The Causes of the Medical Malpractice Crisis: An Analysis of Claims Data and Insurance Company Finances

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I. INTRODUCTION

When the President of the American College of Obstetricians and Gynecologists reported in February 1986 on the state of his profession, he chose Charles Dickens' opening words in *A Tale of Two Cities.* "It was the best of times, it was the worst of times," recited Dr. William Mixson.[1] On one hand, Mixson noted the significant advances in medical care for obstetrical patients and the reduced risks of infant mortality. On the other hand, reported Mixson, the professional liability of members of his profession had reached "crisis proportions."[2] Pregnant women in smaller communities in a number of states no longer had access to obstetrical services as a result of

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1. Mixson, *The Spring of Hope*, 67 OBSTETRICS & GYNECOLOGY: J. AM. C. OBSTETRICIANS & GYNECOLOGISTS 153, 153 (1986).

2. *Id.* at 153-54.

increased malpractice premiums.[3]

The effect of liability insurance problems on medical care has not been limited to obstetrics. One of a series of reports on the malpractice crisis completed by the General Accounting Office (GAO) for Congress stated that insurance costs for all physicians and hospitals increased from $2.5 billion in 1983 to $4.7 billion in 1985.[4] Medical malpractice liability insurance problems also were highlighted in two reports issued by the Tort Policy Working Group established by the Attorney General of the United States.[5]

The state of Florida received particular attention as early as the fall of 1984 when an article in *Newsweek* magazine proclaimed: "The malpractice crisis . . . is alive and well and growing in Florida."[6] A GAO study showed that Florida physicians had the highest malpractice premiums of six states studied, including both New York and California.[7] Further, the increases in malpractice premiums from 1980 through 1986 were substantially higher in Florida than in other locales.[8] By 1987, the American Medical Association (AMA) had declared south Florida to be "the Beirut" of the medical malpractice crisis.[9] The crisis became life-threatening when neurosurgeons and other physicians stopped work to protest increased malpractice premiums; as a result, some emergency rooms closed and others curtailed services.[10] The

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3. H. Jonas, Representing the American College of Obstetricians and Gynecologists (Aug. 13, 1986) (statement prepared for *Hearings on H.R. 2695 Before the Subcomm. on Admin. Law and Gov't Relations*, 99th Cong., 1st Sess. (1985); hearing was canceled and statement never delivered); *cf.* American College of Obstetricians & Gynecologists, News Release (Nov. 14, 1985) (statement by William T. Mixson, M.D., President, American College of Obstetricians and Gynecologists, on release of 1985 survey of 1,400 obstetricians and gynecologists, conducted in June and July of 1985) (availability of obstetrical care is likely to suffer because family physicians in some communities can no longer afford liability insurance to cover obstetrics and because of increasing number of physicians giving up obstetrics and cutting down on high risk obstetrics) (unpublished, copy on file at *Georgetown Law Journal*).

4. UNITED STATES GEN. ACCOUNTING OFFICE, MEDICAL MALPRACTICE: A FRAMEWORK FOR ACTION 2 (1987) [hereinafter GAO, FRAMEWORK FOR ACTION].

5. TORT POLICY WORKING GROUP, AN UPDATE ON THE LIABILITY CRISIS 2 (1987); TORT POLICY WORKING GROUP, REPORT OF THE TORT POLICY WORKING GROUP ON THE CAUSES, EXTENT AND POLICY IMPLICATIONS OF THE CURRENT CRISIS IN INSURANCE AVAILABILITY AND AFFORDABILITY 2 (1986).

6. Press, Prout & McDaniel, *How the Doctors Spell Relief*, NEWSWEEK, Sept. 17, 1984, at 73.

7. UNITED STATES GEN. ACCOUNTING OFFICE, MEDICAL MALPRACTICE: SIX STATE CASE STUDIES SHOW CLAIMS AND INSURANCE COSTS STILL RISE DESPITE REFORMS 16 (1986). The rates compared between states included those for Florida outside of the Miami and Fort Lauderdale metropolitan areas, and for New York outside of the New York City and Long Island areas. Rates for these metropolitan areas in each state often are nearly double those in the remainder of the state.

8. *Id.* at 15. The highest percentage increases in premiums of the six states surveyed occurred in New York, North Carolina, and Florida. *Id.*

9. Ver Berkmoes, *South Florida faces 'semi-battlefield condition' in care*, AM. MED. NEWS, July 17, 1987, at 2.

10. *See* Nordheimer, *Doctors Withhold Services in Protest on Insurance*, N.Y. Times, Dec. 10, 1986, at A25, col. 1; *Florida Hospitals Curtail Services As Doctors Protest Insurance Costs*, N.Y.

Palm Beach Post recounted the story of a patient rendered brain-damaged and paralyzed because of the lack of neurosurgical care.[11]

In Florida and throughout the nation, the medical malpractice crisis has led to finger-pointing. Physicians have blamed lawyers, and lawyers have blamed the insurance industry and physicians. The president of the local medical association in Miami attributed the crisis to "some very clever and avaricious attorneys that have so perverted the justice system as to take the words [sic] 'justice' out of the system."[12] President Ronald Reagan and Attorney General Edwin Meese joined the chorus of those pointing the finger at trial lawyers and the court system.[13] Trial lawyers and consumer groups counterattacked. The President of the Association of Trial Lawyers of America claimed: "The insurance industry itself has created the situation and now seeks to profit from it."[14] Ralph Nader charged that insurers were "price-gouging the public."[15] A year later, the succeeding president of the trial lawyers' association asserted: "Study after study has found that the cause of malpractice litigation is simply malpractice—incompetent or care-

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Times, Jan. 2, 1987, at D14, col. 1; *Hospitals in Florida Cut Certain Services As Protest Continues*, N.Y. Times, Jan. 3, 1987, at 8, col. 3.

11. The newspaper reported that a patient with a severe head injury lay comatose for eight hours while doctors searched for a local neurosurgeon to accept the patient; some neurosurgeons refused to treat patients until the legislature took action to reduce malpractice liability. Ellicott, *Malpractice answer would come too late for shunned victim*, Palm Beach Post, Sept. 12, 1987, at 1A, 14A. In another case, a 36-year-old tourist suffering from a broken neck and wrist waited six hours until the hospital located a surgeon who would treat her. Truesdell & Robb, *Wreck Victim Gets MD—6 Hours Later*, Miami Herald, June 11, 1987, at A1, col. 1.

12. Dr. Bruce W. Weissman, President of Dade County Medical Association, Testimony Before the Academic Task Force for Review of the Insurance and Tort Systems, vol. I, at 15-16 (Miami, Fla., Feb. 3, 1987).

13. *See* Molotsky, *Reagan Reiterates Support for Liability Suit Limits*, N.Y. Times, May 31, 1986, at 28, col. 1. The American Tort Reform Association, an organization of business and professional groups before whom Reagan spoke, asserted: "The liability crisis is about 75% the responsibility of lawyers and judges . . . ." American Tort Reform Ass'n, Questions and Answers on Civil Justice Reform, Question 16 (undated pamphlet) (copy on file at *Georgetown Law Journal*). Similarly, Mortimer B. Zuckerman, Chairman and Editor-in-Chief of *U.S. News & World Report* blamed the civil justice system: "An epidemic of costly litigation is sweeping the country, and the time to halt it is now." Zuckerman, *The National Lottery*, U.S. NEWS & WORLD REP., Jan. 27, 1986, at 80. Zuckerman attributed the crisis to personal injury awards that are "out of touch with reality." *Id.*

14. Perlman, *President's Page*, TRIAL, Jan. 1986, at 5; *see* ASSOCIATION OF TRIAL LAWYERS OF AM., THE INSURANCE CRISIS: A STUDY IN DECEPTION 2 (1986) ("insurance company accounting methods, business practices, and cyclical influences—not the justice system—have been the cause of the recent crisis in the liability insurance marketplace").

15. Horwitz, *Nader Charges Insurers with Price-Gouging*, Wash. Post, Jan. 7, 1986, at D1, col. 6. J. Robert Hunter, former Federal Insurance Administrator in the Carter and Ford Administrations and president of the National Insurance Consumer Organization, charged that the liability insurance crisis is primarily an insurance problem caused by "cash-flow underwriting." Hunter & Borzilleri, *The Liability Insurance Crisis: Insurers Put the Squeeze on Consumers*, TRIAL, Apr. 1986, at 43.

less doctors harming innocent patients."[16] J.B. Spence, a well known plaintiffs' medical malpractice attorney, summed it up by stating that "the insurance industry in this country has a gun to the head of the doctors [and t]he doctors, in turn, have a gun to the head of legislatures."[17]

In the midst of this cacophony of competing claims, the Florida legislature established a task force to study the problem of the lack of affordable and available liability insurance, to determine its causes, and to report back to the legislature with recommendations for change in the state's insurance and tort systems.[18] Unlike similar groups in other states, the task force did not consist of representatives of the major conflicting interest groups;[19] instead, its five members included the presidents of the three major Florida universities, and two businessmen with distinguished public service backgrounds.[20] The Florida task force also differed from other groups because it had a sufficient budget to hire an extensive staff consisting of academics and other professionals with expertise in law, insurance, finance, economics, and medicine.

This task force, the Academic Task Force for Review of the Insurance and Tort Systems, originally was established to deal with liability problems in all areas. In July of 1987, however, Governor Robert Martinez of Florida asked the task force to focus specifically on the medical malpractice crisis and to expedite the completion of this portion of the project. The four coauthors of this article were members of the research team investigating the causes of the dramatic increase in the cost of medical malpractice insurance.

This article evaluates the competing claims charging responsiblity for the

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16. Pavalon, *Medical Malpractice*, Nat'l L.J., July 20, 1987, at 20, col. 3; *see* UNITED STATES GEN. ACCOUNTING OFFICE, MEDICAL MALPRACTICE: NO AGREEMENT ON THE PROBLEMS OR SOLUTIONS 27 (1986) (summary of trial lawyers' view that fundamental cause of medical malpractice claims is medical carelessness); *see also* Lee, *Medical Board Urges Tougher Licensing to Cut Insurance Costs*, Miami Herald, July 12, 1987, at B4, col. 1 (executive director of Florida medical board suggests weeding out unskilled doctors to address malpractice problem).

17. J.B. Spence, Testimony Before Academic Task Force for Review of the Insurance and Tort Systems, vol. II, at 136 (Miami, Fla., Feb. 3, 1987).

18. Tort Reform and Insurance Act of 1986, ch. 86-160, 1986 Fla. Laws 695.

19. Past commissions have consisted of representatives of those interest groups affected most directly by the tort and insurance systems—trial lawyers, doctors, insurance industry spokesmen, and businesses. *See, e.g.*, Executive Office of Consumer Affairs & Business Regulation, State of Mass., Liability in Massachusetts: Toward a Fairer System, Report of the Governor's Task Force on Liability Issues 2 (Dec. 1986) (unpublished, copy on file at *Georgetown Law Journal);* State of Fla., Report of the Governor's Task Force on Emergency Room and Trauma Care (Mar. 1987) (unpublished, copy on file at *Georgetown Law Journal);* Legal Action Task Force, State of Wash., Report of the Professional Liability Insurance Subcommittee of the Legal Action Task Force 2 (Dec. 1986) (unpublished, copy on file at *Georgetown Law Journal).*

20. Members of the Florida Academic Task Force for Review of the Insurance and Tort Systems include the Chairman, Marshall M. Criser, President of the University of Florida; Edward Thaddeus Foote II, President of the University of Miami; Preston H. Haskell, President of The Haskell Company, Architects/Engineers/Contractors; P. Scott Linder, Chairman of Linder Industrial Machinery Company; Dr. Bernard F. Sliger, President of Florida State University.

tremendous increases in the cost of medical liability insurance. Part II documents the dramatic increases in physicians' insurance premiums and how these increases affected both patient health care costs and physicians' income.

The third part evaluates the relative contribution of four potential causes of higher premiums: (1) increased loss payments; (2) excessive insurance company profits; (3) the insurance industry underwriting cycle; and (4) the risk classification system used by insurers for rating and pricing purposes. The primary cause of increased malpractice premiums measured over the last nine years is found to have been the substantial increase in loss payments to claimants. Excessive insurance industry profits are not found to be a cause of increased malpractice premiums; contrary to the claims of consumer advocates, insurance company profits are roughly equivalent to those of other American industrial and financial corporations. The third part also evaluates the role of the so-called insurance industry "underwriting cycle" in the recent medical malpractice rate increases and concludes that the underwriting cycle contributed to the suddenness and the timing of price increases in malpractice insurance during the period 1983 through 1987. Over the course of the entire underwriting cycle, however, it was the increase in paid claims that caused higher premiums for doctors. Finally, part III examines the insurance industry practice of dividing physicians into risk classes by specialty and geographical area for rating and pricing purposes. These risk classification procedures are found to exacerbate affordability problems for physicians practicing in high-risk specialties or in high-risk metropolitan areas.

The fourth part presents a uniquely comprehensive analysis of medical malpractice closed claims. This analysis interprets data from a major jurisdiction collected over a twelve-year period between 1975 and 1986 by the Florida Department of Insurance.[21] The analysis of medical malpractice payments published elsewhere has relied either on selective insurance industry data voluntarily provided,[22] or on a closed claims survey for a one-year period.[23] The data presented in this article enabled the authors to establish trends in the frequency and amounts of paid losses during the period corresponding to the tremendous increase in medical malpractice premiums.

The closed claims analysis shows that the frequency of medical malpractice paid claims in Florida, when adjusted for the increase in population, has

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21. Analysis of Florida Department of Insurance Medical Malpractice Closed Claims Data Set.

22. *E.g.*, P. DANZON, THE FREQUENCY AND SEVERITY OF MEDICAL MALPRACTICE CLAIMS (1982); Danzon, *The Frequency and Severity of Medical Malpractice Claims: New Evidence*, 49 LAW & CONTEMP. PROBS. 57 (Spring 1986).

23. *E.g.*, UNITED STATES GEN. ACCOUNTING OFFICE, MEDICAL MALPRACTICE: CHARACTERISTICS OF CLAIMS CLOSED IN 1984, at 2 (1987) [hereinafter GAO, CLAIMS CLOSED IN 1984] (GAO analyzed data from random sample of claims closed in 1984).

increased only slightly since 1975.[24] The size of loss payments, however, has increased more dramatically and is a substantially more important factor in the overall increase in paid claims.[25] The analysis shows that the average cost of a paid claim has increased since 1975 at an average compound rate of 14.8% per year. Significant variations exist among medical specialties and between various geographic areas in both the frequency and the severity of loss payments, according to the closed claims data. Specialties such as obstetrics are affected disproportionately by medical malpractice claims and unusually high amounts of paid claims,[26] as are certain metropolitan areas such as Miami, Fort Lauderdale, and other urban areas of south Florida.[27] The closed claims analysis further shows that physicians with two or more paid claims accounted for nearly one-half of the amount of paid claims in Florida during the period 1975 through 1986, thus lending support to the argument that more professional regulation of physicians is required if the malpractice crisis is to be ameliorated.

II. COST TRENDS FOR MEDICAL LIABILITY INSURANCE

The cost of medical malpractice insurance has increased sharply in recent years. This part measures the extent of price changes in medical malpractice insurance during the past five years; subsequent parts explore the potential causes of such price increases. The price of medical malpractice insurance varies dramatically among states, and even within areas of a single state, depending upon the past and expected claims experience within a locale.

This part first compares medical malpractice rates in Florida during the recent past with those in other states. It then shows the dramatic upward trends in malpractice rates for various medical specialties within Florida during the past five years. Changes in the price of medical liability insurance are compared with changes in the Consumer Price Index, and with various indices showing price increases for medical services. Finally, this part explores the relationship between changes in insurance rates and physicians' income by tracking changes in the percentage of the physicians' gross incomes that are spent on malpractice insurance.

A. COMPARISON BETWEEN MALPRACTICE RATES IN FLORIDA AND IN OTHER STATES

Malpractice insurance rates in Florida are among the highest in the nation—if not the highest. Table 1 compares the rates charged in Florida by

24. *See infra* part IV. A.
25. *See infra* part IV. B.
26. *See id.*
27. *See id.*

the state's largest malpractice insurer with those charged by the largest insurers for five other states for selected specialties, as of January 1, 1986. The Florida rates are those charged in areas of the state outside the south Florida metropolitan areas around Miami and Fort Lauderdale (Dade and Broward Counties). As discussed below, malpractice rates in these urban areas are precipitously higher than in the rest of the state.

TABLE 1

MEDICAL MALPRACTICE PREMIUMS FOR SELECTED STATES:[a] JANUARY 1, 1986

Specialty	Florida[b]	Arkansas	California[c]	Indiana[d]	New York[e]	North Carolina
General practice (minor surgery)	$10,448	$ 1,907	$10,024	$ 2,328	$ 9,220	$ 2,760
Internal medicine (minor surgery)	10,448	1,907	5,924	2,328	7,233	2,760
General surgery	35,794	6,063	28,576	7,760	20,642	8,896
Anesthesiology	31,837	5,492	20,492	7,760	13,598	7,924
Obstetrics/gynecology	59,537	9,940	42,928	11,380	35,133	16,904
Orthopedic surgery	47,667	7,985	33,632	10,605	36,472	11,812
Neurosurgery	75,367	12,612	37,984	11,380	43,019	18,595

SOURCE: UNITED STATES GEN. ACCOUNTING OFFICE, MEDICAL MALPRACTICE: SIX STATE CASE STUDIES SHOW CLAIMS AND INSURANCE COSTS STILL RISE DESPITE REFORMS (1986).

Notes:

[a] Rates are those applicable to the state's leading insurer of physicians for the predominately purchased coverage limits and policy form for the rating territory in which there was the greatest total number of physicians insured.

[b] Rates applicable to entire state except for Dade and Broward Counties.

[c] Rates applicable to south California.

[d] Includes surcharge rate to participate in the Patient's Compensation Fund.

[e] Rates applicable to entire state except for Nassau, Suffolk, Bronx, Kings, Queens, Richmond, Rockland, Sullivan, New York, Orange, Ulster, and Westchester Counties.

B. INCREASES IN MALPRACTICE INSURANCE RATES IN FLORIDA

The cost of medical malpractice liability insurance in Florida has increased dramatically during the last eight years, with the largest share of this increase coming during the past two years. Both the absolute cost of malpractice insurance and the amount of price increases during the past five years vary greatly among medical specialties, and between south Florida physicians and physicians located elsewhere in the state. Table 2 shows the premiums for selected medical specialties from January 1, 1983, through July 1, 1987. The premiums listed are weighted averages of the rates charged by the three major Florida insurers: St. Paul Fire and Marine Insurance Company (abbreviated STP in the table), Florida Physicians Insurance Company (FPIC), and Physicians Protective Trust Fund (PPTF). The weights used in

TABLE 2

MEDICAL MALPRACTICE INSURANCE RATES IN FLORIDA FOR SELECTED SPECIALTIES: 1983-1987

Specialty	1-1-83	1-1-84	1-1-85	1-1-86	1-1-87	7-1-87
Family practitioner /no surgery						
Dade/Broward	$ 4,310	$ 5,368	$ 7,206	$ 11,866	$ 15,123	$ 19,415
Rest of state	3,123	3,654	4,825	7,147	9,122	10,277
Internal medicine /minor surgery						
Dade/Broward	7,825	9,738	14,179	20,090	25,511	30,442
Rest of state	5,606	6,867	9,472	11,835	5,075	16,058
Emergency medicine /no major surgery						
Dade/Broward	9,777	15,100	22,925	36,471	47,925	58,304
Rest of state	6,992	10,305	15,306	21,405	28,175	30,718
General surgery						
Dade/Broward	21,971	27,538	38,483	59,893	78,918	95,875
Rest of state	15,705	18,718	25,664	35,958	47,454	50,740
Anesthesiology						
Dade/Broward	23,939	27,538	38,483	55,915	73,623	88,838
Rest of state	17,061	18,718	25,664	33,317	43,942	47,024
Orthopedic surgery						
Dade/Broward	27,073	33,380	47,863	79,785	105,167	130,817
Rest of state	19,355	23,008	31,905	47,893	63,205	69,314
Obstetrics						
Dade/Broward	30,433	38,053	57,218	99,702	131,360	165,320
Rest of state	21,679	26,498	38,158	59,849	78,979	87,542
Neurological surgery						
Dade/Broward	37,569	49,787	74,967	115,548	152,525	192,420
Rest of state	27,285	34,480	49,974	70,423	93,100	102,339

SOURCE: Calculated from rates provided by the Florida Department of Insurance.
NOTE: Figures are weighted averages of Florida insurers' premium rates. The rates shown are those for a claims made malpractice policy with limits of $1 million per occurrence and $3 million aggregate at the companies' rates in effect on January 1 of the year indicated. The rates for July 1, 1987 are also shown.

the calculations were the number of doctors insured by each company as of July 1, 1987.

Table 2 illustrates both tremendous increases in malpractice premiums for Florida physicians—for example, an increase of nearly $155,000 for a neurosurgeon practicing in Miami—and considerable variations in the cost of insurance among various medical specialties and between physicians practicing in urban south Florida and elsewhere in the state. These differences appear most dramatically in the indices displayed in table 3 and in table 4. Table 3 allows comparison of medical malpractice premium rates among various selected specialties and comparisons over time from January 1, 1983, through July 1, 1987, for all Florida counties except Dade and Broward. The basis of "100" for this index is the 1983 premium for a family physician who performs no surgery and who practices outside of Dade and Broward Counties.

TABLE 3

INDICES OF MEDICAL MALPRACTICE INSURANCE RATES FOR ALL FLORIDA COUNTIES EXCEPT DADE/BROWARD: 1983-1987

Specialty	1-1-83	1-1-84	1-1-85	1-1-86	1-1-87	7-1-87	Average Annual Increase (%)
Family Physician/ no surgery	100	117	154	229	292	329	26.9
Psychiatry/no electroconvulsive therapy	100	117	154	229	292	329	26.9
Radiology/diagnostic/ no surgery	100	117	154	229	292	329	26.9
Internal medicine/ no surgery	100	117	154	229	292	329	26.9
Pediatrics/no surgery	100	117	154	229	292	329	26.9
Radiology/diagnostic/ minor surgery	179	220	303	379	483	514	23.5
Internal medicine/ minor surgery	179	220	303	379	483	514	23.5
Family practice/ minor surgery	179	220	303	426	545	580	26.5
Surgery/ophthalmology	232	244	332	453	578	613	21.4
Surgery/urological	283	295	395	514	666	827	23.9
Emergency medicine/ no major surgery	224	330	490	685	902	984	34.4
Anesthesiology	546	599	822	1067	1407	1506	22.5
Surgery/otolaryngology/ no plastic	472	586	822	1151	1520	1625	28.1
General surgery	503	599	822	1151	1520	1625	26.4
Surgery/otolaryngology/ including plastic	546	654	913	1279	1685	1864	27.8
Cardiovascular surgery	576	737	1022	1523	2024	2219	31.0
Orthopedic surgery	620	737	1022	1534	2024	2219	29.0
Thoracic surgery	576	737	1022	1534	2024	2219	31.0
Obstetrics/gynecology	694	848	1222	1916	2529	2803	32.2
Neurological surgery	874	1104	1600	2255	2981	3277	30.3

SOURCE: Developed from medical malpractice rates for the top three insurers supplied by the Florida Department of Insurance.
NOTE: The base of 100 for this index is the 1983 premium for a family physician who performs no surgery and practices outside of Dade/Broward Counties.

For example, the entry of "329" for the "family physician/no surgery" listed in the 7-1-87 column indicates that on July 1, 1987, a physician in that risk class was paying a premium that was 329% of the 1983 premium, which represents an increase of 229%. Similarly, a comparison among specialties shows that in 1983 the rate for neurosurgeons in Florida counties other than Dade and Broward was 874% of the premium rate for family physicians. Table 4 makes the same comparison of premiums for physicians practicing in Dade and Broward Counties, once again using the 1983 premium for a family physician who practices outside of Dade and Broward Counties as an index base of "100."

The indices in tables 3 and 4 show: (1) rates have increased sharply since 1983; (2) rates have increased more for the high-rated specialties in both rating territories than for the low-rated specialties; and (3) rates have increased more in Dade and Broward Counties than in the rest of the state. Even the low-risk classifications outside of Dade and Broward Counties experienced a sharp increase in malpractice insurance costs from 1983 to 1987.

TABLE 4

INDICES OF MEDICAL MALPRACTICE INSURANCE RATES FOR DADE/BROWARD COUNTIES: 1983-1987

Specialty	1-1-83	1-1-84	1-1-85	1-1-86	1-1-87	7-1-87	Average Annual Increase (%)
Family Physician/ no surgery	138	172	231	380	484	622	39.7
Psychiatry/no electroconvulsive therapy	138	172	231	380	484	622	39.7
Radiology/diagnostic/ no surgery	138	172	231	380	484	622	39.7
Internal medicine/ no surgery	138	172	231	380	484	622	39.7
Pediatrics/no surgery	138	172	231	380	484	622	39.7
Radiology/diagnostic/ minor surgery	251	312	454	643	817	975	35.2
Internal medicine/ minor surgery	251	312	454	643	817	975	35.2
Family practice/ minor surgery	251	312	454	713	911	1107	39.1
Surgery/ophthalmology	327	360	497	754	961	1157	32.4
Surgery/urological	391	430	590	876	1137	1354	31.8
Emergency medicine/ no major surgery	313	484	734	1168	1535	1867	48.7
Anesthesiology	767	882	1232	1790	2357	2845	33.8
Surgery/otolaryngology/ no plastic	665	865	1232	1918	2527	3060	40.4
General surgery	704	882	1232	1918	2527	3070	38.7
Surgery/otolaryngology/ including plastic	767	961	1370	2174	2859	3538	40.5
Thoracic surgery	804	1069	1533	2555	3367	4189	44.3
Orthopedic surgery	867	1069	1533	2555	3367	4189	41.9
Cardiovascular surgery	804	1069	1533	2555	3367	4189	44.3
Obstetrics/gynecology	974	1218	1832	3193	4206	5294	45.7
Neurological surgery	1203	1594	2400	3700	4884	6161	43.7

SOURCE: Developed from medical malpractice rates for the top three insurers supplied by the Florida Department of Insurance.
NOTE: The base of 100 for this index is the 1983 premium for a family physician who performs no surgery and practices outside of Dade/Broward Counties.

Higher risk specialties outside of Dade and Broward Counties sustained greater average rate increases than lower risk specialties. For example, neurosurgeons in this area were subject to a 275% increase for the four and

one-half year period ending July 1, 1987. These increases reflect premiums at the end of the period almost four times higher than at the beginning of the period. The rates for obstetricians in absolute dollars (as shown in table 2) are not quite as high as those for neurosurgeons, but the increase (304%) was even more precipitous, resulting in malpractice insurance costs slightly more than four times as high, on the average, in 1987 compared with 1983.

Table 4 shows that the increases in Dade and Broward Counties were even more extreme than for the remainder of the state. Family practitioners saw their malpractice insurance costs increase 350%, compared to 229% in the rest of the state. Rates for neurosurgeons increased 412% in south Florida and 275% in the rest of the state. These rates of increase for obstetricians were 444% and 304%, respectively.

C. TRENDS IN THE RELATIONSHIP BETWEEN MALPRACTICE PREMIUMS AND PHYSICIANS' INCOME

The increase in malpractice insurance rates is only one aspect of the affordability issue. A $30,000 increase in annual premiums means one thing in terms of affordability to a successful urban neurosurgeon with an annual net income exceeding $300,000; it poses a different problem for the family physician making $55,000 in a rural community. A closely related issue is whether increases in medical malpractice premiums are passed on to patients through increased medical costs or whether such premium increases actually reduce the physicians' net income.

1. Financial Effects On Physicians

As professional liability insurance costs increase, physicians must either shift their increased costs to consumers or suffer a relative decrease in their net earnings. The authors of this article, in their roles as research staff members for the Academic Task Force for Review of the Insurance and Tort Systems, surveyed fifteen hundred randomly selected Florida physicans.[28] The survey results indicate that the average (mean) medical liability premium for all physicians in policy year 1986/87 was $23,747 and represented 11.6% of the physician's annual practice gross revenues. As demonstrated in table 5, both the absolute cost of premiums and premium costs as a percentage of gross income increased steadily throughout the study period (1971 to present). Information on net income was not obtained; consequently, no conclusion is possible from this data alone regarding the ability of physicians to shift the costs of increased liability premiums to consumers.

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28. The survey of Florida physicians was prepared by the authors and sent to 1500 randomly selected members of the Florida Medical Association. Responses were obtained from 609 physicians, a response rate of 40.6%. Unless otherwise indicated, survey data are reported as the mean value for physicians responding to a given question.

TABLE 5
ABSOLUTE AND RELATIVE COSTS OF LIABILITY INSURANCE

Specialty	Average Premium Amount	Premium Amount as % of Gross Revenues
All Physicians		
1971/72	$ 4,645	3.6%
1981/82	8,915	5.4
1982/83	10,617	—
1983/84	12,613	7.0
1984/85	14,905	8.6
1985/86	19,232	9.7
1986/87	23,747	11.6
Surgical		
1971/72	3,891	4.2
1981/82	11,697	6.3
1982/83	15,266	7.8
1983/84	19,108	9.6
1984/85	23,288	12.1
1985/86	30,051	12.6
1986/87	37,730	14.7
OB/GYN		
1971/72	5,300	4.2
1981/82	11,983	5.5
1982/83	23,527	8.9
1983/84	26,709	10.3
1984/85	35,398	16.1
1985/86	48,819	18.5
1986/87	72,439	23.1

SOURCE: ACOG SURVEY, *supra* note 30.

The survey updates, specifically for Florida, prior attempts to quantify the economic effects of rising liability insurance premiums on physicians. Reports from the early 1980s estimated that physicians spent between 2.9% and 3.7% of gross practice income on professional liability insurance.[29] By 1985 a survey by the American College of Obstetricians and Gynecologists (ACOG) indicated that liability premiums constituted 9.7% of average gross practice income for obstetricians and gynecologists throughout the country.[30]

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29. FLORIDA MEDICAL ASS'N, MEDICAL MALPRACTICE POLICY GUIDEBOOK 16 (H.G. Manne ed. 1985) [hereinafter FMA, MALPRACTICE GUIDEBOOK]; *see* Kirchner, *Is Your Practice Begging for Money?*, MED. ECON., Nov. 12, 1984, at 214, 230 (random sample of U.S. physicians reporting that in 1983 between 1.3% and 5.8% of gross practice income was spent on professional liability insurance).

30. AMERICAN COLLEGE OF OBSTETRICIANS & GYNECOLOGISTS, PROFESSIONAL LIABILITY

As noted previously, significant differences in professional liability insurance costs exist between subgroups of the medical profession. The survey of Florida physicians shows that these variations are not limited to differences in absolute dollars, but also extend to substantial discrepancies in the percentages of physicians' gross revenues spent for liability insurance. For example, the mean liability premium reported for a physician practicing any kind of surgery was $37,730 in 1986/87, representing 14.7% of gross practice revenues. Obstetricians and gynecologists present the most exaggerated example. In 1986/87, physicians in these specialties reported using 23.1% of gross practice revenues to pay an average of $72,439 for liability coverage. In comparison to the 1985 ACOG study, which set the cost of insurance coverage as a percentage of gross income at 12.1% for Florida obstetricians and gynecologists,[31] the survey results presented here reflect the most recent increases in cost of liability insurance.

2. Effects on Health Care Provider Fees

In response to increases in liability premiums, most physicians probably absorb some of the added cost and shift another portion of the increased costs to health care consumers via increased fees. Sixty-six percent of the physicians responding to the Florida physicians' survey indicated that they increased their fees in response to increased liability premiums or concern over medical malpractice claims. Of the subgroup of respondents increasing fees in response to premium increases, an average of 34% of their total fee increases during the study period were attributed to the effects of medical malpractice insurance costs. Previous studies also have documented fee increases in response to increased liability premiums. Zuckerman, using 1983 AMA survey data, reported that over 31% of physicians indicated increasing

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AND ITS EFFECT: REPORT OF A SURVEY OF ACOG'S MEMBERSHIP 19 (1985) [hereinafter ACOG SURVEY] (prepared for Needham Porter Novelli). The study surveyed members of the American College of Obstetricians and Gynecologists (ACOG), a subset of obstetricians and gynecologists who have completed specific training and treating requirements. It is possible that the income characteristics of ACOG members are different from the income characteristics of obstetricians and gynecologists as a whole. If the additional qualifications of ACOG members translate into higher incomes than for other obstetricians and gynecologists, the percentage of gross income spent by members on professional liability insurance would be lower than for other gynecologists or obstetricians.

31. *Id.* Alternatively, the potential differences in income between members of the ACOG and other obstetricians and gynecologists, *see supra* note 30, would explain some of the increase in liability costs as a percentage of gross revenues. The obstetricians and gynecologists surveyed by the survey of Florida physicians probably included both ACOG and non-ACOG members. If the inclusion of non-ACOG obstetricians and gynecologists reduced the income average of the survey group, the portion of income spent on liability premiums would be expected to rise. This difference, however, would not be significant enough to account for substantial proportions of the increase in gross revenues paid for malpractice premiums.

fees in response to rising liability premiums.[32] The 1985 ACOG survey reported that over 94% of obstetricians and gynecologists in Florida stated that their professional fees increased due to the rising cost of liability insurance.[33]

Various attempts have been made to determine what proportion of professional fee increases is due to the rising cost of medical malpractice insurance. If physicians respond only by raising fees, a doubling of liability premiums should produce a professional fee increase equal to the premium amount as a percentage of gross income. An AMA study attempted to estimate the impact of professional liability insurance rates on the cost of physicians' services.[34] Based on survey data, regression analysis was used to distinguish the effect of liability insurance premiums from all of the other factors affecting fees.[35] Table 6 presents a sample of professional procedure fees and the corresponding estimated effect on fees by professional liability.

TABLE 6

Procedure	Average Fee Including Liability Effect	Average Fee Excluding Liability Effect
Office visit/established patient	$ 27.44	$ 19.96
Electrocardiogram	33.62	26.72
Obstetric care/normal delivery	1,019.75	584.07
Hysterectomy	1,349.14	859.31

SOURCE: Reynolds, Rizzo & Gonzalez, *supra* note 34.

In recent years, the available evidence suggests that physicians have not been able to charge patients increased fees sufficient to offset fully their increased premium costs. As a result, increasing medical malpractice premiums have reduced physicians' net income from what it otherwise would have been, at least in some specialties and in some areas. Although comprehensive data comparing various rates of increasing medical malpractice premiums in different locales with the corresponding net incomes of physicians are not available, the following table provides an indirect measure of the extent to which malpractice premium increases have been absorbed rather than passed

32. Zuckerman, *Medical Malpractice: Claims, Legal Costs, and the Practice of Defensive Medicine*, 3 HEALTH AFF. 128, 131-32 (Fall 1984).

33. ACOG SURVEY, *supra* note 30, at 24. The most commonly reported fee increases were between 11% and 20%. *Id.* table 30.

34. Reynolds, Rizzo & Gonzalez, *The Cost of Medical Professional Liability*, 257 J. A.M.A. 2776 (1987).

35. *Id.* at 2779.

on to patients. Table 7 compares the index of the malpractice rates for the Florida Physicians Insurance Company (FPIC) for the period 1978 through

TABLE 7

FPIC MALPRACTICE RATE INDEX AND CONSUMER PRICE INDICES: 1978-1987

Year	FPIC Malpractice Rate Index	Consumer Price Index (CPI-U)	Medical Care Price Index	Physicians Fee Index	Hospital Service Price Index
1978	100.0	100.0	100.0	100.0	100.0
1979	92.8	111.3	109.3	109.2	111.4
1980	81.2	126.3	121.2	120.7	126.0
1981	106.6	139.4	134.2	134.0	144.7
1982	126.6	148.0	149.8	146.6	167.5
1983	173.1	152.7	162.9	157.9	186.4
1984	217.1	159.2	173.0	168.9	201.8
1985	281.4	164.9	183.7	178.8	213.7
1986	523.7	168.1	197.6		
1987	785.4	173.3	209.2		

SOURCES: U.S. Government, Bureau of Labor Statistics (for price indices and fee index). Malpractice rate index calculated from rates supplied by the Florida Department of Insurance.

May 1987 with the Consumer Price Index for urban consumers (CPI-U) and the medical care portion of that index. The indices for physicians' fees and hospital costs are shown through 1985, the latest period for which they were available at the time of writing. Table 7 demonstrates clearly that malpractice insurance rates in Florida have increased much more rapidly than physicians' fees or other health care costs.

Several explanations are advanced for the failure of physicians to shift the full cost of liability premium increases to consumers. Complete shifting of increased liability costs may be prevented by market competition among physicians.[36] Physicians' fees have been under severe pressure in recent years, especially in the urban areas. The sharp increase in the number of practicing physicians in Florida and the widespread development of preferred provider organizations (PPOs)[37] and health maintenance organizations (HMOs)[38]

36. *See* Bovbjerg, *Medical Malpractice On Trial: Quality of Care is the Important Standard,* 49 LAW & CONTEMP. PROBS. 321, 323 (Spring 1986) (physician's ability to pass through full increase of liability premiums depends on insurance payment rules, market resistance to price rises, and how smoothly insurance market works).

37. Preferred provider organizations (PPOs) are contractual arrangements between health care providers and groups of individuals insured under health insurance coverges that limit the amount of fees that can be charged to the insureds. By utilizing the group approach to fee negotiation, the PPO has more bargaining power with health care providers than would a single consumer. AMERI-

have brought intense competition to the health care market, which has generated pressure to hold down fees. Additionally, reimbursement restrictions imposed by Medicare, Medicaid, and other third-party payors[39] often limit physician fee increases.[40] These organizations have become more vigilant in controlling medical costs by developing extensive computerized systems to screen doctors' fees, by seeking reductions in fees where appropriate, and by refusing to compensate fully those fees believed to be excessive.

The apparent inability of Florida physicians to be reimbursed by their patients for increased costs of liability insurance and the resulting relative reduction in physicians' income also is consistent with the findings of other investigators. Another study found that the premium "pass-through" by physicians was about 75% effective; therefore, when liability premiums increased (and all other factors remained constant), physicians' net incomes fell.[41] In addition, less visible costs of the medical malpractice system may affect physicians' incomes. Examples of such hidden costs would include such things as loss of physician work days (e.g., for depositions and trials),[42] costly adaptations of practice style (e.g., seeing fewer patients or hiring additional office help), and decisions to obtain additional continuing medical education. Such factors are not quantified as easily as the direct cost of liability premiums, but, nevertheless, represent real financial expenses. While the physician may shift most of the increase in gross premium to the patient, some of these additional costs may need to be absorbed by the physician, resulting in an overall diminution of net income.[43]

Florida medical malpractice insurance rates have increased substantially more rapidly than physicians' income or other medical costs during the past decade. The pace of premium increases has been especially great during the past four years. The effect of such increases on physicians has varied considerably; the rate increases were higher for high-risk physicians, such as

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CAN MEDICAL ASS'N, COUNCIL ON LONG RANGE PLANNING & DEV., THE ENVIRONMENT OF MEDICINE 68, 88-899 (1985).

38. Health maintenance organizations (HMOs) provide medical consumers with all, or almost all, of their medical care for a period of time in exchange for a fixed prospective payment. Providing consumers' health care needs at a fixed price increases the incentives for health care providers to reduce total health care fees. *Id.* at 68.

39. Medicare now reimburses hospitals for hospital admissions based on diagnosis-related groups (DRGs). DRG reimbursement involves paying the hospital a predetermined fee for a hospitalization involving a particular diagnosis. As with HMOs, the prospective nature of the reimbursement creates incentives for the hospital to hold down costs. *Id.* at 70-71.

40. FMA, MALPRACTICE GUIDEBOOK, *supra* note 29, at 41-43.

41. Zuckerman, Koller & Bovbjerg, *Information on Malpractice: A Review of Empirical Research on Major Policy Issues*, 49 LAW & CONTEMP. PROBS. 85, 107 (Spring 1986) (citing Sloan, *Economic Issues in Medical Malpractice*, in FMA, MALPRACTICE GUIDEBOOK, *supra* note 29, at 41-43).

42. Zuckerman, Koller & Bovbjerg, *supra* note 41, at 107.

43. *See* Bovbjerg, *supra* note 36, at 323 (providers may or may not be able to pass through full increase when liability premiums increase).

neurosurgeons and obstetricians, and physicians in metropolitan Dade and Broward Counties sustained substantially greater increases than the rest of the state. Some physicians practicing in high-risk specialties now pay about one-fourth of their gross income for malpractice insurance, which suggests that malpractice insurance is approaching unaffordability, if it has not already reached it. Finally, the present analysis shows that medical cost constraints imposed by the government, employers, and insurers make it increasingly difficult for doctors to pass along the full costs of malpractice insurance premium increases to their patients.

III. POTENTIAL CAUSES OF INCREASED COSTS FOR MEDICAL MALPRACTICE LIABILITY INSURANCE

The assertion that the costs of medical malpractice liability insurance have increased dramatically during the past four years is uncontroverted. Far less certain and far more controversial are the reasons for this increase. Insurers and physicians frequently point to higher payments and more claims, while lawyers charge insurers with profiteering. If dramatically increased medical malpractice premiums pose a compelling societal problem, then understanding the causes of increased premiums should precede enactment of any legislative measures to remedy the problem. This part attempts to provide such an understanding by analyzing separately four factors frequently alleged to be causes of increased medical malpractice premiums: (1) increased loss payments; (2) excessive insurance company profits; (3) the insurance industry underwriting cycle; and (4) the risk classification system used to group physicians for rating and pricing purposes.

A. AN OVERVIEW OF TRENDS IN LOSS PAYMENTS

The primary role of an insurer is to spread risk. In return for the premiums paid by insureds, the insurer assumes the risk of financial losses of designated types from a large number of insureds. One primary source of insurer revenues, therefore, is policyholder premiums. The other main revenue source is investment income. Between the time premiums are collected and the time when losses attributable to the same policy year are paid, insurers invest the premium dollars. On the expense side, the largest share of expenditures is for loss payments to claimants to whom the insured party may be liable. Almost two-thirds of total insurance company expenses are represented by payments to such patient/claimants and their legal counsel.[44]

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44. Payments to patients/claimants and their counsel represented 64.6% of the incurred costs of medical malpractice insurers for the policy year 1985, according to the Insurance Services Office, Inc., a non-profit organization offering rating and other statistical services to insurance carriers. Insurance Servs. Office, Inc., Calendar Year 1987 Expense Provisions—Medical Professional Liability (Technical Services TS-PR-86-9) (Dec. 1, 1986) (copy on file at *Georgetown Law Journal*). Legal

Other, less important insurance expenses are internal operating costs and expenses for the insurance company's and the physician's legal counsel.

Because claims payments represent the largest share of insurance company expenses, a substantial increase in total medical malpractice claims payments (assuming a constant number of insured physicians) generally would suggest the need for price increases to a prudent and rational insurer. The need for increases in premiums charged physicians sometimes is delayed or even ameliorated by higher returns on the premium dollars invested by the insurer. Sooner or later, however, substantial long-term growth in paid claims likely catches up with and surpasses the growth in investment income, and the insurer must increase premiums if profitability is to be retained or restored.

This section explores total loss payments in the state of Florida during the past twelve years to determine what changes have taken place in this most important cost of doing business for insurance carriers. The data relied on were generated from a unique closed claim database maintained by the Florida Department of Insurance, consisting of all files closed by medical malpractice insurers in the state of Florida from 1975 through 1986. In the mid-1970s, Florida enacted legislation[45] in response to a previous wave of the medical malpractice crisis.[46] This legislation included a provision requiring insurance carriers to report the closing of any medical malpractice claim file whether or not the claim resulted in payment by the insurer.[47] As a result, more than 21,000 claims were reported to the Florida Department of Insurance from 1975 through 1986. The insurer was required to report more than forty separate pieces of information for each claim. This database constitutes a comprehensive compilation of information about closed claims extending over a sufficient period of time to establish meaningful trends.

The closed claims data show that approximately $513 million was paid out by insurance carriers from 1975 through 1986 on malpractice claims against physicians in Florida. This amount includes not only payments actually received by claimants, but also legal fees for defense counsel and other litigation expenses. The annual amount of total paid claims in Florida was essentially unchanged from 1975 to 1979, but the total amount of paid claims

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defense costs constituted 18.4% of insurance costs, and 17.0% were insurance company expenses. *Id.*

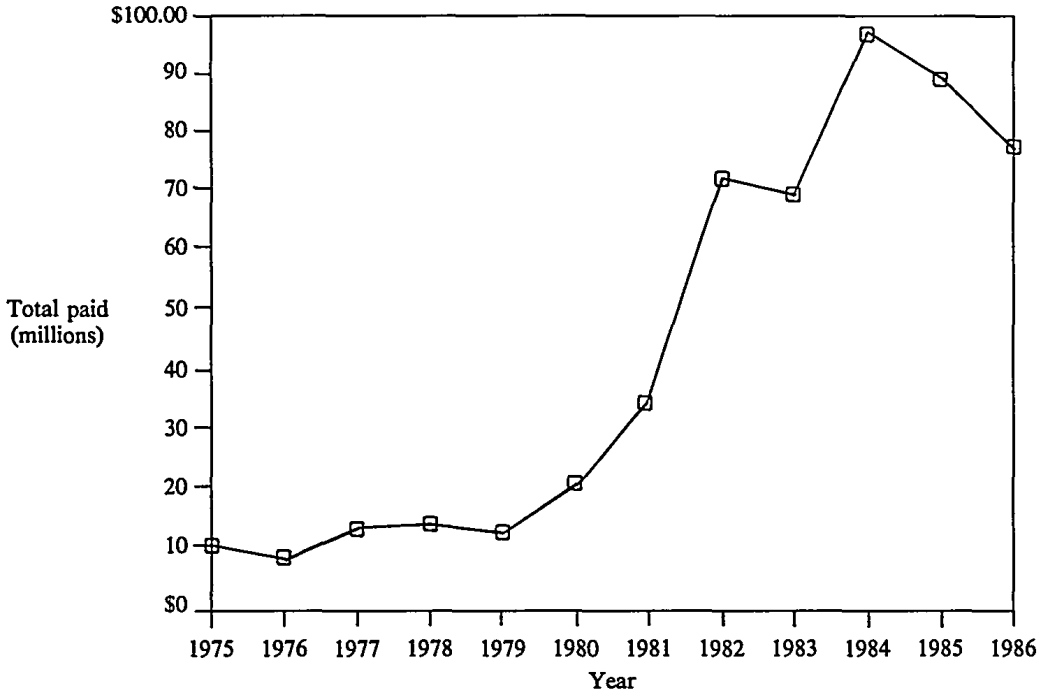
45. 1974 Fla. Laws ch. 74-219.

46. *See Malpractice Crisis: How It's Hurting Medical Care*, U.S. NEWS & WORLD REP., May 26, 1975, at 32 (rising rates of medical malpractice insurance and increasing number of suits and size of claims causing decline in quality of medical care).

47. FLA. STAT. ANN. § 627.912 (West 1984). A physicians' insurer may open a claim file in response to a number of events, including the filing of a lawsuit by an injured patient, notification from the physician that an incident has occurred that may lead to a claim, an oral or written claim for damages by a patient or a member of his family, or notice from an attorney that she is representing a patient. GAO, CLAIMS CLOSED IN 1984, *supra* note 23, at 12.

increased dramatically from 1979 to 1984, as shown in figure 1. The total amount of paid claims has decreased somewhat from its 1984 level, sug-

FIGURE 1
TOTAL MEDICAL MALPRACTICE PAID CLAIMS IN FLORIDA
ALL SPECIALTIES: 1975-1986



SOURCE: Florida Department of Insurance medical malpractice closed claims data set.

gesting that the peak for claims payments probably occurred in 1984.[48] From 1975 through 1986, the number of total paid claims for Florida has grown at an average compound annual rate of slightly more than 20%. Since 1979, this rate of increase has been almost 30%.

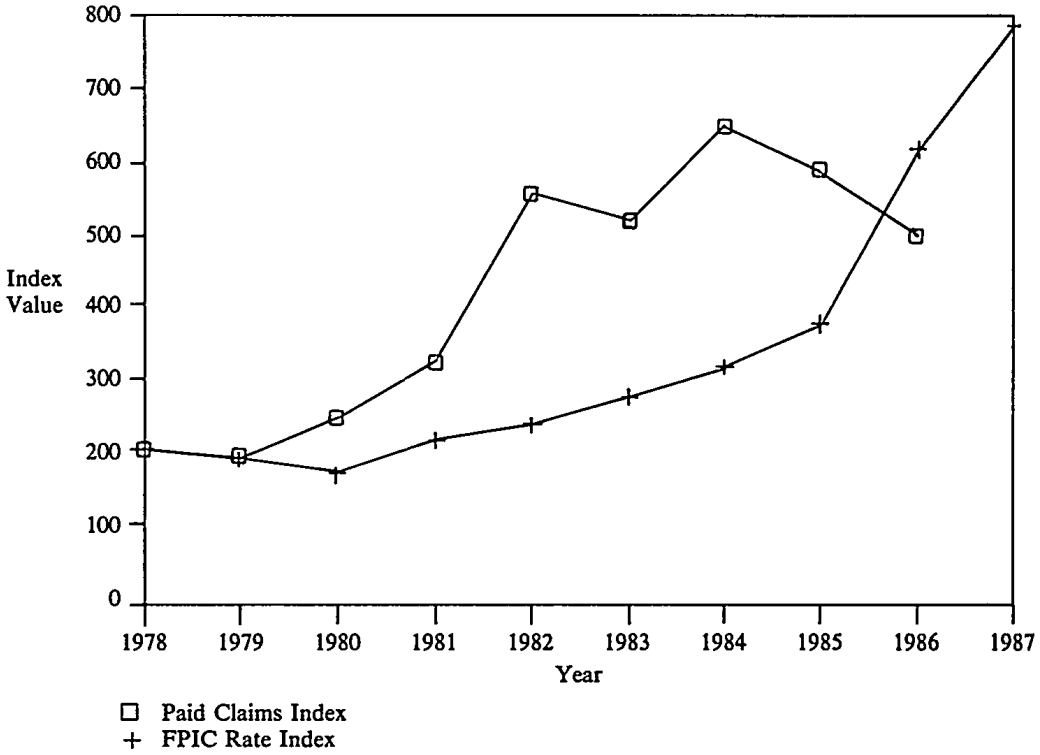
Insurers set premiums with a view toward covering the losses they expect to pay arising from the policy year in question. Obviously, past loss experience may be indicative of future loss trends. Over time, therefore, trends in premiums should reflect changes in paid losses. This correlation is illustrated by figure 2, which compares an index of the average paid claim per Florida physician since 1978 with an index of medical malpractice premium rates.[49]

48. This is not to imply that loss payments will continue downward. Population growth will cause the total amount paid for medical liability to increase, as will increases in the costs of settling claims. In the absence of any changes in the insurance and tort systems, loss payments can be expected to resume their upward trend.

49. The index of rates is based on rates charged by the Florida Physicians Insurance Company (FPIC) because a rate history for the FPIC was available after 1978; the rate history for the other

FIGURE 2

INDICES OF MEDICAL MALPRACTICE PAID CLAIMS PER PHYSICIAN IN FLORIDA AND FLORIDA PHYSICIANS INSURANCE: 1978-1987



SOURCE: Calculated from data supplied by the Florida Department of Insurance.

It reveals that from 1978 through 1984, the rate of increase in claims payments per physician outpaced the rate of premium increases. As discussed below, that insurers were able to keep premium rate increases lower than the trend in loss payments during this period may suggest that they had invested the premium dollars they had collected at the unusually attractive investment rates then available. By 1984, however, the gap between the paid claims index and the premium index became so large as to make substantial price increases necessary if the balance between claims payments and premiums was to be restored. The apparent lack of any short-term correlation between the dramatic increases in paid claims and relatively stable malpractice premiums until 1984 disappeared with the dramatic rise in premiums

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major Florida medical malpractice carriers only dates from 1983. The rate index is based upon the FPIC's mix of insured risks, which does not necessarily mirror the composition of Florida physicians as a whole. Despite this possible limitation, the figure serves to illustrate the long-term relation between premiums and claims payments.

between 1984 and 1986. This rise establishes the long-term relationship between the increases in paid claims and premiums.

Because increased loss payments are the principal cause of increased malpractice insurance costs, the characteristics of loss payments and trends in these loss payments from 1975 through 1986 are analyzed in greater detail in part IV. For now it should be noted that increased numbers of claims (frequency)[50] and increased amount per claim (severity)[51] have both contributed to the substantial increase in total paid claims, with increased severity exerting greater influence on the growth of loss payments.

B. INSURANCE COMPANY PROFITABILITY

The charge that excessive insurance company profits are the source of high malpractice premiums is frequently voiced during debates on the medical malpractice crisis. In response, the insurance industry claims that it is experiencing a financial hemorrhage of the severest magnitude. Based upon the data analyzed by the authors, excessive profitability is not a cause of the medical malpractice problem. When total return on equity is used as a measure of profitability, however, the insurance industry's financial position is less precarious than it claims.

1. Measure of Profitability: Return on Equity

The profitability measure used in this study is total return on equity. The rationale for using total return on equity rather than one of its components as a measure of profitability is rooted in the insurer's primary activity and responsibility, which is the taking of risk by providing insurance to society. To provide insurance, an insurer must have available sufficient surplus (capital) to absorb fluctuations in its financial results and to finance growth. Unexpected increases in the number of claims or the amount paid to settle each claim could result in premiums being insufficient to cover the cost of claims. When this occurs, the company's surplus is used to finance the loss until the relationship between premiums and claims can be restored.

The two major types of insuring organizations are mutual insurance companies and stock companies.[52] Both types of companies coexist and usually compete in the same markets. The primary difference between the two is in the ownership of the firms. Mutual companies are owned by their policyholders; these organizations are (or should be) managed for the policyholders' benefit. Stock companies, on the other hand, are owned by shareholders;

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50. *See infra* part IV. A.
51. *See infra* part IV. B.
52. *See generally* G. REJDA, PRINCIPLES OF INSURANCE 517-19 (2d ed. 1986).

these companies must be managed with the (possibly competing) interests of both policyholders and shareholders in mind.

In the case of a shareholder-owned insurance company, the return on equity must be competitive with returns that could be earned in other sectors of the economy with equivalent risk. If the return is too low, capital will leave the insurance business, which in turn will restrict the supply of insurance.[53] The decreased availability of insurance will cause prices to rise until profitability has been restored, at which point price and supply stability will return. In the United States, capital flows can take place relatively unimpeded. Few, if any, restrictions are placed upon a firm's management when it wishes to increase the firm's capital. While withdrawing capital or withdrawing from insurance markets (which has essentially the same effect as far as supply is concerned) is more difficult, it can and does take place when the firm's management has no expectation of return by remaining in the market.

Mutual companies also must earn an excess of premium over costs. Although such firms are classified as non-profit, the economic principles of the insurance business have the same validity for mutual companies as they do for stock companies. Like a shareholder-owned firm, a mutual company must have surplus to absorb fluctuations in underwriting profitability; therefore, it must also attract and retain capital. A mutual company also must generate surplus to finance the growth of the firm. If the market perceives that the firm is in danger of insolvency, the firm's insureds can (and will) simply cancel or not renew their policies and shift their business to a more stable competitor—whether it is a stock, mutual, or some other form of organization.

The measure of profitability considered here—total return on equity—consists of four parts: (1) underwriting result; (2) net investment income; (3) realized capital gains; and (4) unrealized capital gains. Figure 3 outlines these components of total return on equity. Underwriting result refers to the profitability of the firm's insurance portfolio. The remaining portions of return to the insurance carrier occur because insurance premiums are received by the firm before losses are paid, enabling the company to invest the premiums in the interim. Net investment income is comprised of the amount of cash income (mostly dividends and interest) received by the insurer, less investment expenses incurred to manage these monies. Realized gains arise

53. The relationship between the supply of insurance and insurance company surplus is established through the premiums' written-to-surplus ratio. The National Association of Insurance Commissioners uses a guideline figure of three to one. NATIONAL ASS'N OF INS. COMM'RS, USING THE NAIC INSURANCE REGULATORY INFORMATION SYSTEM 6 (Property Liability ed. 1987). In other words, it is recommended that state regulatory authorities allow insurers to write no more than three dollars of premium for every one dollar of surplus. If surplus is reduced for any reason, such as underwriting losses, investment losses, or withdrawal of capital from the firm, the ability to write insurance potentially is reduced.

FIGURE 3
COMPONENTS OF INSURER TOTAL RETURN

Underwriting gain (loss)	XX
Net investment income	XX
Taxes	−XX
After tax operating result	XX
Realized gains	XX
Unrealized gains	XX
Total dollar return	XX

when the firm sells an asset (such as a stock or bond) for more than its cost. Unrealized gains occur when the price of an asset goes up after its purchase by the company but the security has not yet been sold.

The approach presented here to measuring the profitability of insurers involves potentially controversial choices about how to handle policyholder dividends and unrealized capital gains. On one hand, this analysis treats policyholder dividends as expense items that are deducted from revenue to arrive at taxable income.[54] These dividends operate functionally as price reductions for policyholders, not as dividends that investors typically earn on stock investments. On the other hand, unrealized capital gains are included as part of the profit of the firm in this study. This approach is contrary to the position of the insurance industry, which believes unrealized capital gains should be excluded.[55]

Unrealized gains should be included in return on equity for two reasons.

54. Some consumer organizations argue that policyholder dividends should be included as profits, not expenses, because they represent a return on capital. *See* NATIONAL ASS'N OF ATTORNEYS GEN., AN ANALYSIS OF THE CAUSES OF THE CURRENT CRISIS OF UNAVAILABILITY AND UNAFFORDABILITY OF LIABILITY INSURANCE 14 (May 1986); UNITED STATES GEN. ACCOUNTING OFFICE, INSURANCE: PROFITABILITY OF MEDICAL MALPRACTICE AND GENERAL LIABILITY LINES 5 (July 1987). The rationale for such a position is that policyholder dividends are discretionary price concessions within the control of company management. Because firms could decide not to use dividends to reduce prices, such amounts are available to company owners if they so choose and therefore should be included in income. The insurance industry argues, on the other hand, that the price reductions are usual, customary, and expected by the marketplace. Thus, they are not discretionary and must be made available to its customers. The Internal Revenue Service recognizes policyholder dividends as a proper deduction from revenue in arriving at taxable income. In the opinion of the authors, this places policyholder dividends in the category of expense items that are deducted from revenue to arrive at (before tax) income available to firm owners. In other words, policyholder dividends are a legitimate business expense rather than part of the net income of the firm.

55. The basis of the industry's argument is that unrealized gains are uncertain; they may not be available when the securities are sold in the future. *See* INSURANCE SERVS. OFFICE, INC., 1986 INSURER FINANCIAL RESULTS: AN ANALYSIS OF THE STRENGTH OF THE PROPERTY CASUALTY INSURANCE INDUSTRY'S RECOVERY 15 (1986).

First, management can convert the unrealized gains into cash at any time by selling the securities, thereby removing the uncertainty associated with them. Second, traditionally accepted investment theory includes unrealized gains in the rate of return calculation because the total return on equity available to investors, including unrealized capital gains on premium dollars, determines whether investment capital is attracted to the industry.[56]

2. Profitability of Property-Casualty Industry: 1977-1985

An analysis of insurance industry profits found no evidence to support the claim of excessive long-term profits. Total return on equity for the property-casualty insurance industry measured over an entire underwriting cycle has been slightly less than the average return for American industry as a whole. Largely because of the underwriting cycle and variations in investment rates of returns, the profitability of the insurance industry often varies dramatically from one year to another.[57]

Table 8 shows that from 1977 through 1985, the average annual compound rate of return for the property-casualty industry was 15.9% on a "statutory" return on equity basis. Table 8 divides the return on equity figure into its four component parts so that the contribution of each part to the total can be ascertained. In addition, figures are presented for each year since the start of the last underwriting cycle in 1977.

The "statutory" return on equity figure is prepared according to accounting procedures, prescribed by regulatory authorities, that are designed to gauge the solvency of insurance carriers as opposed to precisely measuring profitability.[58] At the request of the authors—in their role as research scholars for Florida's Academic Task Force for Review of the Insurance and Tort Systems and armed with subpoena power—more than a dozen major insurance carriers voluntarily provided return on equity figures[59] on both a statu-

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56. According to investment theory, an investment return consists of both interest or dividend income and price appreciation or depreciation. Price appreciation consists of both realized and unrealized gains. These two components of profit constitute the total return from undertaking an investment, and this return must be competitive in the marketplace for capital to be attracted and retained. In an insurance context, the insurer commits its surplus at the beginning of the year to support a group of insurance risks, i.e., it makes an investment in insurance each and every year that it decides to remain in the business of underwriting risks. In exchange, it receives a reward consisting of both investment income and price appreciation. To exclude the latter is to understate the actual return earned for accepting insurance risks. *See generally* R. RADCLIFFE, INVESTMENT CONCEPTS, ANALYSIS AND STRATEGY 9-10 (2d ed. 1987).

57. *See infra* notes 70-76 and accompanying text (describing effect of interest rates on underwriting cycle and insurance company nonprofitability).

58. "Statutory" total returns are found using data prepared according to statutory accounting principles as prescribed by the National Association of Insurance Commissioners. T. TROXEL & C. BRESLIN, PROPERTY-LIABILITY INSURANCE ACCOUNTING AND FINANCING 2-15 (2d ed. 1983).

59. The authors, as members of the research staff for the Academic Task Force for Review of the Insurance and Tort Systems, sent extensive questionnaires to 41 major property-casualty insurance

TABLE 8

PROPERTY-LIABILITY INSURANCE STATUTORY RETURN ON EQUITY: 1977-1985

Consolidated Total— Property-Liability	1985	1984	1983	1982	1981	1980	1979	1978	1977
Underwriting	−36.3%	−29.3%	−18.2%	−15.4%	−8.7%	−4.0%	0.1%	8.7%	7.8%
Net investment income	30.6	27.0	26.2	27.6	25.9	26.1	26.2	24.8	23.6
Policyholder dividends	−3.4	−3.2	−3.7	−3.7	−3.6	−3.8	−3.7	−4.3	−3.3
Taxes	3.1	2.5	2.0	1.3	−0.1	−1.4	−2.5	−4.7	−4.1
After tax operating result	−6.0	−3.0	6.3	9.8	13.5	16.8	20.0	24.5	24.0
Realized gains	8.6	4.7	3.5	1.1	0.5	1.3	0.8	0.2	1.3
Unrealized gains	8.2	−4.4	2.2	5.4	−5.2	10.1	5.7	1.4	−4.4
Total	10.8%	−2.6%	12.0%	16.2%	8.9%	28.1%	26.6%	26.1%	20.9%
Annual average	15.9%								

SOURCE: Calculated from data provided in A.M. BEST CO., AGGREGATES & AVERAGES: PROPERTY-CASUALTY (1978-1986 eds.).

tory basis and on the "generally accepted accounting principles" (GAAP) basis more commonly used outside the insurance industry.[60] In most instances, GAAP figures for return on equity were two or three percentage points less than statutory figures. For example, a 15% statutory return on equity figure represents the same profitability as a 12% or 13% GAAP re-

carriers doing business in the State of Florida. Each insurer was provided both with a 160-page printed copy and a computer disk containing a Lotus 1-2-3 spreadsheet that had been programmed with the questions propounded to the insurers as well as with blank cells for responding to the questions. The questionnaires asked for a wide variety of information about profits, loss payments, insurance operations, and other aspects of the insurance business.

The statute creating the Academic Task Force for Review of the Insurance and Tort Systems granted the Task Force subpoena power. Tort Reform and Insurance Act of 1986, ch. 86-160, § 63(6), 1986 Fla. Laws 695, 758. Without exercising this subpoena power, the Academic Task Force received comprehensive returns from all insurers except those who were excused from providing the information because they had withdrawn from the Florida market, recently had undergone a major corporate reorganization, or were small carriers that had not used data processing until recently and therefore had not compiled the information requested. Once received, the results of the insurance company survey were loaded from personal computer terminals into the mainframe at the University of Florida and were analyzed using both SAS (Statistical Applications System) and Lotus 1-2-3.

60. Generally Accepted Accounting Principles (GAAP) are a set of rules and procedures promulgated to provide a relatively uniform measurement of income, as opposed to Statutory Accounting Procedures (SAP), which emphasize the solvency of the insurance company. The GAAP rules are developed and published by the Financial Accounting Standards Board, an accounting profession organization. A more detailed explanation of the difference between the GAAP and the SAP rules can be found in T. TROXEL & C. BRESLIN, *supra* note 58, at 15-25.

turn on equity figure. This suggests that on a GAAP basis, the return on equity during the period 1977 through 1985 was between 13% and 14%.

A comparison between the profitability of the property-casualty insurance business and the rest of American industry has been completed by the Insurance Services Office, Inc.,[61] which treated policyholder dividends and unrealized capital gains in the manner described above.[62] This analysis, shown in table 9, asserts that the profitability of the property-casualty industry is

TABLE 9

SIMPLIFIED GAAP ADJUSTMENT RETURN ON NET WORTH FOR UNITED STATES PROPERTY-LIABILITY INSURANCE INDUSTRY COMPARED TO UNITED STATES INDUSTRY: 1977-1985

Year	S&P Financial	S&P 500 Stocks	Property-Liability Insurance
1977	14.1%	13.5%	16.8%
1978	15.6%	14.1%	18.8%
1979	15.7%	15.4%	18.4%
1980	13.8%	14.1%	17.5%
1981	12.7%	13.8%	8.1%
1982	11.4%	10.7%	11.1%
1983	11.6%	11.0%	8.9%
1984	9.1%	13.2%	−1.0%
1985	9.2%	10.7%	8.1%
Average	12.6%	12.9%	11.7%

SOURCE: INSURANCE SERVS. OFFICE, INC., *supra* note 62, at 51.
NOTE: End of year net worth was used in the calculations. Unrealized capital gains were reduced by 28% to account for federal income taxes.

slightly less than that of Standard & Poor's 500 Stocks and of Standard & Poor's Financial Corporations.

3. Medical Malpractice Profits: 1977-1985

Table 10 displays "statutory" total return on equity for two groups of property-liability insurers—those who only write medical malpractice insurance and those whose major line of business is medical malpractice insurance.[63] The average annual compound rate of return on equity for these

61. Insurance Services Office, Inc., is a non-profit corporation that provides a variety of statistical and other services to over 1300 property-liability insurers throughout the United States. Its services are advisory only, and member companies are free to adopt different prices or policy language.

62. INSURANCE SERVS. OFFICE, INC., INSURER PROFITABILITY: A LONG-TERM PERSPECTIVE 51 (Apr. 1987).

63. The insurers included are those classified as "Medical Malpractice Predominating" by A.M. Best Co., a data gathering, analysis, and rating organization that specializes in insurance companies.

TABLE 10

STATUTORY RETURN ON EQUITY FOR MEDICAL MALPRACTICE PREDOMINATING PROPERTY-LIABILITY INSURERS: 1977-1985

	1985	1984	1983	1982	1981	1980	1979	1978	1977
Underwriting	−69.4%	−55.7%	−47.3%	−39.3%	−35.4%	−23.5%	−16.6%	−6.7%	−13.2%
Net investment income	67.6	65.2	55.8	62.9	57.1	48.9	44.3	37.7	39.1
Policyholder dividends	−3.5	−4.0	−2.4	−3.1	−2.7	−1.8	−1.2	−4.5	−1.7
Taxes	0.5	0.9	−4.0	−0.4	−1.6	−5.2	−4.8	−6.1	−7.7
After tax operating result	−4.7	6.4	2.1	20.0	17.4	18.4	21.7	20.5	16.5
Realized gains	12.3	0.9	5.2	2.3	0.3	0.8	0.4	−2.4	0.3
Unrealized gains	4.3	−0.8	−0.1	0.4	1.6	2.8	0.6	−0.3	0.2
Total	11.9%	6.4%	7.2%	22.8%	19.3%	22.1%	22.7%	17.8%	16.9%

SOURCE: Calculated from data reported by A.M. BEST CO., AGGREGATES & AVERAGES: PROPERTY-CASUALTY (1978-1986 eds.).
NOTE: Return on equity calculated using beginning of year surplus.

insurers from 1977 through 1985 was 16.3%. This return was slightly greater than the return in the property-casualty industry as a whole, but it still was well within the normal range for American corporations.

The data in table 10 also illustrate several significant points. First, at the national level, insurers have consistently lost money on underwriting their insurance operations since 1977. Moreover, the underwriting loss has deteriorated steadily to the point where it produced a 69.4% loss on surplus in 1985 (the latest year for which data are available).[64] Second, investment income as a percent of equity has increased steadily and, except for 1985, has more than offset the underwriting loss in spite of declining interest rates since mid-1981. Third, the industry paid income taxes from 1977 through 1983—thus indicating profitability—but in 1984 and 1985 its underwriting losses were of sufficient magnitude to generate a recapture of income taxes paid in prior years. Finally, the industry's after tax operating profit showed a marked and sudden deterioration in 1983 when compared to the six previous years. This trend persisted in 1984, and in 1985 operating results produced a negative return on equity.

The return on equity measure of profitability cannot be used by itself to evaluate an insurance company's financial performance in a given line, such

Best is neither owned nor controlled by the insurance industry. A Best official defined "predominating" to mean a company whose medical malpractice insurance premium volume was at least 60% to 70% of its business. Telephone conversation with Allison Cooley, A.M. Best Co. (Mar. 10, 1988).

64. The term "loss on surplus" is defined as the amount of dollar loss divided by the surplus or capital invested in the business.

as medical malpractice, or in a given state, such as Florida, because companies do not allocate expenses and surplus by line or by state. Nonetheless, two measures of profitability for medical malpractice insurance in the state of Florida are available. First, the two insurers that currently are the second and third largest medical malpractice providers in the state of Florida operate only in Florida and profitability figures for these carriers are available. Second, the underwriting results—both premiums and expenses—for the Florida operations of other malpractice insurers can be analyzed and compared with nationwide underwriting results.

The return on equity figures for the two exclusively Florida medical malpractice insurers are atypical.[65] One insurer, the Florida Physicians Insurance Company, is emerging from a period of extreme financial distress; consequently, its figures are not indicative of long-term profitability. The return on equity figures for the other carrier, Physicians Protective Trust Fund, were extremely volatile—usually high—in the earlier years because it began operations in 1975 without any paid-in capital or contributed surplus. The equity against which profitability is measured, therefore, was extremely low.[66]

A comparison of medical malpractice underwriting results only—i.e., excluding consideration of the role of investment income in profitability—between Florida insurers and national averages shows no clear persistent differences, although offsetting variations may exist on a year-to-year basis.[67] Underwriting profitability is expressed in a calculation called the "combined loss and expense ratio," which, simply stated, is equal to losses and expenses divided by premiums. A higher ratio, therefore, means lower underwriting profitability. The average adjusted loss ratio (which ignores expenses) for

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65. The annual return on equity figures for these two Florida insurers are compiled in table A.

66. The Physicians Protective Trust Fund's recent results are probably more representative of expected profitability, but they overstate it because the insurer's leverage ratio (i.e., premiums-to-surplus) is over twice as large as that of the typical insurer. This causes the return on equity figure to be higher than it would be if a lower ratio were present.

67. Generally, the approach used in the previous section cannot be used in isolation to measure a company's financial performance in a given state, because companies do not allocate their surplus on a state-by-state basis. Consequently, it is necessary to examine the multiline and/or multistate company's loss ratio. Multiline refers to a company that underwrites more than one line of insurance, e.g., medical malpractice and automobile insurance. Multistate refers to firms that sell insurance in two or more states.

Table B contains the adjusted loss ratio for medical malpractice insurers for Florida and the same ratio for St. Paul's medical malpractice experience in Florida. St. Paul Fire and Marine Insurance Company, the largest medical malpractice insurer in Florida, is a multiline, multistate firm. The adjusted loss ratio is equal to losses incurred divided by premiums earned after policyholders dividends. These terms are technical terms commonly used in the insurance industry. "Losses incurred" is defined as loss payments actually made during a period plus estimates of amounts that will be paid in the future. "Premiums earned" is a measure of the company's revenue or income for the time period.

TABLE A

STATUTORY RETURN ON SURPLUS FOR TWO MAJOR FLORIDA MEDICAL MALPRACTICE INSURERS

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Florida Physicians Insurance Company											
Underwriting	N/A	22.1%	47.6%	−98.7%	−47.1%	−91.0%	−149.1%	−12.3%	−188.8%	−164.1%	−101.1%
Interest, dividends, etc.	N/A	16.5	31.7	47.4	58.7	82.9	108.1	33.6	67.8	129.8	61.1
Realized capital gains	N/A	−0.3	0.0	0.2	−0.5	6.8	−19.2	−4.0	−71.3	−13.9	69.7
Unrealized capital gains	N/A	0.2	−0.2	−7.0	−2.8	−22.8	25.2	7.5	55.0	−21.2	−47.6
Total return[a]	N/A	38.5%	79.1%	−58.1%	8.3%	−24.1%	−35.0%	24.8%	−137.3%	−69.4%	−17.8%
Physicians Protective Trust Fund[b]											
Underwriting	−78.2%	−166.2%	−55.2%	−61.4%	−416.1%	−1033.4%	−89.4%	−162.6%	−56.7%	−49.4%	−36.3%
Interest, dividends, etc.	128.5	222.2	114.9	106.2	508.6	1104.5	94.4	160.6	88.0	56.1	45.1
Realized capital gains	0.0	14.8	0.0	1.3	−9.5	3.1	2.1	13.2	1.7	8.0	8.8
Unrealized capital gains	49.7	−54.6	−18.0	−28.0	−240.4	−180.0	80.9	−68.8	21.0	33.6	13.8
Total return[c]	100.0%	16.2%	41.7%	18.1%	−157.4%	−105.8%	88.0%	−57.6%	54.0%	48.3%	31.3%

SOURCE: Insurance company questionnaire responses.

Notes:

[a] Return is after policyholders' dividends and after income tax. Note, however, that no federal income tax was levied against unrealized capital gains. Such a tax liability may be incurred if and when the gains are realized. The amount of the tax liability is unknown and will depend upon the extent to which the realized gain in securities prices is offset by underwriting losses. End of year surplus was selected by the company in calculating the return on surplus.

[b] Physicians Protective Trust Fund, in reporting this data, included a cautionary letter concerning the use of total return on surplus figures for a trust fund. A copy of the letter is on file at the *Georgetown Law Journal*.

[c] See the above note concerning federal and state income taxes. Beginning of the year surplus was used by Physicians Protective Trust Fund in calculating the return on surplus.

Florida from 1976 through 1986 was 81.5 compared to a nationwide ratio of 87.5, thus indicating slightly greater profitability for medical malpractice insurers in Florida than the nationwide average. In other words, although physicians face higher malpractice premiums in Florida than elsewhere, the

TABLE B
ADJUSTED LOSS RATIO MEDICAL MALPRACTICE LIABILITY INSURANCE: 1975-1986

	FLORIDA		COUNTRYWIDE	
Year	All Companies	St. Paul	All Companies	St. Paul
1975	16.6	4.4	66.5	7.1
1976	94.5	12.6	48.5	13.5
1977	57.6	13.6	41.8	22.3
1978	26.3	37.9	60.6	36.4
1979	67.6	47.9	75.3	48.2
1980	83.6	94.0	82.6	56.2
1981	56.2	48.8	99.5	61.8
1982	89.8	64.5	111.4	67.7
1983	89.7	77.5	112.3	77.1
1984	93.4	73.8	110.9	80.2
1985	131.4	113.6	120.7	86.9
1986	106.7	92.6	99.1	79.8
Average 1976-1986	81.5	61.5	87.5	57.3

SOURCE: A.M. BEST CO., AGGREGATES & AVERAGES (1978-1986 eds.).
NOTE: Adjusted loss ratio is equal to losses incurred divided by premiums earned less policyholder dividends. Since St. Paul Fire and Marine Insurance Company is a multiline, multistate firm, its return on equity figures reflect not only its Florida medical malpractice experience but also the company's medical malpractice experience from other states and other lines of insurance. Under these circumstances, the firm's underwriting results must be examined to gauge one part of the profitability of medical malpractice insurance. Underwriting results are available on a state-by-state basis whereas the return on equity figure is countrywide and reflects the experience of all lines of insurance.

Adjusted loss ratio is an incomplete measure of profitability because it does not take account of the company's expenses, nor does it include investment income or realized and unrealized gains. The data reported in table B cover the period from 1975 (the first year that medical malpractice was reported as a separate line) to 1986. All companies writing medical malpractice insurance in Florida are included except Florida Physicians Insurance Company, the trust funds (of which Physicians Protective Trust Fund is the largest), the Patients Compensation Fund, and the Florida Medical Malpractice Joint Underwriting Association.

The data for the past three years demonstrate the poor underwriting results both in Florida and across the country. Loss adjustment expenses and underwriting expenses must be added to measure underwriting profitability and these two items add about another 45% to the figures shown in table B. Thus, if the combined loss and expense ratio came to 130%, a loss of 30 cents is occurring for every dollar of table 11 premium. As noted above, however, investment results need to be included to accurately assess profitability. Even when this is done, the financial results from recent years show no excess profits, and the long-term average return is very close to overall profitability for the property-liability industry.

position of medical malpractice insurers in Florida is neither substantially better nor worse than that of carriers in other jurisdictions.

4. The Role of Excess Profits in Escalating Premium Rates

From 1977 through 1985, a comparison of the total return on equity for liability insurers with those of other American corporations shows that profits for insurance companies were not excessive. Furthermore, examination of profitability of medical insurers demonstrated approximately the same rate of return as for liability carriers as a whole. The authors, therefore, reject the assertion that excess insurance company profits are a cause of the medical malpractice crisis. On the other hand, the liability insurance industry's financial condition is not nearly as serious as the industry sometimes claims when it focuses upon underwriting results or when it focuses only on the year 1985—the worst year in a nine-year cycle.

C. THE UNDERWRITING CYCLE

The phenomenon known as the "underwriting cycle" is unique to the insurance industry and represents a significant cause of the periodic malpractice insurance crises.[68] The length of the underwriting cycle is defined by the number of years in which insurer underwriting profits cycle from a high point to a low point and back again. Such cycles have always been a feature of the insurance industry, but the most recent cycle (1977 through 1986) was the longest in history and probably the most severe (i.e., the greatest difference between the high point and the low point).

While changes in demand typically influence economic cycles, insurance underwriting cycles reflect primarily changes in supply. A description of the underwriting cycle begins with a highly profitable insurance market that attracts capital and encourages the formation of new companies. The degree of competition increases as newly formed companies cut rates, forcing existing companies to do the same to protect their market share. Rate-cutting continues until the underwriting losses exceed the amount that insurers are willing to bear, at which point some insurers withdraw from the market, either voluntarily or because of insolvency. This shrinkage in supply permits the remaining insurers to raise rates to more profitable levels. The rate increases occur quickly, and usually are accompanied by more stringent underwriting standards, which result in more frequent refusals by insurers to provide insurance. Restored profitability, due to higher rates, attracts new capital and the cycle begins anew.

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68. For a more complete description of the underwriting cycle, see Stewart, *Profit Cycle in Property-Liability Insurance*, in 2 ISSUES IN INSURANCE 79 (1981).

1. Effect of Interest Rates on the Underwriting Cycle

Underwriting cycles are frequently, but not always, driven by changes in interest rates. In addition, interest rates may prolong an underwriting cycle. The most recent cycle was probably influenced in both ways.

Insurance premiums represent one of the two main sources of revenue for insurance carriers; the other source is the profits earned by insurance carriers from investing premium dollars between the time premiums are received from the insured and the time these funds are disbursed to pay for losses and expenses attributable to that policy year.[69] During the late 1970s and early 1980s, investment rates of return were unusually high. Rates of return on Treasury bills reached an unprecedented level of almost 15.5% in 1981.[70]

Under these circumstances, insurers aggressively reduced rates to insure as many risks as possible and thereby capture and invest premium dollars.[71] As in previous underwriting cycles, rates were substantially reduced because carriers expected to offset any losses with investment income. This practice, called cash-flow underwriting, is not necessarily unsound or imprudent business practice. It represents a legitimate and desirable response from insurers that benefits insurance buyers in the form of reduced rates.

During the period 1979 through 1981, however, excesses of cash-flow underwriting occurred, and virtually all insurers were forced into unreasonable price reductions to preserve their market shares. The result, in many instances, was cutthroat price competition resembling an old-fashioned gasoline price war. Insurance company chief executives were faced with cries from the heads of their marketing operations that unless prices were reduced, market share would be lost. Such claims, in most instances, prevailed over the protests of actuaries that the premium rates being charged in 1981 were not actuarily sound. This intense price competition resulted in premium rates lower than those that ordinarily would have been charged in view of the industry's claims paid experience and actuarily sound projections of future losses. Premium rate increases lagged proportionately behind claims paid experience. As a result, the inevitable upward pressure on insurance rates as a result of increasing paid claims was delayed and obscured.

In other words, in hindsight, premium rates for physicians and others in 1981 were lower than they should have been. During the period 1978 through 1980 when prices, as measured by the Consumer Price Index, in-

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69. For an overview of insurance company operations, see G. REJDA, *supra* note 52, at 535-54.

70. The United States Treasury bill rate in 1981 fluctuated between 11.471% and 15.548% with an average rate of 13.776%. ECONOMIC REPORT OF THE PRESIDENT, H.R. DOC. NO. 140, 98th Cong., 2d Sess. 298-99 (1984).

71. Jack Mosely, Chairman and Chief Executive Officer of USF&G Corporation, Testimony Before the Academic Task Force for Review of the Insurance and Tort Systems, vol. I, at 129-33 (Miami, Fla., Feb. 3, 1987).

creased a total of 26.3%, medical malpractice premiums in Florida actually decreased 19%.[72] The large price increases that occurred during the most recent years of 1984 through 1987 are all the more dramatic because they occurred against a base that was artificially low as a result of the underwriting cycle.

One question that legitimately may be asked is, if prices were too low in 1981, why did insurance companies not withdraw from the marketplace and then return only after prices increased to allow for an acceptable level of profit? The answer appears to be their concern over the loss of market share and the difficulty of reentering the insurance market. Most insurance is not sold directly by insurance companies to physicians or other insureds, but instead is sold through agents or brokers. If a carrier withdraws its policies from an agent or broker during a period of inexpensive coverage and low profits, that carrier is less likely to be used by an agent or broker when prices and profits return to higher levels. The disruption to the agent or broker's business caused by such withdrawal may well lead the broker or agent to conclude that the carrier did not stand by her in tough times and should not now reap the benefits of profitable times.

The historically high interest rates of 1981 did not last; as interest rates declined, premium increases became necessary to offset the effect of reduced investment income. The past two years have revealed a return of interest rates to more normal levels and a corresponding increase in prices as insurers sought to restore overall profitability.

Exactly how did the insurance underwriting cycle correlate with premium rates charged Florida physicians? Columns (2) and (3) of table 11 correlate the insurance underwriting cycle with premium rates (columns (4)-(6)) charged Florida physicians. Column (2) shows the "combined ratio" for the insurance industry for the years 1978 to 1986, and column (3) reports the same ratio for the medical malpractice line.[73] The combined ratio relates incurred claims and expenses (other than investment expenses) to premiums. A combined ratio in excess of 100% indicates an underwriting loss while a ratio less than 100% indicates an underwriting profit.

Column (4) of table 11 contains medical malpractice rates for the Florida Physicians Insurance Company (FPIC) for the years 1978 to 1987. The

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72. BUREAU OF LABOR STATISTICS, U.S. DEP'T OF LABOR, HANDBOOK OF LABOR STATISTICS table 110, at 356 (June 1985).

73. Ideally the medical malpractice combined ratio would be compared to malpractice liability rates. However, the malpractice combined ratio is only available through 1986, and an important year (1987) would be missing from the data series. Consequently, the industry combined ratio—the trend in the ratio which is important in tracking the relationship between the underwriting cycle and premium rates—was also used. The medical malpractice combined ratio is included in column (3) to illustrate that for the period for which figures are presented; the ratio is higher than the industry figure, but follows a similar trend.

TABLE 11

THE PROPERTY-LIABILITY INSURANCE UNDERWRITING CYCLE AND FLORIDA MALPRACTICE INSURANCE RATES: 1978-1987

Combined Year	Combined Ratio[a] Industry	Combined Ratio[a] Medical Malpractice	FPIC Rates	St. Paul Rates	PPTF Rates
1978	97.4	104.9	$ 2,680		
1979	100.6	113.9	2,486		
1980	103.1	129.2	2,177		
1981	106.0	137.6	2,857		
1982	109.6	150.9	3,393	$ 4,004	
1983	112.0	151.2	4,638	4,868	$ 4,433
1984	118.0	162.2	5,819	6,414	5,704
1985	116.3	166.9	7,541	8,820	8,349
1986	108.0	139.5	14,034	10,115	12,107
1987	103.6[b]	N/A	21,049	20,425	14,663

[a] After dividends to policyholders. A.M. BEST CO., AGGREGATES & AVERAGES 89, 91 (1987).
[b] First quarter only. A.M. BEST CO., BEST'S REVIEW 91 (July 1987).

trends in rates shown are for a family practice physician (no surgery) in the Miami area, but other specialties and other sections of the state show similar trends. Note that the FPIC's rate reduction in 1979 and 1980 correlates with the rising industry combined ratio. The FPIC's rates began rising in 1981, with the rate of increase accelerating sharply and correlating again with the falling industry combined ratio in 1985, 1986, and the first quarter of 1987. Column (5) of table 11 shows the St. Paul Fire and Marine Insurance Company's Miami rates for a family physician for the years 1982 through the middle of 1987. They follow essentially the same pattern as the FPIC's rates. The rates for the Physicians Protective Trust Fund (PPTF), shown in column (6) for the years 1983 to 1987, show a similar trend.

The sharp acceleration in rates that corresponds with the upturn in the underwriting cycle and tightened underwriting standards that accompany increased rates are major exacerbating causes of the crisis in medical malpractice insurance during the last three years. Clearly, however, the underwriting cycle and alleged poor insurance company management and investment practices[74] are not the primary cause of increases in the cost of malpractice insurance. Two reasons support this conclusion. First, medical malpractice premiums increased at a rate substantially greater than inflation

74. *See* ASSOCIATION OF TRIAL LAW. OF AM., THE INSURANCE CRISIS: A STUDY IN DECEPTION 13 (1986) (concluding that insurance "crisis" was "orchestrated and directed" by property-casualty insurance industry).

even when the accelerations and decelerations of the rate of price increases that result from the underwriting cycle are smoothed out. During the period from 1978 through 1987, malpractice premiums increased at an average annual compound rate of 25.7%.[75] Although this figure is not as dramatic as the average annual increases of 67.1% since 1985, which results when the underwriting cycle concentrates price increases in a few years, it is still a substantial enough price increase in an area of critical public importance to generate concern among public decisionmakers.

Second, the underwriting cycle is not unique to medical malpractice insurance, nor even to third-party liability insurance in general. The underwriting cycle affects other types of insurance such as first-party fire, windstorm, and other property insurance. These lines have not experienced comparable premium increases, however, nor have most other liability lines.[76] To some extent, the effect of the underwriting cycle is greater on medical malpractice lines with a "long tail," that is, a substantial time lag between the receipt of policy premiums by the insurer and the disbursement of funds for claim payments and expenses. The "long tail" exacerbates the underwriting cycle by increasing the financial impact of differential rates of return on investments and inducing fiercer competition among malpractice insurers to attract premium dollars. Nonetheless, the effect of the "long tail" on the malpractice line is not sufficient to explain the difference between increases in medical malpractice premiums and those in first-party coverages not substantially affected by the legal system.

2. Can Underwriting Cycles Be Controlled?

The underwriting cycle and its adverse effects on the malpractice insurance market are probably not controllable. Theoretically, three possible sources of control for underwriting cycles exist: (1) the insurance industry, (2) the states, and (3) the federal government. Control by the industry is highly unlikely in the foreseeable future. Contrary to the frequent assertion that insurance carriers collude and conspire to maintain high profits, the artificially low prices of 1981 that contributed to the dramatic price increases and the tightening of the market in 1984 reflect excessively fierce competition. The industry is composed of over two thousand insurance companies, with approximately 900 operating on a national or near-national basis. Effective coordination of the activities of such a large number of sellers is difficult if not impossible. Underwriting cycles were moderated in the years

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75. These percentages are calculated from the data presented in table 11, column (4).

76. In their capacity as members of the research staff of the Academic Task Force, the authors constructed market price indices for several categories of liability insurance. The indices were descriptions of market rates (as opposed to total premiums) and generally showed a lower rate of inflation than that shown in medical malpractice rates.

prior to the mid-1950s when company-owned rating bureaus were able to establish and enforce rates. A return to that system, however, would raise legitimate antitrust concerns and is out of the question.

No single state represents a sufficiently large part of the national insurance industry to exercise control over these cycles. Theoretically, states could shield doctors from the rate fluctuations that accompany a cycle by requiring insurance carriers to submit both requested rate reductions and rate increases to state regulatory authorities. The result would probably be more stable but higher rates. In addition, such a process is politically unacceptable. A state commissioner of insurance would never call a press conference to announce that she had rejected a company's request to lower medical malpractice premiums for physicians, even if such a step would avoid the traumatic price increases in malpractice premiums experienced the last two years. Such political and economic difficulties would probably confront any similar efforts by the federal government to control the underwriting cycle.

D. RISK CLASSIFICATION SYSTEM

The three factors previously considered—the increase in paid losses, the level of insurance industry profitability, and the underwriting cycle—contribute to the cost and variability of physicians' malpractice insurance. Increased malpractice premiums have not affected all doctors equally, however. Neurosurgeons in some areas of Florida pay nearly $200,000 annually for malpractice coverage, while family physicians in other areas of the same state pay only $10,000.[77] Indeed, medical malpractice became an acute public policy issue during 1985 in large part because of the exorbitant premiums being charged certain specialists, primarily neurosurgeons and obstetricians.

This section analyzes the effect of the risk classification system used by medical malpractice insurers to rate various medical specialists and to determine an appropriate premium for each group of specialists. Two conclusions result from this analysis. First, the number of high-risk specialists insured in some of the risk classes used by insurance companies is too small to provide a sufficient base to absorb the costs of substantial medical injuries. As a result, loss payments in certain high risk specialties have become too large in relation to the number of physicians available to pay for such losses in the narrowly drawn risk classes.

Second, the existing risk classification system does not appear to provide adequate market-based incentives for physicians to avoid losses. Additionally, the present system does not measure the exposure to loss experienced by individual physicians as accurately as possible. The physician with multiple paid claims is charged the same premium rate as the physician who has never

77. *See supra* table 2.

had a paid claim, although past experience may correlate with expected loss payments. Furthermore, a surgeon performing 250 procedures a year pays the same rate as a physician performing a dozen surgeries a year, but her exposure to claims presumably is greater.[78] A convincing contrary argument can be made, however, that the physician doing occasional surgery poses a greater risk to patients than the surgeon operating on a routine basis. These competing claims need not be resolved here. The assertion is not necessarily that more procedures make a physician more or less of a risk, but only that factors other than specialty—such as past experience with paid claims or greater exposure to claims—should be considered in rating physicians for insurance coverage.

Medical malpractice liability insurance is a financing mechanism by which the cost of administration, determination of liability, and measurement of loss and claims is spread over a group of individuals or organizations. Risk classification enables actuaries to analyze this cost and, in conjunction with senior management of the company, allocate claims costs to groups of risks—in this case physicians. On the basis of some factor or factors, premium differentials among risk groups ultimately are determined. In making these cost allocations, insurers must balance the equity goal of not grouping together physicians with substantially different expected losses (thereby requiring low-risk specialties to subsidize high-risk ones) against the need to constitute a risk class large enough to absorb and spread the cost of anticipated losses. Too small a risk class would not provide enough revenues to cover expected claims. On the other hand, if the risk class is too large, a competing carrier could provide smaller risk classes and lure the most desirable insureds away by offering lower premiums.

The authors reviewed the class plan used by the St. Paul Fire and Marine Insurance Company to insure physicians in Florida. It classifies physicians according to medical specialty and surgical activity and also includes classifications for active military personnel, full-time federal government employees, and retired physicians. In addition to specialty ratings, physicians are rated according to whether they practice in urban Dade and Broward Counties or in the remainder of the state. No specific factors are included for the physician's level of activity, i.e., number of patients seen or surgical procedures performed annually, nor is any price adjustment made based on the number and amount of claims incurred by the physician.

As noted above, the size of the financing base available to pay claims depends on the number of insureds practicing a certain specialty within a specified territory of the state. Table 12 shows the total number of physicians

78. The Tort Reform and Insurance Act of 1986 created a new statute, § 627.6058, which requires that rates reflect the number of surgical procedures performed each year by individual health care providers as well as their claims experience.

TABLE 12

NUMBER OF PRACTICING PHYSICIANS IN FLORIDA: 1975-1986

Specialty	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Anesthesiology	437	469	579	590	642	705	726	818	897	—	1,005	—
General practice	1767	1986	2167	2239	2414	2541	2497	2800	2696	—	3009	—
General surgery	1057	1068	1162	1154	1218	1267	1276	1351	1422	—	1516	—
Internal medicine	1478	1618	1868	1830	2030	2138	2231	2438	2534	—	2921	—
Neurology & neurosurgery	231	246	283	298	331	337	370	419	446	—	488	—
Obstetrics & gynecology	791	816	913	934	995	1060	1101	1182	1249	—	1354	—
Orthopedics	479	501	560	574	624	652	673	722	758	—	821	—
Otorhinolaryngology	216	217	259	265	277	290	274	296	315	—	325	—
All specialties	10,930	11,600	13,163	13,584	14,498	15,486	15,979	17,105	18,101	—	20,002	—

SOURCE: CENTER FOR HEALTH SERVS. RESEARCH & DEV., AM. MEDICAL ASS'N, PHYSICIAN DISTRIBUTION & MEDICAL LICENSING IN THE U.S. (published annually since 1975 except 1984 & 1986).
NOTE: Data from 1984 and 1986 are not available. Years refer to the calendar year of closing.

practicing in Florida by specialty and illustrates that the financing base may be too small for some of the specialties affected most severely by the medical malpractice crisis. According to the table, only 488 neurosurgeons and neurologists were practicing in Florida in 1985. The actual number of insureds from this total group among whom an individual insurer can spread the costs of expected claims payments is considerably less. Some of those 488 neurosurgeons and neurologists may be self-insured; the remainder will be divided among the several Florida malpractice insurers. Each group of insured neurosurgeons then will be further divided depending upon where in the state they practice.

Current risk classification procedures thus produce tremendous differentials between the relatively modest premiums charged many physicians and the huge premiums charged a few specialists such as neurosurgeons—precisely those physicians who understandably are exerting the most political pressure to reform the tort and insurance systems. Table 13 shows the ratio of premiums for those physicians practicing in three high-risk specialties (orthopedics, obstetrics, and general surgery) to premiums charged a representative low-risk specialty (family physicians). The first table entry, which compares premiums for orthopedists with family physicians in Dade or Broward Counties, indicates that rates charged orthopedists are about seven times those charged family physicians practicing in the same territory. These numbers illustrate the magnitude of the rate differentials resulting from risk classifications.

Figure 4 shows how the relationship between obstetricians' rates and family physicians' rates has changed, i.e., the differential between the rates has increased from 1983 to 1987. Florida Physicians Insurance Company's (FPIC) rates for obstetricians were 8.79 times higher than for family physicians in 1987, compared to 7.28 times higher in 1983. The important point here is that this differential has increased for all companies. This trend means that risk classification procedures are increasing premiums with a disproportionate increase incurred by those physicians already paying the highest malpractice premiums and most likely to be politically vocal. Some proposed reforms address this issue by limiting the differential between the rates an insurer can charge the high-risk classes and those charged to low-risk classes.[79]

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79. Comm. on Insurance, Florida House of Representatives, Reg. Sess., Proposed Comm. Bill INS 87-19 (1987). The proposed bill, commonly referred to as the "Gunter Proposal," provided for no more than a five to one ratio between high-premium risk rates and low-risk rates. A similar bill, the "Ogden Bill," also provided that "premiums under the plan for the highest risk class of physicians shall not exceed five times the rate for the lowest risk class," with a cap on the rates of the high-risk specialists. H.R. 1458, Comm. on Insurance, Florida House of Representatives, Reg. Sess. (1987).

TABLE 13

SELECTED MEDICAL MALPRACTICE RATE RELATIVES: FLORIDA: 1983-1987

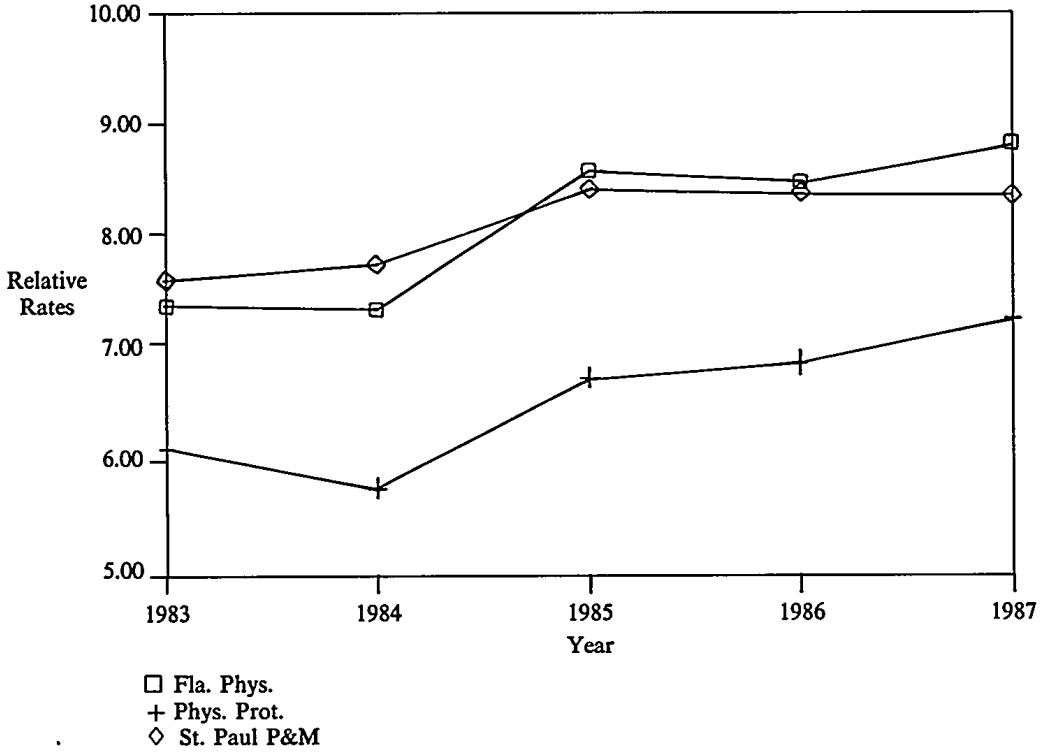
	DADE/BROWARD				
	1983	1984	1985	1986	1987
Orthopedics to:					
Family physicians/no surgery					
Florida Physicians Insurance Co.	6.33	6.33	6.72	6.72	7.03
Physicians Protective Trust	6.15	6.33	6.72	6.72	7.03
St. Paul Fire and Marine	6.37	6.55	6.65	6.67	6.69
Obstetrics to:					
Family physicians/no surgery					
Florida Physicians Insurance Co.	7.28	7.28	8.40	8.40	8.79
Physicians Protective Trust	6.13	5.78	6.68	6.83	7.34
St. Paul Fire and Marine	7.41	7.63	8.29	8.33	8.34
General surgery to:					
Family physicians/no surgery					
Florida Physicians Insurance Co.	5.08	5.08	5.04	5.04	5.27
Physicians Protective Trust	6.13	5.78	6.68	6.83	7.34
St. Paul Fire and Marine	5.32	5.46	4.99	5.01	5.03
	REST OF STATE				
	1983	1984	1985	1986	1987
Orthopedics to:					
Family physicians/no surgery					
Florida Physicians Insurance Co.	6.15	6.33	6.72	6.72	7.03
Physicians Protective Trust	6.13	6.21	6.68	6.83	7.34
St. Paul Fire and Marine	6.32	6.48	6.59	6.62	6.65
Obstetrics to:					
Family physicians/no surgery					
Florida Physicians Insurance Co.	7.08	7.28	8.40	8.40	8.79
Physicians Protective Trust	6.13	6.21	6.68	6.83	7.34
St. Paul Fire and Marine	7.36	7.55	8.22	8.26	8.31
General surgery to:					
Family physicians/no surgery					
Florida Physicians Insurance Co.	4.94	5.08	5.04	5.04	5.27
Physicians Protective Trust	6.13	6.21	6.68	6.83	7.34
St. Paul Fire and Marine	5.28	5.41	4.95	4.97	5.00

SOURCE: Florida Department of Insurance, Bureau of Rates.

NOTE: The effective dates of the rates used for St. Paul Fire and Marine are as follows: 10/1/83, 9/1/84, 7/1/85, 12/31/85, 7/1/87. The effective dates for rates by Florida Physicians Insurance Co. and Physicians Protective Trust Fund are 1/1 of the respective year. Calculations use rates for mature claims-made coverage for $1,000,000 limit of liability per occurrence and $3,000,000 annual aggregate. The FPIC has rates 50% higher in Palm Beach County than in the rest of the state.

FIGURE 4

OBSTETRICS PREMIUM DIVIDED BY FAMILY PHYSICIAN/NO SURGERY PREMIUM FOR DADE/BROWARD COUNTIES: 1983-1987



SOURCE: Table 13.

In addition to substantial rate differentials by specialty, malpractice premiums also vary considerably from one geographic rating territory to another. As noted in the introduction, the sense of crisis concerning medical malpractice that exists in Florida is concentrated in the urban areas surrounding Miami and Fort Lauderdale.[80] During recent years, the rate differential for physicians practicing in these areas relative to the rest of the state has increased. Table 14 compares the rates charged in Dade and Broward Counties with those in the rest of the state. The first entry in table 14 indicates that in 1983 the FPIC charged family physicians in urban Dade and Broward Counties 41% more than it charged family physicians in the rest of the state. By July 1, 1987, the FPIC was charging twice as much in Dade and Broward Counties as in the rest of the state. These ratios which compare rates in the two rating territories, are graphed in figure 5.

80. *See supra* notes 9-11 and accompanying text (describing south Florida as "The Beirut" of medical malpractice crisis).

TABLE 14

TERRITORIAL RATE DIFFERENCES IN FLORIDA FOR SELECTED MEDICAL SPECIALTIES IN DADE/BROWARD COMPARED TO REST OF THE STATE: 1983-1987

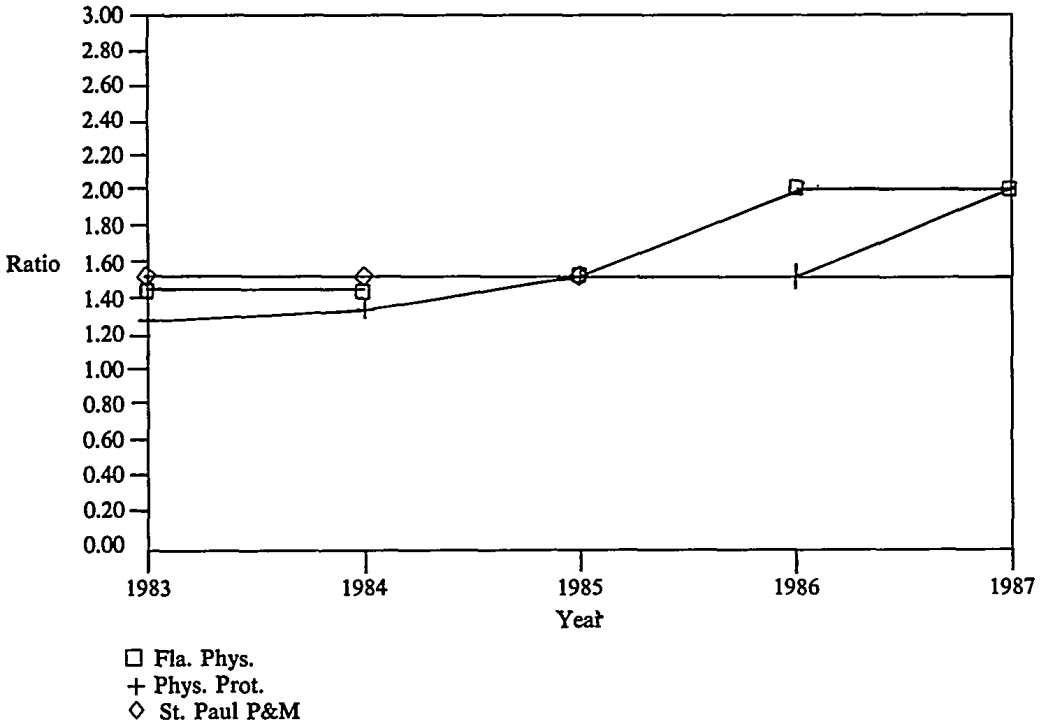
	1983	1984	1985	1986	1987
Family physicians/no surgery					
Florida Physicians Insurance Co.	1.41	1.45	1.50	2.00	2.00
Physicians Protective Trust	1.25	1.47	1.50	1.50	1.50
St. Paul Fire and Marine	1.49	1.48	1.48	1.49	1.97
General surgery					
Florida Physicians Insurance Co.	1.45	1.45	1.50	2.00	2.00
Physicians Protective Trust	1.25	1.37	1.50	1.50	1.50
St. Paul Fire and Marine	1.50	1.50	1.50	1.50	1.99
Orthopedics					
Florida Physicians Insurance Co.	1.45	1.45	1.50	2.00	2.00
Physicians Protective Trust	1.25	1.37	1.50	1.50	1.50
St. Paul Fire and Marine	1.50	1.50	1.50	1.50	1.99
Obstetrics					
Florida Physicians Insurance Co.	1.45	1.45	1.50	2.00	2.00
Physicians Protective Trust	1.25	1.37	1.50	1.50	1.50
St. Paul Fire and Marine	1.50	1.50	1.50	1.50	1.99

SOURCE: Florida Department of Insurance, Bureau of Rates.
NOTE: The rates used for St. Paul Fire and Marine are as follows: 10/1/83, 9/1/84, 7/1/85, 12/31/85, 7/1/87. The effective dates of the rates for Florida Physicians Insurance Co. and Physicians Protective Trust Fund are 1/1 of the respective year. Calculations use rates for mature claims-made coverage for $1,000,000 limit of liability per occurrence and $3,000,000 annual aggregate. The FPIC has rates 50% higher in Palm Beach County than in the rest of the state.

This section has discussed the factors used to categorize physicians into risk classes and the size of the resulting risk classes. In the last decade, paid losses have increased substantially faster than the number of physicians available to pay them, which has led to an inexorable rise in premiums. In addition, the extra amount charged high-risk specialties compared to low-risk groups has increased, as has the surcharge for physicians in Dade and Broward Counties. The risk classification plans in use during the period studied made no specific provision for experience rating, i.e., those physicians who had paid claims incurred no specific surcharges. Thus, no market price incentives existed in the standard insurance market for the person best able to control losses—the physician.

FIGURE 5

OBSTETRICS PREMIUMS IN DADE/BROWARD COUNTIES COMPARED TO OBSTETRICS PREMIUMS IN THE REST OF THE STATE: 1983-1987



SOURCE: Table 14.

IV. THE NATURE OF INCREASED CLAIMS COSTS: FURTHER EXAMINATION OF FLORIDA CLOSED CLAIMS

The previous section concludes that increased claims costs are the primary cause of the dramatic increase in medical malpractice premium rates during the past five years. The detailed information available about Florida claims for the past twelve years enables the authors to determine what is driving this tremendous increase in claims costs. Is it the frequency of claims? Do physicians face, as is sometimes alleged, a substantially greater number of claims—a greater frequency—than previously? Or is the spectacular rise in total loss payments attributable primarily to an increase in the size—or severity—of the loss payments? Finally, do the closed claims data shed any light on the assertion that the medical malpractice crisis is largely the result of "bad doctors" and not a product of deficiencies in the tort and insurance systems?

These questions are addressed in this section through a detailed analysis of the closed claims data collected by the Florida Department of Insurance. An understanding of the nature of the increase in total loss payments is crucial,

because different remedies may be warranted depending on what drives the increased costs. If total costs are rising because of an increasing frequency of claims, then solutions include finding ways to reduce both the number of iatrogenic (physician-induced) injuries and the incentives for making claims, and to control the conditions and circumstances under which liability is assessed against physicians or hospitals. If the rise in the cost of each incident is responsible for increased loss payments, then solutions include methods of reducing the severity of medical injuries and the costs resulting from medical injuries, and controlling the amount of jury awards and settlements. When increased frequency and severity are both causing increased costs, a more complex package of changes may be necessary to affect loss payments substantially.

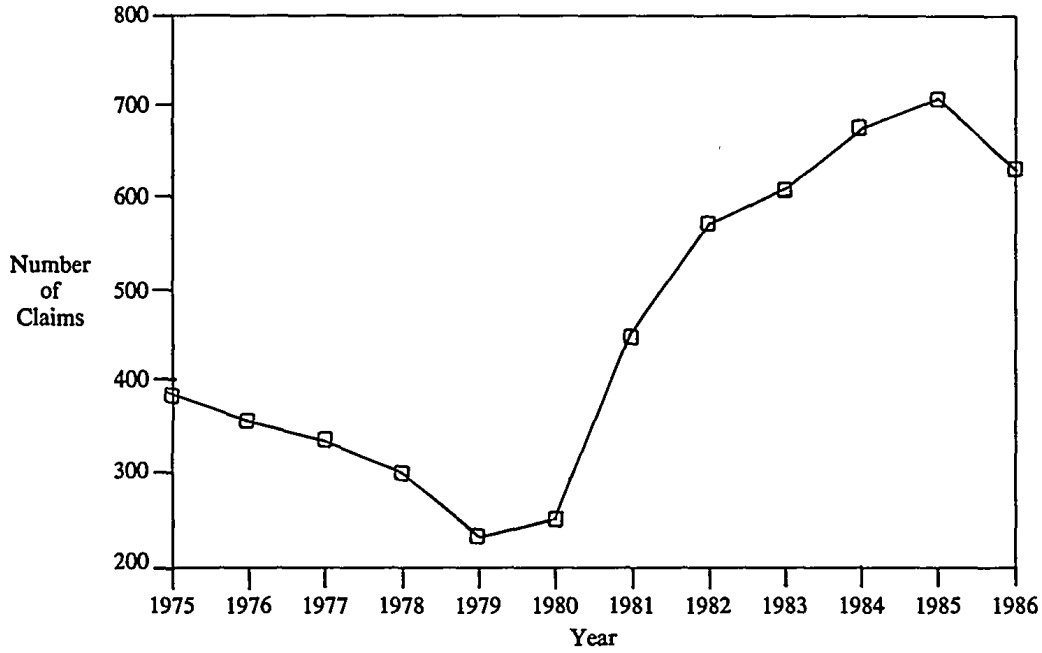
A. INCREASED CLAIMS FREQUENCY

This subsection examines the trend in the number of insurance claim files that have been closed in the last twelve years in Florida. Over this substantial period, the frequency of closed claims should reflect accurately the burdens imposed on the tort and insurance systems by medical malpractice claims. The frequency of closed claims, however, is not a perfect indication of the propensity to file medical malpractice claims. For one thing, a lag time of one to five years typically exists between the time a file is opened and the time it is closed. Accordingly, any dramatic surge in the number of medical malpractice claims filed in 1987 would not be completely reflected in the closed claims data until the 1990s. Furthermore, the number of closed claims is a function not only of the number of filed claims, but also of the propensity of insurers to close claims. For example, insurers may be more reluctant to immediately pay claims during a time when interest rates are high because they may benefit from investing premium dollars longer and by delaying payment. And local changes in the law may make it disadvantageous for either the insurance carrier or the plaintiff to settle a case during a certain period. Accordingly, it is more accurate to look at frequency trends over the entire period of time for which closed claims data are available—twelve years—than to focus on trends during one portion of that period.

Without any adjustment for changes in the number of physicians practicing in the state or for population growth, the number of closed claims in Florida during the period 1975 through 1986, as illustrated in figure 6, increased at a rate of approximately 4.6% per year. Examination of these changes shows a steady decline, at an annual compound rate of 12.5%, in the number of claims closed between 1975 and 1979, followed by a sharp increase between 1979 and 1986, at an annual compound rate of 15.9%. The 1986 figure was significantly lower than that for 1985, but this was due partially to a lengthening of the time between the event giving rise to the claim

FIGURE 6

NUMBER OF MEDICAL MALPRACTICE CLAIMS IN FLORIDA INVOLVING AN INDEMNITY PAYMENT: 1975-1986



SOURCE: Florida Department of Insurance medical malpractice closed claims data set.

and the settlement or disposition date. Consequently, nothing presently indicates that the number of claims will either stabilize or continue to decline.

The decline in the number of closed claims from 1975 to 1979 was probably caused by Florida's enactment in 1975 of legislation requiring mediation of medical malpractice claims to control the cost of claims by reducing the adversarial nature of the claims settlement process.[81] From the beginning the constitutionality of the mandatory mediation provision was challenged,[82] creating uncertainty for the plaintiffs' bar as to whether to accept a mediated award or wait in the expectation that the mediation requirement would be declared unconstitutional. As a result, the average time to resolve a claim increased. In 1980, the mediation rule was eliminated,[83] and the surge in claims in the early 1980s was due in large part to the processing of these

81. 1975 Fla. Laws ch. 75-9.

82. In Aldana v. Holub, 381 So. 2d 231, 236 (Fla. 1980), the Florida Supreme Court held § 768.44, establishing medical liability mediation panels, unconstitutional as violative of the due process clauses of the state and federal constitutions.

83. The legislature formally repealed the statute in 1983. 1983 Fla. Laws ch. 83-214.

earlier cases. This analysis of the effect of the mandatory mediation rule suggests that the period 1975 through 1982 should probably be viewed in its entirety without focusing on annual changes. Seen in this light, the claims rate is relatively stable during this time with, perhaps, a slight upward trend.

Any attempt to trend claim frequency without adjusting for increases in population, increases in the number of physicians, or other factors that may influence the number of physician-patient contacts does not suggest anything about the claims propensity of injured patients. Since 1975, Florida's population has increased 35%—from 8.6 million in that year to 11.7 million in 1986.[84] Part of the increase in the number of claims filed and paid is due to this population growth. Increases in frequency beyond that attributable to population growth may be caused by an increase in the iatrogenic injury rate, an increased claims propensity on the part of the general public, or other factors. Table 15 shows the number of claims closed each year in Florida from 1975 through 1986 for which an indemnity payment was made. This figure was divided by the state's population to obtain the claims rate per 100,000 people. During this period, an average of 4.51 claims were paid each year per 100,000 people. An upward trend in claims frequency persisted, even after adjusting for population change, although at a much more modest rate. Overall, the growth rate in claims per 100,000 people from 1975 to 1986 was 1.8% per year.

The frequency of claims also was analyzed by adjusting for the increased number of physicians practicing in Florida.[85] During the period that Florida's population increased by 35%, the number of physicians practicing in the state grew by 95% (see table 16). As a result of this relatively greater growth in the number of physicians compared to population, the closed claims rate per physician has remained virtually unchanged from 1975 to 1986.

The trend in frequency of claims per physician—and indeed the frequency of claims per physician itself—however, varies markedly from specialty to specialty. Table 17 shows that for all specialties, the average number of paid claims per 100 physicians per year was 2.75 from 1975 through 1985. Over the entire eleven-year period, an obstetrician was 92% more likely to have a claim closed against her than the average physician in Florida, and neurologists faced a 125% higher risk than the average physician. In recent years, the differentials for these specialties have been even greater.

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84. BUREAU OF ECONOMIC & BUSINESS RESEARCH, COLLEGE OF BUSINESS, UNIV. OF FLA., 1987 FLORIDA STATISTICAL ABSTRACT 5 (July 1987). The 1975 population estimate was obtained from the 1986 edition of the abstract (July 1986).

85. CENTER FOR HEALTH SERVS. RESEARCH & DEV., AM. MEDICAL ASS'N, PHYSICIAN DISTRIBUTION & MEDICAL LICENSING IN THE U.S. (published annually since 1975 except 1984 & 1986).

TABLE 15

MEDICAL MALPRACTICE CLOSED CLAIMS (INDEMNITY CLAIMS ONLY) PER 100,000 OF POPULATION: FLORIDA COUNTIES WITH 1986 POPULATIONS GREATER THAN 250,000

County	Mean	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Broward	8.36	6.73	4.92	5.53	4.83	4.05	4.91	7.83	11.15	12.68	13.90	11.74	12.01
Dade	6.51	6.82	6.16	4.95	6.09	3.26	3.51	6.46	8.04	8.17	10.38	7.45	6.81
Orange	5.59	6.88	5.76	7.06	6.68	2.82	2.76	4.15	6.06	5.52	7.35	5.95	6.06
Hillsborough	4.87	3.64	4.15	4.13	2.76	2.85	1.85	5.29	4.72	5.05	7.20	9.75	7.09
All of Florida	4.51	4.51	3.92	3.74	3.31	2.41	2.63	4.38	5.55	5.72	6.19	6.27	5.49
Pinellas	4.34	5.69	3.39	3.20	3.28	2.24	2.88	4.31	5.95	6.91	6.26	4.50	3.43
Palm Beach	4.27	3.32	4.93	4.43	2.14	1.84	3.12	3.25	5.80	6.90	5.13	4.91	5.45
Duval	4.25	7.04	3.33	2.82	2.29	2.63	4.55	6.08	4.31	4.60	4.62	4.65	4.03
Sarasota	4.01	2.43	4.80	4.64	3.29	3.10	0.99	3.82	4.18	5.82	2.16	6.30	6.54
Volusia	3.46	1.83	4.02	0.87	2.94	2.02	1.93	5.22	3.61	4.92	3.72	3.58	6.90
Polk	3.18	3.10	3.39	3.34	2.31	1.28	2.80	3.02	5.31	2.32	2.81	6.83	1.59
Pasco	2.95	2.82	3.35	3.21	0.61	1.69	1.55	2.44	3.78	4.13	1.77	5.57	4.49
Brevard	2.94	4.05	4.91	0.80	2.74	1.14	1.10	1.42	3.69	2.59	2.17	5.90	4.76
Lee	2.41	—	0.61	0.59	1.10	2.59	1.46	2.33	4.84	2.12	1.99	4.92	3.97
Escambia	1.78	—	0.44	1.74	2.17	1.29	0.43	0.84	1.63	2.00	0.78	5.67	2.56

SOURCE: Florida Department of Insurance Medical Malpractice Closed Claims Data Set.
NOTE: Years refer to the calendar year of closing.

TABLE 16

ADJUSTED MEDICAL MALPRACTICE CLOSED CLAIMS RATES IN FLORIDA: 1975-1986

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Number of indemnity claims (all specialties)[a]	389	343	334	303	228	256	443	576	606	677	708	640
Population (Florida) (000s)[b]	8,619	8,744	8,920	9,157	9,449	9,747	10,106	10,375	10,592	10,930	11,288	11,658
Number of practicing physicians[c]	10,930	11,600	13,163	13,584	14,498	15,486	15,979	17,105	18,101	†	20,002	†
Claims rate per 100,000 people	4.51	3.92	3.74	3.31	2.41	2.63	4.38	5.55	5.72	6.19	6.27	5.49
Claims rate per 1,000 physicians	3.56	2.96	2.54	2.23	1.57	1.65	2.77	3.37	3.35	N/A	3.54	N/A

SOURCE:

[a] Florida Department of Insurance Closed Claims Data Set.

[b] BUREAU OF ECONOMIC & BUSINESS REASEARCH, COLLEGE OF BUSINESS, UNIV. OF FLA., 1987 FLORIDA STATISTICAL ABSTRACT (1975-1986 eds.).

[c] CENTER FOR HEALTH SERVS. RESEARCH & DEV., AM. MEDICAL ASS'N, PHYSICIAN DISTRIBUTION & MEDICAL LICENSING IN THE U.S. (published annually since 1975 except 1984 and 1986).

NOTES:

[†] Figures not reported by the American Medical Association.

TABLE 17

NUMBER OF MEDICAL MALPRACTICE PAID CLAIMS PER 100 PHYSICIANS IN FLORIDA: 1975-1986

Specialty	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	All Years
Anesthesiology	5.72	5.33	1.73	2.20	0.62	1.56	2.34	4.16	4.91	—	2.89	—	3.15
General practice	3.96	2.87	3.05	1.38	1.57	1.14	2.12	1.89	2.45	—	2.23	—	2.27
General surgery	6.05	5.43	4.30	4.51	2.22	1.89	3.61	5.26	3.80	—	4.29	—	4.14
Internal medicine	1.96	0.74	1.28	0.60	0.59	0.75	1.03	1.76	1.82	—	1.61	—	1.21
Neurology & neurosurgery	6.06	2.85	3.89	4.03	2.11	2.67	6.22	5.25	4.48	—	5.53	—	4.31
Obstetrics & gynecology	5.31	5.02	5.81	4.71	3.42	3.68	4.90	5.25	6.73	—	8.05	—	5.29
Orthopedics	6.68	6.39	4.82	3.31	4.17	3.37	5.79	8.31	8.71	—	9.99	—	6.15
Otorhinolaryngology	5.09	6.91	3.47	1.89	0.36	2.76	6.57	5.41	4.76	—	4.31	—	4.15
All specialties	3.56	2.96	2.54	2.23	1.57	1.65	2.77	3.37	3.35	—	3.54	—	2.75

SOURCES: Florida Department of Insurance Medical Malpractice Closed Claims Data Set (for number of claims); CENTER FOR HEALTH SERVS. RESEARCH & DEV., AM. MEDICAL ASS'N, PHYSICIAN DISTRIBUTION & MEDICAL LICENSING IN THE U.S. (published annually since 1975 except 1984 & 1986) (for number of physicians).
NOTE: Years refer to the calendar year of closing.

Table 18 displays the proportion of claims closed by specialty with the specialties ranked in descending order according to the proportion of claims closed over the entire period. The last two columns show the contribution each specialty has made to the total number of claims. Obstetrics and gynecology account for about 14% of all indemnity claims over the entire period, followed by general practice, general surgery, orthopedics, and internal medicine. These five specialties collectively account for over one-half of the claims in which indemnity was paid. For the five major specialties mentioned above, the proportion of the total number of claims accounted for by general practice and general surgery has declined since 1975, and the proportion of claims from internal medicine has remained relatively stable. Significantly, obstetrics and gynecology and orthopedics represent an increasing proportion of an increasing number of claims.

Because there were tremendous differences between the level of malpractice premiums charged in the two geographical rating territories in Florida—Dade and Broward Counties and the rest of the state—it should come as no surprise that substantial differences exist in the frequency of claims per 100,000 population between various counties in the state. Four urban counties had a claims frequency above the state average: Broward (Fort Lauderdale), Dade (Miami), Orange (Orlando), and Hillsborough (Tampa). For the most recent three years, the frequency of claims per 100,000 population in Broward County is more than twice as great as the statewide average, and the Dade County frequency also is substantially above the statewide average. Morever, the closed claims frequency is increasing rapidly for Broward County.

The premium rate differential between the two geographical rating territories appears justified based upon the closed claims analysis of claims frequency. Indeed, if only frequency data is considered, an even higher differential in rates between Dade/Broward Counties and the rest of the Florida may be justified.

B. INCREASED CLAIMS SEVERITY

The total paid claims in a given year equals the number of claims paid (frequency) times the cost per claim (severity). The previous section describes trends in the frequency of Florida's closed claims; this section analyzes trends in the cost of those claims in which an indemnity payment was made. The rate of increase in severity (size) of payments has been much greater than the rate of increase in frequency. Consequently, the increase in total paid claims is due more to growth in severity than growth in frequency. Stated differently, larger insurance company settlements and larger verdicts are more important causes of increased medical malpractice insurance rates than the higher number of claims.

TABLE 18

PROPORTION OF MEDICAL MALPRACTICE CLAIMS CLOSED IN FLORIDA: 1975-1986

Specialty	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total % 1975-1986	Cumulative % of Total
Obstetrics & gynecology	10.8	12.0	15.9	14.5	14.9	15.2	12.2	10.8	13.9	15.4	15.4	13.1	13.63	13.63
General practice	18.0	16.6	19.8	10.2	16.7	11.3	12.0	9.2	10.9	8.3	9.5	13.3	12.19	25.82
General surgery	16.5	16.9	15.0	17.2	11.8	9.4	10.4	12.3	8.9	9.9	9.2	8.9	11.54	37.36
Orthopedics	8.2	9.3	8.1	6.3	11.4	8.6	8.8	10.4	10.9	9.5	11.6	12.5	9.98	47.34
Internal medicine	7.5	3.5	7.2	3.6	5.3	6.3	5.2	7.5	7.6	8.1	6.6	7.3	6.63	53.97
Emergency room	0.8	0.6	1.8	4.6	8.8	8.6	8.8	8.9	5.9	7.8	5.8	3.6	5.63	59.60
Osteopathy	6.2	3.2	1.5	6.3	6.6	12.1	7.4	7.3	5.8	4.3	4.1	0.0	4.96	64.56
Anesthesiology	6.4	7.3	3.0	4.3	1.8	4.3	3.8	5.9	7.3	6.5	4.1	2.7	4.96	69.53
Radiology & roentgenology	4.9	3.5	5.4	3.0	3.5	4.3	5.0	4.0	5.9	4.9	6.1	5.3	4.87	74.40
Neurology & neurosurgery	3.6	2.0	3.3	4.0	3.1	3.5	5.2	3.8	3.3	3.1	3.8	2.7	3.45	77.85
Pediatrics	2.3	3.8	2.4	3.6	2.2	1.6	4.3	5.2	2.1	2.7	4.1	3.6	3.31	81.16
Plastic surgery	2.8	5.8	2.7	3.6	1.8	2.7	2.0	2.6	3.0	2.5	3.4	3.1	3.00	84.15
Otorhinolaryngology	2.8	4.4	2.7	1.7	0.4	3.1	4.1	2.8	2.5	3.5	2.0	2.8	2.80	86.95
Cardiovascular	2.3	1.5	1.8	2.3	1.8	0.4	2.7	1.0	3.1	2.1	3.0	4.7	2.44	89.39
Urology	1.3	1.2	3.9	1.7	3.1	4.3	1.4	1.6	2.6	2.4	2.7	2.0	2.25	91.64
Ophthalmology	1.3	2.9	0.6	1.7	0.9	2.3	0.7	1.6	2.5	2.4	1.7	2.2	1.80	93.44
Dermatology	1.8	0.6	2.7	7.3	3.5	0.0	1.8	2.1	1.7	1.6	1.0	0.3	1.78	95.22
Thoracic surgery	1.0	2.3	0.6	1.0	0.9	0.4	1.8	0.9	0.3	1.3	1.0	1.6	1.11	96.33
Pathology	0.0	0.3	0.6	0.3	0.4	1.6	1.4	0.9	0.3	1.0	1.8	1.6	0.94	97.27
Gastroenterology	0.0	0.3	0.0	1.0	0.0	0.0	0.0	1.0	0.5	1.0	1.3	1.6	0.71	97.98
Not classified	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	4.7	0.65	98.64
Psychiatry	0.8	0.6	0.9	1.3	0.4	0.0	0.5	0.2	0.0	0.3	0.4	0.5	0.44	99.07
Nephrology	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.5	0.20	99.27
Endocrinology	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.8	0.0	0.3	0.0	0.16	99.44
Proctology	0.0	0.0	0.0	0.7	0.4	0.0	0.2	0.0	0.2	0.0	0.1	0.0	0.11	99.55
Allergy	0.0	0.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.11	99.65
Hematology	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.09	99.75
Physical medicine & rehabilitation	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.3	0.09	99.84
Pulmonary diseases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.07	99.91
Oncology	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.05	99.96
Public health	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.02	99.98
Rheumatology	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.02	100.00
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

SOURCE: Florida Department of Insurance Medical Malpractice Closed Claims Data Set.

The closed claim data demonstrate that the increase in average claim size results both from an increase in the proportion of very large paid claims and, to a lesser extent, from a rise in the proportion of paid claims in the medium-to-large category. This section also compares the size of paid claims in urbanized south Florida with the average claim severity for the rest of the state. While average claims frequency for the Miami and Fort Lauderdale metropolitan areas was almost twice as high as for the rest of the state, severity averaged only about 15% more than the rest of the state. During the most recent three years, however, average claim severity rose more dramatically in south Florida than in the remainder of the state. In other words, people in Dade and Broward Counties seem to have been more claims conscious than people in the rest of the state during the entire 1975 to 1986 period, but the average cost of paid claims accelerated relative to the rest of the state only recently.

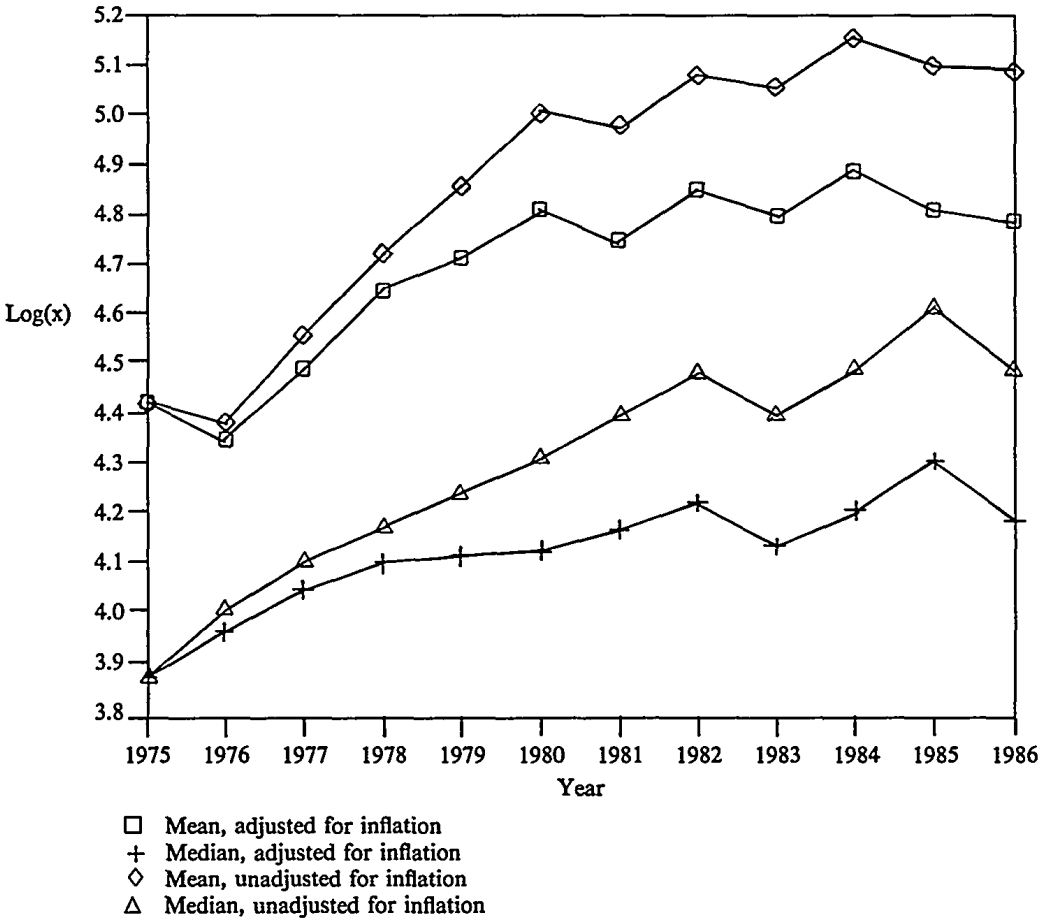
1. Average and Median Costs Per Claim

Figure 7 illustrates the changes in the average and median costs per claim for all medical specialties since 1975 in Florida. When discussing the "average" amount of claims payments, the figures vary dramatically depending upon whether *means* or *medians* are used. The *mean* of a group of claims payments is determined by adding the amounts of all the claims payments and then dividing this total by the number of payments. The *median* size claim is simply the middle number obtained when all claims are arranged in order from the highest amount to the lowest amount. The median is a useful measure of the rate of cost increase because it is not influenced disproportionately by a few very large or very small claims. For rate-setting purposes, however, the mean claim should be used because the mean and the frequency of paid claims determine the total outlay of insurers.

The closed claims survey data from Florida show that mean claims severity increased at an annual compound rate of 14.6% from 1975 through 1986. Table 19 shows the mean and median claims costs for malpractice claims arising in selected specialties in Florida for various years since 1975. Many cases in this table illustrate the extent to which the average (mean) cost of a paid claim has increased, but only a few will be discussed here. Pediatrics provides the most striking example of what has happened in Florida, because the average cost of a claim in this specialty has increased over $300,000 from 1975 to 1986. This corresponds to an annual compound growth rate of 18.5%; that is, the average cost of a pediatrics claim was doubling approximately every 3.9 years during the period studied. Other major specialties with a substantial increase in the average claims cost during the same period were neurology (increase of $194,000), anesthesiology (increase of $180,000),

FIGURE 7

MEAN AND MEDIAN PAID MEDICAL MALPRACTICE CLAIMS IN FLORIDA FOR ALL SPECIALTIES: 1975-1986



SOURCE: Calculated from the Florida Department of Insurance medical malpractice closed claims data set.

NOTE: This graph plots the natural logarithm of each number to show that the growth rates of both the average and the median are high (the steeper the slope of the line, the higher the growth rate).

TABLE 19

MEAN AND MEDIAN MEDICAL MALPRACTICE CLAIMS IN FLORIDA: SELECTED YEARS

Specialty	1975	1980	1984	1985	1986	Change 1975-1986
Anesthesiology						
Mean	$43,014	$137,954	$225,928	$144,579	$222,683	$179,669
Median	15,000	70,000	27,500	57,500	66,650	51,650
Cardiology						
Mean	18,144	162,500	86,849	140,106	60,473	42,329
Median	7,500	162,500	29,584	50,000	25,000	17,500
Emergency						
Mean	3,517	74,131	73,678	71,093	55,485	51,968
Median	1,800	13,750	15,000	10,000	8,500	6,700
General practice						
Mean	16,768	94,560	103,734	149,571	81,296	64,528
Median	5,000	25,000	35,000	55,000	25,000	20,000
General surgery						
Mean	26,142	40,262	83,338	98,351	79,704	53,562
Median	10,000	11,250	30,000	37,500	37,500	27,500
Internal						
Mean	40,141	45,885	170,095	173,669	132,611	92,470
Median	12,000	16,250	35,000	75,000	32,500	20,500
Neurosurgery						
Mean	34,352	25,867	468,424	192,095	228,220	193,868
Median	12,000	10,000	40,000	50,000	100,000	88,000
OB/GYN						
Mean	14,173	96,261	167,533	168,759	174,728	160,555
Median	5,500	28,500	48,388	40,000	40,000	34,500
Orthopedics						
Mean	21,822	73,396	147,838	121,238	116,904	95,082
Median	12,500	26,476	30,000	46,500	25,000	12,500
Osteopathy						
Mean	33,899	96,388	209,362	91,933		(33,899)
Median	12,125	37,500	60,000	50,000		(12,125)
Pediatrics						
Mean	55,738	27,393	382,485	102,539	359,779	304,041
Median	20,000	4,750	65,000	20,000	63,028	43,028
Psychiatry						
Mean	26,083		13,750	39,333	31,945	5,862
Median	20,000		13,750	50,000	33,334	13,334
Radiology						
Mean	36,055	146,781	122,289	109,085	149,293	113,238
Median	2,500	27,390	30,000	35,000	10,833	8,333
Thoracic						
Mean	84,375	9,130	102,130	56,107	243,278	158,903
Median	36,250	9,130	25,000	12,500	137,500	101,250

SOURCE: Florida Department of Insurance Medical Malpractice Closed Claims Data Set.
NOTE: Figures include paid claims only and are unadjusted for inflation.

and obstetrics and gynecology (increase of $161,000). None of the major specialties showed a decrease in average claims cost during the period studied.

Even when the average costs per claim were adjusted for the effects of inflation, they still exhibited substantial growth during the 1975 to 1986 period. Table 20 indicates the inflation-adjusted mean and median cost per

TABLE 20

INFLATION-ADJUSTED MEAN AND MEDIAN MEDICAL MALPRACTICE CLAIMS IN FLORIDA: SELECTED YEARS

Specialty	1975	1980	1984	1985	1986	Change 1975-1986
Anesthesiology						
Mean	$43,014	$90,106	$117,067	$72,334	$109,307	$66,293
Median	15,000	45,721	14,249	28,768	32,716	17,716
Cardiology						
Mean	18,144	106,139	45,002	70,096	29,684	11,540
Median	7,500	106,139	15,329	25,016	12,272	4,772
Emergency						
Mean	3,517	48,419	38,177	35,569	27,236	23,719
Median	1,800	8,981	7,772	5,003	4,172	2,372
General practice						
Mean	16,768	61,763	53,751	74,832	39,905	23,137
Median	5,000	16,329	18,136	27,517	12,272	7,272
General surgery						
Mean	26,142	26,298	43,182	49,206	39,124	12,982
Median	10,000	7,348	15,545	18,762	18,407	8,407
Internal						
Mean	40,141	29,970	88,136	86,889	65,094	24,953
Median	12,000	10,614	18,136	37,523	15,953	3,953
Neurosurgery						
Mean	34,352	16,895	242,719	96,107	112,025	77,673
Median	12,000	6,532	20,726	25,016	49,086	37,086
OB/GYN						
Mean	14,173	62,874	86,809	84,432	85,768	71,595
Median	5,500	18,615	25,073	20,012	19,635	14,135
Orthopedics						
Mean	21,822	47,939	76,604	60,657	57,384	35,562
Median	12,500	17,293	15,545	23,264	12,272	(228)
Osteopathy						
Mean	33,899	62,957	108,483	45,995		(33,899)
Median	12,125	24,494	31,090	25,016		(12,125)
Pediatrics						
Mean	55,738	17,892	198,189	51,301	176,603	120,865
Median	20,000	3,103	33,680	10,006	30,938	10,938
Psychiatry						
Mean	26,083		7,125	19,679	15,681	(10,402)
Median	20,000		7,125	25,016	16,362	(3,638)
Radiology						
Mean	36,055	95,871	63,366	54,576	73,283	37,228
Median	2,500	17,890	15,545	17,511	5,317	2,817
Thoracic						
Mean	84,375	5,963	52,920	28,071	119,417	35,042
Median	36,250	5,963	12,954	6,254	67,494	31,244

SOURCE: Florida Department of Insurance medical malpractice closed claims data set.
NOTE: Figures include paid claims only and are in 1975 dollars.

claim by specialty, as well as the mean and median cost for all claims. After eliminating the effect of inflation on paid claims, the average cost of a paid claim increased at a compound rate of 7.6% per year.

The upward trend in cost is apparent in the size of the median claim as well as the average claim. The median claim size increased from $7,500 in 1975 to $30,000 in 1986. Overall, the average annual growth rate in this number has been 13.4%, a number substantially in excess of the inflation rate.

2. Impact of Changes In Loss Size Distribution Upon Average Cost

Increases in the size of the average claim naturally lead to questions about what caused the increase. Was it simply a few extremely large claims that drove up the average cost or was it due to a greater number of slightly larger than average claims? Past research efforts generally have been unable to answer this question due to a lack of data. Such was not the case in the present study. Because of actions taken by the Florida Legislature in the mid-1970s,[86] the Florida Department of Insurance was able to supply data enabling the authors to determine the cost of virtually every medical malpractice claim closed in Florida since 1975. Using this data it was possible to analyze where the cost increases occurred.

The analysis shows that both of the factors noted above caused the average cost to increase. Not only did the number and size of large paid claims increase, but there was also a greater proportion of the number of paid claims in the medium-to-large size category. The first part of table 21 displays the largest paid claim in Florida for each year from 1975 to 1986. The results are dramatic but probably not surprising to those who have been closely involved with the medical malpractice problem. In 1976 the largest claim was $500,000, followed by a trend during the intervening years of almost uninterrupted growth as shown in figure 8. The remainder of table 21 is a year-by-year analysis of large claims. For any given year, it shows the number of claims in excess of specified dollar amounts, including $250,000, $500,000, $1,000,000 and various other levels of payments. The table illustrates that prior to 1980 there were no paid claims in excess of $1,000,000; however, by 1986 there were twelve paid claims each in excess of $1,000,000. In table 21, the figure in parentheses below the number of claims is the percentage which that number represents of the total number of claims closed in that year. When the aggregate dollar amount of claims paid is examined, the increased effect of large claims also is dramatic. Million dollar plus claims represented

86. *See supra* notes 45-47 and accompanying text (describing legislation requiring filing of closed claim information).

TABLE 21

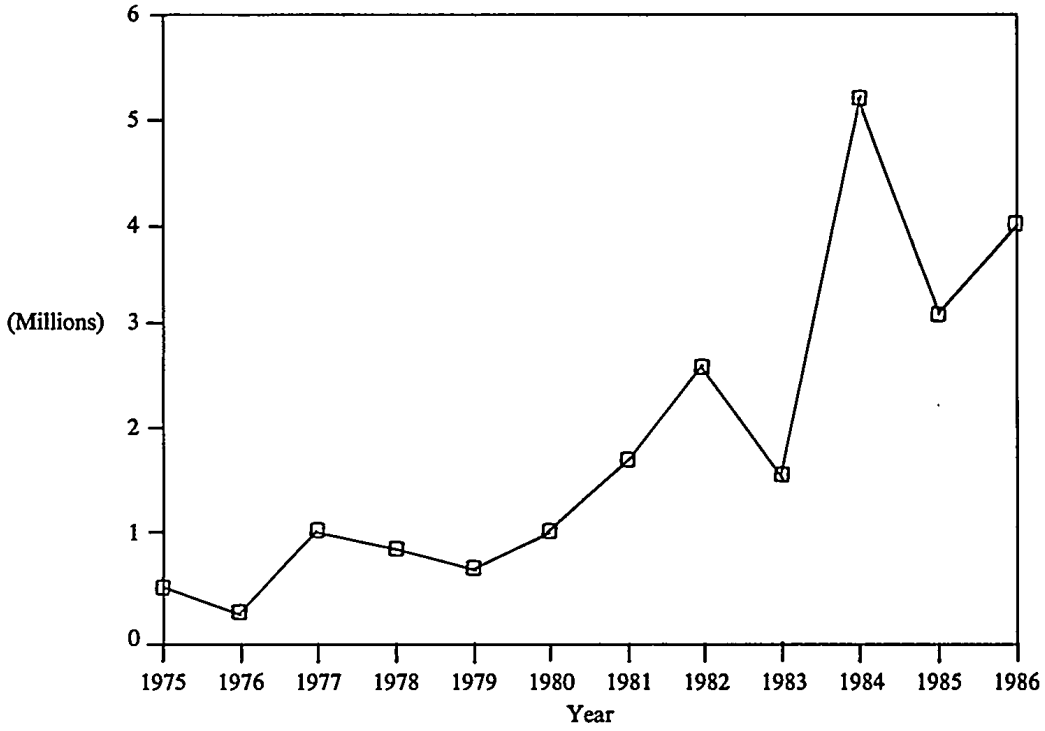
ANALYSIS OF LARGE MEDICAL MALPRACTICE CLAIMS IN FLORIDA: 1975-1986

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Largest paid claim ($000)	$500	$300	$950	$850	$600	$960	$1,624	$2,530	$1,536	$5,114	$3,045	$4,000
Number of paid claims greater than												
$250,000	5 (0.52)	2 (0.19)	3 (0.22)	8 (0.55)	12 (0.82)	21 (1.31)	31 (1.53)	79 (2.99)	75 (2.96)	102 (3.73)	94 (5.34)	62 (4.26)
$500,000			2 (0.15)	1 (0.07)	3 (0.21)	6 (0.38)	10 (0.49)	33 (1.25)	31 (1.22)	46 (1.68)	30 (1.70)	29 (1.99)
$750,000			2 (0.15)	1 (0.07)		5 (0.31)	4 (0.20)	21 (0.79)	18 (0.71)	31 (1.13)	15 (0.85)	19 (1.31)
$1,000,000							1 (0.05)	5 (0.19)	7 (0.28)	12 (0.44)	9 (0.51)	12 (0.83)
$1,500,000							1 (0.05)	1 (0.04)	1 (0.04)	10 (0.37)	5 (0.28)	8 (0.55)
$2,000,000								1 (0.04)		3 (0.11)	3 (0.17)	2 (0.14)
$3,000,000										1 (0.04)	1 (0.06)	1 (0.07)
$4,000,000										1 (0.04)		
$5,000,000										1 (0.04)		
Number of claims closed	968	1036	1335	1453	1457	1597	2032	2644	2536	2733	1760	1454

SOURCE: Florida Department of Insurance Medical Malpractice Closed Claims Data Set.
KEY: Open figures are the number of claims. Figures in parentheses ( ) represent the percent of the number of claims closed that year.

FIGURE 8

TREND IN LARGEST MEDICAL MALPRACTICE PAID CLAIMS IN FLORIDA: 1975-1986



SOURCE: Table 31.

4.9% of the total amount of paid claims in 1981.[87] By 1986, the amount paid for these few claims (less than 1% of the number of claims) accounted for 29.1% of the total compensation paid.

The increase in the proportion of total claims that fall into the "medium-to-large" category can be measured by comparing the data for various years presented in table 22. Cost shifts caused by more frequent payments of larger claims can be detected by noting a declining percentage in smaller dollar categories. Table 22 shows that in 1975, 90.39% of the number of paid claims were for $25,000 or less; but that by 1986, this percentage of small claims had fallen to 76.96%. Although the percentage of paid claims less than $25,000 declined more than any other category of claim size, reductions were also noted in the percentage of claims settled for amounts of $100,000 or less, and for claims paid in amounts of $300,000 or less.

87. Analysis of Florida Department of Insurance Medical Malpractice Closed Claims Data Set.

TABLE 22

CUMULATIVE PROPORTION OF THE NUMBER OF MEDICAL MALPRACTICE CLAIMS CLOSED IN FLORIDA ACCORDING TO SIZE: 1975-1986

Claim Size: Zero Through	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
$25,000	90.39	92.09	91.84	93.12	94.10	93.05	89.67	88.96	88.37	86.86	77.39	76.96
$50,000	94.53	96.24	95.43	95.39	96.02	94.74	92.67	91.30	91.17	90.63	82.44	83.29
$75,000	96.07	97.59	96.78	96.49	97.05	96.12	94.34	92.55	92.63	92.39	85.17	86.31
$100,000	98.55	98.94	99.03	98.42	98.35	97.31	96.56	94.86	94.76	94.22	90.28	90.65
$150,000	99.07	99.42	99.33	98.90	98.70	97.81	97.44	95.58	95.54	94.99	92.16	92.30
$200,000	99.17	99.61	99.63	99.24	99.04	98.50	98.13	96.33	96.33	95.65	93.47	93.81
$300,000	99.79	100.00	99.78	99.66	99.31	98.94	98.82	97.47	97.36	97.00	95.63	96.15

SOURCE: Florida Department of Insurance Medical Malpractice Closed Claims Data Set.

In summary, a general increase in the number and proportion of claims in all larger size categories has occurred, which has caused the overall cost of an average claim to rise. The effect of the increase in the number and size of the very large claims, however, has been most important. There has been a dramatic increase in the size of the largest claim and an equally dramatic increase in the frequency of large claims.

3. Differences in Size of Loss Payments Between Urban and Non-Urban Areas

An analysis of Florida closed claims during the period 1975 through 1986 demonstrates significant differences in the average size of claims payments among various areas of the state, just as the previously presented analysis indicates considerable geographical variations in claims frequency. Because of the low number of claims in smaller counties, which would allow a handful of extremely large claim payments to distort comparisons, this analysis includes only results for counties with a population in excess of 250,000. Among these Florida counties, the highest mean severity for claims was reported in Palm Beach County, which showed a twelve-year average of $117,236; the lowest mean severity was reported in Sarasota County, which had a twelve-year average of $47,185.

Table 23 compares average claim severity for the south Florida urban counties (Dade and Broward) with that for the rest of the state. The average claim size in these two urban counties was 18.6% higher than the rest of the state for the twelve-year period and 42.4% higher during the three most recent years, 1984 through 1986.

TABLE 23

MEAN SEVERITY OF MEDICAL MALPRACTICE PAID CLAIMS IN FLORIDA: DADE/BROWARD COMPARED TO THE REST OF THE STATES: 1975-1986

Territory	Mean	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Dade/Broward	$88,190	$25,494	$27,492	$29,379	$47,086	$55,552	$67,318	$79,905	$137,072	$117,566	$169,045	$142,256	$160,122
All of Florida	80,454	26,540	23,991	34,985	41,193	54,361	80,556	74,592	123,700	114,105	144,018	126,334	121,073
Rest of the state	74,387	27,278	21,662	38,424	36,064	53,556	90,063	70,491	112,851	111,153	119,648	116,924	94,528

SOURCE: Florida Department of Insurance Medical Malpractice Closed Claims Data Set.
NOTE: Figures are unadjusted for inflation. Years refer to the calendar year of closing.

4. The Relative Impact of Increased Frequency and Increased Severity on Total Loss Payments

In summary, both of the factors that determine total claims costs—frequency and severity of claims—have been responsible for the large increase in total paid claims and the resulting increase in malpractice premiums in Florida. The rate of increase in average cost per paid claim, however, substantially exceeds the growth in frequency. Stated differently, more generous verdicts and higher insurance company settlements have contributed more to Florida's increased medical malpractice loss payments than has increased litigiousness or increased claims consciousness on the part of Florida's population.

C. PHYSICIANS WITH MULTIPLE CLAIMS

As suggested in the introduction, some attorneys have claimed that the medical malpractice crisis is primarily the fault of increased medical negligence or "bad doctors."[88] No attempt was made in this study to have each case examined by independent medical experts to determine whether there was "actual negligence." Rather, the closed claims data were analyzed to determine what portion of claims payments resulted from cases against physicians with multiple paid claims. A high concentration of paid claims among physicians with multiple paid claims *may* indicate that such doctors were not sufficiently skillful or careful. On the other hand, in many cases multiple paid claims undoubtedly result from other factors. For example, multiple claims may occur because a physician is practicing in a high-risk specialty or a high-risk area of the state. In addition, some physicians may be more frequently willing to treat high-risk patients for which unfavorable results are to be expected. Even a random distribution of claims among Florida physicians would result in some number of physicians with multiple paid claims.

88. *See supra* note 16 (listing articles describing views of trial lawyers).

TABLE 24

MULTIPLE CLAIM ANALYSIS OF MEDICAL MALPRACTICE CLOSED CLAIMS IN FLORIDA: 1975-1986

Number of Non-Zero Claims per Physician/Surgeon	Number of Physicians	Number of Claims	Percent of Claims	Cumulative % of Claims	Total Indemnity Amount	Percent of Indemnity	Cumulative % of Indemnity
Frequency							
1	3,229	3,229	78.8330	78.8330	$296,703,008	57.7680	57.7680
2	588	1,176	14.3555	93.1885	121,218,977	23.6013	81.3694
3	164	492	4.0039	97.1924	41,895,505	8.1571	89.5264
4	53	212	1.2939	98.4863	19,009,391	3.7011	93.2275
5	38	190	0.9277	99.4141	17,519,203	3.4110	96.6385
6	12	72	0.2930	99.7070	5,333,256	1.0384	97.6769
7	3	21	0.0732	99.7803	5,147,520	1.0022	98.6791
8	2	16	0.0488	99.8291	1,517,650	0.2955	98.9746
9	3	27	0.0732	99.9023	3,328,868	0.6481	99.6228
10	1	10	0.0244	99.9268	175,000	0.0341	99.6568
11	1	11	0.0244	99.9512	315,761	0.0615	99.7183
13	1	13	0.0244	99.9756	379,835	0.0740	99.7923
34	1	34	0.0244	100.0000	1,066,983	0.2077	100.0000
Totals	4,096	5,503			$513,610,957		

SOURCE: Florida Department of Insurance Medical Malpractice Closed Claims Data Set.

The Florida closed claims data show that of the approximately one-half billion dollars paid to claimants during the period 1975 to 1986, almost one-half was accounted for by physicians with two or more paid claims.[89] Table 24 portrays the number of physicians against whom one or more of paid claims were made. Column (1) displays the number of claims involved. Column (2) shows that a total of 3,229 physicians experienced one indemnity claim each; this number accounted for 78.8% of the number of paid claims. The sum of $296.7 million was paid to resolve these claims, and this amount represented 57.8% of the total amount paid during the period. The balance of the table is read in a similar fashion.

During the period 1975 through 1986, 867 Florida physicians had two or more paid claims—approximately 4% of all physicians. This group was responsible for $216.9 million dollars in paid claims, which is 42.2% of the total claims payments. Figure 9 illustrates the portion of total claims payments that results from claims against physicians with one paid claim, with two paid claims, with three paid claims, and with more than three paid claims.

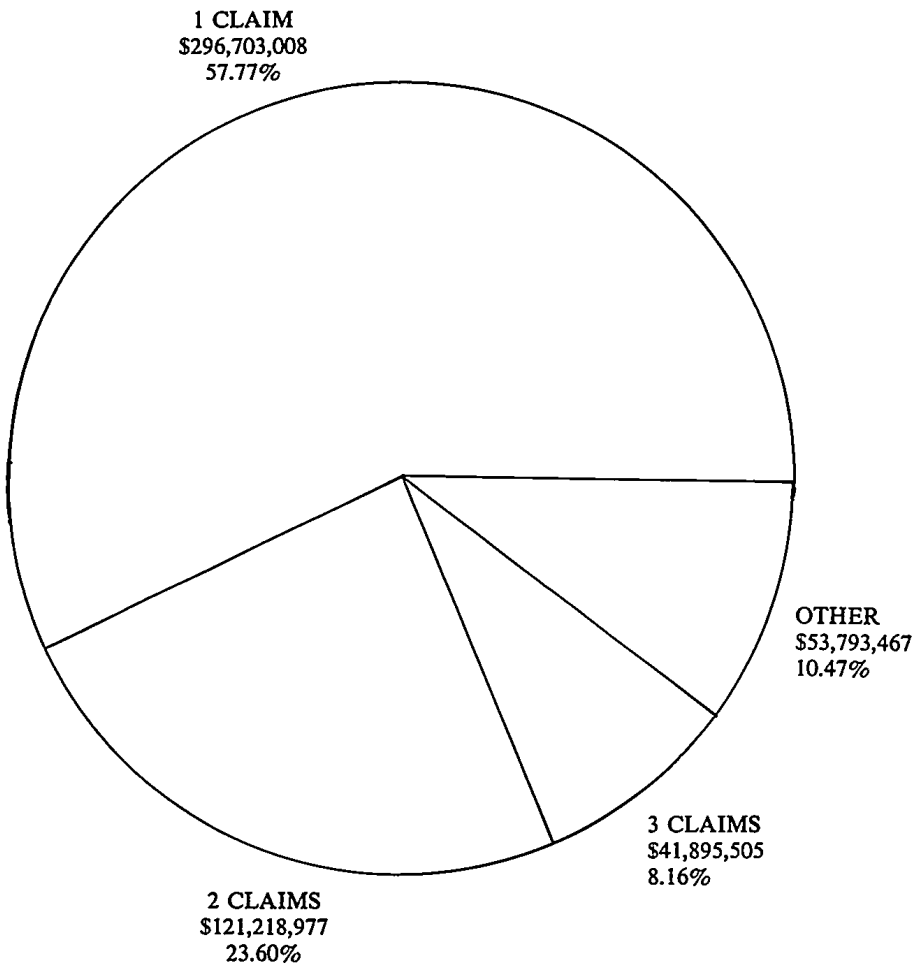
The number of physicians with multiple paid claims also was broken down by specialty. There were more general practitioners among the total number of physicians who had one claim against them, nearly 14% more than for any other specialty. This likely results from general practice being the most common specialty.[90] Among physicians with two or more claims, the largest group was obstetricians and gynecologists. Other specialties with high concentrations of physicians with multiple claims included orthopedics, general surgery, and general practice. The non-random distribution of physicians with multiple claims suggests that, in some cases, physicians with multiple claims are not necessarily "bad doctors," but merely practice in high-risk specialties or perform high-risk procedures.

That over 40% of all claims payments is attributable to 4% of physicians, however, does suggest that significant potential exists for reducing paid claims by controlling the losses generated by physicians with multiple claims. The substantial dollar amount of payments attributable to physicians with multiple paid claims raises the question of what methods currently are in place to review or regulate the quality of medical care practiced by such physicians. Two types of external discipline are possible. One is a market-

89. An investigation into the number of claims experienced by each physician from 1975 through 1986 was accomplished by merging the closed claims data file with a list containing the names of physicians practicing in the state. The name of each physician in the approximately 21,000 closed claims was examined to determine how many claims were closed for each physician during the 12-year period or any portion thereof.

90. As shown in table 17, *supra*, the number of paid claims per 100 physicians is less for general practitioners than for the average of all physicians. General practitioners rank seventh of the eight specialties listed in table 17 in terms of frequency of claims per physician.

FIGURE 9
MEDICAL MALPRACTICE PAID CLAIMS IN FLORIDA ACCORDING TO THE NUMBER OF PAID CLAIMS PER PHYSICIAN: 1975-1986



SOURCE: Table 35.
NOTE: Figures are not adjusted for inflation.

based incentive that would surcharge physicians who generate excessive amounts of claims. The other, not market based, is professional regulation such as that provided by state licensing boards, professional medical socie-

ties, or hospital staff regulation. Either alternative likely would provide substantial additional incentives to ensure quality medical care.

V. CONCLUSION

The study of Florida closed claims in this article presents a comprehensive picture of the expanding costs imposed by medical malpractice. While not addressing the equity of a claims payment in any single case, this study shows that the costs of medical malpractice coverage are exacting an increasingly burdensome toll on physicians, particularly those in high-risk specialties such as obstetrics and neurosurgery. This study demonstrates that increased premiums are not the result of high insurance company profits but rather are primarily driven by increased loss payments. Insurance industry rating and pricing practices and fierce premium competition within the industry have exacerbated the effect of recent premium increases. When viewed over the course of a decade, however, the dramatic increase in claims payments is the dominant cause of increased malpractice premiums.

Also, perhaps surprisingly, the frequency of claims payments is not primarily responsible for increased claims costs. Physicians in Florida have about the same chance of having a claim filed against them today as they did in 1975. Rather, the huge increase in the size of claims payments, particularly the increasing frequency of very large payments, largely accounts for the total increase in paid losses. Presumably, those larger claim payments resulting from settlement reflect the beliefs of defense attorneys and malpractice insurance claims managers that, if such claims proceeded to trial, the ultimate judgments would be higher than they were in 1975. This belief may derive from more serious iatrogenic injuries, a concern that juries are more likely to award larger verdicts and that judges are less likely to control them, a sense that the plaintiffs' trial bar is more able than before, or a concern that the insurer will be held liable under a bad faith claim if it fails to settle within policy limits.[91]

When physicians complain about dramatically increased premiums, the temptation exists to assume that the way things were a decade ago was the norm or the way things should be. On the other hand, a societal choice may be made that the detriments of increased medical costs, and in some cases

91. *See generally* Crisci v. Security Ins. Co., 66 Cal. 2d 425, 431, 426 P.2d 173, 176-77, 58 Cal. Rptr. 13, 17 (1967) (failure of insurer to settle within policy limits sufficient evidence of breach of duty to consider insured's interest); Rova Farms Resort, Inc. v. Investors Ins. Co. of Am., 65 N.J. 474, 496, 323 A.2d 495, 507 (1974) (failure of insurer to settle within policy limits when policy restricts insured's rights to settle is breach of fiduciary duty to negotiate settlement within policy limits if possible); Levantino v. Insurance Co. of N. Am., 102 Misc. 2d 77, 87-88, 422 N.Y.S.2d 995, 1003 (Sup. Ct. 1979) (failure of insurer to settle within policy limits evidence of bad faith giving rise to action in tort); FLA. STAT. § 624.155 (1985) (creating cause of action for insured against insurer for failure to make good faith attempt to settle claim).

reduced physician income, are warranted by the need to compensate injured plaintiffs and to preserve the full array of rights that plaintiffs currently enjoy in the tort system. If the contrary decision is made, however, the results of this study suggest that substantial tort reform aimed at reducing the size of verdicts and settlements probably will be required. At the same time, increased professional regulation of physicians and insurance reform designed to reduce the premium differential between high-risk and low-risk physicians should not be viewed as mutually exclusive alternatives to tort reform but instead, as complementary ingredients of a comprehensive and effective package of medical malpractice solutions.