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BOOK REVIEW

MEDICAL MALPRACTICE: FACING REAL PROBLEMS AND FINDING REAL SOLUTIONS

A MEASURE OF MALPRACTICE: MEDICAL INJURY, MALPRACTICE LITIGATION, AND PATIENT COMPENSATION, by Paul C. Weiler, Howard H. Hiatt, Joseph P. Newhouse, William G. Johnson, Troyen A. Brennan, and Lucian L. Leape. Harvard University Press, 1993. Pp. 178. \$29.95

MICHAEL J. SAKS*

Medical accidents kill more than three times as many people each year as do auto accidents¹ and produce many more permanent total or near-total disabilities than do workplace accidents.² Few victims of negligent medical injury—only between three to seven percent—bring any claim for compensation.³ Of those who bring valid claims, at least in the eyes of the defendants' insurers, half do not prevail at trial.⁴ Economic compensation generally falls below the injury victim's actual losses.⁵ The interval from injury to compensation averages six years in the State of New York, and those with the most serious injuries typically wait over a decade.⁶

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1. PAUL C. WEILER ET AL., A MEASURE OF MALPRACTICE: MEDICAL INJURY, MALPRACTICE LITIGATION, AND PATIENT COMPENSATION 55 (1993). As dreadful as these numbers may seem, the problem could be several times worse. See *infra* notes 87-90 and accompanying text.

2. WEILER ET AL., *supra* note 1, at 56.

3. *Id.* at 73-74.

4. Thomas B. Metzloff, *Resolving Malpractice Disputes: Imaging the Jury's Shadow*, 54 LAW & CONTEMP. PROBS. 43, 50 (1991).

5. Frank A. Sloan & Chee R. Hsieh, *Variability in Medical Malpractice Payments: Is the Compensation Fair?*, 24 LAW & SOC'Y REV. 997, 1019 (1990) (finding "that a 1 percent increase in loss yields about a 0.1 to 0.2 percent increase in compensation on average").

6. WEILER ET AL., *supra* note 1, at 5.

These conclusions are only a select few from a sizable body of research conducted in recent years.⁷ The study reported in *A Measure of Malpractice* is one of the most ambitious and important to date. Ironically, the motivation behind this and other studies comes in great part from the medical community itself and its vociferous complaints that the tort system has imposed excessive and unjust burdens on malpractice defendants.⁸ In an effort to measure the extent of the problem of malpractice litigation, the research discovered instead a massive problem of malpractice and the apparent ineffectiveness of tort law to address it.⁹

Rather than moving to protect the public from such massive harm, legislative reforms of the past two decades have been aimed at shielding health care providers, especially doctors, from the principal legal device designed to deal with accidental injuries, thereby assuring that injuries and deaths remain high and compensation inadequate.¹⁰ How could so remarkable a gap grow between widespread belief (and legislation), on the one hand, and the reality of the situation, on the other? No doubt many reasons worked together, but surely one of them was the lack of good and accessible data to throw real light on the problem.¹¹ "[G]overnments

7. See, e.g., PATRICIA M. DANZON, *MEDICAL MALPRACTICE: THEORY, EVIDENCE, AND PUBLIC POLICY* (1985); DEBORAH R. HENSLER ET AL., *COMPENSATION FOR ACCIDENTAL INJURIES IN THE UNITED STATES* (1991); Stephen Daniels, *Tracing the Shadow of the Law: Jury Verdicts in Medical Malpractice Cases*, 14 JUST. SYS. J. 4 (1990). For a discussion of these and other studies, see 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).

8. WEILER ET AL., *supra* note 1, at 1 (noting that the State of New York directed a medical liability study because "a sense of crisis enveloped the malpractice system as premiums were skyrocketing").

9. *Id.* at 73 ("[T]he odds that a potentially legitimate tort claim will be brought" are small.).

10. *Id.* at 76.

11. The body of knowledge about malpractice and malpractice litigation contains many gaps which allow numerous alternative interpretations and likely misinterpretations of the applicable data. See Saks, *supra* note 7, at 1169-70; Michael J. Saks, *Malpractice Misperceptions and Other Lessons About the Litigation System*, 16 JUST. SYS. J. 7, 19 (1993) ("[T]hese findings could support a variety of conclusions and, in turn, a variety of reforms."). For example, if the number of claims has risen over time, that rise could reflect increased "litigiousness" in the society. But in the alternative, it could reflect any one or more of the following changes: more malpractice, more medical care (for with more care come more occasions for error), more access to health care (as more people gain access to medical care, more occasions for instances of malpractice arise), an aging population (a larger number of older people combined with the fact that malpractice occurs disproportion-

should know something about the real world of medical injury and malpractice litigation before they enact reforms that profoundly affect the fates of patients, doctors, and lawyers for decades to come."¹² That shortcoming now has been reduced considerably.¹³

The book under review summarizes the origins, animating issues, methods, findings, and conclusions of the Harvard Medical Practice Study,¹⁴ one of the most important studies among the body of serious research on the subject of medical malpractice and malpractice litigation. The majority of the research reported in *A Measure of Malpractice* has appeared earlier in a lengthy technical report¹⁵ and numerous journal articles,¹⁶ although a few of the analyses included in the book are refinements over previous reports. This book represents the most public, most accessible, and most coherent statement of the Harvard project, its findings, and its conclusions. Although parts of the book are tough analytical sledding,¹⁷ I encourage the less statistically literate reader to stick with the book's text and not to worry unduly about the tables of

ately among older patients leads to more cases of malpractice), improved case selection by lawyers (more serious malpractice cases taken in place of less serious types of cases), and so on.

12. WEILER ET AL., *supra* note 1, at 152; cf. TERESA A. SULLIVAN ET AL., AS WE FORGIVE OUR DEBTORS: BANKRUPTCY AND CONSUMER CREDIT IN AMERICA 336 (1989) ("To advocate law reforms without a shred of evidence about how the system currently works, who is likely to be affected, and how those effects may reverberate throughout the system is breathtakingly negligent."); OXFORD DICTIONARY OF QUOTATIONS 192 (3d ed. 1979) ("It is a capital mistake to theorize before one has data.") (quoting SIR ARTHUR CONAN DOYLE, THE MEMOIRS OF SHERLOCK HOLMES (1983)).

13. Historians of law and policy will marvel not only at the legislative misdirection, but at the media's failure to report the story, even after hard evidence had displaced the anecdotes. To their credit, major medical journals, along with social science, law, and economics journals, have published many of the studies. See, e.g., Troyen A. Brennan et al., *The Nature of Adverse Events in Hospitalized Patients—Results of the Harvard Medical Practice Study II*, 324 NEW ENG. J. MED. 377 (1991); Frank A. Sloan et al., *Medical Malpractice Experience of Physicians: Predictable or Haphazard*, 262 JAMA 3291 (1989).

14. HARVARD MEDICAL PRACTICE STUDY, PATIENTS, DOCTORS, AND LAWYERS: MEDICAL INJURY, MALPRACTICE LITIGATION, AND PATIENT COMPENSATION IN NEW YORK, THE REPORT OF THE HARVARD MEDICAL PRACTICE STUDY TO THE STATE OF NEW YORK (1990).

15. *Id.*

16. See, e.g., Saks, *supra* note 7, at 1178-79. Many of these articles appeared in the *New England Journal of Medicine* and the *Journal of the American Medical Association*.

17. Notwithstanding some of the dust cover's assurances to the contrary. Moreover, some of the book's tables would draw a scolding from statistics or social science journal editors for their avoidable opacity.

multiple logistic regression analyses and probit models. Even these readers will emerge with a powerful education about the problem of medical malpractice and malpractice litigation.

ORIGINS OF THE PROJECT

Several of the most interesting lessons taught by *A Measure of Malpractice* can be found in the project's birth. When debate began to emerge over medical malpractice litigation in 1984, the deans of the Harvard School of Public Health and the Harvard Law School invited several of their colleagues to form the Harvard Medical Practice Study Group to conduct an interdisciplinary analysis of medical malpractice problems with a goal of recommending solutions. The group's composition¹⁸ and their enterprise changed over time. The Study Group's members debated with each other for more than a year. Then

it dawned on us that we were mired in these controversies because we suffered from the same information gap that was afflicting legislators and courts asked to choose from this policy menu. The case for these proposals rested almost entirely on anecdotal evidence, too easily tailored to the predispositions of the protagonist.

Eventually we concluded that as scholars in a university, our responsibility and our comparative advantage lay in doing the kind of research that could fill this yawning gap in the malpractice debate. Accordingly, we mapped out an ambitious study that for the first time would come to grips with all the major facets of this problem. Only after immersing ourselves in this process of empirical discovery and analysis would we be in a position to offer our views about how to improve the law's treatment of medical care.¹⁹

The realization that solid evidence is a necessary ingredient of good policy comes far more readily to empirical scientists of all kinds than to lawyers and legal scholars. Nevertheless, legal schol-

18. The book's authors include scholars from the fields of law (Paul C. Weiler), medicine (Howard H. Hiatt), health policy and management (Joseph P. Newhouse), health economics (William G. Johnson), and public health (Troyen A. Brennan and Lucian L. Leape).

19. WEILER ET AL., *supra* note 1, at vii-viii.

ars continually have rediscovered this in many areas of legal policy²⁰

The group's proposed study was suggested to officials in government and organized medicine in Massachusetts, the obvious site for the research. The officials rebuffed the offer because a malpractice reform bill supported by both the Governor and the medical society was pending in the legislature.²¹ Apparently waiting for research to provide necessary answers risked confusing the lawmakers with the facts, and certainly would delay the adoption of a law they already were poised to approve.²² The State of New York, especially the office of the Commissioner of Health, which apparently felt a strong need for more solid answers, welcomed the study and committed \$4 million to finance it.²³

THE STUDY

The core of the study involved review of the medical records of approximately 31,000 patients treated in fifty-one New York hospitals during 1984.²⁴ The hospitals were a representative sample of the state's acute-care, nonpsychiatric hospitals.²⁵ The study carefully oversampled high-risk patients and undersampled low-risk patients, and weighted them so that the sampled cases could be extrapolated to the state's 2.6 million hospital patients that year.²⁶

The records were screened by medical records analysts trained to identify possible "adverse events," defined as "unintended or

20. See, e.g., DAVID BALDUS ET AL., *EQUAL JUSTICE AND THE DEATH PENALTY: A LEGAL AND EMPIRICAL ANALYSIS* (1990); DAVID L. CHAMBERS, *MAKING FATHERS PAY: THE ENFORCEMENT OF CHILD SUPPORT* (1979); SULLIVAN ET AL., *supra* note 13.

21. WEILER ET AL., *supra* note 1, at viii-ix.

22. *Id.* The landscape of malpractice reform is littered with examples of legislation that did not work. See Saks, *supra* note 11, at 17-18 (reviewing studies of malpractice litigation reforms that failed). On the other hand, no single project provides all the answers, and policy virtually always must be made in the face of some uncertainty. The problem in the tort reform area has been that confident assertions so often have turned out, when the serious research came in, to be at so great a distance from reality that the facts certainly would have been worth waiting for.

23. This sum is not excessive, considering the problem consumes \$1 billion annually in insurance premiums in the State of New York. WEILER ET AL., *supra* note 1, at ix.

24. *Id.*

25. The researchers and the State succeeded in gaining the cooperation of every one of the hospitals selected for the study. *Id.* at x-xi.

26. *Id.* at 40.

unexpected harmful consequences of medical intervention."²⁷ Those adverse events found were then reviewed by at least two physicians who again assessed the injury, judged whether the injury was attributable to negligence²⁸ and if so the gravity of the negligence, and evaluated the disability level caused by the injury. Disagreements were resolved by one of six senior physicians on the project.²⁹

In addition to analyzing hospital records, the Harvard Study reviewed insurance records of malpractice claims in the state in order to assess the correspondence between negligent injuries suffered and claims filed.³⁰ Finally, the project conducted interviews with 739 doctors, to learn about their experience with and perceptions of malpractice and malpractice litigation³¹ and with 3,341 patients, many of whom the project had determined to be malpractice victims.³²

Although confidential reviews of records and aggregation of data (with no personal identifiers) are accepted ways of conducting research while protecting the privacy of individuals, the interview phase of the study did present an ethical dilemma. Because the great majority of those who suffered negligent injuries had not filed

27. *Id.* at 34-35.

28. "A negligent adverse event was the consequence of treatment that failed to meet the standard of the average medical practitioner in the field." *Id.* at 35.

29. *Id.* at 41. The fact of disagreement is itself worth noting. Medical malpractice may be one of the most difficult areas of torts in which to attribute injuries to negligence. While an injury in itself will alert the driver of a car or the user of a tool that something is amiss, a medical patient is less likely to know whether an injury is unexpected and, if so, whether it is due to physician error. Marlynn L. May, *Aggrieved Patients' Journeys to Justice: Self-Help Networks Among Suers and Non-Suers* 4 (June 26-29, 1991) (unpublished paper presented at the joint meeting of the Law and Society Association and the Research Committee on the Sociology of Law of the International Sociological Association, on file with the author) (finding that before filing a claim, injured patients typically consult family, friends, and professionals, including doctors, in an effort to understand the cause of their condition and decide what action to take, if any). From the Harvard Study, it is obvious that even physicians have difficulty deciding when an injury is due to negligence. See WEILER ET AL., *supra* note 1, at 41 (noting differences of opinion between the screeners of the medical records). This has implications that the authors seem to have overlooked. See *infra* notes 115-23 and accompanying text.

30. WEILER ET AL., *supra* note 1, at 38.

31. *Id.* at 118.

32. *Id.* at 83. Apparently, however, no family members of deceased patients were interviewed.

claims, the project's interviewers would be talking to people who had suffered negligent injuries, some of whom were left seriously disabled by those injuries, and who might still bring a claim. Hospital officials conditioned their cooperation with the study on a promise not to reveal anything to the interviewees that would alert them to the fact that they probably had a valid malpractice claim on which they never had acted.³³ This presented the researchers with an interesting dilemma. Could they ethically extract information from former patients about their injuries, disabilities, suffering, and economic losses, and in exchange for their cooperation, never reveal to the interviewees the true reason for the interest in them?³⁴ The book does not discuss the full analysis of this ethical dilemma, if one was undertaken, and the fact that the study was conducted is sufficient to tell the reader in which direction it was resolved.³⁵

BASIC FINDINGS

This Section summarizes the basic findings and conclusions of the research reported in *A Measure of Malpractice*. Subsequent sections comment on various aspects of the research, the findings, and their implications.

33. *Id.* at xi-xii.

34. Rather than informing people they were the source of information for a study of malpractice, they were told the study was about "the economic consequences of hospitalization." *Id.* at xii.

35. If one finds it ethically impermissible to take information from people without telling them the real purpose for which the information is being sought, and thus failing to obtain or even seek their informed consent for participation in the study, then those portions of the study requiring interviews will not be done. But the requirement of informed consent for research participation is not absolute. Where the risks to the participant are minimal, as in verbal interviews and surveys, the requirements of informed consent are lessened. *See* 45 C.F.R. § 46.101(b) (1992); *see also* National Research Act, Pub. L. No. 93-348, 88 Stat. 342 (1974); NATIONAL COMM'N FOR PROTECTION OF HUMAN SUBJECTS OF RESEARCH, U.S. DEP'T HEALTH, EDUC. & WELFARE, PUB. NO. OS 78-0012, BELMONT REPORT: ETHICAL PRINCIPLES AND GUIDELINES FOR THE PROTECTION OF HUMAN SUBJECTS OF RESEARCH 12 (1978). Moreover, from a utilitarian perspective, the particular malpractice victims are equally well off whether the study is not done at all or is done and they are deceived about the true reasons for their participation. If the study is done, however, future malpractice victims (potentially including the respondents themselves) may benefit from law and policy based on these findings.

Medical Accidents and Negligence

Adverse events occurred for 3.7% of patients or nearly 99,000 New York hospital patients in 1984.³⁶ More than a quarter of those adverse events were due to negligence.³⁷ In other words, approximately one percent of hospital patients, more than 27,000 people, were victims of medical malpractice.³⁸ Of that number, nearly half, more than 12,000, involved minimal injury and the victims recovered within one month, while three percent, or nearly 900 victims, suffered major permanent disability.³⁹ And twenty-five percent of the victims, about 6,900 individuals, died as a result of the malpractice.⁴⁰ Generally speaking, the more serious the injury, the more likely it was to have been caused by negligence. For example, as the accompanying Table 1,⁴¹ reprinted from the book, shows, while only twenty-two percent of the 56,042 minimal injuries were due to negligence, fifty-one percent of the 13,451 deaths were.⁴²

36. WEILER ET AL., *supra* note 1, at 43-44.

37. *Id.* at 43.

38. *Id.*

39. *Id.* at 44.

40. *Id.*

41. See Table 1, *infra*.

42. WEILER ET AL., *supra* note 1, at 44 (Table 3.2 reproduced herein as Table 1).

Table 1. Disability caused by adverse events, based on 1984 New York State population estimates.

Disability	Adverse events		Negligent adverse events		Adverse events due to negligence
	No.	%	No.	%	%
Minimal, recovery 1 month	56,042	57	12,428	46	22
Moderate, recovery 1-6 months	13,521	14	3,302	12	24
Moderate, recovery > 6 months	2,762	3	817	3	30
Permanent, 1-50% disability	3,807	4	869	3	23
Permanent, > 50% disability	2,550	3	877	3	34
Death	13,451	14	6,895	25	51
Not determinable	6,477	7	1,989	7	31
Total*	98,610	100	27,177	100	28

* Totals differ from sums reported above because of rounding errors.

The authors extended their New York findings to the nation:

If New York's adverse-event-related death total can be extrapolated to the U.S. population as a whole, one would estimate over 150,000 iatrogenic fatalities annually, more than half of which are due to negligence. Medical injury, then, accounts for more deaths than all other types of accidents combined, and dwarfs the mortality rates associated with motor vehicle accidents (50,000 deaths per year) and occupation-related mishaps (6,000 deaths per year).⁴³

A better index of the riskiness of medical treatment was the number of permanent and total or near-total disabilities. Severe nonfatal injuries from medical management numbered 2,500 in New York State, which would be equivalent to more than 30,000 victims nationally, a total greatly in excess of comparable disabilities from the job⁴⁴

43. *Id.* at 55 (footnote omitted).

44. *Id.* at 56.

In addition, the researchers treated the observed malpractice like other sources of disease or injury, and carried out analyses to better understand the epidemiology of medical injury⁴⁵ Those analyses might prove helpful to risk management specialists in efforts to reduce the incidence of such injuries.

Claims Filed

Across the State of New York, claims for compensation rose from six per one hundred physicians in 1976 to seven per one hundred in 1984.⁴⁶ The important question, of course, is how the number of claims compares with the number of negligent injuries or adverse events. The study accomplished the comparison using several procedures, including matching the negligent injuries found by the review of hospital records to filings with malpractice insurers.⁴⁷ The analysis revealed that for every seven to eight patients who suffered a negligent injury, one claim was filed.⁴⁸

It is informative to disaggregate this ratio, because while not every victim of negligent injury filed a claim, not every claim filed was by a patient judged in the records review to have suffered a negligent injury.⁴⁹ As Table 2 shows, in their sample of over 30,000 patients, forty-seven filed malpractice claims, but only eight of

45. *Id.* at 33. Greater age and lack of health insurance were the major risk factors associated with patients who became victims of malpractice. *Id.* at 47. More negligence occurred in hospitals with higher percentages of minority patients. *Id.* at 51. A much smaller percentage of adverse events was attributable to malpractice in university teaching hospitals and proprietary hospitals. *Id.* at 50-51.

46. *Id.* at 69. Using data only from the two largest physician insurers, whose insureds were most actively engaged in practice, the rates are 11 per 100 in 1976 and 13 per 100 in 1984. *Id.*

47. *Id.* at 67.

48. *Id.* at 70.

49. *Id.* at 71. Table 2 was constructed from data presented in Chapter 4 of the book. It clarifies the comparison between those patients who have negligent injuries and those who do not, and what actions they take. *Id.* at 77-109. For every patient with a negligent adverse event who files a claim, there are almost five additional claims filed by patients who did not suffer negligent injuries. *Id.* at 71. But Table 2 makes other interpretations of those data apparent. Of a total of 280 negligent adverse events, eight claims were filed. *Id.* at 72. Of 29,841 cases in which the study found no negligent adverse event, 39 claims were filed. *Id.* Put differently, 2.9% of negligent adverse events were detected and claims filed; no claims were filed for 99.9% of the nonnegligent adverse events. And the comparison between valid claims not brought (272) and invalid claims brought (39) becomes patent, a ratio of seven to one.

those had, by the study's reckoning, suffered from negligent medical injuries.⁵⁰ This meant that the gap between negligent injuries suffered and claims brought would be closer to one in fifty than to one in seven or eight. Other considerations led the authors to conclude that the actual ratio of false negatives (negligently injured patients who bring no claim) most likely fell somewhere between one claim in fifteen instances of malpractice and one in thirty⁵¹

In addition to false negative errors, the study also revealed instances of false positive errors—doctors who had not inflicted negligent injuries but who nonetheless had claims filed against them. The ratio of false positives to true positives was nearly five to one (thirty-nine to eight).⁵²

Table 2. Medical Accidents and Claims.

	Claim Filed?		
	No	Yes	
Negligent Adverse Event	272	8	280
No Negligent Adverse Event	29802	39	29841
	30074	47	30121

Putting the two kinds of errors together, as we can see from Table 2, the ratio of erroneous filings to erroneous non-filings is about one to seven (thirty-nine to 272).⁵³ That is, for every doctor or hospital against whom an invalid claim is filed, there are seven valid claims that go unfilled.

The authors conclude:

[A] common physicians' complaint about malpractice litigation is that it is both excessive and erratic. Our investigation of the incidence and distribution of litigation in New York demonstrates that while the legal system does in fact operate erratically, it hardly operates excessively.⁵⁴

50. *Id.* at 72.

51. *Id.* at 74-75.

52. *Id.* at 71.

53. *Id.*

54. *Id.* at 73. I have doubts that the data support the charge of "erratic." A closer look suggests much the reverse. See *infra* notes 109-23 and accompanying text.

Our litigation study demonstrates a far greater gap than we had expected between tortious injuries inflicted on patients in hospitals and tort claims filed against health care providers. [W]e found several times as many seriously disabled patients who received no legal redress for their injury as innocent doctors who bore the burden of defending against unwarranted malpractice claims.⁵⁵

Patient Losses and Compensation

This portion of the book focuses on the *additional* losses imposed on patients due to medical accidents—that is, costs above and beyond those arising from the underlying illness or injury which occasioned hospitalization and treatment.⁵⁶ This analysis was accomplished by using two alternative methods, both building on a comparison of medically-injured patients with similar but nonmedically-injured patients.⁵⁷ The total of the compensable costs due to medical accidents came to about \$3.77 billion in 1984—\$1.8 billion in additional medical care and \$1.96 billion in lost earnings and household production.⁵⁸

Because this analysis was aimed at testing whether the authors' proposed no-fault compensation system is economically feasible, the authors had little interest in separating the costs to the negligently injured from those imposed upon all persons suffering iatrogenic injuries. They also had little interest in evaluating the adequacy of payments made under the existing tort system.⁵⁹

When these losses are adjusted for taxes, consumption payments, employment-related lost income compensation, health insurance compensation, and a proposed six-month deductible period, the total cost of medical injuries is reduced from \$3.77 billion to \$964 million.⁶⁰ To this figure must be added other costs of a no-

55. WEILER ET AL., *supra* note 1, at 76.

56. *Id.* at 77-109.

57. *Id.* at 82-91.

58. *Id.* at 99.

59. *But see* Hensler, *supra* note 7, at 107 (finding that tort liability payments accounted for only about seven percent of total compensation); Saks, *supra* note 7, at 1218-20 (summarizing studies finding that the tort system overcompensates small losses, undercompensates large losses, and on average undercompensates).

60. WEILER ET AL., *supra* note 1, at 99.

fault system, notably administrative costs, which the study estimates at between thirty and thirty-five cents per dollar of claim.⁶¹ The sum would be the expected cost of the proposed no-fault plan. By comparison, during the same period, the total cost of malpractice premiums in New York State came to about \$1 billion.⁶²

The authors' proposed alternative malpractice compensation system would compensate all injuries caused by medical intervention (whether due to negligence or not), but only for injuries that endure beyond a six-month deductible period, only for the increment due to the adverse event (that is, no coverage for the underlying illness or injury), only for costs that are not already covered by other kinds of insurance, and provide nothing for pain, suffering, and loss of enjoyment of life.⁶³ As the numbers above indicate, such a plan appears economically feasible.⁶⁴

Deterrence

For reasons that will be discussed later, and of which the authors are aware, the deterrence analysis is methodologically the weakest part of the study and the findings should be regarded as commensurately tentative. Nevertheless, this Section will summarize the study's basic findings.

Physicians overestimated by a factor of three the likelihood that a suit will be filed. They estimated that 19.5 suits were filed per 100 physicians,⁶⁵ while the actual rate was 6.6 per 100.⁶⁶ While doctors in all specialties overestimated the risks of suit,⁶⁷ the overestimates of those in the low-risk specialties were the most exaggerated and those in the high-risk specialties the least exaggerated.⁶⁸

61. *Id.* at 106. The comparable transaction costs for the existing medical malpractice system are estimated at 55 cents to the dollar and for workers' compensation at 20 cents. *Id.*

62. *Id.* at ix.

63. *Id.* at 101, 106-07.

64. See *supra* notes 57-62 and accompanying text.

65. WEILER ET AL., *supra* note 1, at 124. I suspect the authors really mean claims. Not all filed claims are born as or become lawsuits.

66. *Id.*

67. *Id.*

68. *Id.* Low-risk specialties included internal medicine and associated specialties; medium-risk specialties included general surgery and associated specialties; high-risk specialties included orthopedic surgery, neurosurgery, and obstetrics. *Id.* at 117.

Physicians believed that forty-five percent of adverse events and sixty percent of negligent adverse events resulted in malpractice claims.⁶⁹ The most generous calculations of the actual proportions are four percent and thirteen percent, respectively.⁷⁰

There was "marked variation among physicians in their willingness to label certain kinds of medical outcomes as iatrogenic, and an even more pronounced reluctance to label as negligent those treatment decisions that, *ex post* at least, were clearly erroneous."⁷¹

In personal interviews, physicians "expressed great distress, even anguish, over having their professional performance and competence attacked."⁷² Physicians indicated that malpractice actions, or fear of those actions, produced a number of changes in their practice patterns. In response, they ordered more tests and procedures, and reduced either the number of patients or the range of their services.⁷³

The survey of a large number of physicians revealed that the effect of possible malpractice litigation on standards of care was judged by them to be on a par with clinical care rules, guidelines, and standard operating procedures developed by clinical departments and hospitals—considerably lower than continuing medical education and medical journals and considerably higher than external organized peer review.⁷⁴ Personal interviews, by contrast, suggested that potential malpractice actions were rated lower, along with external peer review and state boards of discipline.⁷⁵

The most important analysis, which estimated the effect of a host of variables on the proportion of adverse events that were

69. *Id.* at 125.

70. *Id.* It is interesting to note that even physicians recognize that far fewer than all negligently caused injuries result in claims, and thus that the tort system's lack of vigilance favors injurers over the injured, even though the physicians' estimate is more than four times greater than the actual probability of a claim resulting from negligent injury. *Id.*

71. *Id.* at 125.

72. *Id.* at 126.

73. *Id.* at 127. Yet the data suggest that the size of the effect is quite modest, with relative odds of only 1.04 and 1.01, respectively, for those seeing the risks of suit as higher versus lower. This seems to challenge much of the popular wisdom about physicians practicing defensive medicine. *Id.*

74. *Id.* at 128.

75. *Id.* at 128-29.

negligent, concluded that "the more malpractice suits that are brought against the doctors and other providers in a particular hospital, the fewer the number of negligent medical injuries that will be suffered by patients in that hospital."⁷⁶ "The current level of litigation intensity in New York appeared to be reducing the negligent injury rate in our sample by 29 percent . . . and overall medical injuries by 11 percent ."⁷⁷

The Sections that follow comment on a number of issues raised by the study, its findings, and their implications. I suspect that much of what I write below will come as no revelation to any of the authors of the book, but the book does not discuss them, and such discussion may be helpful as we digest the work of the authors and reflect on its implications.

HOW ACCURATE IS THE COUNT OF MEDICAL INJURIES?

The basic data accord roughly with the few similar studies that have been conducted. The best known was sponsored by the California Medical Association and the California Hospital Association,⁷⁸ which found about 0.8% of hospital patients were victims of malpractice.⁷⁹ The U.S. Department of Health, Education and Welfare conducted a similar study⁸⁰ and found that two percent of patients suffered from negligent injuries.⁸¹ The apparent differences among the studies could be due to time, place, research procedures, or other factors, and cannot be read as showing general increases or decreases in the level of malpractice. The overall level of rough agreement, however, cannot be taken to confirm anything beyond that general agreement. Because the same basic methods were used, it should come as no surprise that the same basic an-

76. *Id.* at 129.

77. *Id.* at 131.

78. See Saks, *supra* note 7, at 1179 n.89 (citing CALIFORNIA MEDICAL ASS'N & CALIFORNIA HOSP. ASS'N, REPORT ON THE MEDICAL INSURANCE FEASIBILITY STUDY (Don H. Mills ed., 1977)).

79. WEILER ET AL., *supra* note 1, at 43. Recall that the study under review found one percent. *Id.*

80. LEON S. POCINCKI ET AL., U.S. DEP'T HEALTH, EDUC. & WELFARE, PUB. NO. (05) 89, THE INCIDENCE OF IATROGENIC INJURIES: REPORT OF THE SECRETARY'S COMM'N ON MEDICAL MALPRACTICE 50 (1973).

81. *Id.* at 50 (using data obtained from a sample of 23,750 patients discharged in 1972 from two large urban hospitals).

swers were obtained. If the method has systemic errors, then all three studies might be producing the same miscount. There are several reasons to suspect that the number of injurious medical errors is greater, perhaps far greater, than the number found by these studies, including the Harvard Medical Practice Study⁸²

If the initial stages of medical record screening picked up an adverse event that was not an adverse event, or attributed negligence to cases in which none existed, that false positive error had several opportunities to be weeded out,⁸³ much as in the litigation process itself. But false negatives—negligent or nonnegligent medical injuries that are overlooked—are likely to remain uncounted. The Harvard researchers conducted a study within their study and found that the medical records screeners missed one in two hundred adverse events.⁸⁴ Second, by design the study focused on hospital inpatients and largely ignored outpatient medical accidents.⁸⁵ Third, medical treatments that are given successfully but unnecessarily—such as “successful” coronary bypass surgery for patients who do not need it⁸⁶—would not be captured at all by the study under review. Yet such inappropriate treatment is at least negligent.

Finally, and most importantly, the study assumed that the essential information needed to count medical injuries and negligence was in the medical records.⁸⁷ A very recent study tested that assumption by having researchers accompany doctors at a hospital and then compare what was observed to what was recorded in

82. HARVARD MEDICAL PRACTICE STUDY, *supra* note 14.

83. See, e.g., WEILER ET AL., *supra* note 1, at 44.

84. *Id.* at 37.

85. *Id.* at 31. In some of the institutions outpatient records were available. *Id.* at 41.

86. Constance M. Winslow et al., *The Appropriateness of Performing Coronary Artery Bypass Surgery*, 260 JAMA 505, 507 (1988) (finding that, in a study of 386 patients, 56% of bypass surgeries were appropriate, 30% equivocal, and 14% inappropriate). Similar findings exist for other treatments. See, e.g., *The Appropriateness of Carotid Endarterectomy*, 318 NEW ENG. J. MED. 721 (1988) (finding that, in a study of 1302 patients, 32% of carotid endarterectomies were inappropriate).

87. The book mentions this as a potential problem, common to studies of medical records, but the authors do not assess their own study's vulnerability to it. Sometimes the record's incompleteness would be deliberate in order to hide an error. See *infra* note 89 and accompanying text. Other times the omission from the record and the maltreatment may have resulted from the very same cause: the doctor did not realize that what was being done was wrong or missed the problem. WEILER ET AL., *supra* note 1, at 37.

medical records and incident reports.⁸⁸ Given the importance of medical records not only to patients but to the welfare of physicians and other hospital staff, it should not be surprising to find the records being manipulated.⁸⁹ The Andrews study found that about four times as many negligent injuries occurred as were recorded.⁹⁰ Any such discrepancy between what happens to patients and what is reflected in their medical records has major implications for virtually every aspect of the work under review. For example, it may mean that the study's estimation of 150,000 deaths nationally is in reality several times that number, and places into doubt the cost estimates of the authors' no-fault plan.

Whatever the correct number may be for New York State, the study's extrapolations to national death and serious injury estimates are rough approximations, calculated simply by increasing the New York medical accident data by the ratio of the nation's population to New York's population.⁹¹ The actual national figures might be less or more than suggested by the book. For example, if New Yorkers have greater access to hospitalization than the rest of the country, then the national total of medical accidents would be lower than a simple population adjustment would yield. On the other hand, if New York doctors tend to give more error-free care, then the national totals might be higher than the estimates offered in the book.

88. Lori Andrews, *Medical Error and Patient Claiming in a Hospital Setting* 10 (May 30, 1993) (unpublished paper presented at the annual meeting of the Law & Society Association, on file with the *William and Mary Law Review*).

89. *Id.* at 11. Sometimes important and inculpatory information inadvertently may not be recorded. On the other hand, there have been documented instances of the fraudulent alteration of medical records to conceal malpractice. See John J. Harris & Don H. Mills, *Medical Records and the Questioned Document Examiner*, 8 J. FORENSIC SCI. 453 (1963) (reporting several cases of alteration and falsification of medical records used in litigation). The more that hospital records come to be used to cast light on the general phenomena, in addition to their use in litigation, the more likely the records are to be the target of systematic distortion. Thus, an apparent decrease in adverse events or negligence over time could mean less medical malpractice, or it could mean improved skill at concealment.

90. Andrews, *supra* note 88, at figure 6.

91. WEILER ET AL., *supra* note 1, at 137.

PUTTING MEDICAL ACCIDENTS INTO PERSPECTIVE

Whatever the level of injury is actually, and however crushing those harms may be personally or financially to victims and their families, the reader should bear in mind that from both a public health and a compensation perspective these numbers are not quite as devastating as they may appear. On average, lost years of work or life, and the sums of money associated with these, are no doubt far less for victims of medical malpractice than for victims of other kinds of torts.⁹² Most victims of most other torts are relatively young and healthy before their accidents. Many victims of medical malpractice already are suffering serious illness or injury for which they have sought medical treatment. Some medical accidents may shorten the patient's life by only days or hours. In that event, while the death is still wrongful, the compensable damages will be small. Moreover, negligent injuries produce disproportionately more deaths, and therefore lower costs, than nonnegligent injuries, which are more likely to lead to long-term medical costs.⁹³ Thus, although the number of people affected by malpractice is staggering, the translation into economic losses is greatly attenuated.⁹⁴

BEYOND STATISTICS

The Harvard Medical Practice Study is admirable for its thoughtful research design, its systematic collection of extensive empirical data, its careful analysis (often using alternative approaches to see if they converged on the same answer), and its sober report of quantitative findings. These virtues may also be weaknesses. While quantitative data and statistical analysis open a window to knowledge that cannot otherwise be gained, at the same time aggregate numbers and careful analysis leave many readers and listeners a bit cold and uncomprehending. Likely, that is why

92. *Id.* at 97.

93. *Id.*

94. This may be evident in the pattern of litigation behavior: "[N]early 80 percent of the patients who suffered a negligent injury but did not sue were either fully recovered from the injury within six months or were more than 70 years old when the injury occurred [and therefore had little or no loss of income]." *Id.* at 70.

anecdote writers⁹⁵ have had as much impact on policy as they have, even though many of their conclusions cannot find support in more systematic evidence.⁹⁶ Because serious scholars, among them the Harvard Study's authors, know how meaningless anecdotes are for answering virtually all of the issues in the litigation policy debates, they tend to eschew anecdotes altogether. In doing so they may give up too much to the storytellers.⁹⁷

Moreover, a reader of *A Measure of Malpractice* can still wonder what the hospital records analysts looked at and how they judged injuries to be "adverse" or "negligent." I would not blame doctors who remained unconvinced unless and until they could see the details of the cases and satisfy themselves as to the injuries and errors. Indeed, because medical malpractice is a relatively rare event,⁹⁸ doctors will see fewer of them than the lawyers whose work requires them to see concentrations of such cases.⁹⁹ As far as I am aware, no published source brings together the concrete factual details of a representative sample of such cases. Such case examples would provide a kind of information that is not now available.

At the University of Iowa, the National Maternal and Child Health Resource Center conducted an analysis of 178 pediatric medical malpractice cases they were able to find through an extensive search of law reporters.¹⁰⁰ A co-director of the project, Dr. John MacQueen,¹⁰¹ has said that when he began the project he was

95. E.g., PETER W. HUBER, *LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES* (1988) (purporting to chronicle a recent dramatic increase in litigation and its negative consequences); WALTER K. OLSON, *THE LITIGATION EXPLOSION: WHAT HAPPENED WHEN AMERICA UNLEASHED THE LAWSUIT* (1991) (arguing that recent changes in liability law have benefitted lawyers almost exclusively).

96. See Saks, *supra* note 7, at 1242.

97. For an effective presentation of data and representative case descriptions, see SULLIVAN ET AL., *supra* note 12.

98. Recall, according to the present study, there is only one malpractice victim per 100 hospital discharges. WEILER ET AL., *supra* note 1, at 43.

99. This group of lawyers includes hospital lawyers, insurance company lawyers, plaintiffs' lawyers, and defense lawyers.

100. JOHN C. MACQUEEN & DAVID BALDUS, *DEPT OF PEDIATRICS AND COLLEGE OF LAW, UNIVERSITY OF IOWA, A STUDY OF MEDICAL DISABILITY CASES AND DAMAGES* (1993) (on file with the *William and Mary Law Review*).

101. Dr. MacQueen, a pediatric neurologist, is director of the University of Iowa National Maternal and Child Health Resources Center, Professor of Pediatrics Emeritus at the University of Iowa College of Medicine, former director of the State of Iowa Program for Chil-

indignant about lawsuits being brought against doctors and hospitals, and shared the same beliefs (disbeliefs, really) that many other doctors held. But after reading the actual cases, his attitude changed to one of shock at what some of his colleagues were doing. He concluded that a large proportion of the pediatric cases reviewed involved what would be regarded by most physicians as gross errors in medical care.¹⁰² He also concluded, however, that in a significant, albeit smaller, proportion of cases physicians were penalized for injuries that were probably unavoidable under the circumstances or were related to medical judgments that were not clearly unreasonable.¹⁰³ The authors of the report provided a quantitative summary of the various errors¹⁰⁴ and injuries,¹⁰⁵ but believed that they could convey the real nature of the accidents only by providing concrete descriptions of representative cases.¹⁰⁶

dren with Special Health Care Needs, and past president of the American Academy of Pediatrics.

102. *MACQUEEN & BALDUS*, *supra* note 100, at 15. Having gone to trial and appeal, these cases presumably are the more ambiguous and less glaring. One would expect the most outrageous cases to have been settled.

103. *Id.*

104. *Id.* at 27, Chart F. Chart F demonstrates the proportion of errors due to failure to diagnose, delay of diagnosis, improper performance of surgery, improper performance of treatment, mistaken diagnosis including misinterpretation of diagnostic test, improper performance of diagnostic test, wrong drug ordered, wrong dosage ordered, wrong drug given, wrong dosage given, improper choice of delivery method, improper choice of treatment, etc.

105. *Id.* at 44, Chart L. Chart L demonstrates the proportion of injuries causing neurological impairment, brain function impairment, neuromuscular impairment, impairment in physical appearance, neurosensory impairment, impairment in body function, skeletal impairment, skin impairment, renal impairment, reproductive dysfunction, etc.

106. *Id.* at 14-29. Although the news media eagerly publish anecdotal case reports, few scholarly journals are eager to do so. That division of contents and outlets seems likely to have affected the public's and policymakers' perception of the facts.

Lest I commit the same omission as I am discussing, let me provide an edited summary of one of MacQueen and Baldus' summaries:

Injury Type: 3: INTRACRANIAL INJURY

Case Name: *Hoskie v. United States*, 666 F.2d 1353 (10th Cir. 1981)

On August 17, 1977, the two-and-one-half-year-old male plaintiff entered a federal government medical facility for a routine bronchoscopy to remove a lodged sunflower seed. During the course of treatment, plaintiff was given an injection of 10 milligrams of morphine as a sedative, a dose several times that recommended by accepted pediatric authorities for a child of his age and weight. Within a few hours, he lapsed into a coma and remained unresponsive for several days. When he gradually emerged from unconsciousness, it was determined that the overdose of morphine had depressed his breathing function, depriving his brain of oxygen and causing permanent brain damage.

Counting such cases is fine, but sometimes readers need to be given a more concrete sense of what is being counted.

HOW "ACCURATE" IS THE TORT SYSTEM?

Do malpractice claims accurately target instances of negligent injury, or are they random and unpredictable, as likely to be brought against physicians who did not commit malpractice as those who did injure a patient negligently? This aspect of the conventional tort system should make a difference for both our assessment of the justice of the system and its likely deterrent effect. On this topic, the author(s) of one chapter of *A Measure of Malpractice* does not quite seem to have grasped what the author(s) of another chapter wrote.¹⁰⁷

The chapter on deterrence, Chapter 6, comments:

[I]n terms of absolute numbers more claims are filed against careful than against careless doctors. To reiterate the analogy from [Chapter 4], one cannot assume that a legal regime that gives out more traffic tickets to drivers going through an intersection on the green than on the red light will serve as an effective deterrent against drivers going through on the red.¹⁰⁸

Before entering the medical facility, the plaintiff was a healthy, normal, well-coordinated child who could walk, speak in sentences, ride a tricycle, and was toilet-trained. He now suffers from spasticity; rigidity; impaired hand-eye coordination, balance, and other motor skills; impaired speech and vision; mental retardation (I.Q. under 50); and has suffered convulsions. He walks with a spastic gait, even with aid of leg braces. He cannot run, ride a tricycle, or play elementary sports. At age four-and-one-half, he cannot speak clearly and is no longer toilet-trained. Although his condition may improve gradually, he will remain mentally retarded. He will require some form of supervision for the rest of his life. His life expectancy is over 60 years. The plaintiff sought \$1,000,000 pain and suffering. The trial court awarded plaintiff total compensatory damages of \$231,000 consisting of \$206,000 in special damages and \$25,000 in general damages. Plaintiff's mother was awarded \$5,000 in lost wages.

Plaintiff appealed the damages award. The appellate court reversed and remanded the pain and suffering award, and affirmed the remainder of the verdict. On remand, the trial judge awarded \$1,000,000 pain and suffering.

MACQUEEN & BALDUS, *supra* note 100, at 20.

107. The problem may be that a phenomenon obvious to biostatisticians or epidemiologists (who, I suspect, wrote Chapter 4) may not be so familiar to econometricians (who obviously wrote Chapter 6), and vice versa for other issues.

108. WEILER ET AL., *supra* note 1, at 115-16.

Chapter 4 makes quite a different point. It takes pains to go beyond the raw numbers and to deal in more meaningful probabilities:

[W]hile the absolute number of unfounded claims is considerably larger than the absolute number of valid claims, the pattern shows that the chances that any one doctor will be sued are far greater if negligent treatment has occurred than if it has not. To return to our traffic analogy, even though more drivers may be ticketed by police after going through green than red lights, the reason is that far more drivers go through green lights in the first place. With that difference controlled for, the odds that a careless driver will get a ticket, or that a careless doctor will be sued, are far greater than the odds faced by their careful counterparts.¹⁰⁹

A glance back at Table 2 of this book review should clarify the point.¹¹⁰ The number of cases in which no negligent adverse event occurred vastly outnumbers the negligent injuries (about one hundred to one), and even a ninety-nine percent accurate system would produce more invalid than valid filings on so skewed a distribution.¹¹¹ This problem is regularly faced in biomedical testing, and therefore should present no surprise or confusion to the medical profession.¹¹²

Thus, in the legal context as well, false positives can outnumber true positives (by five times, based on the data in Table 2). Yet at the same time, the system targets negligent injuries with sufficient accuracy that a doctor who causes a negligent injury stands a far

109. *Id.* at 75. The quotation continues: "As we shall see in Chapter 6, however cloudy the malpractice signal might appear to doctors, both the reality and the perception of that signal have a pronounced tilt in the proper direction." *Id.* at 75-76.

110. See *supra* notes 49-53 and accompanying text.

111. If patient filings were 99% accurate, given the basic data in the margins of Table 2, there would be 277 true positive filings and 298 false positive filings. See *supra* Table 2.

112. HIV screening provides an example. Though the test is 97.7% accurate, because the population distribution of HIV infections is about 250 uninfected to each one infected, in a screening of the population the test would make about 19 false positive errors for every true positive found, so that a positive test result would mean one had about a five percent chance of actually being infected with HIV. Stanley H. Weiss et al., *Screening Test for HTLV-III (AIDS Agent) Antibodies*, 253 JAMA 221, 224 (1985); see also Joseph L. Gastwirth, *The Statistical Precision of Medical Screening Procedures: Application to Polygraph and AIDS Antibodies Test Data*, 2 STAT. SCI. 213, 216 (1987) (showing that the ratio of false positives to true positives rises as the prevalence of the condition in the sample declines).

greater chance of being claimed against than one who has not (better than twenty-two to one odds).

Both of these dramatic and important facts about malpractice litigation are overshadowed by a third fact, which perhaps has the greatest bearing on the system's level of deterrence. Underlying the odds in the preceding paragraph are the probabilities of becoming a defendant at all. That twenty-two to one ratio comes from a probability of being sued given a negligent injury of .029 and a probability of being sued given no negligent injury of .0013.

Although the authors of *A Measure of Malpractice* conclude that "the legal system does in fact operate erratically,"¹¹³ a closer look at the data seems to suggest that the legal process, even at the initial filing stage, is remarkably accurate.

First of all, though the authors use the words "legal system" in their discussion of these data, they really are talking only about *filings*, which merely initiate the legal process. Any system would require filings, some of which would be made in error. Indeed, the Harvard group's preferred administrative system undoubtedly would produce a far higher rate of erroneous filings, because those filings would be made directly by patients without the benefit of pre-screening by an attorney and the attorney's consulting physician.¹¹⁴

The authors' statement that "the legal system does in fact operate erratically" is based on the finding that only eight of the forty-seven filed claims were filed by patients who had suffered negligent medical injuries, according to the study's medical records review. Without going beyond the assumptions and data of the study itself,¹¹⁵ let us consider more carefully how false those thirty-nine false positives really are. Although in the final analysis, the study judged these false positives not to be negligent adverse events,

113. WEILER ET AL., *supra* note 1, at 73.

114. Whatever incentive attorneys have to file cases that appear meritorious, and sanctions they face for filing groundless claims, would not operate on patients who, unlike attorneys, have nothing to lose from filling out whatever forms would be required in a no-fault system. Evidence suggests that attorneys turn away many cases brought to them by prospective plaintiffs. See Saks, *supra* note 7, at 1190-93 (discussing what decisions get made at various stages of the legal process).

115. That is, without positing negligent injuries missed by the researchers or unnecessary medical treatments, etc., but simply considering the authors' own data at face value.

most of them had various indicia of being such, or at least of being adverse events. The medical records analysts referred all but twelve of them as possible adverse events. At the next level of review, the referred cases involved considerable disagreement among the physicians as to whether an adverse event had occurred and, if so, whether negligence had caused those adverse events.¹¹⁶

Of the thirty-nine false positives among the 29,841 cases judged by the study not to have involved negligent injury, only twelve appeared to have no basis. Of the rest, fifteen to eighteen patients were found to have suffered adverse events and seven were thought by at least one of two reviewing doctors to be the victims of negligent injury. In all, thirty-five of the forty-seven patients who filed claims had at least *some* real basis (confirmed by the Harvard reviewers) for thinking they had a valid claim.¹¹⁷

This analysis seems to reveal patient-claiming behavior that hardly is "erratic." The odds of a patient filing a claim without any basis, without a hint of an adverse event, appear to be about four in 10,000.¹¹⁸ This pattern does not represent random or haphazard filings, but for the most part looks like the problem of resolving genuine ambiguity. Treatment outcomes that involve trauma or dysfunction are difficult for patients, lawyers, and sometimes even doctors to sort into "adverse events" versus "not unexpected." In turn, adverse events are not always easy to sort into "negligent" and "nonnegligent." If within the study the ambiguity had to be resolved by higher and higher levels of review, it is not surprising that within the legal system initial filings take some review, negoti-

116. See WEILER ET AL., *supra* note 1, at 72, Table 4.2. Of 14 cases referred as possible adverse events, five were judged by at least one of the two reviewing doctors to be an adverse event. *Id.* Of the three cases referred as low threshold adverse events, one of them was judged by one of the reviewing physicians to be due to negligence. *Id.* Of 10 adverse events ultimately judged not to involve negligence, six of them were judged by one of two reviewing doctors to involve negligence. *Id.*

117. *Id.*

118. *Id.* There were 12 baseless claims in the sample of 30,121. Recall that even by the study's own deceptively bright lines (treating its own resolved ambiguities as "true negligent injuries" versus "unwarranted" or "groundless" suits), the study found the yearly odds to be only about one in 1,000 that a doctor who did not cause a negligent injury would become the subject of a filed malpractice claim. *Id.* Clearly, a patient is not lurking around every corner hungering for the chance to sue.

ation, and occasionally¹¹⁹ a trial to resolve.¹²⁰ Medical injury is probably the most factually ambiguous kind of tort. Most injured patients do not bring a claim until after they have gone through a period of extensive consultation with others, often doctors.¹²¹ Many such patients resolve their ambiguity in favor of the putative injurer and do not file.

MEASURING TORT LAW'S DETERRENT EFFECT

The deterrent effect of tort law is important because without that justification one would be hard pressed to defend the system's existence.¹²² Its transaction costs are so high and its compensation effectiveness so low that it would be relatively easy to find a replacement for the tort system that could provide more equitable compensation for the innocent victims of iatrogenic injury. Thus, a proper attempt to assess tort law's deterrent impact, if any, is worthwhile.¹²³

Until now, one could do little more than point to legal, psychological, or economic theory,¹²⁴ or indirect data showing that physicians have both a dread of malpractice suits and an exaggerated estimation of their frequency of occurrence.¹²⁵ But no direct empirical evidence existed (ideally including an estimate of its relative value as a component of the system).

The authors claim that "[t]he Harvard Medical Practice Study constituted the first-ever attempt to develop tangible evidence of

119. On average, one trial takes place for every 10 filings. See Herbert M. Kritzer, *Adjudication to Settlement: Shading in the Gray*, 70 JUDICATURE 161, 161-62 (1986).

120. See Saks, *supra* note 7, at 1226 (finding evidence that in each successive stage of the legal process the ratio of true positives to false positives improves).

121. May, *supra* note 29, at 7.

122. See GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 24-33 (1970) (discussing the goals and sub-goals of tort law).

123. Given this importance, it is curious that the final chapter proposes its no-fault system without making allowance for the loss of deterrence. The immediately preceding chapter tentatively concludes a deterrent effect exists under current malpractice law, and is potent enough to justify the additional cost of the tort system. WEILER ET AL., *supra* note 1, at 134.

124. They all make the same point: increased sanctions, punishment, or costs, respectively, should reduce the behavior with which those aversive events are associated.

125. Physicians' misperception of the severity and frequency of claims, however, may be just the right thing to offset the infrequency of filings and the greater infrequency of plaintiff success, even when negligent injury did indeed occur.

whether malpractice litigation reduces medical injuries."¹²⁶ The methodological challenge was enormous, but the design of the study was never up to the task. To their credit, those who worked on this portion of the analysis were smart enough to see clearly the problems they faced; many less capable researchers would not have seen them. Nevertheless, they had little or no hope of escaping the limitations of the research design and were forced to equivocate their way through their chapter.

Here are some of their problems. How do you show that malpractice litigation causes a decrease in malpractice injuries? Straightforward correlations between the two do not allow you to distinguish the cause from the effect, nor to tease apart the reciprocal contributions of two things that really are working together: more malpractice leads to more malpractice litigation which theoretically, at least, leads to less malpractice.¹²⁷ At a minimum, one would think, to separate these effects, one needs to compare settings that differ only by the level of litigation experienced, that is, experimental and control conditions. Alternatively, one could compare measures at two points in time. Thus, by looking at the pattern of relationships between malpractice injuries and malpractice claims at time₁ and malpractice injuries and malpractice claims at time₂, you may be able to draw defensible inferences about causation, because causes precede their effects.¹²⁸ But the Harvard Study data were from only one state in only one year.

A second major problem is that the measure of sanction (the number of claims per negligent injuries) and the measure of malpractice (the number of negligent injuries per patients) both contain one of the same ingredients, which unfortunately is in the denominator of one measure and the numerator of the other. That means that any error in measurement—and there is always error in

126. WEILER ET AL., *supra* note 1, at 131.

127. Suppose the correlation is positive: high rates of malpractice are associated with high rates of malpractice claims. Does that refute deterrence theory, which says high litigation rates should cause low malpractice rates? Or does it simply mean that malpractice is being responded to with malpractice suits? Suppose the correlation is zero. Does that refute the theory or does it reflect a canceling out of the countervailing effects?

128. The research design described in this sentence is called a cross-lagged panel correlation. See THOMAS D. COOK & DONALD T. CAMPBELL, *QUASI-EXPERIMENTATION: DESIGN & ANALYSIS FOR FIELD SETTINGS* 309-20 (1979).

all measurement—would tend to produce a spurious correlation. The greater the measurement error, the more it would appear that a deterrent effect existed.

Well aware of these problems, the researchers attempted to get around them. They tried to harness variations in intensity of litigation in different regions of the state and different hospitals and to build complex variables that would help control for extraneous, confounding, differences between those jurisdictions.¹²⁹ In place of negligent injuries, for one of the measures, they built a proxy variable out of *predictors* of malpractice.¹³⁰ My misgivings about these efforts are that they build assumptions upon assumptions built on assumptions. And they rely on beta-weight magic to make all of the adjustments that need to be made if the effects of interest are to be seen with any clarity.

The deterrence analysis appears to be an afterthought. Had the researchers seen it as an important part of the study from the outset, one might expect that the design would have chosen two points in time, say five years apart, and done half the data collection in each of the two years. Then one would have a measure of any real trend in malpractice or litigation or both, and be able to carry out a more convincing test for deterrent effects.

In the end, the effect is declared simultaneously to exist, “we did observe the hypothesized relationship in our sample—the more tort claims, the fewer negligent injuries,”¹³¹ and not to exist, due to the authors’ own misgivings about their analysis: “[W]e cannot exclude the possibility that this relationship was coincidental rather than causal.”¹³²

Other sections of the book, by the way, also treat statistically nonsignificant differences as if they exist but have failed to pass some higher test of reality.¹³³ This misses the whole point of significance testing. Significance testing asks the question: Have we used a large enough sample that we can rule out the possibility that ap-

129. WEILER ET AL., *supra* note 1, at 139-41.

130. *Id.*

131. *Id.* at 129.

132. *Id.*

133. *See, e.g., id.* at 51 (“Hospitals with more than 80 percent minority discharges had adverse event rates of 3.7 percent, which was higher than in predominantly white hospitals, but not significantly so.”).

parent differences are due to nothing more than sampling or measurement error? A difference that is not "significant" is not a difference at all, it's just noise. So when the book speaks of "non-significant differences" as if they *are* differences, it is uttering nonsense.

With respect to the deterrent effect of tort law, we alternately are told that it exists and that it does not exist. "Our best estimate is that the more malpractice suits that are brought against the doctors and other providers in a particular hospital, the fewer the number of negligent medical injuries that will be suffered by patients in that hospital."¹³⁴ Next, however, the reader is told that "this result did not reach the conventional level of statistical significance and thence scientific demonstration."¹³⁵ Then we learn how much "the current level of litigation intensity" was reducing the negligent injury rate,¹³⁶ but are reminded that "these injury prevention estimates have no more statistical significance than the point estimate from which they were translated."¹³⁷

The authors make an argument, of sorts, that the conventional level of statistical significance is inappropriate and unwise in some decisionmaking applications, tort policy being among them, and therefore we need not rigidly insist on a significance level of .05.¹³⁸ Their argument could be a persuasive one.¹³⁹ But if the authors are serious about that, they (1) should not have told us repeatedly that the results did not reach conventional significance, (2) should have told us the probability of erroneous rejection of the null hypothesis of no-deterrent-effect that *was* found by their data, so that readers and reformers could have some chance of weighing the risks they are being asked to run,¹⁴⁰ and (3) perhaps should have offered

134. *Id.* at 129.

135. *Id.* (footnote omitted).

136. *Id.* at 131.

137. *Id.*

138. *Id.* at 131-33.

139. I have made it myself on occasion. See MICHAEL J. SAKS, *JURY VERDICTS: THE ROLE OF GROUP SIZE AND SOCIAL DECISION RULE* 73-76 (1977) (arguing that, in a study of differences in decisions made by juries of various sizes, a 10% level of significance is appropriate because an erroneous finding that no differences exist could endanger the rights of defendants).

140. "[W]e believe that for purposes of practical policy-making, the safest course is to accept the indication that malpractice litigation does have an injury prevention effect,

analysis and arguments concerning what the sensible risks of Type I and Type II error should be in this context.¹⁴¹ While I have heard of authors wanting to have it both ways, these authors do not want it either way

NO-FAULT MALPRACTICE COMPENSATION

As noted earlier, *A Measure of Malpractice* proposes a system of no-fault compensation for a subgroup of malpractice victims and a subset of their losses.¹⁴² The final chapter of the book offers an additional, enabling proposal: To introduce the plan with legislation that merely permits patients the voluntary option of foregoing the right to sue in return for no-fault coverage that would pay 100% of medical costs and 80% of lost earnings (up to 200% of their state's average earnings level) that are occasioned by a medical injury and nothing for pain, suffering, and loss of enjoyment of life.¹⁴³

The proposal has at least one conspicuous virtue over the customary malpractice reforms. The principal "successful" malpractice law reform in the states has been to cap the amount of damages for pain and suffering (and sometimes for all losses) that plaintiffs may be awarded.¹⁴⁴ I say "successful" because it is one of the few reforms that actually has had a measurable impact.¹⁴⁵ But its savings are achieved by limiting only the compensation of the most gravely injured patients, who also are most likely already to be the most seriously undercompensated, while allowing those at the lower end of the loss spectrum to enjoy windfalls un-

however statistically fragile the specific point estimate might be." WEILER ET AL., *supra* note 1, at 132. How do they know that would be the practical lesson from their data? Why do they themselves disregard the lesson when they do their own policy-proposing? I would like an answer that goes deeper than the fact that some authors wrote some chapters and other authors wrote other chapters.

141. Type I error is the risk of erroneously concluding that an effect exists when in reality it does not; Type II error is the risk of erroneously concluding that no effect exists when in fact one does.

142. See *supra* notes 62-64 and accompanying text.

143. WEILER ET AL., *supra* note 1, at 151-52.

144. Caps have also been proposed at the federal level. See Shirley Qual, *A Survey of Medical Malpractice Tort Reform*, 12 WM. MITCHELL L. REV. 417, 434 (1986); *President Offers Congress a Medical Malpractice Reform Bill*, LIABILITY WK., July 6, 1992.

145. See Mitchell S. Berger, Note, *Following the Doctor's Orders—Caps on Non-Economic Damages in Medical Malpractice Cases*, 22 RUTGERS L.J. 173, 187 (1990).

molested.¹⁴⁶ Caps are a cruel and perverse solution.¹⁴⁷ By contrast, the Harvard Study's no-fault proposal finds its cost savings where they will do less harm, taking from the least, rather than the most, severely injured malpractice victims.

The principal questions to be asked about a no-fault proposal are whether it is economically feasible, whether it loses tort law's deterrent function, and whether it is just.

A Measure of Malpractice goes to considerable lengths to test whether the no-fault proposal is economically viable, and concludes that it is.¹⁴⁸ This conclusion differs from that of the major predecessor study, the California Medical Association and California Hospital Association study,¹⁴⁹ carried out in the 1970's for the same purpose of trying to determine whether a no-fault compensation system would be feasible. The earlier study concluded that the proportion of claims brought was so small relative to the incidence of medical injury that the existing tort system placed doctors and hospitals in a better financial position than a no-fault system would.¹⁵⁰ The current study reaches a different conclusion because it found the gap between injuries and claims to be somewhat smaller and because it has been more clever at limiting who would be covered and for what losses. If the incidence of medical injury is much greater than found by the Harvard Study, then the cost estimates may have to be adjusted upward.¹⁵¹

As to deterrence I will say only this: Not only is the study's deterrence analysis its most brittle component methodologically,¹⁵² but it is cast in almost exclusively economic terms, which in the malpractice context likely is an error. For example, the book notes

146. The most common finding from studies of tort compensation is that people with relatively small losses tend to be overcompensated several times over, while those whose losses are large on average receive far less than a dollar of compensation for every dollar of loss. See Saks, *supra* note 7, at 1271-80.

147. Sensible alternatives exist, such as comparative review of cases for purposes of guiding additur and remittitur decisions. See DAVID BALDUS ET AL., STATE JUSTICE INSTITUTE, IMPROVING JUDICIAL OVERSIGHT OF JURY DAMAGE ASSESSMENTS: A PROPOSAL FOR THE COMPARATIVE ADDITUR/REMITTITUR REVIEW OF AWARDS FOR NONPECUNIARY HARMS AND PUNITIVE DAMAGES (1993).

148. WEILER ET AL., *supra* note 1, at 146.

149. *Id.* at 78.

150. *Id.*

151. See Andrews, *supra* note 88 (suggesting considerable adjustment may be necessary).

152. See *supra* notes 128-43 and accompanying text.

that because malpractice insurance is not experience rated, so that all doctors of the same specialty in the same geographic region with the same company pay the same premiums, liability insurance lacks a financial deterrent threat.¹⁵³ But in tort law, perhaps the process is the punishment.¹⁵⁴ And as the data of this study show, negligent errors are far more likely to result in legal action than nonnegligent errors.¹⁵⁵ Ergo, the claim itself may be the deterrent.

Is the proposed no-fault scheme just? I do not believe I am unfairly characterizing *A Measure of Malpractice* when I say that it essentially dismisses notions of corrective justice as too old-fashioned to bother with anymore.¹⁵⁶ But it is not hard to imagine doctors asking why they should be "responsible" for adverse events which may have occurred as a "result" of their care but which were not their "fault." The answer is simple pragmatism. The best way to avoid the need for hearings and trials is to eliminate the most difficult question: Whether the care given was negligent. If *all* medically caused injuries are compensated, it would be far easier for case by case decisions to be made administratively. Such a system might save money. And doctors would gain what in their heart of hearts they long for most, namely, escape from lawyers. A pragmatic quid pro quo. But it may not satisfy doctors' intuitions about justice.

Innocent victims of someone else's negligence, who happen to be excluded by the six-month deductible period, might ask why the losses they have suffered are to be left on them (or the taxpayers may ask why it should be passed to them). The basic answer is that to save money someone has to be left out, and those who recover from their injuries within six months are among the more able to cope with the burden.¹⁵⁷ Seriously injured malpractice vic-

153. See WEILER ET AL., *supra* note 1, at 114-15.

154. The comparable point has been made for the criminal law. See MALCOLM M. FEELEY, *THE PROCESS IS THE PUNISHMENT* (1979); see also PAUL C. WEILER, *MEDICAL MALPRACTICE ON TRIAL* (1991).

155. See *supra* notes 110-15 and accompanying text.

156. "[T]he value of individualistic corrective justice as a guiding norm for medical liability is no longer very relevant in a world in which the burden of liability is distributed to the broader community through the interplay of malpractice insurance and health care insurance." WEILER ET AL., *supra* note 1, at 78.

157. Moreover, those with the smallest losses are most likely to be overcompensated by the current system. See *supra* note 59.

tims earning over \$60,000 annually¹⁵⁸ might ask why they and their families, the innocent victims of someone else's mistake, should have to lose income, perhaps permanently, perhaps along with their homes, while the people whose negligence caused their catastrophes should be put to no trouble at all. Victims, rich or poor, of serious malpractice injuries might ask why their suffering and the massive disability imposed on them should be valued at zero.¹⁵⁹

The answers are pragmatic and long familiar to students of tort law and its alternatives. Under the tort system so few victims would receive even that much, most nothing at all; only proportionately few of you would win substantial sums and occasionally windfalls; and by saving on transaction costs we can put more of the money to work for injury victims. No-fault can deliver improved distributive justice, but does so by placing explicit limitations on who can receive what. Tort law promises to "make whole" the victims of negligent injury, but that is a promise that in practice it has never come close to keeping. Tort law's aspirations come closer to satisfying one's sense of justice, but it fails miserably in the performance, at least with respect to compensation. No-fault offers only compromises, but is candid about them.

POLICY ANALYSIS

The book makes a specific proposal for new legal policy in the malpractice area, tests its proposal against the data gathered, and concludes that its alternative is both feasible and superior to current tort law, at least with respect to compensation. I think the data in this book have a higher calling than that.

Policy proposals of various kinds exist and still more will come into being once policymakers and the public realize they have been obsessing about only one side of the problem, and that one being by far the less tragic side.¹⁶⁰ Not only are there many proposals, there are numerous variables to be maximized (or minimized) and

158. Sixty thousand dollars is double the approximate mean income for all U.S. families. See U.S. BUREAU OF THE CENSUS, STATISTICAL ABSTRACT OF THE UNITED STATES: 1992, at No. 695 (112th ed. 1992).

159. Zero value means no compensation for pain, suffering, and loss of enjoyment of life. Consider the case summarized, *supra* note 106.

160. In that the system's injustices to negligently injured patients far exceed its injustices to doctors and hospitals.

some of those variables no doubt are more important than others.¹⁶¹ The goal ought not to be to find *an* improvement, but to design a system that makes the best trade-offs and maximizes overall utility

Techniques exist for conducting these more comprehensive policy analyses.¹⁶² The body of serious studies that have been accumulating on the subject of malpractice, the Harvard Medical Practice Study prominent among them, should be placed into wider analysis so that comparisons may be made among the full range of proposals. When we are ready for real malpractice reform, let us try to find the best one that can be found.

CONCLUSION: LEARNING FROM EVIDENCE

My various criticisms loom quite small in making a balanced assessment of the book under review and the work that it reports. The book is a major contribution to understanding the extent of medical malpractice, whom it affects, at what cost, with what response, and what we can do to improve matters.

The study's findings strongly suggest that the problem of malpractice¹⁶³ is considerably more serious than the problem of malpractice litigation.¹⁶⁴ Indeed, it makes more sense to see the increase in litigation as an overdue response to a real problem: "[T]he steady increase in claims frequency and severity reflects merely a partial closing of the large gap between potential

161. The obvious ones are compensation and deterrence. Other variables may include transaction costs, transparency of the system's logic, and procedural justice.

162. One such technique is multi-attribute utility analysis. For a discussion of this technique, see Ward Edwards et al., *A Decision-Theoretic Approach to Evaluation Research*, in 1 *HANDBOOK OF EVALUATION RESEARCH* 139-81 (Elmer L. Streuning & Marcia Guttentag eds., 1975).

163.

Hospital patients face a considerable chance of being hurt as a result of negligent treatment by doctors and other providers, and an even greater risk of injury from non-negligent medical intervention. The hospital record review highlights the urgent need for greater quality assurance efforts within the health care system

WEILER ET AL., *supra* note 1, at 61.

164. "[T]he underlying assumption that too many groundless malpractice suits are initiated is unfounded." *Id.* at 137.

and actual malpractice claims, not an inordinate level of litigation inflicted by the law on the medical system.”¹⁶⁵

Whatever reforms might be proposed in the light of such data would all share at least one common aspect: They would be a major reversal from the malpractice reforms that have been pursued over the past two decades, reforms which aim to restrict the cure rather than the ailment.

This and other research that has been conducted on this topic, virtually all of which points in the same direction, eventually may require all of us to ask a larger question: Are we, as a society, capable of learning from serious evidence about the real world we live in, or do our laws, policies, and practices flow from whatever illusions the most influential interest groups promote?

The authors began with sharp and monotonously familiar differences of opinion, but committed themselves to “more informed analysis and less fervent conviction.”¹⁶⁶ In the face of the data they gathered, they came together around a common, well informed policy proposal. Perhaps the rest of us can do so as well.

165. *Id.* at 6. “Our data make clear, then, that the focus of legislative concern should be that the malpractice system is too inaccessible; rather than too accessible, to the victims of negligent medical treatment.” *Id.* at 76.

166. *Id.* at xiii.