

THE EFFECTS OF TORT REFORMS ON THE FREQUENCY  
AND SEVERITY OF MEDICAL MALPRACTICE CLAIMS:  
A SUMMARY OF RESEARCH RESULTS

Patricia M. Danzon

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PREFACE

On March 26, 1986, Patricia Danzon appeared by invitation before the Senate Committee on the Judiciary to summarize her research on medical malpractice claims. This paper contains her testimony. Other reports on medical malpractice written by the author for The Institute for Civil Justice are listed at the back of this paper.



THE EFFECTS OF TORT REFORMS ON  
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A SUMMARY OF RESEARCH RESULTS

Testimony Submitted by Patricia M. Danzon  
Committee on the Judiciary, United States Senate

March 26, 1986

Mr. Chairman and members of the Committee, my name is Patricia Danzon. I am Associate Professor of Health Care Systems & Insurance at The Wharton School, The University of Pennsylvania, and a consultant to The Institute for Civil Justice at The Rand Corporation. Rand is a private, nonprofit corporation that conducts public policy research. The Institute for Civil Justice was established in 1979 within Rand and is supported primarily by corporate and foundation grants.

My testimony concerns the results of studies I have conducted for the Institute on the frequency and severity of medical malpractice claims.<sup>1</sup> In the late 1960s, the frequency of claims per physician and claim severity (average payment per paid claim, including jury verdicts and out-of-court settlements) began to increase at unprecedented rates, culminating in the medical malpractice crisis of the mid-1970s. In response to that crisis, legislatures in almost every state enacted tort reforms intended to curb the rise in claims, in addition to other changes designed to assure the availability of malpractice insurance.

Between 1975 and 1978, claim frequency per physician slowed or even decreased in many states, but since 1978, claim frequency has resumed an upward trend. The St. Paul Fire and Marine Insurance Company, which has been a leading writer of malpractice insurance for many years, reported a 55 percent increase in claim frequency between 1980 and 1984 -- from 10.5 claims per 100 physicians in 1980 to 16.3 in 1984.<sup>2</sup> Claim severity

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<sup>1</sup> Danzon and Lillard, 1982a; Danzon and Lillard, 1982b; Danzon, 1982; Danzon, 1986. Danzon, 1982, was partially supported by the Health Care Financing Administration, U.S. Department of Health and Human Services. Danzon, 1986, was partially supported by the Urban Institute. The views expressed here are mine and are not necessarily endorsed by my research sponsors.

<sup>2</sup> *Physicians' and Surgeons' Update*, 1985, The St. Paul Fire and Marine Insurance Company, St. Paul, Minnesota.

increased faster than the rate of inflation throughout the 1970s, and this trend appears to have continued into the 1980s. On average, over the decade 1975-1984, claim severity increased at almost twice the rate of increase in the Consumer Price Index (CPI).<sup>3</sup> The St. Paul reports that claim severity increased 95 percent during the five-year period 1979-1983, from \$27,408 in 1979 to \$53,482 in 1983.<sup>4</sup> The average malpractice jury award is reported to have risen from \$404,726 in 1980 to \$954,858 in 1984.<sup>5</sup> This upward trend in claim costs, together with the recent spate of large malpractice premium increases, has revived interest in tort reform, and hence, in the impact of the reforms enacted after the 1975 crisis. Today I shall summarize the results of three studies that provide some evidence on the impact of these reforms. Each of these studies uses data from a different time period; the findings show slight differences, but are broadly consistent.

In the first study, my colleague, Lee Lillard, and I examined the disposition of some 6,000 individual medical malpractice claims closed in either 1974 or 1976.<sup>6</sup> The former were disposed before most states had moved to institute reforms. The latter begin to reflect the effects of legislation enacted in response to the perceived malpractice crisis. Assessing these effects is difficult for several reasons.

First, the precise form of a given reform measure varied from state to state. For example, relaxing the collateral source rule could involve simply making evidence of collateral compensation payments admissible in court, or it could authorize deductions from the court award to avoid double payment to the plaintiff.

Second, identifying whether particular statutes could have affected claims in the data base is unavoidably imprecise. Our analysis considered only those statutes that were enacted prior to the closing date of claims in the 1976 sample. Some statutes, however, did not become effective until several months after they were enacted; claims in

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<sup>3</sup> Danzon, 1986.

<sup>4</sup> *Ibid.*

<sup>5</sup> Jury Verdict Research, Inc. cited in n.2 *supra*.

<sup>6</sup> Danzon and Lillard, 1982a; Danzon and Lillard, 1982b.

or near trial may have been exempted from recent changes in law; and there may have been further delays before changes in court decisions fed back into changes in out-of-court settlements.

Third, it was not possible for us to control for all of the changes being made simultaneously along with other unmeasured changes (e.g., alterations in judge-made tort law or in jury attitudes).

For all of these reasons, the effects realized in the period immediately following enactment -- the period captured by the 1976 data file -- may or may not be reliable guides to the long-term effects of each measure. Consequently, the estimates of the effects reported below were not viewed as definitive, but as rough, preliminary indicators of their apparent immediate impact. They were derived by comparing the change in awards between 1974 and 1976 in states which enacted a particular reform during that period and in states which did not.<sup>7</sup> Technical difficulties sometimes made it impossible to separate closely associated measures; in those cases, we grouped them together and arbitrarily assumed that they had equal impact. The resulting estimates should be regarded as particularly tentative.

When a state moved to cap verdicts, or to eliminate specific dollar requests by plaintiffs (i.e., bar the *ad damnum* clause), or to permit payments of awards for future losses in periodic installments, the seeming effect of any one of these changes was to:

- Reduce the average shadow verdict by 30 percent.
- Cut the average settlement by 25 percent.
- Raise the portion of cases dropped from 43 to 48 percent.
- Reduce the share of cases going to verdict from 5.1 to 4.6 percent.

The analysis does not permit an accurate estimate of the cumulative effect of these measures, and the assumption that all are of equal

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<sup>7</sup> This controls for the fact that states with relatively high awards in 1974 were more likely to enact changes. Assuming no such changes, they could be expected to have high awards in 1976. If we simply compared the level of awards in 1976 in states which did and did not enact changes, we would underestimate the effects of the changes.

weight is probably incorrect. Evidence from the latest studies suggests that caps on awards have greater effect than periodic payments or limits on the *ad damnum*.

Relaxation of the ban on evidence of collateral sources of compensation for the injury seemed to reduce shadow verdicts by 18 percent, but the statistical significance of this finding was quite low.

Imposition of limits on contingent fees charged by plaintiffs' attorneys seemed to:

- Cut the average settlement by nine percent.
- Raise the portion of cases dropped from 43 to 48 percent.
- Reduce the share of cases going to verdict from 6.1 to 4.6 percent.<sup>8</sup>

All of these results suggest that the changes enacted in the tort law during the crisis period had substantial effects, and that these effects were in the directions probably expected by the lawmakers who adopted them. It is also true that the frequency of claims and the explosion of insurance premiums -- factors largely responsible for the sense of crisis -- abated during the years after 1976. But we emphasize that this analysis does *not* establish any necessary connection between these events: Many factors other than changes in tort law may have worked toward relieving the crisis. The evidence supports the general proposition, however, that these changes had important downward effects on settlements, verdicts, and the number of cases pressed to judgment, while tending to increase the number of claims that were dropped without payment.

In a second study, I used state-by-state data on the average number of claims closed per capita and average severity per paid claim for 1970 and 1975-1978. Information on individual claims was not available. These data were used to analyze the contribution of medical factors,

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<sup>8</sup> The estimate that 6.1 percent of cases would have gone to verdict in states which limited contingent fees, compared with 5.1 percent in states enacting measures to limit awards, shows that limits on contingent fees were adopted in states with relatively high litigation rates.



demographic characteristics, and legal factors -- including tort reforms -- to the differences among states and trends over time in claim frequency and severity.

The study concluded that the increase in claims over time and the persistent diversity in experience among states could only partly be explained by such factors as the increase in the number and complexity of medical treatments and concomitant increases in exposure to the risk of iatrogenic injury.<sup>9</sup> The pro-plaintiff trend in common law during the 1950s and 1960s also appears to have contributed significantly to the rise in claim frequency and severity. The other major factor contributing to the diversity among states was urbanization; however, we could not identify the specific characteristics of urban environments that generated higher frequency and severity. Differences in the number of attorneys per capita, the cost of medical services, per capita income, and unemployment rates did not appear to play significant roles.

This early analysis found mixed early effects of the tort reforms enacted in response to the 1975 crisis. Limitations on the plaintiff's recovery (caps on awards) and mandatory offset of collateral benefits appeared, by 1978, to have significantly slowed the growth in claim severity in states that enacted such changes. However, none of the other changes, such as pretrial screening panels or shorter statutes of limitations showed any impact on frequency or severity. Moreover, none of the reforms could explain, in a statistical sense, the lull in growth of claim frequency that occurred between 1975 and 1978. However, this early analysis, using data on claims closed through 1978, obviously did not purport to measure the long-run impact of the tort reforms enacted since 1975. In particular, any impact of shorter statutes of limitations on the "long tail" of claims would not then be evident. As in the earlier study of individual claims closed in 1976, even the estimates of the apparent short-run effects might have been contaminated by other unmeasured factors related to the crisis, such as changes in public attitudes, which might prove short-lived.

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<sup>9</sup> Danzon, 1982.

In order to update these early estimates, I have just completed an analysis of the impact of the tort reforms and other factors on trends in malpractice claim frequency and severity, using claim experience over the full decade 1975-1984.<sup>10</sup> The length of time since the enactment of the 1974-1977 tort reforms should now, in principle, be long enough to estimate their long-run impact. However, in practice, there are several difficulties. First, the reforms have been subject to legal challenge in many states, and final rulings either upholding or denying their constitutionality have been long delayed. For example, the California cap on awards for pain and suffering was not finally upheld in state court until early 1985 and a U.S. Supreme Court appeal failed only in October 1985. To the extent that the disposition of claims over the last decade has been influenced by uncertainty as to the ultimate outcome of these legal challenges, it may still be too early to estimate full long-run effects of those that have been upheld.

A second practical difficulty in estimating the impact of tort reforms is lack of a consistent, comprehensive data base. The medical malpractice insurance market has undergone substantial changes since 1975 in the identity of carriers and types of coverages. Several major stock insurers have withdrawn, to be replaced by physician-owned mutuals and hospital "captives" and by joint underwriting associations (JUAs). A substantial fraction of the market has also changed from an "occurrence" policy (which covers all claims arising out of medical incidents occurring in the policy year regardless of the date of claim filing) to "claims-made" coverage (which covers only claims filed in the policy year regardless of the date of injury, provided that the physician was covered by a claims-made policy with that company at the time of the injury). Although these changes in liability insurance markets are not expected to affect the behavior of patients and courts with regard to filing and disposing of claims, the large number of insurers who have had a significant market share for at least some fraction of the period under study makes collection of a comprehensive data base on claim experience very costly. The switch from occurrence

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<sup>10</sup> Danzon, 1986.

to claims-made coverage further complicates the estimation of trends, particularly for claim frequency, because the number of claims reported tends to be low in the early years of claims-made coverage, rising as the policy "matures" -- even with no change in the underlying frequency of claims filed.

My earlier analysis of 1970s malpractice claim trends drew on a virtual census of all claims closed from 1975 through 1978, collected in a special survey by the National Association of Insurance Commissioners (NAIC). Since 1978, there has been no national compilation of malpractice claims. Data for this recent study were requested from most of the insurers with a significant market share at any time from 1975 through 1984. Several of the largest stock insurers and physician-owned companies, covering roughly 100,000 physicians, provided data in the format and detail requested. Forty-nine states are represented for at least some years. However, it remains possible that the data base may not be fully representative of the situation nationwide.<sup>11</sup>

In attempting to measure the effects of various factors, including tort reform, on malpractice claims frequency and severity, I statistically compared the average experience of physicians in different states and at different points in time over the ten years, 1975-1984. As in the second study discussed above, the units of observation are not individual claims, but individual states in each year. The variables to be explained are claim frequency per 100 physicians and average severity per paid claim, by state.

To estimate the impact of a particular tort reform, one cannot simply compare the experience of State X before and after enactment because other factors may have changed over the same timespan. Similarly, one cannot simply compare, at a particular point in time, states that have enacted a particular reform and states that have not

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<sup>11</sup> For example, data published by the American Medical Association show significant differences in claim frequency for 1983, by type of insurer. Physician-owned companies linked to medical societies reported 24 claims per 100 insured physicians in that year, compared with only 10 per 100 insured physicians for commercial companies and 11 per 100 for independent provider-owned insurers. (AMA, 1984, p. 10.) These differences could reflect such factors as differences in states in which the companies do business, differences in underwriting stringency, and simple differences in claim reporting practices.

because other factors may contribute to any observed differences between states. For example, assume that State A, which enacted a cap on awards, had 20 percent higher claim severity in 1984 than State B in 1984. One should not infer that the cap had no effect because it may be that claim severity would have been 50 percent higher in A than in B had the cap not been enacted. Thus, to estimate the net impact of the cap -- or any other factor -- statistical methods are used to attempt to "control" for other factors.

The number of factors that can be controlled for depends on the number of independent observations in the sample, which determines the "degrees of freedom," and on the subset of the observations that have the characteristic of interest. In this data base, there are observations on over 45 states in each of 10 years, but the effective degrees of freedom are less than 450 (45 times 10) to the extent that experience in successive years in any state is not fully independent of experience in the same state in prior years. This complicates measurement of statistical significance.<sup>12</sup> Further, it is not possible to measure the effect of each variant of each reform -- for example, a cap on pain and suffering at \$250,000, at \$100,000, and so on -- because the number of observations on each variant is too small. For most reforms, the average impact for each type of change has therefore been estimated. Two exceptions are that separate estimates were made for the effects of mandatory and discretionary collateral source offset and for different types of legislation regarding screening panels.

With these caveats, the evidence from this analysis suggests that the last round of tort reforms affected the frequency and severity of malpractice claims over the decade 1975-1984 in a manner broadly consistent with theory and previous evidence. Although claim frequency and severity have continued to rise despite reforms, this does not mean that the tort changes have had no effect. States that enacted shorter statutes of limitations and set outer limits on discovery rules have had less growth in claim frequency than states with statutes more lenient to plaintiffs. On average, cutting one year off the statute of limitations for adults appears to have reduced claim frequency by eight percent; the

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<sup>12</sup> This is discussed further in Danzon, 1986.

effect would presumably be greater for reduction from, say, four to three years than from ten to nine years.

Statutes permitting or mandating the offset of collateral benefits have apparently reduced malpractice claim severity by 11 to 18 percent and claim frequency by 14 percent relative to comparable states without collateral source offset. The feedback from a reduction in severity to a reduction in frequency is not surprising, since collateral source offset reduces the potential recovery for a large number of claims, so reduces incentives to file.

Caps on awards have reduced severity by 23 percent. This is the average impact of the various forms of caps over the period 1975-1984. If the dollar thresholds are not revised periodically to keep pace with inflation, the future effect will presumably be greater, unless juries find ways of implicitly circumventing the limits by increased allowances for uncapped components of the award.

Arbitration statutes appear to have increased claim frequency and reduced average severity. Disaggregated (i.e., individual claim) data are necessary to determine whether the reduction in observed average severity results from a reduction in awards per case or simply reflects the filing of more small claims. The net effect appears to be an increase in total claim costs but compensation to more patients.

None of the other reforms analyzed, including screening panels and limits on contingent fees, appears to have had any systematic impact on claim frequency or severity.

Among the other factors affecting claims, urbanization remains a highly significant factor that explains much of the observed difference among states in claim frequency and severity. Per capita income, the unemployment rate, and the number of attorneys per capita have no statistically significant effects after controlling for urbanization. The surgery rate in a state increases claim frequency; the ratio of surgeons to medical specialists increases claim severity.

In summary, these three studies suggest that caps on awards and collateral source offset have significantly reduced claim severity; collateral source offset and shorter statutes of repose have significantly reduced claim frequency. These studies did not attempt to measure the effect of tort reforms on malpractice insurance premiums.

That would depend not only on the effect on expected claim cost, but also on the effect on investment income and on predictability of losses. Reforms which reduce uncertainty of tort losses should reduce the volatility of price and availability of malpractice insurance.

Finally, from a public policy perspective, the goal of tort reform should not be simply to reduce the costs of claims and of malpractice insurance. Reforms should be evaluated in the broader context of the fundamental purposes of the tort system, which are deterrence of medical negligence and efficient compensation of its victims. I believe that the tort system can be made cost effective in performing these dual roles, as discussed elsewhere.<sup>13</sup>

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<sup>13</sup> Danzon, 1985.

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