

---

## Injury, Liability, and the Decision to File a Medical Malpractice Claim

---

Frank A. Sloan

Chee Ruey Hsieh

The authors used two data sets based on interviews with families who suffered an adverse birth outcome in Florida—either a stillbirth, an infant death, or a permanent birth-related injury—to assess the decision to file a medical malpractice claim. These data were supplemented by medical evaluations of liability. The authors found that cases in which the physician evaluators thought the physician had been negligent were much more likely to have become claims, as were more serious injuries. Overall, the view of critics of the current medical malpractice system that innocent physicians are just as likely, or more likely, to be sued than the guilty ones and that patients sue when they do not obtain a “perfect result” is not confirmed. Claims were less likely to result when the family had health insurance, either private or public, and when families who had been told by the physician that there might be a problem with the child. The mother’s educational attainment and family income had no effect on the probability of claiming. Mothers who admitted to consuming alcohol during pregnancy were more likely to claim.

**T**here is widespread dissatisfaction with the tort liability system in the United States as it now exists (for reviews of the issues, see, e.g., Litan & Winston 1988; Schuck 1991). Some critics point to the high administrative cost of compensating victims and the lengthy delays before payment results (Kakalik & Pace 1986). Others suggest that tort law overdeters, in part because parties unsatisfied with an outcome are prone to sue when there is no legal merit, the law has become too plaintiff-oriented in its doctrine, and juries have become too sympathetic to plaintiffs in as-

---

This research, including data collection, was supported in part by Grant No. 5-R01-HS06499, “Birth Outcomes, Satisfaction with Care and Malpractice” made to Vanderbilt University and later to Duke University from the U.S. Agency for Health Policy and Research. Collection of data on closed claimants was supported by Grant No. 14045, “Resolution of Malpractice Claims: Birth and Emergency Room Related Injuries,” from the Robert Wood Johnson Foundation to Vanderbilt University. We thank Stephen Entman, Penny Githens, Gerald Hickson, Bridget Reilly, Cheryl Glass, Christoph Schenzler, and Ellen Wright Clayton for their significant contributions in this study; Christopher Manner and Elizabeth Kulas for computational assistance; and anonymous reviewers of an earlier draft for their helpful comments. Address correspondence to Frank Sloan, Center for Health Policy Research, Box 90253, Duke University Durham, NC 27708-0253.

sessing defendant liability and in determining compensation levels (e.g., Huber 1988).<sup>1</sup>

Much of the public controversy about the tort liability system in recent years has focused on medical malpractice. Compared with other types of cases, especially automobile torts, medical malpractice claims frequency is low, but payments per paid claim are relatively high on average (see, e.g., Bovbjerg et al. 1991; Hensler et al. 1991; Kritzer 1991; Kritzer, Bogart, & Vidmar 1991; Sloan, Bovbjerg, & Githens 1991). Some critics maintain that plaintiffs' lawyers seek out nonmeritorious medical malpractice cases because such cases are so profitable. Further, it is said that the "wrong" parties are compensated, given that errors in determining liability are common, and those who receive compensation are often overcompensated.<sup>2</sup>

A sharply contrasting view, supported by empirical evidence, is that only a small proportion of injuries caused by physician negligence actually result in claims.<sup>3</sup> Thus, rather than too many, there is actually a paucity of meritorious claims. Failure to file such tort claims may result in underdeterrence rather than overdeterrence (Danzon 1985). Underclaiming arises in part because plaintiffs' lawyers, paid on a contingency fee basis, reject claims that are unlikely to be profitable. The probability of winning at trial is low for medical malpractice cases (Bovbjerg et al. 1991). Although compensation tends to be higher for medical malpractice than for other personal injury cases, such as automobile torts, there is some empirical evidence that medical malpractice plaintiffs as a group tend to be undercompensated relative to the "economic" loss they incurred (Sloan & Hoerger 1991).

A substantial amount of empirical research, based on data from closed claims files and from jury verdict reporters, has accumulated on dispute resolution in medical malpractice and in such other areas of tort law as automobile torts and product liability.<sup>4</sup> By contrast, there has been virtually no empirical analysis of the decision to file a claim. (An exception is May & Stengel 1990.) The major impediment to such research is the difficulty in identifying comparable injury victims who did not file.

In this study, we used two data sets on families who suffered an adverse birth outcome in Florida, either a stillbirth, an infant death, or a permanent birth-related injury, to assess the decision to claim. An advantage of the data over data available from

---

<sup>1</sup> See Hans & Lofquist (1992) for empirical evidence on juror attitudes that runs counter to the assertion that jurors are biased against defendants.

<sup>2</sup> For specific criticisms of medical malpractice, see, e.g., American Medical Association 1988, 1994a, 1994b, 1995.

<sup>3</sup> See Weiler et al. (1993) for evidence from New York and Mills (1978) for earlier evidence on the extent of underclaiming based on data from California.

<sup>4</sup> See, e.g., Danzon & Lillard 1983; Viscusi 1986; Fournier & Zuehlke 1989; Hughes 1989; and Sloan & Hsieh 1990.

closed claims files or jury verdict reporters is that information is available on independent evaluations of both medical liability and injury cost, on funds the family received from sources other than from the medical malpractice claim, and on costs of obtaining payment. By contrast, virtually all other research on the legal dispute resolution process has had to use proxies for liability, such as allegations by the plaintiff,<sup>5</sup> and estimates of injury cost derived from insurer or court records. Injury cost is used strategically by the disputants. Estimates of injury cost are likely to be either upward- or downward-biased, depending on whether they were developed by plaintiffs or defendants (Sloan et al. 1993:ch. 8).

## I. Conceptual Framework

Early conceptual work using an economic framework specified that an injured party files a claim if the return net exceeds litigation cost associated with the claim. Later work has added realism at the cost of additional complexity, but the underlying premise of the motivation for claiming remains unchanged.<sup>6</sup>

Injured persons decide to file or not based on their predictions of returns versus costs if they file.<sup>7</sup> The expected value of a claim is the difference between the expected award (the weighted average of expected compensation at verdict and of expected compensation if the case is settled) and the expected cost of claiming (the weighted average of the cost of asserting a claim, i.e., the expected legal cost if the case is resolved at trial, is settled, or is dropped).

A disadvantage of the framework, as originally proposed, is that it does not allow for revaluations after the parties obtain additional information about liability and damages during the course of dispute resolution. Cornell's (1990) insight was to view a legal dispute as an information revelation process. By filing a claim, a victim purchases an option to go to trial, which, like a stock option, can be exercised if information obtained subsequently, such as from depositions, reveals the case is still profitable to pursue.<sup>8</sup> However, if news unfavorable to the victim's case is obtained, it is possible to drop the case and thereby save legal expense. The framework used here allows for such changes.

---

<sup>5</sup> See studies cited in note 4. Sloan & Hoerger (1991) used independent medical evaluations of defendant liability.

<sup>6</sup> The principal early articles are by Landes 1971; Gould 1973; and Posner 1973. See reviews by Cooter & Rubinfeld 1989; Shavell 1982.

<sup>7</sup> See Cooter & Rubinfeld (1989) for further elaboration of this conceptual framework.

<sup>8</sup> Other literature has analyzed the stages of a legal dispute in considerable detail (see, e.g., Silberman 1985). Cornell's contribution was to view a claim as an option to go to trial, analogous to a stock option.

The expected value of the claim to the injury victim at filing ( $I^*$ ) is

$$I^* = qV - C,$$

where  $q$  is the probability of receiving compensation,  $V$  is the size of the payment conditional on receiving compensation, and  $C$  is the cost of claiming that occurs during various stages of the dispute resolution process.

Both returns and costs contain nonpecuniary elements. Incorporated in  $C$  is the savings in legal cost from a midcourse correction, that is, the possibility of dropping the case. Likewise, both  $q$  and  $V$  are values perceived at the time the claim is brought. After additional information is obtained as the case progresses, these variables are updated.

Virtually all medical malpractice claimants have legal representation, and lawyers work for claimants on a contingency fee basis. Under this arrangement, lawyers receive a fixed share of payments to claimants. In turn, they bear a substantial share of  $C$ . As a practical prerequisite to filing, lawyers must be convinced that their expected compensation covers the legal costs they expect to incur. Many cases that appear profitable to prospective claimants, particularly if nonpecuniary benefits are considered, may be unprofitable to lawyers. Also, lawyers are much more expert in gauging the probability of obtaining compensation than are injury victims. Thus, lawyers filter out claims that injury victims might otherwise wish to file.

This framework, combined with certain institutional features, leads to several testable hypotheses.

1. When there is initial evidence of physician liability, there is a higher probability of receiving compensation relative to cases in which there is no initial evidence of physician liability. Hence injury victims are more likely to file claims when there is initial evidence of liability. Claims may be filed when initial evaluations of liability are ambiguous since such claims can be dropped if information unfavorable to the claimant's case is obtained subsequently.<sup>9</sup>
2. Since they have a higher potential award at verdict, cases involving more serious injuries are more likely to be filed. When the law requires that funds the plaintiff receives from sources other than the tort claim, such as from health insurance, be subtracted from the award at verdict, the incentive to file is reduced.<sup>10</sup>

<sup>9</sup> For a defendant to be liable, a plaintiff must prove that the defendant (1) failed to meet the standard of care which (2) caused the injury resulting in (3) damages recognized in law.

<sup>10</sup> The common law tradition is not to consider payments from other sources ("collateral sources") in setting the award at verdict. However, several states, including Florida, modified this rule to require that funds from collateral sources be subtracted from the award. There is empirical evidence that such mandatory collateral source offsets reduce

3. To the extent that plaintiff negligence results in a lower probability of receiving compensation or compensation is reduced by the plaintiff's degree of negligence, the probability of filing a claim is reduced.<sup>11</sup>
4. Nonpecuniary motives, such as a desire to learn why the injury occurred or to seek revenge against an injurer, increase the incentive to file.
5. Cases with a high cost of claiming are less likely to be filed. Among the costs incurred by claimants are those involved in obtaining legal representation, time spent in the litigation process, and psychological costs, such as those associated with filing a claim against a person with whom one has had a long-standing relationship.

## II. Data and Empirical Specification

### Data

Our data come from two sources. Many of the questions in the two surveys were worded identically, permitting the two surveys to be merged for purposes of the analysis.<sup>12</sup>

The first is a survey of 127 families in Florida who had experienced birth-related injuries and had filed medical malpractice claims and whose claims closed between late 1985 and early 1990. Names of defendants were provided on closed medical malpractice insurance claims forms which, by Florida law, must be filed with the state and made available on a public use basis. With information on the defendants, state courts were contacted to obtain names and other identifying information on plaintiffs. Claims that did not result in suits could not be identified and thus were excluded from the survey.<sup>13</sup> Plaintiffs were interviewed by telephone for about 90 minutes each. In a few cases when families had no telephone, interviews were conducted in person. Among the items covered in the survey were characteristics of the plaintiff and details about the injury. At the end of the survey,

---

amounts paid per paid medical malpractice claim, even when payment is determined by settlement rather than by a jury verdict. See Danzon 1986; Sloan et al. 1989.

<sup>11</sup> Traditionally, when the plaintiff's negligence contributed to the occurrence of the injury, the plaintiff was barred from receiving compensation from a tort claim. This is called the contributory negligence rule. In recent years, many states have replaced contributory negligence with comparative negligence (Curran 1992). Under various forms of comparative negligence, the plaintiff who was partly responsible for the injury due to his or her negligence may be compensated, but compensation is reduced in proportion to the degree of plaintiff negligence. In practice, injury victim negligence is not a complete bar to receiving compensation under either rule, but compensation is reduced for plaintiff negligence—more so under contributory than under comparative negligence. See White 1989; Sloan & Schenzler 1992.

<sup>12</sup> Both survey instruments were designed by a research team at Vanderbilt University.

<sup>13</sup> This survey is described in detail in Sloan et al. 1993:ch. 2.

respondents were asked for written permission to obtain charts for mother and child from the hospital at which the delivery occurred.

In the second survey, 963 women were interviewed in 1992 who gave birth in Florida in 1987.<sup>14</sup> This survey also used a combination of telephone and in-person interviews, mostly the former.<sup>15</sup> Respondents were asked about details of their pregnancy, adverse birth outcomes (stillbirths, infant deaths, permanent injuries of the child), as well as about personal characteristics of the respondent. Interviews typically took from 45 minutes to an hour. Using birth, fetal death, and death records as the sampling frame, and with information from unpublished records on the name of the physician who delivered the baby, the survey oversampled stillbirths, infant deaths, and other probable bad outcomes, based on such indicators as low birthweight and low Apgar scores recorded at birth, and delivery by obstetricians with high claims frequency.<sup>16</sup> Of the 963 cases, 67 involved stillbirths, 128 infant deaths, and 25 permanent injuries of surviving children that had become evident by the child's fifth year. Since incurring an injury is a prerequisite for obtaining compensation by means of a tort claim, we limited the sample to the 220 cases in which an adverse birth outcome occurred.

None of the adverse outcomes in the second survey led to a medical malpractice claim, although in 23 cases victims reported that they discussed filing a claim with a lawyer. Thus, to assess the probability of filing a claim, we combined information on non-claimants from the second survey with information on claimants from the first survey. Fortunately, the questions we needed to ask for this analysis were almost always identically worded.

Practicing obstetricians, two per case, performed independent evaluations of each of the hospital charts and answered questions about whether the care rendered was substandard and if so, whether such care caused the injury.<sup>17</sup> The same methodology and same raters were used for charts from both surveys. The obstetricians were not told whether the case resulted in a claim or the outcome of the dispute if a claim had been filed. There was often disagreement between the raters on negligence and causation, especially the latter. Rather than resolve the dispute by add-

---

<sup>14</sup> The first survey was conducted by Scientific Surveys International; the second by Mathematica Policy Research (MPR).

<sup>15</sup> For additional details about this survey, see Entman et al. 1994; Hickson et al. 1994.

<sup>16</sup> High claims frequency was defined as four or more claims against the obstetrician from incidents arising from care provided during 1977–83. A claim was excluded if it did not result in some payment to the claimant or nothing was spent in defending the claim.

<sup>17</sup> The vast majority of evaluations were performed by obstetricians who practiced in Florida in 1987. The physicians were asked to evaluate the charts with reference to standards of care prevalent in Florida in 1987.



ing additional raters, disagreement was reflected in specification of explanatory variables for the medical evaluations of liability.<sup>18</sup>

## Empirical Specification

### *Dependent Variable*

We limited the analysis to persons who experienced an adverse birth outcome, either a stillbirth, an infant death, or, for children who survived to age five, a permanent injury. The dependent variable was whether a medical malpractice claim was filed.<sup>19</sup>

### *Explanatory Variables*

The explanatory variables measured (1) the degree of physician liability, (2) the extent of the injury, (3) availability of funds from sources other than the tort claim, (4) degree of patient negligence, (5) nonpecuniary motives for claiming, (6) cost of obtaining compensation, and (7) demographic variables and family income.

To measure defendant liability, we first defined the following mutually exclusive variables based on the medical evaluations of information from the hospital charts (Fig. 1): (1) both physician raters agreed that the victim's physician was negligent ("both negligence"); (2) only one of the raters believed the physician was negligent ("one negligence"); (3) both raters agreed that the physician was not negligent; (4) one rater found evidence of no negligence and the other said that negligence could not be determined with available evidence; (5) both raters agreed that negligence could not be determined with available information

<sup>18</sup> Having evaluations of liability is extremely rare in studies of resolution of legal disputes. Two exceptions are studies by Farber & White (1991) and Sloan & Hoerger (1991). Using data from one hospital, Farber and White obtained access to evaluations performed by physicians for purposes of deciding how the defense should handle these cases.

Sloan and Hoerger studied resolution of disputes of cases that were filed, using the 127 birth outcome cases used here and 60 cases involving injuries in emergency rooms. In that study, medical evaluations of liability were based on a three-stage review process. First, physicians were asked to respond to a paragraph taken from the closed claim form filed on the case with the State of Florida's Department of Insurance. Second, they were given pertinent information from an interview of the injury victim and asked whether they wished to change their initial evaluation of defendant liability, given the additional information. Third, the evaluators were given the hospital chart and asked whether, based on this information, they changed their impression about liability formed in the first two stages. If charts were not available on the case, Sloan and Hoerger took the second-stage evaluation as the final one. We did not use this three-stage evaluation approach in this study, primarily because no allegation forms existed for nonclaimants. (There was no allegation of liability.) Sloan and Hoerger found that cases in which the evaluators thought that the defendant was liable were more likely to result in payment. Further, plaintiffs were more likely to have dropped cases in which evaluators found no liability in the first-stage evaluation or in which the evaluation of liability became more favorable to the defendant as more information was revealed to the evaluators.

<sup>19</sup> All the claims involved lawsuits against one or more physicians.

(“negligence not determined”); and (6) the case was not rated because hospital charts were not available (“not rated”). For purposes of our regression analysis, we defined four mutually exclusive negligence variables: both negligence (group 1); ambiguous negligence (one negligence (group 2) and negligence not determined (group 5); not rated (group 6); with not negligent (groups 3 and 4) the omitted reference group.<sup>20</sup>

		Rater 1			
		Yes	No	Don't know	Not rated
Rater 2	Yes	Both negligence (group 1) <i>N</i> = 30	One negligence (group 2) <i>N</i> = 69		
	No	One negligence (group 2)	Omitted reference group (group 3) (group 4) <i>N</i> = 22		
	Don't know		(group 4) <i>N</i> = 9	Negligence not determined (group 5) <i>N</i> = 23	
	Not rated				Not rated (group 6) <i>N</i> = 194

Figure 1. Liability Ratings

When a rater found negligence in a case, the rater was asked about causation. When both raters agreed that the physician had been negligent, at least one rater said that the birth injury was caused by substandard care in 77% of cases. When only one rater found negligence, the rater concluded that the injury was caused by the physician’s action or inaction in 51% of cases. Our causation variable was set to 1 if (1) at least one rater found care to be substandard and (2) that rater also found causation. If two raters

<sup>20</sup> Although survey firms conducted the surveys, researchers at Vanderbilt University obtained the hospital charts and organized the chart evaluation process.



found negligence and only one concluded that there was causation, the causation variable was also set to 1.<sup>21</sup>

For severity of injury, we defined four mutually exclusive categories: (1) stillborn;<sup>22</sup> (2) child died; (3) "minor permanent" injuries (such as loss of fingers, deafness); and (4) "major permanent" injuries (paraplegia, quadriplegia) (the omitted reference category). We also included binary variables for the number of days the baby spent in the neonatal intensive care unit (NICU), 1–14 days in NICU, more than 14 days in NICU, with no days in NICU the omitted reference group; and for the number of days the baby was hospitalized following delivery (5 or more days in hospital). Less than 5 days in hospital was the reference group.

To measure the effect of funds from other sources on the propensity to claim, we included variables for the injured parties' health insurance at the time of the delivery: (1) private fee-for-service insurance, (2) health maintenance organization (HMO), (3) Medicaid, and (4) other health insurance; with (5) no insurance the omitted reference group.

We included three measures of patient negligence: (1) whether the patient drank any alcoholic beverage during the pregnancy; (2) whether the patient smoked at all during the pregnancy; and (3) whether the patient initiated prenatal care after the first trimester of her pregnancy. In the very few cases in which the patient did not indicate whether or not she drank or smoked (3% of respondents), we assumed that she abstained. A few respondents also failed to indicate when they initiated prenatal care (3%). In such cases, we assumed that prenatal care was initiated during the first trimester. Women who were unmarried at the time of the birth may account for this. A binary variable identified women who gave birth "out of wedlock."

To measure nonpecuniary motives for claiming, we specified a binary variable based on the following question. "At any point during your labor or delivery, were you or your family told there was or might be a problem?" Parents who were not told may have used the legal system to obtain information about what happened or to seek revenge.

Finally, we included several variables for cost of claiming. First, we specified a binary variable indicating whether the patient switched physicians at some time during pregnancy and labor/delivery. This often occurred because the respondent's regular physician was not available during labor/delivery. Such persons were less likely to have had a long-standing relationship

---

<sup>21</sup> Initially we included interaction terms between findings of causation and findings of negligence. This more detailed specification introduced considerable multicollinearity.

<sup>22</sup> A stillborn child is not a "person" within the meaning of Florida Wrongful Death Act (1994). This provision does not preclude a suit since a parent might still claim nonpecuniary loss or economic loss, such as lost earnings or extra medical care.

with the physician who delivered the infant and hence found pursuing a claim less psychologically costly. Another probability is that patients who switch physicians may be difficult to satisfy.

Second, persons who have lived in the community a long time are likely to have better information about the local lawyer market (Pauly & Satterthwaite 1981) and therefore may be more likely to know which lawyers represent medical malpractice plaintiffs and are effective in doing so. To account for differences in costs of obtaining legal representation by how long the injury victim had been living in the community, we included binary variables for the number of years the respondent had lived in the community before the birth: lived in community 2–9 years; lived in community 10 or more years; lived in community 0–2 years (the reference group). Third, more educated persons also potentially face lower costs in obtaining legal representation. We included variables for the respondent's education: college graduate; some college; high school graduate; and less than 12 years (the reference group).

Demographic variables (not included above) include the patient's religion, Catholic, Jewish, other and no religion, with Protestant the reference group; race/ethnicity (variables defined for Hispanic and nonwhite (almost all black) patients); and family income at the time the injury occurred (income \$30,000 and over vs. under \$30,000 (the reference group)).

We used logit to estimate the equation.

### **III. Results**

Three regressions are presented in Table 1. The second regression is based on the entire sample of 347 cases. In the first regression, some explanatory variables were dropped to examine robustness of results to changes in specification. In the third regression, all cases for which negligence was not rated were dropped. The regressions predict filing status correctly in more than 85% of cases, compared with naive predictions of 63–71% accurate predictions. Comparing the results from the first and second regressions, it is evident that the results are quite robust to changes in specification. Although dropping the not-rated cases does not change signs on most parameter estimates, the odds ratios sometimes change appreciably. Unless otherwise specified, this discussion refers to the second regression.

There is a definite correspondence between the independent medical evaluations of liability and the propensity to file a medical malpractice claim. Cases in which the evaluators thought the physician was negligent were far more likely to have become claims.

**Table 1.** Regression Results: Decision to File a Claim

Explanatory Variables	Logit Regressions			Mean (SD)
	(1)	(2)	(3)	
Intercept	-0.27 (1.26)	-1.06 (1.33)	-1.20 (2.37)	— (—)
<b>Liability Rating</b>				
Both negligence	1.82* (0.94) [6.17]	1.97* (1.12) [7.17]	4.42** (1.81) [83.10]	0.09 (0.28)
Ambiguous negligence	0.70 (0.85) [2.01]	0.78 (0.88) [2.18]	1.21 (1.17) [3.35]	0.27 (0.44)
Case not rated	1.65* (0.80) [5.21]	1.74** (0.83) [5.70]	— (—) [—]	0.56 (0.50)
No negligence Causation—yes	ref. — (—) [—]	ref. -0.29 (0.67) [0.75]	ref. -0.77 (0.92) [0.46]	0.17 (0.37)
Causation—no	ref.	ref.	ref.	
<b>Extent of injury</b>				
Stillborn	-4.74*** (0.71) [0.01]	-4.20*** (0.79) [0.01]	-6.18*** (1.92) [0.00]	0.22 (0.41)
Child died	-3.80*** (0.59) [0.02]	-3.66*** (0.63) [0.03]	-4.12*** (1.25) [0.02]	0.47 (0.50)
Minor permanent injury	-1.85*** (0.64) [0.16]	-1.87*** (0.68) [0.15]	-0.91 (1.27) [0.40]	0.13 (0.33)
Major permanent injury	ref.	ref.	ref.	
Days in NICU:				
1–14 days	— (—) [—]	0.30 (0.50) [1.35]	-0.88 (0.99) [0.41]	0.28 (0.45)
More than 14 days	— (—) [—]	-0.39 (0.67) [0.68]	-1.95 (1.39) [0.14]	0.18 (0.38)
No days	ref.	ref.	ref.	
Days in hospital:				
5 or more days	— (—) [—]	1.12** (0.54) [3.06]	2.15* (1.19) [8.58]	0.38 (0.49)
0–4 days	ref.	ref.	ref.	
<b>Other sources of funds</b>				
Insurance:				
Private fee-for-service insurance	-1.01** (0.48) [0.36]	-1.13** (0.51) [0.32]	-0.85 (1.02) [0.43]	0.61 (0.49)
HMO	-1.87** (0.78) [0.15]	-2.14*** (0.80) [0.12]	-4.19** (1.86) [0.02]	0.10 (0.31)
Medicaid	-0.91 (0.73) [0.40]	-1.38 (0.88) [0.25]	-4.12 (3.28) [0.02]	0.08 (0.28)

Table 1 (continued)

Explanatory Variables	Logit Regressions			Mean (SD)
	(1)	(2)	(3)	
<b>Other sources of funds (cont.):</b>				
Insurance:				
Other health insurance	0.03 (0.93) [1.03]	0.06 (0.95) [1.06]	-0.65 (3.12) [0.52]	0.05 (0.21)
No health insurance	ref.	ref.	ref.	
<b>Patient negligence</b>				
Drank—yes	1.26*** (0.42) [3.53]	1.09** (0.44) [2.97]	1.79** (0.91) [5.99]	0.24 (0.43)
Drank—no	ref.	ref.	ref.	
Smoked—yes	— (—) [—]	0.32 (0.44) [1.38]	-0.23 (0.99) [0.79]	0.28 (0.45)
Smoked—no	ref.	ref.	ref.	
Initiated prenatal care after 1st trimester	— (—) [—]	0.25 (0.68) [1.28]	1.14 (1.92) [3.13]	0.06 (0.23)
Initiated prenatal care on time	ref.	ref.	ref.	
Out-of-wedlock birth	— (—) [—]	0.32 (0.75) [1.38]	3.98** (2.02) [53.52]	0.13 (0.34)
In-wedlock birth	ref.	ref.	ref.	
<b>Nonpecuniary returns</b>				
Told problem	-1.08*** (0.42) [0.34]	-1.10** (0.44) [0.33]	-1.80** (0.86) [0.17]	0.30 (0.46)
Not told problem	ref.	ref.	ref.	
<b>Cost of claiming</b>				
Switched doctor	0.85** (0.39) [2.34]	0.90** (0.40) [2.46]	1.82** (0.90) [6.17]	0.32 (0.47)
Did not switch doctor	ref.	ref.	ref.	
Lived in community:				
2–9 years	2.17*** (0.64) [8.76]	2.27*** (0.66) [9.68]	3.76** (1.49) [42.95]	0.35 (0.48)
10 or more years	2.41*** (0.62) [11.13]	2.41*** (0.64) [11.13]	4.11** (1.67) [60.95]	0.44 (0.50)
0–2 years	ref.	ref.	ref.	
<b>Education:</b>				
High school graduate	-0.55 (0.58) [0.58]	-0.36 (0.60) [0.70]	-3.85** (1.67) [0.02]	0.37 (0.48)
Some college	-0.15 (0.60) [0.86]	-0.08 (0.65) [0.92]	-3.00* (1.65) [0.05]	0.32 (0.47)
College graduate	-0.71 (0.72) [0.49]	-0.57 (0.77) [0.57]	-4.00** (1.68) [0.02]	0.19 (0.40)
Dropout	ref.	ref.	ref.	

Table 1 (continued)

Explanatory Variables	Logit Regressions			Mean (SD)
	(1)	(2)	(3)	
<b>Demographic variables &amp; family income</b>				
Religion:				
Catholic	0.83** (0.42) [2.29]	0.78* (0.47) [2.18]	3.09*** (1.19) [21.98]	0.29 (0.45)
Jewish	0.88 (0.90) [2.41]	0.70 (1.00) [2.01]	— (—) [—]	0.04 (0.19)
Other—no religion	0.68 (0.52) [1.97]	0.71 (0.55) [2.03]	1.07 (1.02) [2.92]	0.13 (0.33)
Protestant	ref.	ref.	ref.	
Race/ethnicity:				
Hispanic	— (—) [—]	0.13 (0.59) [1.14]	-1.41 (1.54) [0.24]	0.11 (0.31)
Non-Hispanic Nonwhite	ref. -1.00* (0.59) [0.37]	ref. -1.04* (0.61) [0.35]	ref. -0.19 (1.26) [0.83]	0.15 (0.36)
White	ref.	ref.	ref.	
Income:				
\$30,000 & over	0.19 (0.40) [1.21]	0.19 (0.40) [1.21]	0.65 (0.82) [1.92]	0.69 (0.46)
Under \$30,000	ref.	ref.	ref.	
$\chi^2$ ( $p = 0.0001$ )	224.23	232.03	109.49	
Degrees of freedom	23	31	29	
Correct predictions (%)	85.3	86.5	87.6	
<i>N</i>	347	347	153	347

NOTE: Values in parentheses are standard errors; values in brackets are odds ratios.

\*  $p < .10$  (two-tail test)      \*\*  $p < .05$  (two-tail test)      \*\*\*  $p < .01$  (two-tail test)

The probability that a claim was filed was higher when both raters found physician negligence. The parameter estimate is statistically significant at the 10% level (two-tail test). Compared with cases in which raters found no negligence, the probability of filing was about seven times higher. The ambiguous negligence variable does not have a statistically significant impact on the probability of filing, and the estimated effect is much smaller than for the cases in which negligence was clearer to the independent raters.

Cases for which liability was not rated because hospital charts were unavailable for review also had a higher probability of being claims; the coefficient on this variable is statistically significant at the 5% level. The associated odds ratio is 5.7, almost as high as the odds ratio for the negligence variable.

These results have several plausible interpretations. First, a higher proportion of respondents who had claimed did not send

in the form granting the research team permission to obtain charts from the hospital. Some respondents may have been advised by their attorneys not to cooperate even though the case was closed at the time of the survey. Second, the survey team also tended to have more difficulty obtaining hospital charts when litigation had been involved. Unfortunately, we cannot distinguish between the two reasons for “chart not found” or hospital nonresponse to our repeated requests for chart information. The charts may simply have been misplaced or have been in lawyers’ offices rather than at the hospital. Or, and not mutually exclusive with the other explanation, defense lawyers may have advised hospitals not to respond to our requests.

The causation variable does not have a statistically significant effect on the probability of filing a claim. The negative sign on the parameter estimate on this variable was not anticipated.

As expected, more serious injuries were more likely to have resulted in medical malpractice claims. All three binary variables for extent of injury have negative coefficients, and all are statistically significant at the 1% level. Economic loss tends to be appreciably higher for major permanent birth injuries when the child survives,<sup>23</sup> the omitted reference group here. With the binary variables for extent of injury included, days the infant spent in the NICU has no effect on the probability of claiming. But the parameter estimate on the binary variable identifying cases in which the infant spent five or more days in the hospital is positive and statistically significant at the 5% level; cases in which the infant stayed five or more days were about three times more likely to have resulted in claims.

The family was less likely to sue the physician when funds to finance the cost of medical care were available from other sources. All the parameter estimates on the health insurance variables are negative except “Other health insurance,” and two, those for private fee-for-service insurance and for health maintenance organization, are statistically significant at the 5% level or better. Injury victims with private conventional insurance had a 0.32 relative risk of claiming compared with those having no health insurance; for HMO enrollees, the relative risk was 0.12. Not only do the uninsured need to obtain funds to pay their medical bills, but these results also are plausible since the expected potential award was lower for insured injury victims. Florida law required that tort payments be offset by the amount the plaintiff obtained from other (collateral) sources.

By contrast, our hypothesis that injury victims who may have been partially at fault for the adverse outcome would be less likely to claim is not supported empirically. None of the coeffi-

---

<sup>23</sup> For estimates of economic loss for birth injuries in the claimant sample by severity of injury and survival status, see Sloan & van Wert 1991.



cients on the patient negligence variables are statistically significant *with* the signs we expected. Women who said they drank alcoholic beverages were more, not less, likely to file claims. One reason may be that there was not universal agreement among physicians that moderate or light alcohol use is a determinant of adverse birth outcomes such as congenital anomalies.<sup>24</sup> Therefore, drinking during pregnancy may not have during the observational period been considered to constitute negligent behavior. The higher propensity of drinkers to sue may reflect personality factors that we did not measure.

To measure nonpecuniary returns to claiming, we included a binary for parents who were told by the physician that the infant may have a problem. Those who were not told may have sued seeking information and/or revenge. In fact, our findings on "told problem" suggest that early warnings about a health problem that may later become evident to the patient reduces the patient's propensity to claim. The parameter estimate is negative and statistically significant at the 5% level. Compared with those not told, the odds of claiming for those told was 0.33. Of the parents, 30% were told that there might be a problem.<sup>25</sup>

Injury victims who faced a comparatively low cost of claiming were more likely to claim. Among the variables for cost of claiming, the coefficients on "switch doctor" and "years in town" have anticipated positive coefficients and are statistically significant at the 5% level or better. Having changed physicians while pregnant or during labor/delivery increased the probability of claiming (odds ratio = 2.5). Since persons who changed did not have long-standing relationships with their physicians, the psychological cost of suing was presumably lower. Persons who lived in the community for many years and therefore probably had better knowledge of the local lawyer market were much more likely to claim than were newcomers. In future surveys, it would be useful to obtain more direct indicators of knowledge about the local lawyer market. Education has no effect on the probability of claiming, holding other factors constant.

Finally, among the demographic variables, we found that Catholics and Jews were more likely to file a claim than were Protestants, the omitted reference group. However, only the variable for Catholics has a statistically significant impact at conven-

---

<sup>24</sup> The empirical evidence on the effects of moderate or light use of alcohol at least some of the time during pregnancy was mixed. See Institute of Medicine 1985:69.

<sup>25</sup> It is conceptually possible that respondents who sued may tend to deny that they were told potential problems. However, we often obtained detailed accounts of health care provider-patient interactions from the respondents (see especially Sloan et al. 1993). Also, none of the respondents to the second survey sued. Yet, the physicians that respondents said were poor in communicating tended to be disproportionately the physicians who had been sued the most prior to the survey. See Hickson et al. 1994.

tional levels.<sup>26</sup> Hispanic origin has no impact on the probability of claiming. However, nonwhites were less likely to file a claim. Judging from the odds ratio (0.35), nonwhites, almost all of whom were black, were much less likely to claim than whites, holding a large number of other factors constant. Family income at the time of the injury had no effect on the probability of claiming.

Finally, we examined the relationship between liability rating group and other selected explanatory variables by comparing means for the explanatory variables by rating group (Table 2). For most of the explanatory variables, there were no statistically significant differences between the no negligence group and the other groups. However, when we compared the means for both negligence and no negligence groups, we found that the former group contained significantly higher proportions of injury victims who had spent more than 14 days in a NICU, 5 or more days in the hospital at birth, out-of-wedlock births, and nonwhites. It is noteworthy that, comparing all groups, the no negligence group contained no Medicaid recipients, no out-of-wedlock births, and no nonwhites. The substantial intergroup differences on race in particular suggests that nonwhites had poorer access to high-quality care if we take a finding of negligence, ambiguous negligence, or no chart as a surrogate for quality.<sup>27</sup>

#### **IV. Discussion and Conclusions**

Many critics of the current medical malpractice system maintain that innocent physicians are just as, or more likely, to be sued as the guilty ones. This, it is said, is partly due to efforts of greedy lawyers who, in pursuit of a high contingency fee, induce patients who are not completely satisfied with the outcome to sue.

Our regression analysis reveals a far different picture, however. There is a definite, but not complete, correspondence between independent medical evaluations of liability and the propensity to claim. In particular, the probability of claiming is systematically related to evaluations of liability that can be made from information contained in hospital records. Generally, the prenatal record was included as part of the hospital chart. Ambiguity of evidence of liability did not preclude filing. In fact, filing a claim is a mechanism for fact-gathering to determine whether litigation is worth pursuing beyond an initial stage.

---

<sup>26</sup> Kritzer and colleagues (1991), using data from the Civil Litigation Research Project, found that Protestants were more likely to claim than were Catholics. Their sample covered a wide variety of types of cases, few, if any, involving medical malpractice.

<sup>27</sup> On the frequency of occurrence of substandard hospital care by patients' socioeconomic status, see Burstin, Lipsitz, & Brennan 1992.

**Table 2.** Means and Standard Deviations of Selected Explanatory Variables by Liability Rating Groups

	Both Negligence	Ambiguous Negligence	Case Not Rated	No Negligence
<b>Extent of injury</b>				
Stillborn	0.20 (0.41)	0.21 (0.41)	0.21 (0.41)	0.29 (0.46)
Child died	0.57 (0.50)	0.43* (0.50)	0.44* (0.50)	0.61 (0.50)
Minor permanent injury	0.00 (0.00)	0.20** (0.40)	0.12 (0.33)	0.06 (0.25)
More than 14 days in NICU	0.37** (0.49)	0.16 (0.37)	0.16 (0.37)	0.13 (0.34)
5 or more days in hospital	0.50* (0.51)	0.41 (0.50)	0.37 (0.48)	0.26 (0.44)
<b>Other sources of funds</b>				
Private fee-for-service insurance	0.57 (0.51)	0.66 (0.48)	0.58 (0.50)	0.68 (0.48)
HMO	0.17 (0.38)	0.10 (0.30)	0.09 (0.29)	0.13 (0.34)
Medicaid	0.03 (0.18)	0.07** (0.25)	0.11*** (0.32)	0.00 (0.00)
Other insurance	0.10 (0.31)	0.02 (0.15)	0.05 (0.22)	0.03 (0.18)
<b>Patient negligence</b>				
Drank—yes	0.27 (0.45)	0.32 (0.47)	0.20 (0.40)	0.26 (0.44)
Smoked—yes	0.20 (0.41)	0.28 (0.45)	0.28 (0.45)	0.35 (0.49)
Initiated prenatal care late	0.07 (0.25)	0.04 (0.21)	0.07 (0.25)	0.03 (0.18)
Out-of-wedlock birth	0.10* (0.31)	0.09*** (0.28)	0.18*** (0.38)	0.00 (0.00)
<b>Nonpecuniary returns</b>				
Told problem—yes	0.20 (0.41)	0.41*** (0.50)	0.28 (0.45)	0.16 (0.37)
<b>Cost of claiming</b>				
Switched doctor—yes	0.37 (0.49)	0.32 (0.47)	0.32 (0.47)	0.23 (0.43)
Lived in community 10 or more years	0.40 (0.50)	0.43** (0.50)	0.47*** (0.50)	0.23 (0.43)
<b>Demographic variables &amp; family income</b>				
High school graduate	0.37 (0.49)	0.36 (0.48)	0.40 (0.49)	0.29 (0.46)
Some college	0.30 (0.47)	0.32 (0.47)	0.32 (0.47)	0.32 (0.48)
College graduate	0.30 (0.47)	0.26 (0.44)	0.13* (0.34)	0.29 (0.46)
Hispanic—yes	0.10 (0.31)	0.08 (0.27)	0.14*** (0.35)	0.03 (0.18)
Nonwhite—yes	0.17** (0.38)	0.11*** (0.31)	0.19*** (0.39)	0.00 (0.00)
Income \$30,000 or more	0.60 (0.50)	0.68 (0.47)	0.72 (0.45)	0.65 (0.49)
<i>N</i>	30	92	194	31

NOTE: Values in parentheses are standard errors.

Difference from "no negligence" group: \*  $p < .10$ \*\*  $p < .05$ \*\*\*  $p < .01$

In general, there was less agreement between physician raters about causation than about whether the care was substandard. Experts do not agree on the etiology of birth injuries—in particular, whether serious conditions such as cerebral palsy are primarily caused by inadequate care during labor and delivery, during pregnancy, or by factors beyond the control of health professionals.<sup>28</sup> This lack of consensus may itself be responsible for increased claims frequency, since it increases the number of potential experts potentially available for testimony at trial.

The most newsworthy result does not come from the regression analysis. Of 963 women giving birth in Florida in 1987 who were surveyed in 1992, 220 experienced an adverse birth outcome, either a stillbirth, an infant death following a live birth, or a permanent injury, mostly a major one. The high fraction of adverse outcomes was the consequence of deliberate oversampling. Yet of the 220 adverse outcomes, not a single medical malpractice claim resulted. Of the 220 cases, 23 sought legal representation, but none obtained it. To place this lack of claiming in perspective, Florida is a state with one of the highest rates of medical malpractice claims frequency and premiums in the United States (U.S. General Accounting Office 1986). Further, obstetrics is a specialty with one of the highest claims frequencies and premiums among physician specialties (Institute of Medicine 1989). The lack of claimants among the 220 women whose babies had serious birth-related injuries and the failure of 23 women to obtain representation runs counter to the “conventional wisdom” that patients sue when they obtain less than a “perfect result.” In fact, lawyers filter out many potential claims that injury victims might lose. Injuries associated with higher losses were more likely to result in claims.

In analysis not presented, we performed various forms of logit analysis to assess determinants of contacting a lawyer. Multinomial logit analysis proved not to be feasible because the sample of 23 cases was too small, particularly with the large number of explanatory variables in our study. Ordered logit analysis with contacting a lawyer as an intermediate category between not claiming and claiming yielded results very similar to those presented in Table 1. Learning about why persons do not obtain legal representation, especially in medical malpractice cases, merits high priority. Such research would inform the policy debate about whether to implement additional barriers to claiming, such as pretrial screening panels and limits on lawyers’ contingency fees.

Injury victims with funds from sources other than a tort claim were less likely to sue their physicians. Whether this reflects a

---

<sup>28</sup> Recent studies suggest that many cases of cerebral palsy are not caused by actions or inactions of medical personnel at labor and delivery. See, e.g., Nelson & Ellenberg 1986.

need for money to pay medical bills, Florida law (with its modified collateral source rule), or some other factor cannot be determined with information available. Our finding that the uninsured are more likely to sue suggests that implementation of universal health insurance would lower the number of suits against physicians even if not accompanied by various "tort reforms" designed to discourage suits. It is interesting that the propensity to claim was decidedly lower among the 10% of injury victims who were enrolled in health maintenance organizations, in fact, appreciably lower than for the 60% of persons with other private health insurance. Perhaps risk managers at HMOs take actions to avoid suits once an adverse outcome has occurred. The 1992 survey contained questions about satisfaction with care received. If anything, HMO patients tended to be less satisfied with the care they received during the 1987 pregnancy and labor/delivery than were respondents with other types of private health insurance (Hoerger & Howard 1994).

The conceptual framework used in this study is based on the notion that injury victims file a tort claim when it is "profitable" to do so, with returns and costs defined broadly to include nonpecuniary elements. The framework in other studies, such as Felstiner et al. (1980–81), Vidmar (1981), Silberman (1985), and Kritzer et al. (1991), begins at an earlier stage, with the perception of the injury and the attribution of the injury to an external cause. In our study, all injury victims had perceived the injuries by the time of the surveys. The question of attribution, however, in the context of birth injuries is much more complex. A birth injury may be attributed to an unfortunate event in the course of life or, alternatively, to some aspect of medical care received. Given that there is disagreement among the experts about causes of birth injuries, there is reason for injury victims to be even more confused. Evidence from both of the surveys used in this study suggests that attribution often began with patient dissatisfaction with the relationship she had had with her physician (Hickson et al. 1992, 1994). In fact, when the relationship was thought by the patient to be good, patients tended to have accepted the adverse outcomes. Unfortunately, with retrospective surveys such as ours, it is difficult to capture the process of attribution process as it unfolded.

The only other empirical study of the decision to file a lawsuit against a physician was conducted by May and Stengel (1990), who obtained data on nonclaimants by screening a sample of 2,050 persons from city directories in two Wisconsin cities to identify 175 persons who were dissatisfied with the medical care they received during the previous two years.<sup>29</sup> These data

---

<sup>29</sup> A recent study by the RAND Corporation's Institute for Civil Justice involved a national survey of 26,000 households to determine whether they had experienced economic losses due to recent or previous injuries (Hensler et al. 1991). In the second stage,

were combined with a second sample obtained from public records of 65 patients who filed a medical malpractice suit. May and Stengel found that more seriously injured victims and those with previous litigation experience were more likely to sue. The first result is consistent with our findings. The sign on the coefficient for schooling was negative but with a high associated standard error, weakly suggesting that more educated persons are less likely to sue. This evidence also implies that schooling has other effects than those on search costs, perhaps as we speculated above on physician-patient communication. Unfortunately, they obtained no information on defendant liability.

The conventional wisdom appears to be that the uneducated, the careless, the poor, the uninsured, and perhaps some minorities are more likely to sue their doctors. But until now, there has been little hard evidence on the influence of these variables. Our empirical evidence supports some, but not all, of these beliefs. Indeed, alcohol consumption during pregnancy and lack of health insurance increased the probability of suing. But being a nonwhite lowered this probability. Education and income had no effect.<sup>30</sup> These results are conditional on an adverse outcome having occurred. To the extent that the various lacks raise the probability of adverse outcomes, the differences are greater than our results imply.<sup>31</sup>

Even though most of these results imply that physicians can improve their claims record by denying access to disadvantaged groups, we also found that better communication, in particular, discussing the possibility of adverse outcomes in advance of a claim, also can help achieve this objective.

Finally, we have investigated the decision to initiate a subset—birth injuries—of one type of tort liability claim, medical malpractice, in one state (Florida). The narrow scope of this study raises the question of generalizability of findings to medical malpractice, to other types of tort claims, and to a much broader geographic area. To avoid an expensive general survey of the population to identify persons who had experienced a rare event—a particular type of injury—we used unpublished vital statistics data and closed claims data to identify families to be interviewed. Vital statistics information is collected and maintained by

---

2,800 households (those with some loss) were interviewed. This study encompassed all injuries. A study of single injury type would require a much larger household sample in the first stage. An earlier survey of this type by Harris et al. (1984) was conducted in England and Wales.

<sup>30</sup> In preliminary analysis, we included a continuous variable for income. The parameter estimates on this measure were also statistically significant.

<sup>31</sup> In an analysis of adverse birth outcomes, based on our MPR survey, Sloan and coauthors (1994) found that being nonwhite and being on Medicaid increased the probabilities that the infant died within five days of birth, died within a year, and had a permanent injury or was dead by age five. Uninsured persons had higher rates of low Apgar scores and deaths within one year of birth.



individual state governments. Closed medical malpractice claims data are available on a public use basis only very rarely, Florida being one of the few states providing a public use file. Performing medical evaluations of liability is made much more difficult when many types of injuries are involved. Thus, the scope of studies such as ours is likely to be narrow. Replication with data on other case types and from other jurisdictions merits a high priority.

## References

- American Medical Association (1988) "A Proposed Alternative to the Civil Justice System for Resolving Medical Liability Disputes: A Fault-based, Administrative System." Chicago: American Medical Association.
- (1994a) "Professional Liability in the '80s." AMA Special Task Force on Professional Liability & Insurance Report 1 (Oct.). Chicago: American Medical Association.
- (1994b) "Professional Liability in the '80s." AMA Special Task Force on Professional Liability & Insurance Report 2 (Nov.). Chicago: American Medical Association.
- (1995) "Professional Liability in the '80s." AMA Special Task Force on Professional Liability & Insurance Report 3 (March). Chicago: American Medical Association.
- Bovbjerg, Randall R., Frank A. Sloan, Avi Dor, & Chee Ruey Hsieh (1991) "Juries and Justice: Are Malpractice and Other Personal Injuries Created Equal?" 54 (2) *Law & Contemporary Problems* 5.
- Burstin, Helen R., Stuart R. Lipsitz, & Troyen A. Brennan (1992) "Socioeconomic Status and Risk for Substandard Medical Care," 268 *J. of the American Medical Association* 2383.
- Cooter, Robert D., & Daniel L. Rubinfeld (1989) "Economic Analysis of Legal Disputes and Their Resolution," 27 *J. of Economic Literature* 1067.
- Cornell, Bradford (1990) "The Incentive to Sue: An Option-Pricing Approach," 19 *J. of Legal Studies* 173.
- Curran, Christopher (1992) "The Spread of the Comparative Negligence Rule in the United States," 12 *International Rev. of Law & Economics* 317.
- Danzon, Patricia M. (1985) "Liability and Liability Insurance for Medical Malpractice," 4 *J. of Health Economics* 309.
- (1986) "The Frequency and Severity of Medical Malpractice Claims: New Evidence," 49 (2) *Law & Contemporary Problems* 57.
- Danzon, Patricia M., & Lee A. Lillard (1983) "Settlement Out of Court: The Disposition of Medical Malpractice Claims," 12 *J. of Legal Studies* 345.
- Entman, Stephen S., Cheryl A. Glass, Penny B. Githens, Kathryn Whetten-Goldstein, Gerald B. Hickson, & Frank A. Sloan (1994) "The Relationship between Malpractice Claims History and Subsequent Obstetrical Care," 272 *J. of the American Medical Association* 1558.
- Farber, Henry S., & Michelle J. White (1991) "Medical Malpractice: An Empirical Examination of the Litigation Process," 22 *RAND J. of Economics* 199.
- Felstiner, William L. F., Richard L. Abel, & Austin Sarat (1980–81) "The Emergence and Transformation of Disputes: Naming, Blaming, Claiming . . .," 15 *Law & Society Rev.* 631.
- Fournier, Gary M., & Thomas W. Zuehlke (1989) "Litigation and Settlement: An Empirical Approach," 71 *Rev. of Economics & Statistics* 189.
- Gould, John P. (1973) "The Economics of Legal Conflicts," 2 *J. of Legal Studies* 279.

- Hans, Valerie P., & William S. Lofquist, "Jurors' Judgments of Business Liability in Tort Cases: Implications for the Litigation Explosion Debate," 26 *Law & Society Rev.* 85.
- Harris, Donald, Mavis Maclean, Hazel Genn, Sally Lloyd-Bostock, Paul Fenn, Peter Corfield, & Yvonne Brittan (1984) *Compensation and Support for Illness and Injury*. Oxford: Clarendon Press.
- Hensler, Deborah R., M. Susan Marquis, Allan F. Abrahamse, Sandra H. Berry, Patricia A. Ebener, Elizabeth G. Lewis, E. Allan Lind, Robert J. MacCoun, Willard G. Manning, Jeannette A. Rogowski, & Mary E. Vaiana (1991) *Compensation for Accidental Injuries in the United States*. Executive Summary R-3999. Santa Monica, CA: RAND Corp.
- Hickson, Gerald B., Ellen W. Clayton, Penny B. Githens, & Frank A. Sloan (1992) "Factors That Prompted Families to File Medical Malpractice Claims Following Perinatal Injuries," 267 *J. of the American Medical Association* 1359.
- Hickson, Gerald B., Ellen W. Clayton, Cynthia S. Miller, Penny B. Githens, Kathryn Whetten-Goldstein, Stephen S. Entman, & Frank A. Sloan (1994) "Obstetricians' Prior Malpractice Experience and Patients' Satisfaction with Care," 272 *J. of the American Medical Association* 1583.
- Hoerger, Thomas J., & Leslie Z. Howard (1994) "Search Behavior and Choice of Physician in the Market for Prenatal Care," *Medical Care*, forthcoming.
- Huber, Peter W. (1988) *Liability: The Legal Revolution and Its Consequences*. New York: Basic Books.
- Hughes, James W. (1989) "The Effect of Medical Malpractice Reform Laws on Claim Disposition," 9 *International Rev. of Law & Economics* 57.
- Institute of Medicine (1985) *Preventing Low Birthweight*. Washington: National Academy Press.
- (1989) *Medical Professional Liability and the Delivery of Obstetrical Care*. Washington: National Academy Press (2 vols.).
- Kakalik, James S., & Nicholas M. Pace (1986) *Costs and Compensation Paid in Tort Litigation*, Rand Corp. (R-3391-ICJ). Santa Monica, CA: Institute for Civil Justice, RAND Corp.
- Kritzer, Herbert M. (1991) "Propensity to Sue in England and the United States of America's Blaming and Claiming in Tort Cases," 18 *J. of Law & Society* 400.
- Kritzer, Herbert M., W. A. Bogart, & Neil Vidmar (1991) "The Aftermath of Injury: Cultural Factors in Compensation Seeking in Canada and the United States," 25 *Law & Society Rev.* 499.
- Landes, William M. (1971) "An Economic Analysis of the Courts," 14 *J. of Law & Economics* 61.
- Litan, Robert E., & Clifford Winston, eds. (1988) *Liability: Perspectives and Policy*. Washington: Brookings Institution.
- May, Marlynn L., & Daniel B. Stengel (1990) "Who Sues Their Doctors? How Patients Handle Medical Grievances," 24 *Law & Society Rev.* 105.
- Mills, Don Harper (1978) "Medical Insurance Feasibility Study: A Technical Summary," 128 *Western J. of Medicine* 360.
- Nelson, Karin B., & Jonas H. Ellenberg (1986) "Antecedents of Cerebral Palsy: Multivariate Analysis of Risk," 315 (2) *New England J. of Medicine* 81.
- Pauly, Mark V., & Mark A. Satterthwaite (1981) "The Pricing of Primary Care Physicians' Services: A Test of the Role of Consumer Information," 12 *Bell J. of Economics* 488.
- Posner, Richard A. (1973) "An Economic Approach to Legal Procedure and Judicial Administration," 2 *J. of Legal Studies* 399.
- Schuck, Peter H., ed. (1991) *Tort Law and the Public Interest: Competition, Innovation, and Consumer Welfare*. New York: W. W. Norton.

- Shavell, Steven (1982) "Suit, Settlement, and Trial: A Theoretical Analysis under Alternative Methods for the Allocation of Legal Cost," 11 *J. of Legal Studies* 55.
- Silberman, Matthew (1985) *The Civil Justice Process: A Sequential Model of the Mobilization of Law*. Orlando, FL: Academic Press.
- Sloan, Frank A., Randall R. Bovbjerg, & Penny B. Githens (1991) *Insuring Medical Malpractice*. New York: Oxford Univ. Press.
- Sloan, Frank A., Penny B. Githens, Ellen Wright Clayton, Gerald B. Hickson, Douglas A. Gentile, & David F. Partlett (1993) *Suing for Medical Malpractice*. Chicago: Univ. of Chicago Press.
- Sloan, Frank A., & Thomas J. Hoerger (1991) "Uncertainty, Information and Resolution of Medical Malpractice Disputes," 4 *J. of Risk & Uncertainty* 403.
- Sloan, Frank A., & Chee Ruey Hsieh (1990) "Variability in Medical Malpractice Payments: Is the Compensation Fair?" 24 *Law & Society Rev.* 997.
- Sloan, Frank A., Paula M. Mergenhausen, & Randall R. Bovbjerg (1989) "Effects of Tort Reforms on the Value of Closed Medical Malpractice Claims: A Microanalysis," 14 *J. of Health Politics, Policy & Law* 663.
- Sloan, Frank A., & Christoph Schenzler (1992) "Negligence Rules, Compensation and Incentives for Accident Avoidance." Unpublished, Vanderbilt Univ.
- Sloan, Frank A., & Stephen S. van Wert (1991) "Cost and Compensation of Injuries in Medical Malpractice," 54 (1) *Law & Contemporary Problems* 131.
- Sloan, Frank A., Kathryn Whetten-Goldstein, Penny B. Githens, & Stephen S. Entman (1994) "Effects of the Threat of Medical Malpractice Litigation and Other Factors on Birth Outcomes," *Medical Care*, forthcoming.
- U.S. General Accounting Office (1986) *Medical Malpractice: Six Case Studies Show Claims and Insurance Costs Still Rise Despite Reforms*. No. GAO/HRD-87-21. Washington: U.S. General Accounting Office.
- Vidmar, Neil (1981) "Justice Motives and Other Psychological Factors in the Development and Resolution of Disputes," in M. J. Lerner & S. C. Lerner, eds., *The Justice Motive in Social Behavior: Adapting to Times of Scarcity and Change*. New York: Plenum Press.
- Viscusi, W. Kip (1986) "The Determinants of the Disposition of Product Liability Claims and Compensation for Bodily Injury," 15 *J. of Legal Studies* 321.
- Weiler, Paul, Howard H. Hiatt, Joseph P. Newhouse, William G. Johnson, Troyen A. Brennen, & Lucian L. Leape (1993) *A Measure of Malpractice: Medical Injury, Malpractice Litigation, and Patient Compensation*. Cambridge: Harvard Univ. Press.
- White, Michelle J. (1989) "An Empirical Test of the Comparative and Contributory Negligence Rules in Accident Law," 20 *Rand J. of Economics* 308.

## Statute

Florida Wrongful Death Act, Fla. Stat. Ann. sec. 768.18 (West 1994).