE IN MASSACHUSETTS (2008) (finding that eighty-three percent of respondents reported that they engaged in defensive practices); *Jackson Healthcare Study #2*, *supra* note 48 (finding that seventy-five percent of surveyed physicians reported practicing defensive medicine primarily “to avoid being named in a potential lawsuit.”).

116. See, e.g., Matthew D. Adler, *Welfare Polls: A Synthesis*, 81 N.Y.U. L. REV. 1875, 1905 (2006) (discussing things to worry about in survey responses, among them that “the respondent is behaving strategically and not answering the question truthfully . . .”).

117. *Response Bias: Definition and Examples*, STATS. HOW TO (June 24, 2015), <https://www.statisticshowto.datasciencecentral.com/response-bias/> [<https://perma.cc/ZD9U-JK4F>]. This is not to say that survey research cannot be useful for some other purposes, such as asking someone to look at a product and declare whom they believe manufactured it (as in trademark-infringement litigation).

desirability bias.”<sup>118</sup> People want to look good to those whose opinions matter to them.

These are the most obvious methodological weaknesses of self-report surveys.<sup>119</sup> Others include: (1) low response rates, especially by busy professionals; (2) recall biases; (3) heuristic biases; and (4) questions that could not possibly elicit meaningful answers. We describe some of these.

Typically, owing to the time pressures on practitioners and the frequency of inquiries directed to them, physician surveys have low response rates.<sup>120</sup> The low response rates allow respondents with stronger feelings about the subject matter to be over-represented in the sample. Logically, if a survey receives few responses, and defensive practitioners disproportionately respond, then the resulting sampling bias will drive up the “average” amount of defensive practice reported.

Similarly, a variety of psychological distortions, chief among them the tendency to inaccurately recall an event, can play havoc with self-reports.<sup>121</sup> Even where respondents try their best to provide candid answers, instant recall of the choices they made

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*See, e.g.,* Shari Seidman Diamond, *Reference Guide on Survey Research*, FED. JUD. CTR., REF. MANUAL ON SCI. EVIDENCE, 359, 366 (3rd ed. 2011).

118. Ivar Krumpal, *Determinants of Social Desirability Bias in Sensitive Surveys: A Literature Review*, 47 *QUALITY & QUANTITY* 2025, 2025 (2013).
119. *Id.*
120. In reviewing direct physician surveys conducted up through the 1990s, OTA complained of response rates under fifty percent, which created unacceptable risks of unrepresentativeness and participation bias. OTA-H-602, *supra* note 66. Since then, response rates seem to have fallen further. For example, in the Massachusetts Medical Society Investigation of Defensive Medicine in Massachusetts, only 23.6 percent of sampled doctors responded. MASS. MED. SOC’Y, *supra* note 115. The survey by Jackson Healthcare consisted of “over 3000” physicians out of 138,686 invited to respond—a two-percent response rate. *Jackson Healthcare Study #1*, *supra* note 48. Conversely, David M. Studdert and colleagues were able to achieve a sixty-five percent response rate. Studdert et al., *supra* note 5, at 2610.
121. ROGER TOURANGEAU, LANCE J. RIPS & KENNETH RASINSKI, *THE PSYCHOLOGY OF SURVEY RESPONSE* 86, 125, 143–144 (2000). The balance of this paragraph are a few examples from a large catalog of such problems. *Id.*

in each case over a defined period of time, or mentally averaging them, can prove to be difficult or impossible. Efforts to provide answers suffer from unintentional cognitive biases. For example, when asked to estimate the frequency of occurrence of something, our minds equate the ease (or difficulty) of recall with higher (or lower) frequency. This is known to cognitive scientists as the “availability” heuristic. If survey respondents have heard others offer “guestimates,” then they too will tend to conform their own guestimates to those they have heard before. This is known as the heuristic of anchoring.<sup>122</sup>

Direct physician surveys typically pose vague or general questions; responses can hardly be any less vague or general.<sup>123</sup> Respondents typically are asked whether concerns about malpractice have caused them to practice more defensively.<sup>124</sup> Sometimes they are asked how frequently concerns about malpractice liability caused them to do so (“never, rarely, sometimes, often”).<sup>125</sup> The responses to such questions cannot

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122. In the classic experiment on this effect, a wheel of fortune was spun that (unbeknownst to the research participants) was set to stop randomly at either the number ten or sixty-five. Participants were asked whether the percentage of African nations in the U.N. was greater or smaller than that number. Then they were asked to estimate the percentage of nations in the U.N. that were African. Those participants whose wheel had stopped at ten generated lower estimates (twenty-five percent on average) than participants whose wheel stopped at sixty-five (forty-five percent on average). Amos Tversky & Daniel Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, 185 SCI. 1124, 1128 (1974).

123. GEORGE F. BISHOP, THE ILLUSION OF PUBLIC OPINION: FACT AND ARTIFACT IN AMERICAN PUBLIC OPINION POLLS 14 (2004) (commenting on “the fog of public opinion created by the ambiguity of language used in most survey questions. Ever since the inception of modern polling, survey researchers have struggled with the Achilles heel of their measuring instrument: the frequently vague meaning of survey questions”; noting “the penchant of many respondents for answering questions which have no meaning for them . . . .”; and noting that “[r]espondents answer vaguely worded questions in idiosyncratic ways.”).

124. Examples of the language can be found in OTA-H-602, *supra* note 66; Studdert et al., *supra* note 5, at 2610; *Jackson Healthcare Study #2*, *supra* note 48.

125. As to these issue-quantifying efforts, see N.C. Schaeffer, *Hardly Ever or Constantly? Group Comparisons and Vague Quantifiers*, 55 PUB. OPINION Q. 395 (1991) (finding that categories using vague



offer much specificity: exactly how many procedures, of what kinds, under what circumstances, and with what costs or benefits, are defensive. Whether 3% or 93% of doctors say that *sometime* in the preceding year they did *something to someone* that they felt was defensive in nature, we still know very little about how common or how costly the problem is.

Discerning our motives for doing something can be more difficult than most of us assume. Whatever the real cause of our behavior, we are capable of quickly inventing a plausible explanation which might or might not have something to do with why we did what we did.<sup>126</sup> For this reason, serious researchers are skeptical about the usefulness of the just-ask approach to learning about the incidence of defensive practices. The OTA review considered the direct physician survey results to be “highly

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quantifiers—for example, “a few,” “some,” and “many”—are interpreted differently across respondents).

126. See, e.g., John M. Darley & C. Daniel Batson, “From Jerusalem to Jericho”: A Study of Situational and Dispositional Variables in Helping Behavior, 27 *J. PERSONALITY & SOC. PSYCHOL.* 100, 107-08 (1973). In their experiment, volunteer seminary students at Princeton University were sent across campus to record an ad that they were to improvise along the way. It asked them to explain why they were pursuing their careers. Half were assigned to talk about the practical benefits of a career as a minister; the other half were assigned to talk about service to others. Each of those halves was further subdivided, with half given a recording time that allowed a leisurely walk to the studio and the other half an appointment for which they would have to hustle to not be late. Along the way, an actor who feigned illness was lying by the path, pleading for help. Most of the seminarians who were unrushed stopped to help, but most of those who were in a hurry passed by the sick person. That seemingly trivial variable—the press of time—was the major predictor of whether they offered help or not, rather than factors we or they would expect to matter, such as personality, backgrounds, attitudes and beliefs related to religious commitment, service to others, and so on. But when asked what led them to help or not, participants in such studies are usually clueless about what really drove their actions (or inaction). See generally *id.* Relatedly, as Jonathan Haidt has made famous through his metaphor of the “emotional dog and its rational tail,” when we are required to offer reasons for our behavior, we are remarkably skilled at formulating rational-sounding explanations which might have nothing to do with the actual drivers of our behavior, which even the behavior is not sure of. Jonathan Haidt, *The Emotional Dog and Its Rational Tail: A Social Intuitionist Approach to Moral Judgment*, 108 *PSYCHOL. REV.* 814, 814 (2001).

suspect,” especially due to something researchers today would call “priming”—the questions “invariably prompt responding physicians to consider malpractice liability as a factor in their practice choices.”<sup>127</sup> That is, if the question cannot be asked without raising concerns for litigation and defensive medicine, then the answers that are elicited will be infected by concerns about, and efforts to connect answers to, litigation and defensive medicine.<sup>128</sup> And, if it’s difficult to accurately access the competing factors in one’s own decisions, imagine how much harder it would be to accurately discern what one’s colleagues did and why they decided to do those things.

Nevertheless, pollsters sometimes ask unanswerable questions<sup>129</sup> and, because people responding to surveys can generate replies to any question posed, responses will come forth.<sup>130</sup> Surveys of belief and opinion are sure to generate data. This happens even when those being polled do not know, and could not know, the actual answer to the questions asked.<sup>131</sup> A well-known Marist poll illustrates the point. When researchers asked whether space aliens exist, sixty percent of survey respondents answered, “yes.”<sup>132</sup> When those responding

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127. OTA-H-602, *supra* note 66, at 5.

128. *Id.*

129. Familiar examples are questions about what will happen at some time in the future. *See, e.g.*, Melia Robinson, *Here’s What Americans Think the World Will Be Like in 2036*, BUS. INSIDER (June 27, 2016, 7:58 PM), <https://www.businessinsider.com/predictions-about-the-future-2016-6> [<https://perma.cc/A8FA-V2C2>] (explaining causes of (or solutions to) problems that respondents can do no better than guess about or matters on which the respondents have no experience or knowledge whatsoever).

130. JON A. KROSINICK & STANLEY PRESSER, QUESTION AND QUESTIONNAIRE DESIGN 5–6 (Peter v. Mardsen & James D. Wright eds., 2d. 2010) (“A more dramatic shortcut is to skip the retrieval and judgment steps altogether. That is, respondents may interpret each question superficially and select what they believe will appear to be a reasonable answer. The answer is selected without reference to any internal psychological cues specifically relevant to the attitude, belief, or event of interest. Instead . . . the respondent may select an answer completely arbitrarily.”).

131. *See* Robert Cooke, *Life Out There? Majority Thinks So*, NEWSDAYUSA (Dec. 16, 1997), available on Westlaw NewsRoom at 1997 WLNR 586871.

132. *Id.*

affirmatively were then asked to compare the intelligence of space aliens and earthlings, forty-seven percent asserted that the extraterrestrials were more intelligent, thirteen percent thought they were less intelligent, and forty percent thought we were “about the same.”<sup>133</sup> Can such “research findings” be taken as a serious guide to the existence and IQs of space aliens?

Similarly, whether or not they are capable of knowing how much defensive medicine is practiced as a result of fear of lawsuits, physician respondents provide responses. Those responses can be put to work to create other “facts” and policy arguments. For example, Jackson Healthcare conducted its own survey of doctors and asked them to estimate the overall percentage of healthcare costs that were attributable to defensive medicine.<sup>134</sup> The answer was a staggering thirty-four percent.<sup>135</sup> Jackson then hired the Gallup Organization to repeat the survey (with presumably better design, sampling, and questioning). The new answer was twenty-six percent.<sup>136</sup> Multiplying those findings by the total cost of healthcare, which the Centers for Medicare and Medicaid Services at that time estimated to be \$2.5 trillion,<sup>137</sup> yielded Jackson Healthcare’s assessment: “between \$650 billion and \$850 billion are being spent each year due to defensive, or lawsuit-driven, medicine.”<sup>138</sup>

How seriously can the self-report survey approach be taken? OTA concluded after its extensive review of similar surveys that they had little value: “Survey-based estimates of the national cost of defensive medicine advanced by researchers at several organizations are unreliable and potentially biased.”<sup>139</sup> Although simple surveys of complicated issues are notorious for providing little in the way of meaningful information, they are nevertheless frequently employed because they are relatively cheap and easy to do.<sup>140</sup> This is not to say that direct physician surveys cannot

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133. *Id.*

134. *Jackson Healthcare Study #1, supra* note 48.

135. *Id.*

136. *Id.*

137. *Id.*

138. *Id.*

139. OTA-H-602, *supra* note 66, at 74.

140. A comparison of the next two research approaches—clinical scenario surveys and multivariate statistical analyses—will make

be of value when they inquire about something that the respondents are in a good position to know something about and ways are found to obtain candid answers. But, on the topic of defensive medicine, it's hard to see of what value such "data" would be apart from lobbying.

*B. Clinical Scenario Surveys*

An alternative approach is to present descriptions of specific cases to samples of physicians and asking them how they would handle the case: what tests, what treatments, and why. Responses to broad, general survey questions and more concrete, specific clinical scenarios can produce dramatically different results. For example, Stalans and Diamond found in their 1990 study that survey respondents generally stated that most criminal sentences are too short. But, when the researchers described specific crimes and asked what the proper sentence should, respondents on average recommend *lower* sentences than what the courts actually give.<sup>141</sup> Thus, different research approaches to the same question can lead to very different conclusions.

In the defensive medicine context, case scenarios have been designed to allow researchers to infer whether the clinical choices deviate from what is medically appropriate in ways that serve the interests of the doctor more than they benefit the patient.<sup>142</sup> Compared to the surveys described above, scenario studies are few and far between (for the same reasons that direct-ask surveys

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demonstrate the point. *See also*, Michael J. Saks, *Scientific Method: The Logic of Drawing Inferences from Empirical Evidence*, in MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY § 4:6 (David L. Faigman et al., eds., 2018–19) [hereinafter *Saks—Scientific Method*] (“It is easier to ask someone how often they drive while intoxicated than it is to try to follow them around and directly observe the behavior. But, as the example makes apparent, the price of ease of inquiry may be decreased accuracy.”).

141. Loretta J. Stalans & Shari S. Diamond, *Formation and Change in Lay Evaluations of Criminal Sentencing: Misperception and Discontent*, 14 L. & HUM. BEHAV. 199, 200 (1990).

142. OTA-H-602, *supra* note 66, at 75.

are so numerous: cost and difficulty).<sup>143</sup> Actual medical knowledge is needed to prepare the scenarios and to evaluate the responses.<sup>144</sup>

Scenario surveys can be conducted without prompting or priming—that is, conveying in any way that “this study is about defensive medicine and how you feel about malpractice litigation,” thereby evoking respondents’ thoughts and feelings about those issues. But these surveys also reveal only what respondents *say* rather than what they *do*. Still, a major virtue of the scenarios is that they are so specific. Instead of a vague count of how many doctors feel they acted defensively, the doctor reacts to a specific description of a patient with specific health problems. Specificity is also a limitation of the scenario approach because the responses cannot easily be generalized to other patients and other conditions. To obtain a more complete picture of how much defensive medicine is (impliedly) practiced, a wide range of scenarios would have to be presented to many different doctors. The OTA’s conclusion from the scenario studies it reviewed and the new studies it conducted was: “Although it is possible to identify particular clinical situations in which defensive medicine plays a relatively major role, it is impossible in the final analysis to draw any conclusions about the overall extent or cost of defensive medicine.”<sup>145</sup>

Most of the clinical scenario studies by OTA and others were chosen and “specifically designed to increase the likelihood of [a] defensive response by physicians.”<sup>146</sup> Thus, they were not representative of most diagnostic situations that doctors would encounter. Even so, doctors responding to these scenarios employed defensive practices very little.<sup>147</sup> Certain scenarios did, however, arouse more cautious responses than others. For

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143. *See id.* at 41–42.

144. Direct-ask surveys pose a question like: “Have you increased defensive practices out of malpractice liability concerns?” while clinical scenarios involve designing cases with specific medical facts, diagnostic options, and treatment options—and knowing which are standard practice within the appropriate specialty and which reflect excessive caution. *See generally* Phil EM Smith & John C Mucklow, *Writing Clinical Scenarios for Clinical Science Questions*, 16 *CLINICAL MED.* 142, 142 (2016).

145. OTA-H-602, *supra* note 66, at 74.

146. *Id.* at 56.

147. *Id.*

example, the survey presented a “15-year-old boy with a minor head injury resulting from a skateboard accident.”<sup>148</sup> Nearly half of the respondents said that they would order a CT scan, and nearly half of those “said they would order it . . . primarily out of concern for malpractice.”<sup>149</sup>

The contrast between the scenarios that did and did not elicit defensive practices can potentially help refine our understanding of when doctors act defensively, when they do not, and why. The case example above represents a situation where the risk of missing a serious diagnosis is small; but, if one is missed, then the outcome could be catastrophic.<sup>150</sup> Under such circumstances, doctors are inclined to worry about error, harm to the patient, and malpractice liability, all of which lead to them ordering more testing than might be thought necessary.

On the one hand, this appears to be defensive behavior prompted by fear of litigation because most CT scans carried out under such circumstances will find the brain was undamaged.<sup>151</sup> On the other hand, perhaps this is where an excess of caution (and additional expense) benefits the patient by ensuring that serious brain damage is not in the process of developing. Recall Dr. Gawande’s insistence, earlier in this article, that his son get the extra testing and observation in a very similar situation.

In another study using clinical scenarios, researchers hunted for correlates of excessive resource use.<sup>152</sup> They wondered if a relationship might exist between apparent defensive practices and the physicians’ history of defending malpractice claims.<sup>153</sup> Might those who had been sued previously be more vigilant about avoiding future suits? The research found no evidence of such a

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148. *Id.* at 5.

149. *Id.*

150. Herbert H. Engelhard, *Subdural Hematoma Surgery*, MEDSCAPE (Aug. 10, 2018), <https://emedicine.medscape.com/article/247472-overview> [<https://perma.cc/Z37G-JUF5>] (“The mortality of acute SDH has been reported to be in the range of 36–79%. Many survivors do not regain previous levels of functioning, especially after an acute SDH severe enough to necessitate surgical drainage. Favorable outcome rates after acute SDH range from 14% to 40%.”).

151. OTA-H-602, *supra* note 66, at 65.

152. *Id.* at 69.

153. *Id.*

relationship.<sup>154</sup> The only variables found to be consistently correlated, across multiple scenarios, were doctors' attitudes toward cost consciousness and their subjective estimates of the probability that they were dealing with a potentially severe health problem.<sup>155</sup> The analysis was that those who were more concerned about costs tended to keep costs lower, while those who saw higher risks of severe harm to a patient tended to want to do more, as in the head injury cases.<sup>156</sup>

Overall, “[i]n clinical scenario surveys designed specifically to elicit a defensive response, malpractice concerns were occasionally cited as an important factor in clinical decisions. However, physicians’ belief that a course of action is medically indicated was the most important determinant of physicians’ clinical choices.”<sup>157</sup> The contrast between the conclusions reached based on direct-ask surveys versus those from clinical scenarios illustrates how powerful an impact research design can have on what a study finds. A wholly different methodological approach is to stop asking doctors what they say they have done or what they say they would do, and to try to look at what they actually do.

### *C. Multivariate Statistical Analyses*

The third research approach consists of statistical analysis of existing databases pertaining to the volume of tests and procedures that doctors order in states with different levels of malpractice risk. Defensive practice typically is measured in dollars of excessive Medicare expenditures. Malpractice risk in these studies has been measured by malpractice premiums, incidence of lawsuits, or tort reforms. The basic idea is that where malpractice risk is lower, doctors will be less fearful, and will therefore practice less defensively, diagnose and treat less intensely, and consequently cause fewer healthcare dollars to be spent—all else being equal.<sup>158</sup>

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154. *Id.*

155. *Id.*

156. *Id.*

157. *Id.* at 74.

158. For more on these concepts, see Katherine Baicker et al., *Malpractice Liability Costs and the Practice of Medicine in the Medicare Program*, 26 HEALTH AFF. 841, 844 (2007).

“All else being equal” is the Achilles’ heel of this approach. In contrast to an experiment in which two or more groups are created equal by random assignment to treatment conditions, but then treated differently so that the treatment’s effects can be compared on an apples-to-apples basis, two pre-existing groups are rarely if ever “equal.” For example, patients in a state with higher malpractice premiums might also have a population of Medicare recipients who are older or poorer or sicker than those in a state with less spending. Perhaps they face different health problems for other reasons. Or, other changes in the state have occurred—other legal reforms, for example—that confound malpractice risk with other influences on Medicare spending.

Relying on healthcare spending to reflect the quantum of defensive medicine presents a more unusual problem. For example, treatment intensity varies as a function of the supply of healthcare services, not only patients’ health needs.<sup>159</sup> Moreover, the blurry line between healthcare fraud and defensive medicine has methodological implications. Studies that have compared Medicare billings to patient records have found that the billings can overstate healthcare actually provided, sometimes by a considerable amount—a discrepancy of sixty to ninety percent, depending on a patient’s diagnose.<sup>160</sup> According to healthcare-fraud expert Malcolm Sparrow, researchers who equate Medicare billings with medical services actually provided are missing the distorting effect of fraud on their data.<sup>161</sup> Thus, in places where Medicare fraud is higher, spending will be higher, and researchers can mistake that for defensive medicine being greater.

Let’s suppose that all of the confounding variables—patient health status, different provider practice patterns, demographic differences, state law differences, level of healthcare fraud, etc.—could be controlled for on a state-by-state basis. If researchers then compared State A which passed a particular tort reform act against State B which lacks that reform, then the finding that providers in State A billed for fewer Medicare dollars than

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159. See, e.g., Elliott S. Fisher & John E. Wennberg, *Health Care Quality, Geographic Variations, and the Challenge of Supply-Sensitive Care*, 46 PERSPS. IN BIOLOGY AND MED. 69, 73 (2003).

160. Paul Jesilow, *The Effects of Fraud on the Evaluation of Health Care*, 13 HEALTH CARE ANALYSIS 239, 241 (2005).

161. Joe Eaton, *The War on Medicare Fraud*, AARP BULL. (June 2016).



providers in State B would be consistent with the hypothesis that malpractice risk explains the difference.

But those inferences can be drawn soundly only if researchers are able to disentangle the possible cause of interest from the potential confounding variables by making statistical adjustments using measures of those potentially confounding variables—the “multivariate” in multivariate statistical analysis.<sup>162</sup> These adjustments are not simple and straightforward because the study might not have collected data on a critically important confounding variable, or the statistical model might contain the potential confounder but under-adjust for its impact.

Inadequately controlled observational studies can result in dramatically erroneous conclusions, as medical researchers know all too well. For example, studies using such research designs led to the conclusion that estrogen replacement was beneficial to post-menopausal women.<sup>163</sup> The methodological risk was that women who sought and obtained hormone replacement differed in various ways from those who did not—perhaps being essentially healthier, wealthier, and taking better care of themselves in various ways.<sup>164</sup> Better health outcomes for those women might seem to be attributable to the estrogen when in reality they were attributable to those confounding factors.<sup>165</sup> Eventually, better-designed research methods, randomized controlled trials, discovered not only that hormone replacement was *not* producing better health outcomes, but also that it was dangerous for many women.<sup>166</sup> Incorrect conclusions about estrogen based on findings from multivariate, observational (correlational) research designs led to tens of thousands of avoidable breast cancers, heart attacks, and strokes.<sup>167</sup>

Despite its imperfections, the multivariate approach has the virtue of dealing with the behavior of actual doctors making real choices about treatment of real patients—not merely what

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162. See generally ALVIN C. RENCHER AND WILLIAM F. CHRISTENSEN, METHODS OF MULTIVARIATE ANALYSIS (3d ed. 2012).

163. JERRY AVORN, POWERFUL MEDICINES: THE BENEFITS, RISKS, AND COSTS OF PRESCRIPTION DRUGS 28–9 (2004).

164. *Id.* at 36–37.

165. *Id.* at 37.

166. *Id.* at 33–34.

167. *Id.* at 38.

doctors in surveys say they have done or would do. Keeping reasonable cautions about confounds and file drawers and so on in mind, we review the multivariate studies.

1. Studies and Their Findings: Cesarean Sections

One popular line of such studies looked at cesarean sections. They did so because an obstetrician's preference for delivering a baby vaginally or surgically was suspected of being especially sensitive to the malpractice risk climate.<sup>168</sup> The assumption was that, where the risk of malpractice litigation was higher, obstetricians would perform an increased number of cesareans.<sup>169</sup> Taken together, the results of the studies are inconclusive. Some did find higher cesarean delivery rates where malpractice risk was greater.<sup>170</sup> Other studies found little evidence that cesarean rates increased in response to higher malpractice risks or costs; or, they found *decreases* in the rate of cesareans.<sup>171</sup>

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168. Leonard J. Nelson III et al., *Medical Liability and Health Care Reform*, 21 HEALTH MATRIX: J. OF L. MED. 443, 482–83 (2011).

169. *Id.*

170. See Lisa Dubay et al., *The Impact of Malpractice Fears on Cesarean Section Rates*, 18 J. HEALTH ECON. 491, 519 (1999) (reviewing national birth data from 1990–92, and finding that where malpractice premiums were higher, cesarean rates were higher, primarily for patients in lower socioeconomic strata); A. Russell Localio et al., *Relationship Between Malpractice Claims and Cesarean Delivery*, 269 J. AM. MED. ASS'N 366 (1993) (using New York State hospital claims data for 1984); Karna Murthy et al., *Association Between Rising Professional Liability Insurance Premiums and Primary Cesarean Delivery Rates*, 10 OBSTETRICS & GYNECOLOGY 1264, 1265 (2007) (explaining that Illinois obstetricians' higher rates of primary cesarean delivery were associated with higher medical-liability insurance premiums for Illinois obstetricians-gynecologists).

171. See, e.g., Katherine Baicker & Amitabh Chandra, *Medicare Spending, the Physician Workforce, and Beneficiaries' Quality of Care*, 23 HEALTH AFF. WEB EXCLUSIVES W4-184, W4-192 (2004); Janet Currie & W. Bentley MacLeod, *First Do No Harm? Tort Reform and Birth Outcomes*, 123 Q. J. ECON. 819, 826 (2008) (finding that replacing the traditional rule of joint and several liability with proportional-share liability for all defendants reduced complications of labor and cesarean deliveries, but that the introduction of noneconomic damages caps *increased* the rate of cesarean deliveries); David Dranove & Yasutora Watanabe, *Influence and Deterrence: How Obstetricians Respond to Litigation against Themselves and Their Colleagues*, 12 AM. L. & ECON. REV.

Interestingly, at least one research team found a relationship between cesareans and malpractice concerns, but wondered whether it reflected *improved practice* in response to higher malpractice risk.<sup>172</sup> A climate of greater malpractice risk was associated with increased use of electronic fetal monitoring, more diagnoses of fetal distress, and more consequent use of cesarean deliveries.<sup>173</sup>

## 2. Studies and Their Findings: Cardiac and Other Medical Procedures

In examining other medical procedures, a convoluted picture emerges. Some studies have found evidence that wasteful spending ordered by doctors is at least somewhat correlated with the level of malpractice risk faced by those doctors. The earliest of these studies, one that sets the high-water mark for findings of a defensive-medicine effect, was conducted by Kessler and McClellan and published in 1996.<sup>174</sup> They looked at the effects of state malpractice-law reforms on Medicare spending for hospital patients who were treated for acute myocardial infarction (AMI) or new ischemic heart disease (IHD) in 1984, 1987 and 1990.<sup>175</sup> They found that what they termed “direct” tort reforms (damages caps, abolition of punitive damages, elimination of mandatory pre-judgment interest, changes in the collateral source rule<sup>176</sup>)

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69, 92 (2010) (using micro-data, and finding a short-term, hospital-wide increase in cesarean rates in response to malpractice suits against them or their colleagues, and an upsurge in the use of cesareans by the responsible physician, but that these effects disappeared in a short time); Frakes, *supra* note 105, at 473–77 (finding that a noneconomic damage cap was associated with a reduction in the utilization of episiotomies during vaginal deliveries); Beomsoo Kim, *The Impact of Malpractice Risk on the Use of Obstetrics Procedures*, 36 J. LEGAL STUD. S79, S79 (2007) (finding that cesarean rates tend not to be sensitive to malpractice risk).

172. A. Dale Tussing & Martha A. Wojtowycz, *Malpractice, Defensive Medicine, and Obstetric Behavior*, 35 MED. CARE 172, 178 (1997).

173. *Id.*

174. Daniel P. Kessler & Mark McClellan, *Do Doctors Practice Defensive Medicine?*, 111 Q. J. ECON. 353, 388 (1996) [hereinafter *Kessler & McClellan—1996*].

175. *Id.* at 354.

176. These changes allow juries to learn whether the injured patient has other insurance sources to cover their losses. *See 50 State Collateral*

were associated with a 5% to 9% annual reduction in medical expenditures for patients with those two conditions.<sup>177</sup> And those reductions occurred “without substantial effects on mortality” or greater need for readmission for AMI or IHD—suggesting that the additional care being delivered was of little benefit to patients and could safely be omitted.<sup>178</sup> “Indirect” reforms combined (including such changes as limitations on plaintiff attorney contingency fees, mandatory periodic payments, joint and several liability and patient compensation funds) reduced Medicare payments by 1.8%.<sup>179</sup> The elimination of joint and several liability and replacing it with a proportionate share liability rule resulted in a small increase in Medicare spending.<sup>180</sup> If their results could be generalized to all health care costs, not just treatment of two heart conditions for Medicare inpatients, then defensive medicine could account for a substantial amount of wasteful healthcare spending.

Later studies built on, expanded, and improved Kessler and McClellan’s initial work in various respects, among them: (1) including more illness conditions (as opposed to focusing on just two types of heart disease);<sup>181</sup> (2) examining outpatient spending as well as inpatient spending;<sup>182</sup> (3) analyzing physician spending as well as hospital spending;<sup>183</sup> (4) studying private spending as well as Medicare spending;<sup>184</sup> (5) covering longer time

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*Source Overview*, THE HARMONIE GROUP <https://www.harmonie.org/file/Litigation%20Best%20Practices/Collateral%20Source%20Rule%202016.pdf> [<https://perma.cc/7UH6-BTE9>] (last visited Nov. 22, 2019).

177. *Kessler & McClellan—1996*, *supra* note 185, at 386.

178. *Id.* at 382–83.

179. *Id.* at 385.

180. *Id.* at 372, 377.

181. *See, e.g.*, Baiker & Chandra, *infra* note 40, at 841; Sloan & Shadle, *supra* note 4; J. William Thomas et al., *infra* note 200, at 1581; Nelson III et al., *supra* note 168, at 477–79.

182. *See, e.g.*, Thomas et al., *infra* note 200, at 1579.

183. ALI MOGHTADERI ET AL., DAMAGE CAPS AND DEFENSIVE MEDICINE: REEXAMINATION WITH PATIENT LEVEL DATA (Oct. 2017); Lakdawalla & Seabury, *infra* note 205, at 362–367.

184. *E.g.*, *Letter to Senator Hatch*, *infra* note 195, at 4–5.

periods;<sup>185</sup> (6) using larger samples;<sup>186</sup> and (7) trying to control for additional confounding variables.<sup>187</sup>

One of the later studies was a follow-up by Kessler and McClellan themselves. They looked at the population of Medicare beneficiaries with heart disease in 1984 through 1994.<sup>188</sup> They found that noneconomic-damage caps were associated with a 4.2% decrease in spending for AMI patients and a 4.4% decrease in spending for IHD patients<sup>189</sup> (contrasting with 5.8% and 8.9%, respectively, from the initial study).<sup>190</sup> Moreover, the follow-up found that managed care stanching the excess spending as well as tort reform did.<sup>191</sup>

A 2003 study by researchers at the Congressional Budget Office (CBO) studied Medicare patients treated for a broad range of conditions, but “failed to find any impact of state tort laws on medical spending.”<sup>192</sup> A 2006 CBO study, looking at a broader set of spending measures from 1980 through 2003 (and employing more statistical controls), found that caps on noneconomic damages resulted in no reduction in overall health care spending, but *did* reduce Medicare inpatient spending.<sup>193</sup> The study also found that the replacement of joint and several liability with proportionate share allocation of liability resulted in a 4% *increase* in overall Medicare spending.<sup>194</sup> The CBO’s conclusion

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185. Daniel P. Kessler & Mark McClellan, *Malpractice Law and Health Care Reform: Optimal Liability Policy in an Era of Managed Care*, 84 J. PUB. ECON. 175, 184 (2002) [hereinafter *Kessler & McClellan—2002*]; *Letter to Senator Hatch*, *infra* note 195, at 5; *See, e.g.*, Thomas et al., *infra* note 200, at 1579.

186. *See, e.g.*, *Letter to Senator Hatch*, *infra* note 195.

187. *Kessler & McClellan—2002*, *supra* note 185, at 182; *See, e.g.*, Thomas et al., *infra* note 200, at 1580.

188. *Kessler & McClellan—2002*, *supra* note 185, at 175.

189. *Id.* at 189.

190. *Kessler & McClellan—1996*, *supra* note 174, at 382.

191. *Kessler & McClellan—2002*, *supra* note 185, at 194.

192. CONG. BUDGET OFF., U.S. GEN. ACCOUNTING OFF., GAO-03-836, MEDICAL MALPRACTICE: IMPLICATIONS OF RISING PREMIUMS ON ACCESS TO HEALTH CARE, at 29 (2003).

193. CONG. BUDGET OFF., MEDICAL MALPRACTICE TORT LIMITS AND HEALTH CARE SPENDING, at 34 (2006).

194. *Id.* at 23. This finding should not be too surprising. Under the traditional rule, hospital liability insurers often covered the costs

was that the evidence was weak or inconclusive that tort reform could reduce defensive medicine.<sup>195</sup>

Similarly, Baicker and Chandra found little evidence of changes in treatment patterns for several different treatment protocols for Medicare enrollees or overall expenses in Medicare programs associated with increases in liability insurance premiums.<sup>196</sup> The following year, Baicker and other colleagues found that “higher malpractice awards and premiums are associated with higher Medicare spending, especially for imaging services,” but those increases represented less than 0.6% of aggregate spending.<sup>197</sup>

Sloan and Shadle extended Kessler and McClellan’s approach by looking at Medicare payments over a longer time period (1985–2000), expanding the range of health conditions beyond heart disease, collecting data on treatment settings that included outpatients as well as inpatients, and implementing additional controls (notably the health status of the patient).<sup>198</sup> They found no statistically significant reduction in healthcare payments,

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of all defendants, or all damages were assessed against the physician defendant who was judged to be principally responsible for the harm. Under the reform, however, plaintiffs are compelled to name more defendants and to seek judgments against all of them in order to recover the full amount of damages that the court found the injured patient to be entitled to. Any defensive strategies that were being undertaken would, if anything, increase. *Id.*

195. *Id.* at 35. Later, the director of OMB, Douglas W. Elmendorf, responded to a query in a Letter to Senator Orrin G. Hatch (Congressional Budget Office, Oct. 9, 2009, archived at <http://perma.cc/P7KS-SQE8> [hereinafter *Letter to Senator Hatch*]), explaining that their data suggested that a package of tort reforms including a \$250,000 cap on noneconomic damages; \$500,000 cap on punitive damages; modification of the collateral source rule; shortening of the statute of limitations; and replacement of joint and several liability with a proportionate share allocation rule—would reduce total national health care spending attributable to utilization of services (by inference, attributable to defensive medicine) by about 0.3%—equal at that time to about \$5.4 billion per year. *See id.*

196. Katherine Baicker & Amitabh Chandra, *The Effect of Malpractice Liability on the Delivery of Health Care*, 8 FORUM FOR HEALTH ECON. & POL’Y: FRONTIERS IN HEALTH POL’Y RES. 4, 18 (2006).

197. Katherine Baicker et al., *supra* note 158, at 841.

198. Sloan & Shadle, *supra* note 4, at 484.

concluding that Kessler and McClellan's findings "do not generalize to other reasons for hospital admission," and that "it seems inappropriate to conclude that tort reforms implemented to date succeed in reducing non-beneficial care."<sup>199</sup>

Thomas et al. studied 35 clinical specialties to assess whether and how much malpractice liability reforms would reduce healthcare spending. They concluded that "defensive medicine practices exist and are widespread, but their impact on medical care costs is small."<sup>200</sup> Further, they established that, across all 35 specialties, "if medical malpractice premiums were to be reduced as much as 30 percent, defensive medicine costs would decline no more than 0.4 percent."<sup>201</sup> Nelson III et al. conducted a study focusing almost exclusively on the impact of damage caps and concluded that "it is not clear that . . . damages caps will significantly reduce health care costs or that any savings will be passed on to consumers."<sup>202</sup> Ronen Avraham and colleagues found a three-to-five-percent reduction in intensive cardiac interventions following adoption of familiar tort reforms (including damages caps), and estimated a total reduction of about 1–2% across the entire healthcare system.<sup>203</sup> Like Kessler and McClellan found in 2002, Avraham and colleagues found that managed care could eliminate the excess spending caused by defensive practices.<sup>204</sup>

Lakdawalla and Seabury used jury awards in malpractice cases as the measure of litigation pressure and found that where trial awards were higher medical expenditures were higher, presumably from defensive practices.<sup>205</sup> The difficulty with such an approach is that jury awards tend to rise as tort reforms make the bringing of a claim costlier and riskier for plaintiffs'

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199. *Id.* at 490.

200. J. William Thomas et al., *Low Costs of Defensive Medicine, Small Savings from Tort Reform*, 29 HEALTH AFF. 1578, 1582–83 (2010).

201. *Id.* at 1583–84.

202. Nelson III et al., *supra* note 168, at 448.

203. Ronen Avraham et al., *The Impact of Tort Reform on Employer-Sponsored Health Insurance Premiums*, 28 J. OF L., ECON. & ORG. 657, 661, 674, 684 (2012).

204. *Id.* at 658, 676.

205. Darius N. Lakdawalla & Seth A. Seabury, *The Welfare Effects of Malpractice Liability*, 32 INT'L REV. L. & ECON. 356, 365 (2012).

attorneys.<sup>206</sup> Consequently, in a world of tort reform, rising jury awards might, paradoxically, indicate a litigation environment that is becoming more—not less—favorable to defendants.

Paik and colleagues studied how Medicare spending changed after Texas adopted comprehensive tort reform in 2003, including a strict damages cap, by comparing spending in Texas counties with high claim rates to spending in counties with low claim rates.<sup>207</sup> The study found no decline in spending in the high-litigation-risk counties compared to the low-risk counties.<sup>208</sup> Compared to national spending trends, if anything, spending in Texas increased post-reform. “In sum,” the study concluded, “we find no evidence that Texas’s tort reforms bent the cost curve downward.”<sup>209</sup>

In an expanded study, Paik and colleagues re-analyzed the effects of tort reforms, particularly damages caps, of the mid-1980s and found no change in Medicare spending as a consequence.<sup>210</sup> They also analyzed the effects of the imposition of caps in nine states during the “third wave” of tort reforms (2002–2005). They found no significant impact on Medicare Part A (hospital) spending, but did find an approximately 4% *increase* in Medicare Part B (physician services) spending (rather than the predicted reduction in spending when liability fears are reduced).<sup>211</sup> Another study, by Moghtaderi et al., found little to no association between the existence of caps and Part A and B Medicare spending nor between caps and a range of cardiac testing rates and interventions.<sup>212</sup>

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206. Plaintiffs’ attorneys screen out cases involving weaker evidence and smaller expected settlement or award amounts. *See generally* Michael J. Saks, *Do We Really Know Anything About the Behavior of the Tort Litigation System – And Why Not?*, 140 U. PA. L. REV. 1147 (1992).

207. Myungho Paik et al., *Will Tort Reform Bend the Cost Curve? Evidence from Texas*, 9 J. EMPIRICAL LEGAL STUD. 173, 173 (2012).

208. *Id.*

209. *Id.*

210. Myungho Paik et al., *Damage Caps and Defensive Medicine, Revisited*, 51 J. HEALTH ECON. 84, 84 (2017) [hereinafter *Paik et al.—Damage Caps*].

211. *Id.*

212. MOGHTADERI ET AL., *supra* note 183.



Most worrisome, of course, is the possibility that reducing or removing the risk of tort liability reduces safety for patients. Of the studies that tested for that outcome, most found no effect, but a few reached findings that could raise concerns. Reviewing research that examined mortality as a function of tort law reforms in 2009, the CBO found evidence that malpractice law reforms led to a small increase in the nation's overall death and injury rate—translating, at the time, to approximately 5,000 additional deaths and 400,000 more injuries.<sup>213</sup> Similarly, Lakdawalla and Seabury found that defensive practices were beneficial to patients and therefore that tort reforms aimed at reducing physician liability expenses were not cost-effective.<sup>214</sup> Currie and McLeod found that the introduction of noneconomic damages caps actually increased the rate of cesareans—one intuitively expects them to decrease—as well as increased preventable complications of labor.<sup>215</sup> More recently, Zabinski and Black found that imposing caps on general damage awards triggered gradually rising rates of harmful errors, which are measured using the Agency for Healthcare Research and Quality's (AHRQ) Patient Safety Indicators instrument.<sup>216</sup>

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213. *Letter to Senator Hatch, supra* note 195.

214. Lakdawalla & Seabury, *supra* note 205, at 368.

215. Currie & Bentley MacLeod, *supra* note 171, at 826.

216. Zenon Zabinski & Bernard S. Black, *The Deterrent Effect of Tort Law: Evidence from Medical Malpractice Reform*, RESEARCH PAPER NO. 13-09, NW. UNIV. L. & ECON. (Feb. 15, 2015), available at <http://dx.doi.org/10.2139/ssrn.2161362> [<https://perma.cc/UZ3T-W7PU>]. The study looked at the effect on patient safety of adopting caps (limiting general damage awards) in five states (Florida, Georgia, Illinois, South Carolina, and Texas), which were also compared to control states that did not adopt the caps reform, thereby allowing trends due to other factors to be taken into consideration. As a measure of safety practices, the researchers used the PSI (Patient Safety Indicators instrument), developed by the AHRQ. The research found that in states with caps on damages, the level of safety as measured by the PSI declined. “We find a gradual rise in rates [of errors and harm] for most PSIs after reform, consistent with a gradual relaxation of care, or failure to reinforce care standards over time. The decline is widespread and applies both to aspects of care that are relatively likely to lead to a malpractice suit (e.g., PSI-5; foreign body left in during surgery), and aspects that are unlikely to do so (e.g., PSI-7; central-line associated bloodstream infection). The broad relaxation of care

In all, the multivariate studies present quite a mixed picture, even in regard to the fundamental question of whether defensive medicine exists. And, if it does, in regard to what health conditions, to what extent, and at what cost it exists. The best-informed conclusion would have to be: more research is needed to establish sound answers to these questions.<sup>217</sup>

### 3. One “Almost Quasi-Experiment”

Frakes and Gruber recently reported an important study that improves upon the multivariate approach, approximating some of the qualities of a randomized experiment.<sup>218</sup> They designed their study around an idiosyncrasy of the U.S. military health services (MHS) in its prohibition on suing for medical negligence.<sup>219</sup> Under the *Feres* doctrine, active-duty personnel who believe that they have been injured through negligent care have no right to sue for compensation.<sup>220</sup> This is in stark contrast to other patients at military hospitals—dependents, retirees, and other family members—whose malpractice claims face no such bar.

In essence, from one patient to the next, the very same military treatment facilities (MTFs) and their staff face two different worlds: one with and one without the possibility of malpractice liability. It’s almost a true experiment. But because patients in the two groups differ in ways that likely confound observed differences, and because other mechanisms might be responsible for observed differences, the researchers also used multivariate analyses to try to statistically remove possible

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suggests that medical malpractice liability provides ‘general deterrence’—an incentive to be careful in general . . . .” *Id.*

217. See also Michael Frakes & Jonathan Gruber, *Defensive Medicine: Evidence from Military Immunity*, 11 AM. ECON. J.: ECON. POL’Y 197 (2019) (summing up the same body of multivariate studies by saying that, “[c]ollectively, the . . . findings paint a varied picture of both the size and existence of defensive medicine.”).

218. *Id.* For a design that many researchers would characterize as a quasi-experiment, see *Saks—Scientific Method*, *supra* note 140, at § 4:43.

219. See generally *Feres v. United States*, 340 U.S. 135, 159 (1950) (concluding that the United States “is not liable under the Federal Tort Claims Act for injuries to servicemen where the injuries arise out of or are in the course of activity incident to service.”).

220. *Id.*

confounding.<sup>221</sup> Still, their approach comes closer than any other to being an apples-to-apples comparison. If providers at MTFs order more tests for their patients who possess the right to sue than they do for patients who have no right to sue, all else equal, then those differences likely result from defensive practices rather than something else. In addition, another basis for comparison arose when some military base hospitals closed and military patients had to turn to non-military hospitals for care.<sup>222</sup>

Here, we summarize Frakes and Gruber's main findings. On several different measures of treatment intensity, patients at on-base MTFs who could not sue received four-to-five percent less care than those who could sue.<sup>223</sup> Where doctors had less discretion whether to treat or not, that effect of liability immunity was reduced by one-to-two percent.<sup>224</sup> In regard to patients for whom doctors were not immune from suit, the higher intensity of care was far more likely to consist of diagnostic procedures rather than non-diagnostic procedures.<sup>225</sup> All but two non-diagnostic procedures showed no differences in frequency in the care of patients who were, versus who were not, able to sue.<sup>226</sup> Those two—gastrointestinal and orthopedic admissions (which were only marginally statistically significant)—suggested that providers were *less* likely to order those procedures for patients who had the power to sue.<sup>227</sup> Interestingly, all else equal, MTFs treated patients at a lower intensity than private hospitals did.<sup>228</sup> Frakes and Gruber's study also permits an estimate of the maximum savings that might be realized if the healthcare industry were made completely immune from tort liability, which we discuss in the concluding section.

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221. See Frakes & Gruber, *supra* note 217, at 229.

222. *Id.* at 209–10.

223. *Id.* at 204, 220.

224. *Id.* at 220.

225. *Id.* at 221.

226. *Id.*

227. *Id.*

228. *Id.* at 216. Perhaps this reflects the “restraining hand” of managed care.

## DISCUSSION

The notion of defensive medicine presents a series of paradoxes. The most aggressive advocates on behalf of the healthcare industry insist that healthcare workers routinely behave unethically, by lying to patients and insurers; recklessly, by subjecting patients to needless tests and treatments; wastefully and fraudulently, by redistributing wealth from patients, insurers, and taxpayers to themselves by ordering inappropriate procedures. They insist, however, that potential remedies should not be focused on the actors who engage in such behavior because their actions are motivated by fear—a fear of being compelled by the law to reimburse patients for losses resulting from preventable iatrogenic harms. Instead, healthcare advocates argue that the solution is to remove the source of the fear by further insulating the healthcare industry from legal accountability. Doing so, they promise, will make the evils of defensive medicine and the wasteful spending that results from it disappear.

By contrast, those who would continue to apply conventional accident law to the healthcare industry do not seem to believe that healthcare providers behave as badly as the industry claims.

Paradoxically, the industry's argument implies a legal system that has a powerful influence on behavior. By the lights of the defensive medicine concept, physicians and other providers are being over-deterred by the tort system. Their solution is to insulate the healthcare industry from accident law. One might think, instead, that with helpful data and thoughtful adjustments, a legal tool so able to move behavior should be able to be employed to steer providers to deliver better and safer healthcare. Doing so could render litigation less necessary, reduce provider fears, make defensive practices unnecessary, and send wasteful healthcare expenditures downward.

Another paradox arises from the fact that, if providers are caught ordering unnecessary tests, treatments, and other procedures, thereby fraudulently increasing their incomes, they are charged with healthcare fraud and are required to return their ill-gotten gain; they might also be confronted with civil penalties, if not criminal charges.<sup>229</sup> But if they engage in essentially the same behavior under the flag of “defensive medicine,” then the

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229. See, e.g., GAO-12-820, *supra* note 78.

typical response is sympathetic concern for the fearful physician. In both scenarios, healthcare providers elevated their own interests above those of their patients and profited from doing so. But what at one moment evokes scorn for fraud and self-dealing is transformed in the blink of an eye into a cry for help.

One of the most remarkable facts about defensive medicine is how successful the promoters of the notion have been in persuading legislators and the public of its existence, its seriousness, that it is key to solving the problem of exorbitant healthcare costs,<sup>230</sup> and that the only cure for it worth discussing is to reduce the healthcare industry's accountability. That, despite empirical evidence for the hypothesis which has been found contradictory and uncertain. Indeed, Paik and colleagues concluded that, although a "core policy argument used to support adoption of damage caps . . . is that caps will reduce defensive medicine and thus reduce healthcare spending," their research found that caps led to *higher* spending.<sup>231</sup>

Proponents of the defensive medicine hypothesis have put forward fantastic numbers, the most extreme of them approaching a trillion dollars annually, on air-thin bases. Even serious and sober studies have found their way to numbers at the high end of where the empirical evidence can take us. In their effort to calculate the total national cost of the medical liability system in the United States—from administrative costs to damages payments and everything in between—Mello et al. arrived at a figure of \$45.6 billion (in 2008 dollars) for defensive medical practices (\$38.8 billion by hospitals and \$6.8 billion by physicians) and \$10 billion for all other malpractice litigation system costs added together.<sup>232</sup> Obviously, that is vastly less than

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230. President Barack Obama seems to have been at least somewhat persuaded: "I don't believe malpractice reform is a silver bullet, but I have talked to enough doctors to know that defensive medicine may be contributing to unnecessary costs." Barack Obama, President of the United States, Speech to a Joint Session of Congress on Health Care Reform (Sept. 9, 2009), text available at <https://obamawhitehouse.archives.gov/the-press-office/remarks-president-barack-obama-address-joint-session-congress> [<https://perma.cc/9BWY-EY8K>].

231. Paik et al.—*Damage Caps*, *supra* note 210, at 96.

232. Michelle M. Mello et al., *National Costs of the Medical Liability System*, 29 HEALTH AFF. 1569 (2010) [hereinafter *Mello et al.—Costs*].

the survey-based guestimates of \$650 to \$850 billion (as much as \$933 billion in today's dollars<sup>233</sup>). But Mello et al. built their estimate of the defensive medicine components on Kessler and McClellan's high-water-mark finding.<sup>234</sup> Had Mello et al. averaged in the other studies, some of which found more modest fear-of-litigation effects and others none at all, their estimate of costs attributable to defensive medicine would have been lower still.<sup>235</sup> Mello et al. do note that the quality of the sources for their estimate of defensive medicine costs was unavoidably one of the weakest of all cost components in their study, and classify the quality of that evidence as "low."<sup>236</sup> Indeed, the shaky quality of the underlying evidence might be the most important lesson to take from our entire exploration of the hypothesis of defensive medicine.

So much for costs. What about benefits? Mello and colleagues recognized that from the cost of defensive practices one has to subtract the benefits secured by malpractice litigation. The most notable of these would be savings from injuries and deaths *prevented*. If that benefit exceeds the cost of defensive medicine, then the system provides a net gain to society. On this vital matter, Mello et al. write: "It is important to note, however, that our calculations ignored benefits arising from this spending."<sup>237</sup> This is because the benefit figure is a known unknown. From a dollars-and-cents perspective, it does policy-makers little good to know the costs of any system or policy unless the benefits that those costs purchase for society are also known. And so, another curiosity of this debate has been its obsession with costs accompanied by a disregard of benefits.<sup>238</sup>

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233. *Inflation Calculator*, CPO INFLATION CALCULATOR, <http://www.in2013dollars.com> [<http://perma.cc/3BPB-T85S>] (last visited Feb. 21, 2020).

234. Michael D. Frakes, *The Surprising Relevance of Medical Malpractice Law*, 82 U. CHI. L. REV. 317, 358 n. 79 (2015) ("Mello and her coauthors relied heavily on Kessler and McClellan, whose findings generally fall on the very high end of those studies that have found a positive association between liability forces and health-care costs.").

235. *Id.*

236. *Mello et al.—Costs*, *supra* note 232, at 1574.

237. *Mello et al.—Costs*, *supra* note 232.

238. One recent study that offers a peek at the benefit side of the equation is Zabinski & Black, *supra* note 216, at 2 (finding that the

Perhaps the chief concern of policy-makers is how to bring down America's astonishingly high healthcare costs. To the extent that defensive medicine exists, how much can reducing or eliminating it contribute to bending the cost curve downward? Looking across the landscape of policy options for bringing healthcare costs under control, while ensuring broad access to care and promoting innovation, Mongan et al. in the *New England Journal of Medicine*, rated malpractice reforms as having the "lowest potential for cost savings" because the "direct costs of malpractice premiums" combined with the "estimated costs of 'defensive medicine' are not major factors in overall health care spending."<sup>239</sup> More recently, Frakes summed up the research community's consensus as being "that medical malpractice reform is unlikely to be a meaningful source of health-care cost containment."<sup>240</sup>

Frakes and Gruber have provided the approximate upper bound of savings that might accrue from reduced defensive practices if malpractice liability were abolished entirely, that amount being under five percent.<sup>241</sup> The *costs* that would be

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adoption of caps, the most popular reform, seems to initiate a decline in patient safety measured by AHRQ's PSI (Patient Safety Indicators)).

239. James J. Mongan et al., *Options for Slowing the Growth of Health Care Costs*, 358 *NEW ENG. J. MED.* 1509, 1512 (2008).
240. Frakes, *supra* note 105, at 317; *See* Thomas et al., *supra* note 200, at 1583 (concluding that "defensive medicine practices exist and are widespread, but their impact on medical care costs is small."); Michelle M. Mello & Troyen A. Brennan, *Deterrence of Medical Errors: Theory and Evidence for Malpractice Reform*, 80 *TEX. L. REV.* 1595, 1629 (2002) (commenting that defensive medicine "has long been invoked by chronic defendants . . . as a rationale for enacting tort reform. However, the over deterrence rhetoric has not been firmly grounded in fact. Most defensive-medicine studies have failed to demonstrate any real impacts on medical practice arising from higher malpractice premiums.").
241. Margot Sanger-Katz, *A Fear of Lawsuits Really Does Seem to Result in Extra Medical Tests*, *N.Y. TIMES* (July 23, 2018), <https://www.nytimes.com/2018/07/23/upshot/malpractice-lawsuits-medical-costs.html> [<https://perma.cc/Z9RN-3SUQ>] ("Mr. Gruber said the paper's estimates were best viewed as a kind of ceiling for the effects of more realistic reforms . . . Any law that limits the cases where patients can sue, or the amount of money they can collect, is likely to lower medical use in the hospital by less than the 5 percent they measured in their study.").

associated with abolition, including a rising incidence of iatrogenic injury, are unspecified. Thus, whether abolition would lead to net savings or net increased costs is unknown.

If excessive healthcare costs are the principal concern (as it appears to be even among proponents of tort reform in the name of reducing defensive medicine), then we might expect the conversation to be about larger sources of wasteful expenditures in healthcare. Using Mello et al.'s estimate of the cost of defensive medicine, the portion of total healthcare spending attributable to defensive practices, is one-and-a-half percent.<sup>242</sup> But that represents only a fraction of the approximately 20–30 percent of total healthcare expenditures that are squandered on low-value and no-value services.<sup>243</sup> If the major concern is reducing healthcare costs by reducing wasteful spending, then attention might more fruitfully be given to the problems that account for more than ninety percent of the waste, and less on what accounts for only five-to-seven percent of the waste. The laser-beam focus on defensive medical practices suggests that the industry's true interests are not in bending the cost curve.

If defensive medicine is itself a particular concern, whatever the reasons, then attention could be given to reducing it more effectively:

[i]f tort reformers were genuinely worried about defensive medicine and desired to prevent it, they would offer vastly different proposals from the ones they now endorse. Concern about unnecessary tests and procedures, for example, might lead them to call for evidence-based

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242. See Mello et al.—*Costs*, *supra* note 232, at 1574. Mello et al.'s 2008 total of \$45.6 billion of defensive medicine converts to \$51.9 billion in 2017 dollars. Dividing that by total national spending on healthcare in 2017 (\$3.5 trillion) yields a 1.5% increase.

243. See JONATHAN SKINNER & ELLIOTT S. FISHER, DARTMOUTH INST. FOR HEALTH POL'Y & CLINICAL PRAC. REFLECTIONS ON GEOGRAPHIC VARIATIONS IN U.S. HEALTH CARE, at iii (Mar 31, 2010), available at [https://www.dartmouthatlas.org/downloads/press/Skinner\\_Fisher\\_DA\\_05\\_10.pdf](https://www.dartmouthatlas.org/downloads/press/Skinner_Fisher_DA_05_10.pdf) [<http://perma.cc/8CZK-MV2B>] (finding that, if all regions of the U.S. could safely reduce care to the level observed in low spending regions with equal quality, healthcare cost savings of twenty to thirty percent could be achieved, but concluding that that is an underestimate because even the low-cost regions employ some wasteful practices that could be safely eliminated).



treatment guidelines specifying when and if certain tests need to be performed.<sup>244</sup>

As research described above has suggested, managed care can be as effective as tort reform in reducing defensive practices. Insurers could identify worthless practices and refuse to pay for them. Prosecutors could expand enforcement of healthcare fraud to include the most common defensive practices. Accountable care organizations (which are on the rise), or other forms of value-based payment arrangements might, by their very nature, drive down defensive practices along with other low-value care.<sup>245</sup>

One of the most illuminating findings is that tort reforms have little impact on the perceptions of healthcare providers about the legal environment that they inhabit. If providers are insensitive to the specific tort rules under which they practice, if they do not know what the law is in their jurisdiction, then they cannot sensibly adjust their estimation of malpractice risk. Instead, they simply have and hold onto a generalized fear of becoming a defendant in litigation. To the extent that describes providers' state of knowledge, it means that the economic and psychological signals that are sent by any one (or package) of tort reforms tends to be overwhelmed by noise.

That is what Carrier and her colleagues found: levels of malpractice concern that were generally high and unrelated to the actual level of lawsuit risk in the state where physicians practiced.<sup>246</sup> Similarly, Hyman and Sage observe that “[p]hysicians in states with strong tort reforms and in states

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244. *Hyman & Silver—2005, supra* note 39, at 942.

245. See Mark Merlis, *Accountable Care Organizations (Updated)*, HEALTH AFF. 1 (Aug. 13, 2010), available at <https://www.healthaffairs.org/doi/10.1377/hpb20100813.757461/full/> [<https://perma.cc/N3K9-ALXT>]; David Muhlestein et al., *Recent Progress in The Value Journey: Growth of ACOs and Value-Based Payment Models in 2018*, HEALTH AFF. (Aug. 14, 2018), <https://www.healthaffairs.org/doi/10.1377/hblog20180810.481968/full/> [<https://perma.cc/7HD4-9FR4>].

246. Emily R. Carrier et al., *Physicians' Fears of Malpractice Lawsuits are not Assuaged by Tort Reforms*, 29 HEALTH AFF. 1585, 1589 (2010) (“We found high levels of malpractice concern among both generalists and specialists in states where objective measures of malpractice risk were low. We also found relatively modest differences in physicians' concerns across states with and without common tort reforms.”).

lacking those reforms articulated identical views regarding malpractice risk.”<sup>247</sup> Thus, according to Carrier et al., it is possible that “many policies aimed at controlling malpractice costs may have a limited effect on physicians’ malpractice concerns”—and therefore on practice behavior and costs.<sup>248</sup>

Relatedly, Hyman and Sage have discussed the “habits and beliefs” of physicians, which “seem unaffected by evidence regarding the actual likelihood of a lawsuit or the level of potential damages.”<sup>249</sup> This is consistent with findings of physicians’ overestimation of lawsuit risk<sup>250</sup> and general “anxiety about medical malpractice litigation and liability,” which has been described as “pervasive . . . erroneous . . . and irrational . . . .”<sup>251</sup> The insensitivity of healthcare providers to actual levels of litigation risk has led Scherz and Oliver to suggest that “[t]he only way to eliminate defensive medicine is to make it impossible for doctors to be sued for medical errors.”<sup>252</sup>

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247. David A. Hyman & William Sage, *Do Health Reform and Malpractice Reform Fit Together?*, AM. ENTERPRISE INST. PUB. POL’Y RES., Working Paper No. 2011-02 (April 1, 2011), available at <https://www.aei.org/wp-content/uploads/2011/10/2011-04-Hyman-Sage.pdf> [<https://perma.cc/XQ3P-CFGL>].

248. Carrier et al. propose several possible explanations for their finding that doctors are insensitive to something that they are thought to be quite concerned about. The most paradoxical of them is the possibility that reform advocates have them confused: “Advocacy efforts by medical professional societies in support of tort reform may contribute to this problem by conveying the impression that most or all states and specialties are in crisis and require additional legal protection.” Carrier et al., *supra* note 246, at 1591. If so, it is the extreme and undifferentiated complaining of their supplicants that has created a situation that prevents reforms from being able to change the very thing (wasteful spending) that supposedly prompts the supplication.

249. Hyman & Sage, *supra* note 247, at 20.

250. Lawthers, *supra* note 50, at 468.

251. Marshall B. Kapp, *Medical Error Versus Malpractice*, 1 DEPAUL J. HEALTH CARE L. 751, 752 (1997).

252. Hal Scherz & Wayne Oliver, *Defensive Medicine: A Cure Worse Than the Disease*, FORBES (Aug. 27, 2013), <https://www.forbes.com/sites/realspin/2013/08/27/defensive-medicine-a-cure-worse-than-the-disease/#66652b27c954> [<https://perma.cc/VK8M-7XSK>].

Another scenario aligns well with existing empirical evidence, and is consistent with an image of healthcare providers as thoughtful professionals who are properly concerned about their patients' well-being, rather than routinely sacrificing their patients' interests for their own.<sup>253</sup> This scenario is that sick patients fall along a continuum ranging from clearly suffering from a condition that requires a particular treatment strategy, at one extreme, to clearly not suffering from the condition at the other extreme. For those clear cases, no defensive practices need be employed. Cases near the middle, characterized by the greatest uncertainty and high risk of error, will be more likely to prompt "defensive" behavior, especially for a condition where an erroneous diagnosis could lead to a disastrous outcome. Under such circumstances, non-cost-beneficially-optimal, "wasteful," diagnostic testing is most likely to be undertaken.<sup>254</sup> Whether that is done to protect the physician or the patient might be impossible to disentangle. Doctors might say that they thought they were acting defensively. But they were simultaneously making sure that the patient was being protected against the consequences of error. Under such circumstances, the line that divides defensive medicine from good medical practice becomes impossible to discern.

An example of that kind of situation would be a head injury. If the patient suffered a potentially dangerous head injury that could have been detected with more testing and observation, but is not caught, the result for the patient could be devastating. That's what the doctors responding to OTA's head-injury-case scenario were almost certainly thinking about when they proposed to order "excessive" testing. That is certainly what Atul Gawande was worrying about when his son was taken to the ER after a fall. Furthermore, it is consistent with research finding that "the strongest effect of greater malpractice pressure is in increased use of imaging services, with somewhat smaller effects on the use of other discretionary, generally low-risk services such

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253. Rather than the image promoted by healthcare industry lobbyists of frightened providers who impose expense on their patients and place them at risk, eagerly violating laws and ethical principles, merely to reduce the chances the provider will face the annoyance of a lawsuit.

254. See Frakes, *supra* note 105, at 359.

as physician visits and consultations, use of diagnostic tests, and minor procedures.”<sup>255</sup>

If that is what most “defensive medicine” looks like, then it is not irrational, not particularly wasteful, and not something many patients would wish to put a stop to. Perhaps most, if not all, defensive medicine stands at the confluence of two streams—defensive practice and good medical practice—flowing together and becoming one, indistinguishable.

Moreover, if that is the most accurate picture of defensive medical practice, then the basis for most of the malpractice law reform that has taken place over the past several decades evaporates.

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255. *Baicker & Chandra—Disappearing Doctors*, *supra* note 40, at 31; *See also* Frakes & Gruber, *supra* note 217, at 221; OTA-H-602, *supra* note 66 (stating, among other things, that “defensive medicine is not always bad for patients . . . a high percentage of defensive medical procedures are ordered to minimize the risk of being wrong when the medical consequences of being wrong are severe.”).

