

# The Effects of Tort Reforms on the Frequency and Severity of Medical Malpractice Claims

PATRICIA M. DANZON\*

## I. INTRODUCTION

This paper summarizes the results of studies I have conducted on the determinants of the frequency and severity of medical malpractice claims, focusing in particular on the effects of tort reforms.<sup>1</sup> I shall also comment briefly on the extent to which the evidence from medical malpractice can be generalized to other areas of tort law, to which similar statutory changes have more recently been applied.

In the late 1960s, the frequency of claims per physician and claim severity (average amount per paid claim, including jury verdicts and out-of-court settlements) began to increase at unprecedented rates. For example, in California the average annual rate of increase in claim costs (frequency times severity) was roughly forty percent a year. Initially, insurance premiums did not keep pace. In 1974-75 insurance carriers sought huge premium increases—over 300 percent in some states—precipitating the so-called malpractice crisis of the mid-1970s.

In response to that crisis, legislatures in virtually 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.<sup>2</sup> The scope and the detail of these changes differ from state to state. Broadly, they fall into the following categories: caps on awards; provisions for mandatory or discretionary offset of collateral benefits against the tort award; statutes of repose; mediation or screening panels; sliding scale limits on contingent fees; provisions to permit periodic rather than lump sum payment of large awards for future disabilities; and attempts to curtail or clarify the use of res ipsa and informed consent.

What has been the subsequent trend in the frequency and severity of claims? Between 1975 and 1978 claim frequency per physician slowed or even fell in many states, but since 1978 it has resumed an upward trend. Averaging over the decade 1975-84, the number of claims per physician has increased at roughly ten percent a year.<sup>3</sup> On average over the decade 1975-84, claim severity has increased at almost twice the rate of increase of the Consumer Price Index (CPI). This real growth

---

\* Assoc. Professor, Health Care Systems and Insurance, University of Pennsylvania.

1. P.M. DANZON, *MEDICAL MALPRACTICE: THEORY, EVIDENCE AND PUBLIC POLICY* (1985) [hereinafter P.M. DANZON, *MEDICAL MALPRACTICE*]; Danzon, *The Frequency and Severity of Medical Malpractice Claims: New Evidence*, 49 *LAW & CONTEMP. PROBS.* (1986); Danzon, *The Frequency and Severity of Medical Malpractice Claims*, 27 *J. LAW & ECON.* 115 (1984); Danzon & Lillard, *Settlement Out of Court: The Disposition of Medical Malpractice Claims*, 12 *J. LEGAL STUD.* 345 (1983).

2. I shall adhere to conventional usage by referring to these changes as “reforms,” without wishing to imply any judgment on the merits of these changes. For a detailed evaluation of these reforms from an economic standpoint, see P.M. DANZON, *MEDICAL MALPRACTICE*, *supra* note 1.

3. The St. Paul Fire and Marine Insurance Company, which has been the 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. St. Paul, 1985.

of payments to successful tort claimants cannot be fully explained by the fact that medical care prices have risen more rapidly than consumer prices in general, because medical expenses account for less than one quarter of reported economic loss in malpractice cases closed with payment.<sup>4</sup>

## II. DATA AND METHODS

To assess the impact of tort reforms and other factors on malpractice claim frequency and severity, statistical methods were used to analyze the average experience of physicians in different states, some with and some without tort reforms, over the years 1975 through 1984. The unit of analysis is not the individual physician or individual claim, but the average frequency of claims per 100 physicians and average severity per paid claim in each state. To estimate the impact of a particular reform, one cannot simply compare the experience of physicians in a particular state that enacted a reform, before and after the change, because other factors may have changed. Similarly, one cannot simply compare, at a point in time, states with and states without a particular reform, because other factors may contribute to any observed differences or, conversely, may mask real effects of differences in the law. For example, one might observe that a state that has enacted a cap on awards has thirty percent higher claim severity than a state without a cap; however, the difference might have been fifty percent in the absence of the cap. Thus to estimate the net impact of reforms, statistical methods are used to control for other relevant factors, to the extent possible.

There are several practical difficulties in applying this type of statistical analysis to estimate the impact of tort reforms on malpractice litigation. First, ideally one would like to analyze the complete universe of claims against physicians and hospitals. Because malpractice insurance is written by a large number of companies and there has been a substantial turnover of insurers in recent years, obtaining such a complete census of claims is not possible. The data used in the most recent study to be described here were obtained from some of the leading stock and physician-owned insurers. Forty-nine states are represented for at least some of the ten years. However, it remains possible that the data base may not be fully representative of the situation nationwide.

Second, it is not possible to measure separately the effects of each variant of each law. For example, states that adopted caps differ in the level of the cap and in the types of damages to which it applies. Because the number of observations on each variant of a particular type of reform is so small, the average effect of each general type of change has been estimated, with a few exceptions to be described below.

Finally, the analysis does not take account of the fact that many of the reforms were under challenge during the period of study. A state is assumed to have a particular reform if such a statute had been enacted and had not been overturned. To the extent the effect of a reform is dampened by the fact that it is under challenge, the

---

4. National Association of Insurance Commissioners (NAIC), *Malpractice Claims*, 2(2) (1980).

evidence from this period 1975 through 1984 may underestimate the full long run effect of a reform once it has been upheld—assuming that the passage of time does not also permit the development of incentive ways around the constraint.

### III. FINDINGS

#### A. *Medical, Social, and Demographic Factors*

Several variables were included in the analysis as proxies for exposure to iatrogenic injury. Most consistently significant was the number of surgical procedures per capita, which is positively related to the frequency of claims filed per physician. Claim severity is significantly higher in states with a high ratio of surgical specialists, relative to medical specialists. These variables may capture the general effect of more complex medical practice, as well as the likelihood that surgical mishaps involve more serious errors and are easier to prove.

Urbanization is a major determinant of interstate differences in the frequency and severity of claims. States that have a higher percentage of the population in urban areas tend to have a higher frequency of claims per physician and higher awards. This difference remains after controlling for measurable differences in medical practice and in number of attorneys per capita. Although there is a high simple correlation between number of attorneys per capita and the frequency and severity of claims, after controlling for urbanization the number of attorneys has no statistically significant impact. This tends to suggest that lawyers are attracted to areas with high litigation rates and high awards, rather than being an independent cause of the litigation. However, such conclusions remain tentative, until the causes of the apparently higher rates of litigation in urban areas are better understood. The higher frequency of claims in urban areas could be in part a response to higher awards in urban areas.<sup>5</sup> Thus the higher awards are the primary puzzle to be explained.

The statistical evidence tends to reject the hypotheses that higher rates of litigation are associated with differences in per capita income; percent of the population on welfare; unemployment rates; percent of the population that has recently moved to the area (a rough proxy for lack of established ties with physicians); or the percent of the population over sixty-five.

#### B. *Tort Reforms*

In evaluating the evidence on the impact of tort reforms, it must be emphasized that this evidence from the last decade, when the reforms were under challenge in many states, may underestimate the full long run effect of reforms that have been upheld. Further, the inevitably simplified measures of complex statutes may introduce bias in estimating effects. There is also some uncertainty as to the true

---

5. It is also possible that the higher frequency of claims in urban areas is in part a result of "border crossing," that is, out-of-state patients in rural areas may visit physicians in urban areas and file claims in the jurisdiction where the physician's office is located.

levels of statistical significance.<sup>6</sup> Taken at face value, the results show how much a particular reform affected experience, relative to what that experience would have been, had the reform not been enacted. Thus, the statement that reform X reduced claim frequency by Y percent does not mean that frequency fell by Y percent but that it was Y percent lower than it otherwise would have been. The percentage difference noted is the average differential in a single year if a particular change had been enacted and had not been overturned.

*Caps on awards.* The average impact of statutes to limit all or part of the plaintiff's recovery has been to reduce average severity by twenty-three percent. This average impact obviously masks great differences among cases, with the majority of cases being unaffected but a major effect on the minority of very large awards. Because large awards account for a very substantial share of total dollars paid out (an earlier study found that over fifty percent of dollars are paid on five percent of paid claims), caps that severely reduce the few very large awards can have a significant effect on the average and on the total payout.

*Collateral source offset.* Laws providing for collateral source offset appear to reduce awards by between eleven and eighteen percent. This estimate is broadly consistent with estimates derived from examining the amount of economic loss that would be covered by other sources of private and public insurance. Using this latter approach yields the estimate that mandatory offset of all collateral benefits might reduce average severity by thirty to forty percent.<sup>7</sup> Since some statutes apply only to a subset of collateral sources or credit the plaintiff with the cost of the premium for private insurances, and some statutes only provide for offset at the discretion of the court, the observed effect of roughly half this maximum possible effect seems plausible.

In addition to reducing claim severity, collateral source offset also appears to reduce claim frequency by roughly fourteen percent. This feedback from an effect on severity to a reduction in claim frequency is quite plausible. Collateral source offset would reduce the expected recovery on many small claims which involve primarily short-term medical expense, which is relatively well covered by private and public health insurance plans. Thus, many of these small claims may cease to be worth filing.

*Statutes of repose.* States that have adopted shorter statutes of limitations and set an outer limit on the time allowed to file a claim have experienced some reduction in claim frequency. Reducing the statute of limitations for adults by one year reduces total claim frequency by eight percent and frequency of claims paid by six to seven percent. This estimate is the average effect of a one-year reduction, measured at the sample mean of roughly five years. The effect is presumably greater for a reduction from, say four to three years, less for a reduction from ten to nine years, because the majority of claims are filed in the first few years after the occurrence of the injury. No attempt was made to estimate the effect of shorter statutes for minors.

---

6. For details, see Danzon, *The Frequency and Severity of Medical Malpractice Claims: New Evidence*, 49 *LAW & CONTEMP. PROBS.* (1986).

7. See P.M. DANZON, *MEDICAL MALPRACTICE*, *supra* note 1, at 169.

*Other reforms.* None of the other reforms appear to have had a consistently significant effect. An earlier study did find some reduction in awards from ceilings on contingent fees,<sup>8</sup> but this result was not observed in the larger study covering a longer span of time reported on here. However, the fact that on average other types of reforms have not had a systematic impact does not preclude the possibility that specific variants in some states may have had an effect.

#### IV. CONCLUSIONS

Although medical malpractice claim frequency and severity have continued to increase since the enactment of reforms in the mid-seventies, this does not mean that these reforms have had no impact. Caps on awards, collateral source offset, and statutes of repose have had significant effects, in the direction and magnitude that is consistent with theory, prior evidence, and common sense.

The effects experienced over the last decade, when many of the reforms were under challenge, may understate their potential long-run impact once upheld. If dollar thresholds for caps are not revised upward to keep pace with inflation, such caps will have a greater proportional downward effect in future years.

No attempt was made in these studies to estimate the effect of tort reforms on malpractice insurance rates. In the long run, with competitive insurance markets, reduction in claim frequency and severity can be expected to be reflected in insurance rates. However, the exact magnitude depends not only on the impact on average insurance claims costs but also on the timing of disbursements (and hence on investment income) and on the effect on uncertainty. Reforms which reduce uncertainty—notably, caps and statutes of repose—should reduce insurers' risk and hence reduce both the level and the volatility of insurance premiums.

The reforms which have been found to reduce malpractice claims can reasonably be expected to have an impact if applied to other lines, for example products liability. However, the percentage effect will differ, depending on the size distribution of awards and the timing of filings. For example, a given dollar cap or threshold will have a greater effect, the larger the proportion of dollars paid out on large claims relative to small claims. Similarly, a statute of repose running from the date of injury could have a larger effect in products liability than in medical malpractice, if a larger fraction of claims are filed relatively long after the date of injury.

Finally, an evaluation of the merits of the various reforms, in terms of the efficiency and equity with which the tort system performs its dual functions of deterrence and compensation, has been done elsewhere and is beyond the scope of this paper.<sup>9</sup>

---

8. Danzon & Lillard, *supra* note 1.

9. P.M. DANZON, *MEDICAL MALPRACTICE*, *supra* note 1.

