

## TRENDS

## Malpractice Premiums In Massachusetts, A High-Risk State: 1975 To 2005

If any state has a premium crisis, Massachusetts should, yet premiums were lower in 2005 than in 1990 for nearly all physicians.

by **Marc A. Rodwin, Hak J. Chang, Melissa M. Ozaeta, and Richard J. Omar**

**ABSTRACT:** Massachusetts has the fourth-highest median malpractice settlement payments for all states. The American Medical Association (AMA) declares it a crisis state. As a test case, we analyzed its premiums from 1975 to 2005. In 2005 mean premiums were \$17,810 for the coverage level and policy type most frequently purchased. Most physicians paid lower inflation-adjusted premiums in 2005 than in 1990. Mean premiums increased in only three specialties comprising 4 percent of physicians: obstetrics, neurology, and orthopedists–spinal surgery. However, because of discounts and surcharges, in 2005 premiums within the three highest-risk specialties varied nearly threefold, and nearly one-third paid less than in 1990. [*Health Affairs* 27, no. 3 (2008): 835–844; 10.1377/hlthaff.27.3.835]

THE MOST DISCUSSED malpractice reform proposal would limit compensation for patients injured as a result of negligence. Its proponents claim that the law should require caps because malpractice premiums represent a large part of practice costs, increase steadily, are higher today than ever, and threaten the viability of medical practice.

The cost of malpractice insurance is rarely studied carefully.<sup>1</sup> The best studies—conducted by the American Medical Association (AMA) from 1970 to 2000—suggest that there is no premium crisis.<sup>2</sup> Mean premiums nationally, regionally, and for high-risk specialties peaked around 1986, declined until 1996, and were still below 1986 levels in 2000, when AMA surveys ended. In constant 2005 dollars, mean premiums in 2000 for all physicians were

\$20,868; for obstetrics/gynecology (OB/GYN), \$44,458. Premiums were 7 percent of practice costs for all physicians and 12.7 percent for OB/GYN. Having the highest premiums didn't threaten OB/GYN viability. At \$275,484, its mean net practice income was nearly \$15,000 higher than mean income for all physicians.<sup>3</sup>

The AMA studies, however, don't report premiums since 2000; also, national and regional averages could hide premium crises in states without liability caps. We studied premiums from 1975 to 2005 in a state without caps to test whether it supports the prediction of premium crises in such states or reflects patterns in AMA national data.

### Study Data And Methods

■ **Study sample.** Based on available evi-

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dence, if individual states have premium crises, Massachusetts should. Malpractice premiums reflect award size and frequency. National Practitioner Data Bank (NPDB) statistics from 2000 to 2005 suggest that Massachusetts premiums are high. Among fifty-one jurisdictions, its median settlement payment (\$187,000) ranked fourth, and its mean payment (\$329,000) ranked sixth. At 4.34 payments per 100,000 people, it ranked twenty-fourth but had less than one fewer payment per 100,000 than the ninth-ranked state.<sup>4</sup> Only Washington, D.C., and Connecticut had both higher mean payment size and higher frequency. The AMA lists Massachusetts among twenty-one states with a malpractice crisis.<sup>5</sup> Massachusetts has a soft \$500,000 settlement cap that allows broad exceptions.<sup>6</sup> The Massachusetts Medical Society says that this is “woefully inadequate” and has not stabilized the market.<sup>7</sup>

The Massachusetts malpractice insurance market today includes (1) a state-regulated mutual insurer, the Medical Professional Mutual Insurance Company, known as ProMutual (the “Insurer”), which supplied our data; (2) other state-regulated insurers; (3) the Controlled Risk Insurance Company (CRICO) for Harvard Medical School-affiliated physicians; and (4) risk-retention groups and offshore insurers.

In 1975, commercial malpractice insurers exited Massachusetts, and the legislature created the Massachusetts Medical Malpractice Joint Underwriting Association (MMJUA). The legislature converted it to ProMutual in 1995. Around the time of the formation of the MMJUA, Harvard-affiliated hospitals created CRICO for malpractice insurance.

Since their creation, CRICO and the MMJUA/ProMutual have controlled approximately 90 percent of the physicians’ liability insurance market, each covering about half. AM Best reports that in 2005, the Insurer covered 77 percent of regulated professional liability insurance, which includes other medical professionals and institutions.<sup>8</sup> The Insurer estimates that it covers 88–91 percent of regulated physician liability insurance and 40–50 percent of all physician liability insurance.

■ **Liability insurance policies.** Insurers set rates based on the time period covered, dollar amount of protection, and risk of loss.

*Time period.* Policies cover either periods when alleged negligence occurs, regardless of when claims are filed—called occurrence policies—or periods during which patients file negligence claims—called claims-made policies. Physicians renewing a claims-made policy are covered from the first year they owned the policy. Premiums are higher for second-, third-, and fourth-year claims-made policies because they cover a longer time period. Insurers also sell mature claims-made policies that cover five or more years of past practice. Occurrence policies cost more than first-through fourth-year claims-made policies and less than mature claims-made policies. The costs of insurance through claims-made and occurrence policies generally converge over time because physicians who do not renew a claims-made policy need to purchase so-called tail insurance for claims filed later.

*Dollar amount of protection.* Policies specify a maximum amount reimbursed both per claim and yearly. A typical policy covers up to \$1 million per claim, capped at \$3 million yearly (known as \$1/\$3 million coverage).

*Risk of loss.* Insurers calculate each specialty’s average risk of loss and assign it to a premium rate group. In 2005, the Insurer had nineteen rate groups. Insurers can further refine individual physicians’ risk based on their claims history, length of time in practice, work setting, organizational affiliation, and other factors.

■ **Inflation adjustment.** We express all data in constant 2005 dollars adjusted by the Consumer Price Index (CPI), rather than for medical inflation as some scholars do.<sup>9</sup> Medical inflation is twice CPI, so the premium increases we report are much greater than if we adjusted for medical inflation.

Malpractice awards compensate for medical expenses (appropriately adjusted by medical inflation) and nonmedical expenses, lost income, and pain and suffering (best adjusted using CPI). The most accurate premium adjustment would combine the two, weighted

toward the CPI. We used the CPI because our study is a test case to identify the highest premiums by choosing a state with top settlement payments. Thus, we preferred to overstate premium increases. Furthermore, policy debate focuses on how premiums affect practice costs, which AMA surveys indicate include mainly nonmedical items (nonphysician personnel, rent, utilities, and office expenses).<sup>10</sup> Adjusting by CPI facilitates comparing premium and other practice cost increases.

### Occurrence Policies: 1975–2005

■ **Mean manual rates and mean premiums by tiers.** We report mean rates for all physicians and mean premiums for practice specialties grouped into five tiers from 1975 to 2005, for \$1/\$3 million and \$2/\$6 million occurrence policies. This accounted for 83 percent of all policies in 2005.

In 2005, Tier 5 included 78 percent of physicians and had the lowest premiums. Tier 4 had 8 percent of physicians and the second lowest premiums. Tier 3 comprised 5 percent of physicians: those who performed major general, abdominal, thoracic, plastic, gynecological, cardiac, or hand surgery and emergency medi-

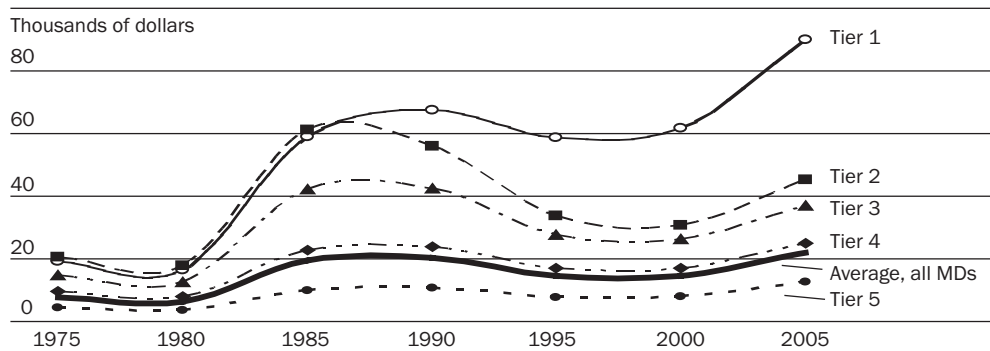
cine. Tier 2 represented 4 percent of physicians: those performing major vascular, cardiovascular, head and neck, traumatic, and orthopedic (except spinal) surgery. Tier 1 included 4 percent of physicians: obstetrics and OB/GYN, orthopedics performing spinal surgery, and major neurological surgery.

Exhibit 1 displays \$1/\$3 million occurrence manual rates. Mean rates for all physicians grew only slightly over thirty years, with cycles of rises and falls. But rates for physicians in Tiers 1–3 were much higher than for most physicians, especially at their peaks. Tiers 3 and 2 rates soared from 1980 to 1990, declined until 1995 or 2000, increased thereafter, but in 2005 were lower than in 1990. Only Tier 1 rates were much higher in 2005 than in 1990.

Exhibit 2 displays mean premiums for each tier weighed by the number of physicians from each rate group within the tier. The Insurer lacked data on the number of physicians in each rate group before 1990. Mean premiums for \$1/\$3 million coverage for all physicians decreased from \$17,907 in 1990 to \$17,810 in 2005. From 1990 to 2005, Tier 5 premiums rose just over \$1,250; Tier 4, just over \$1,040; and Tier 2 and Tier 3 premiums declined by over \$5,375

#### EXHIBIT 1

**Mean Manual Premium Rates For \$1/\$3 Million Occurrence Policies, For All Physicians And Physicians Divided Into Five Tiers, Adjusted By The Number Of Rate Groups In Each Tier, Selected Years 1975–2005**



**SOURCE:** Medical Professional Insurance Company.

**NOTES:** All data adjusted by Consumer Price Index (CPI) and expressed in constant 2005 dollars. Practice specialties divided into tiers charged similar rates. Tier 1: obstetrics/gynecology, neurological surgery, and orthopedists performing spinal surgery. Tier 2: major vascular, cardiovascular, head and neck, traumatic, and orthopedic (except spinal) surgery. Tier 3: major general, abdominal, thoracic, plastic, cardiac, and gynecological or hand surgery and emergency medicine without major surgery. Tier 4: anesthesiology, and major surgery for emergency medicine, ronco-esophagology, colon and rectal, endocrinology, gastroenterology, geriatrics, neoplastic, nephrology, laryngology, otology, otorhinolaryngology, rhinology, and urology. Tier 5: all other physicians (a total of sixty-five practice specialties).

**EXHIBIT 2**  
**Mean Manual Premiums For Five Physician Tiers Weighted By The Number Of Physicians In Each Rate Group For \$1/\$3 Million And \$2/\$6 Million Occurrence Policies, Selected Years 1990–2005**

<b>\$1/\$3 million occurrence policies</b>								
	<b>1990</b>		<b>1995</b>		<b>2000</b>		<b>2005</b>	
	<b>dollar</b>	<b>Percent<sup>a</sup></b>	<b>dollar</b>	<b>Percent<sup>a</sup></b>	<b>dollar</b>	<b>Percent<sup>a</sup></b>	<b>dollar</b>	<b>Percent<sup>a</sup></b>
	<b>amount</b>		<b>amount</b>		<b>amount</b>		<b>amount</b>	
Tier 5	\$ 9,119	72	\$ 7,098	78	\$ 7,281	79	\$10,375	78
Tier 4	23,875	14	15,988	8	16,331	7	24,916	8
Tier 3	41,932	4	27,039	5	25,376	5	36,557	5
Tier 2	51,815	2	37,024	4	32,856	5	44,289	4
Tier 1	66,220	8	60,981	5	65,612	4	95,045	4
5-tier mean	17,907		12,891		2,551		17,810	
No. of doctors	5,632		9,438		7,179		5,678	
<b>\$2/\$6 million occurrence policies</b>								
Tier 5	\$13,446	83	\$ 8,812	90	\$10,214	84	\$ 14,658	84
Tier 4	31,127	8	21,104	4	22,601	8	30,153	12
Tier 3	62,464	3	38,569	1	35,961	2	45,422	2
Tier 2	71,225	0	52,160	1	46,511	2	55,003	2
Tier 1	94,307	5	83,236	4	95,867	3	117,541	1
5-tier mean	20,872		13,115		15,067		18,722	
No. of doctors	670		1,067		2,209		2,358	

**SOURCE:** Medical Professional Mutual Insurance Company.

**NOTES:** All data adjusted by Consumer Price Index (CPI) and expressed in constant 2005 dollars. Practice specialties divided into tiers charged similar rates. For explanation of tiers, see Exhibit 1 Notes.

<sup>a</sup> Percent of physicians in each tier.

and \$7,526, respectively. Tier 1 rates rose \$28,825 from 1990 to 2005. Trends are similar for \$2/\$6 million coverage. However, Tier 4 premiums decreased from 1990 to 2005.

■ **Distribution of physicians by manual rates.** Exhibit 3 displays the distribution of physicians by manual rates at \$10,000 increments from 1990 to 2005. In 2005, 29 percent of physicians with \$1/\$3 million coverage had rates below \$10,000; 78 percent, \$20,000 or less; and 92 percent, under \$40,000. Four percent had rates over \$50,000. Between 1990 and 2005, those with rates under \$20,000 increased from 72 percent to 78 percent. Within this group, physicians moved into higher premium levels. Those with high rates—more than \$60,000—decreased from 8 percent to 4 percent. Those with rates higher than \$70,000 increased from 0 percent to 4 percent. Those in the middle range—\$20,000–\$60,000—decreased from 20 percent to 17 percent. Within

the group, physicians moved to the middle.

In 2005, 23 percent of physicians with \$2/\$6 million coverage had rates under \$10,000; 63 percent, under \$20,000; and 95 percent, under \$40,000. Only 5 percent of physicians had rates higher than \$40,000; only 1 percent, higher than \$60,000. From 1990 to 2005, the highest rate group shrank, and the lowest rate group expanded.

■ **Discounts and surcharges.** Starting in 1990, the Insurer discounted premiums for some physicians. In 2000 it increased discount frequency and size, and it surcharged some physicians. In 2005 the Insurer discounted as follows: interns, residents, and fellows working in a facility insured by the Insurer: 25 percent or 15 percent; physicians in first- and second-year practice, 50 percent and 25 percent; physicians in academic settings or community service treating patients twenty-one hours a week or less, 50 percent; emergency

**EXHIBIT 3**  
**Distribution Of Physicians By Dollar Amount Of Manual Premium Rates, Prior To**  
**Discounts And Surcharges, \$1/\$3 Million And \$2/\$6 Million Occurrence Policies,**  
**Selected Years 1990–2005**

Dollar amount of manual premium rates	\$1/\$3 million occurrence policies			
	1990	1995	2000	2005
<\$10,000	56%	70%	70%	29%
\$10,000–\$19,999	16	16	16	49
\$20,000–\$29,999	14	5	7	8
\$30,000–\$39,999	2	4	3	5
\$40,000–\$49,999	2	1	1	4
\$50,000–\$59,999	2	4	4	0
\$60,000–\$69,999	8	0	0	0
\$70,000+	0	0	0	4
Number of physicians	5,632	9,438	7,179	5,678
Dollar amount of manual premium rates	\$2/\$6 million occurrence policies			
	1990	1995	2000	2005
<\$10,000	17%	56%	39%	23%
\$10,000–\$19,999	62	33	46	40
\$20,000–\$29,999	9	5	8	20
\$30,000–\$39,999	3	0.80	2	12
\$40,000–\$49,999	0	0.60	2	2
\$50,000–\$59,999	2	0.60	0	2
\$60,000–\$69,999	0	0.09	0	0
\$70,000+	7	4	3	1
Number of physicians	670	1,067	2,209	2,358

**SOURCE:** Medical Professional Mutual Insurance Company.

**NOTE:** All data adjusted by the Consumer Price Index (CPI) and expressed in constant 2005 dollars.

medicine physicians, up to 20 percent; and physicians covered by the Federal Tort Claims Act, between 25 and 50 percent.

The Insurer reduced premiums additionally up to 25 percent for physicians deemed at low risk and surcharged physicians deemed at high risk up to 25 percent. Physicians with no closed claims over \$10,000 received discounts of 3–15 percent, based on duration of clean claims. Group practices with a favorable claims history also received discounts.

By 2005, 88.7 percent of policies were discounted, and 6 percent were surcharged. Sixty-five percent of physicians received discounts of 0–25 percent; 23.6 percent, discounts of 25–50 percent. Four-and-a-half percent paid surcharges less than 25 percent; 1.4 percent, surcharges over 25 percent. Adjusting Tier 1's premiums for discounts and surcharges, physicians paying more than \$70,000 fell from 4 percent to 2.7 percent; 1.1 percent

paid \$60,000–70,000; and 0.1 percent paid \$50,000–\$60,000.

In 2005, 66.7 percent of all \$1/\$3 million occurrence policies were discounted more than 12 percent. Reducing 2005 rates by just over 12 percent for Tier 5 and by only 5 percent for Tier 4 results in lower premiums than in 1990. Thus, premiums for most physicians in Tiers 4 and 5 were lower in 2005 than in 1990. Mean rates for Tiers 2 and 3 were lower in 2005 than in 1990, even before adjusting for discounts and surcharges, but Tier 1 had a higher mean premium in 2005 than in 1990, even after adjusting for its average discount of \$11,014.

Exhibit 4 and Supplemental Exhibit 1 reveal premium variations.<sup>11</sup> In 2005, premiums for Tier 1 physicians with \$1/ \$3 million coverage varied widely. The OB/ GYN manual rate was \$97,243, approximately \$8,700 more than its 1990 level, but premiums ranged between \$48,622 and \$145,865. Few Tier 1 physicians

**EXHIBIT 4****Tier 1: Top Three Practice Specialty Manual Premium Rates, And Mean, Median, Low, And High Premiums Adjusted For Discounts And Surcharges For \$1/\$3 Million And \$2/\$6 Million Occurrence Policies, 2000 And 2005**

	Manual premium	Mean discount-surcharge adjusted premium	Low premium	Median discount-surcharge adjusted premium	High premium
<b>2000 \$1/\$3 million occurrence policies</b>					
Ortho/spinal	\$ 43,687	\$ 33,028	\$ 21,844	\$ 30,581	\$ 56,794
Neurology	62,182	46,481	31,091	43,527	80,837
OB/GYN	69,361	53,172	34,681	55,489	90,170
Tier 1 mean	61,148	50,134	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>
<b>2005 \$1/\$3 million occurrence policies</b>					
Ortho/spinal	72,080	60,028	36,040	57,664	85,496
Neurology	90,710	74,056	45,355	72,568	108,852
OB/GYN	97,243	85,979	48,622	77,794	145,865
Tier 1 mean	86,678	82,936	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>
<b>2000 \$2/\$6 million occurrence policies</b>					
Ortho/spinal	61,442	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>
Neurology	87,451	64,268	43,726	61,216	96,196
OB/GYN	97,550	76,723	48,775	78,040	117,060
Tier 1 mean	85,998	74,647	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>
<b>2005 \$2/\$6 million occurrence policies</b>					
Ortho/spinal	89,559	80,603	71,647	80,603	89,559
Neurology	112,706	112,706	112,706	112,706	112,706
OB/GYN	120,823	122,962	108,741	120,823	157,070
Tier 1 mean	110,978	116,429	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>

**SOURCE:** Medical Professional Mutual Insurance Company.

**NOTES:** All data adjusted by Consumer Price Index (CPI) and expressed in constant 2005 dollars. Ortho/spinal is orthopedics performing spinal surgery. OB/GYN is obstetrics/gynecology, including obstetrics/major surgery.

<sup>a</sup> Not applicable.

purchased \$2/\$6 million coverage in 2005. Nearly all obstetrician/gynecologists with \$2/\$6 million coverage paid the manual rate; more paid surcharges than received discounts.

■ **Focus on obstetrics.** Since 1990, the highest rates were for OB/GYN. We supplemented OB/GYN occurrence data with claims-made data (Exhibit 5 and Supplemental Exhibit 2).<sup>12</sup> In 2000, OB/GYN occurrence rates were \$69,361, about \$275 more than 1990 rates. However, because of discounts and surcharges, 88 percent paid less than in 1990. Claims-made premiums reveal similar patterns: mean weighted premiums were lower than in 1990. By 2005, only 3 percent of obstetrician/gynecologists with occurrence policies

paid the manual rate, \$97,243; 29 percent paid less than the 1990 rate. Between 53 percent and 76.2 percent of obstetrician/gynecologists purchasing first- through fourth-year claims-made policies received discounts, yet most paid more than 1990 rates. Premiums varied greatly; the highest were more than twice the lowest.

■ **Changes in policies purchased.** In 1987 the Massachusetts Board of Registration in Medicine required that physicians purchase at least \$1/\$3 million coverage.<sup>13</sup> Hospitals can require greater coverage for physicians to receive practice privileges. Since 1990, many physicians increased coverage limits, and thus paid more. Physicians purchasing \$1/\$3 mil-



**EXHIBIT 5**  
**Obstetrics/Gynecology (OB/GYN) Manual Rates And Mean, Low, and High Premiums Adjusted For Discounts And Surcharges, 2005, For \$1/\$3 Million First-Year Through Mature Claims-Made (CM) And Occurrence Policies**

OB/GYN \$1/\$3M policies	Number	2005 manual rate	Mean discount- surcharge adjusted premium	Low premium	Median discount- surcharge adjusted premium	High premium	1990 manual rate
First-year CM	21	\$ 31,503	\$ 27,303	\$22,052	\$ 25,202	\$ 47,255	\$ 6,100
Second-year CM	15	52,502	60,902	36,751	63,002	78,753	16,763
Third-year CM	4	78,754	72,847	55,128	66,941	102,380	31,242
Fourth-year CM	13	94,506	87,963	66,154	85,055	113,407	52,383
Mature CM	13	105,006	102,583	52,503	105,006	136,508	68,359
Occurrence	182	97,243	85,979	48,621	77,794	145,865	69,086

**SOURCE:** Medical Professional Mutual Insurance Company.

**NOTE:** All data adjusted by Consumer Price Index (CPI) and expressed in constant 2005 dollars.

lion policies decreased from 71.3 percent to 67.4 percent; those purchasing \$2/\$6 million policies jumped from 8.4 percent to 30.3 percent. Physicians purchasing \$2/\$6 million occurrence policies soared from 5.4 percent to 26.6 percent.

However, physicians also switched to less expensive policy types. Those purchasing mature claims-made policies—the most costly category—fell from 25.4 percent to 10.7 percent. Physicians purchasing occurrence policies—the second most costly type—increased from 72.6 percent to 83.2 percent. Physicians with first- through fourth-year claims-made policies increased from 2 percent to 6 percent.

### Sample Versus Other Policies

■ **Policies offered by the Insurer.** In 2005, 54.6 percent of the Insurer's policies were for \$1/\$3 million occurrence, and 26.6 percent were for \$2/\$6 million occurrence (Supplemental Exhibit 3).<sup>14</sup> Nearly 66 percent of the Insurer's occurrence policies were for \$1/\$3 million coverage, and 30.3 percent were for \$2/\$6 million; only 1.6 percent provided greater coverage. Premiums for the Insurer's nineteen rate groups vary for each policy type.<sup>15</sup> Occurrence policies in 2005 cost \$3,473 more than first-year claims-made coverage for rate group 1, and \$65,740 more for rate group 19. Mature claims-made premiums were \$375

more than for occurrence in rate group 1 and rose to \$7,763 more in rate group 19.

■ **Other Massachusetts insurers.** Does the Insurer reject high-risk physicians or insure a smaller share of them than the state average? Massachusetts regulations prohibit insurers from refusing any applicant. However, insurers can cede risk and insurance premiums for any policyholder they do not wish to cover to a state-mandated reinsurance program. The program divides these costs among insurers based on their market share. ProMutual has 88–91 percent of the market and bears that share of cost, which since the start of the reinsurance plan in 1995 ranged between 0 and 10 percent of sales.

In 1997, the Insurer analyzed Board of Registration of Medicine data and found that obstetrician/gynecologists were 4 percent of Massachusetts physicians, the same as its own proportion.<sup>16</sup> However, between 2000 and 2005, the Insurer's obstetrician/gynecologists declined from 242 to 182 for \$1/\$3 million coverage and from 55 to 20 for \$2/\$6 million coverage. Similarly, the Insurer's physicians in the top rate group for \$1/\$3 million occurrence policies decreased from 4.4 percent in 1995 to 3.2 percent in 2005. In addition, Tier 1 represented 8 percent of the Insurer's physicians in 1990 but only 4 percent in 2005. It appears that physicians switched to competitors for

lower premiums.

Physicians in the Insurer's highest rate group most likely pay at least as much as physicians with similar risk insured by CRICO, risk-retention groups, or offshore companies. Physicians choose unregulated insurance to pay less, or they bear insurance risk and administrative cost without benefit.

Two regulated insurers—Medical Protective and Connecticut Medical Insurance Company—developed niche markets by selling insurance to specialties that they believe are overcharged. In 2005, Medical Protective set lower rates than the Insurer: 14 percent or \$5,850 less for orthopedists; and 11 percent or \$11,602 less for obstetrician/gynecologists.<sup>17</sup> Yet we don't know what physicians actually paid, because discounts and surcharges are not disclosed. Also, these insurers might select physicians with below-average risk.

■ **Rate changes, 2005–2007.** In 2006 the Insurer raised rates 5 percent. In 2007 no rates increased, and rates decreased for five high-risk specialties; OB/GYN manual rates decreased 10 percent.

## Discussion

■ **Explaining perceptions of a premium crisis.** Massachusetts premiums are probably higher than in all but the four or six states with higher median or mean settlement payments. Yet for most Massachusetts physicians, malpractice premiums are low and declined from 1990 to 2005. What accounts for the perception that premiums are higher than ever nationally and constitute a crisis?

Most observers do not adjust premium increases for inflation; focus on the highest-risk specialties, which are atypical; ignore discounts from manual rates; overlook previous premium declines, which offset recent increases; and base conclusions on unreliable data.

Most physicians are also unaware that premiums have cyclical rises and falls but change much less over the long term.<sup>18</sup> Premium cycles are partly due to the long time lag between when physicians purchase policies and insurers incur loss. This increases uncertainty and

complicates accurate pricing of insurance risk. Market competition induces insurers to reduce premiums to increase their market share, until they revise upward predictions of future liabilities and reserve needs. Then, insurers increase premiums sharply to make up for liabilities incurred several years hence based on more optimistic estimates. A changing investment climate promotes premium cycles. As interest rates rise, so does insurer income from reserves. When interest rates decline, insurer investment income falls.<sup>19</sup> Market cycles result. In hard markets, insurers select risks, increase reserves, and raise premiums. During soft markets, insurers assume more risk, decrease reserves, and lower premiums.

Many observers assume that short-term premium increases are caused by the rising size and frequency of settlement payments. It is true that premiums reflect liability costs over the long term, but underwriting cycles explain short-term premium changes. Studies show that premiums rose in Texas in the 1980s and early 2000s because insurers changed long-term loss predictions and the investment climate soured, not because claims or awards increased in size or frequency.<sup>20</sup>

■ **Effect of medical underwriting and competition.** Medical underwriting explains the divergence among practice specialties as well as the wide premium variation within Tier 1. The Insurer used seven premium rate groups in 1975, eight in 1980, fifteen in 1990, and nineteen in 2005. After 1990, the Insurer extended underwriting within practice specialties through premium discounts and surcharges based on individual risk factors. It reduced premiums for lower-risk physicians and increased them for those with higher risks. Physicians within Tier 1's specialties paid identical premiums in 1990; by 2005, their premiums varied threefold. In 2005, 29 percent of obstetrician/gynecologists paid less than 1990 rates; 44 percent paid \$8,700–\$18,400 more, and 24 percent paid \$28,150 or more than 1990 rates. Refining risk rating contributed greatly to the increased costs for high-risk obstetrician/gynecologists.

Health insurers that sell individual policies



also use risk rating, charge steep premiums to high-risk individuals, or deny them coverage. However, most people obtain health insurance through employers, which spreads the risk across all employees and makes insurance affordable for high-risk individuals. An equivalent mechanism for malpractice insurance is known as enterprise liability. It shifts legal and financial responsibility from individual physicians to organizations such as hospitals.

■ **Policy implications.** If individual states have premium crises, Massachusetts should. However, it does not. Rather, its premiums reflect national and regional averages reported by the AMA surveys from 1970–2000. Instead of rising continually, premiums rose and fell cyclically. Most premiums were moderate in 2005 and lower than their 1990 peak for nearly all physicians. For the most frequently purchased type of policy and level of coverage, mean premiums in 2005 were \$17,810. Only within the three highest-risk practice specialties (which included 8 percent of physicians in 1990 and 4 percent in 2005) were mean premiums higher in 2005 than in 1990. Even within these specialties, nearly one-third of physicians paid less than in 1990. Obstetrician/gynecologists paid the highest mean premiums in 2005: \$85,979. Most likely, the Insurer's OB/GYN premiums are higher than the state-wide mean. The Insurer lost market share since 1997 as obstetrician/gynecologists switched to competitors with lower rates.

Our study suggests that other states with high settlement payments and no caps are unlikely to have a premium crisis unless special factors explain why Massachusetts does not. Differences in insurers' underwriting practices, risk assessment, and state regulation could lower Massachusetts premiums. However, these are likely to produce only marginal or short-term savings. The Insurer, a mutual insurance company, might charge lower premiums than commercial insurers in other states. This, too, might produce only small premium differences. Moreover, the opposite occurred in Massachusetts: commercial insurers charged lower rates than the Insurer to high-risk physicians.

Nevertheless, in 2005 three Massachusetts practice specialties paid premiums greater than 5.3 times the mean for all physicians. Their premiums are outside the norm because of the size of their settlement payments. OB/GYN premiums, for example, are driven by compensation for infants with disabilities requiring lifelong medical or custodial care. Physicians in these specialties who want to advocate for their patients should help change medical practice to reduce injuries and also seek a better means to compensate those injured, not cap damage awards for all patients.

Can practice changes reduce adverse events? Anesthesiology suggests that it can. Once a high-risk specialty, it reversed course in the 1980s.<sup>21</sup> American Society of Anesthesiology practice guidelines changed the standard of care.<sup>22</sup> Monitors that continuously check oxygen levels became standard, and fatalities fell between ten- and twentyfold in a decade. By cutting adverse events, physicians also greatly decreased malpractice lawsuits and premiums.

If injuries aren't due to negligence, alternative means of compensating injured patients make sense. One option—which would also provide financial relief for high-risk specialties—is for Congress to create a no-fault compensation system for certain patient injuries, such as infants born with permanent disabilities. There is precedent for such an approach. Virginia and Florida have selective no-fault insurance for certain birth-related injuries.<sup>23</sup> The AMA and others proposed selective no-fault compensation systems for obstetrics-related injuries or cerebral palsy.<sup>24</sup> Similarly, Congress created a no-fault vaccine injury compensation system.<sup>25</sup> Social Security, which insures certain permanent disabilities, could be expanded to cover birth-related disabilities. The Medicare statute could be amended to cover medical, nursing home, and home health care costs for all citizens with certain iatrogenic injuries.

Another option is to shift liability from physicians to hospitals for all adverse events that occur in hospitals—so-called enterprise liability. That would ensure patient compensa-

tion and reduce the burden on all hospital-based physicians. If institutions rather than physicians shouldered the burden for compensating injured patients, these expenses would be factored into their overhead costs and reflected in charges paid by insurers.

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 The authors thank Stephen Langlois, Dwight Golan, Tom Baker, and an anonymous reviewer for their assistance.

**NOTES**

1. The main source on premium information is the *Medical Liability Monitor Reporter* (MLMR), which tracks company rate sheets. Premiums paid, however, are adjusted from rate sheets based on risk factors and discounted to make sales. Furthermore, the MLMR averages do not account for differences in types of policies or the dollar level of coverage purchased, which affect price.
2. See S.G. Vahovich, ed., *Profile of Medical Practice* (Chicago: American Medical Association, 1973); and J.D. Wassenaar and S.L. Thran, eds., *Physician Socioeconomic Statistics 2000-2002* (Chicago: AMA, 2003).
3. M.A. Rodwin, H.J. Chang, and J. Clausen, "Malpractice Premiums and Physicians' Income: Perceptions of a Crisis Conflict with Empirical Evidence," *Health Affairs* 25, no. 3 (2006): 750-758.
4. Calculations based on NPDB data adjusted by state population from U.S. census data for 2001-2004.
5. AMA, "America's Medical Liability Crisis: A National View" (Chicago: AMA, January 2007).
6. *Massachusetts General Laws*, Ch. 231, sec. 60H (2000).
7. Massachusetts Medical Society, "Background: Massachusetts Medical Liability Crisis" (Waltham: MMS, 14 June 2004).
8. A.M. Best Company, Best's Market Share Reports, *Massachusetts—Professional Liability Insurance* (CD-ROM) (Oldwick, N.J.: A.M. Best Company, 2005).
9. B. Black et al., "Stability, Not Crisis: Medical Malpractice Claim Outcomes in Texas, 1988-2002," *Journal of Empirical Legal Studies* 2, no. 2 (2005): 207-259.
10. M.L. Gonzalez and P. Zhang, eds., *Physician Malpractice Statistics 1978-1998* (Chicago: AMA, 1999).
11. Supplemental Exhibit 1 (online) displays the distribution of physicians receiving various discounts. See <http://content.healthaffairs.org/cgi/content/full/27/3/835/DC1>.
12. Supplemental Exhibit 2 (online) displays this in-

formation for 2000. Ibid.

13. 243 *Code of Massachusetts Regulations*, sec. 2.07 (16), Mandatory Professional Malpractice Liability Insurance, 20 February 1987, p. 30.
14. Supplemental Exhibit 3 (online, as in Note 11) displays the distribution of all policies by type and dollar coverage from 1990 to 2005.
15. Supplemental Exhibit 4 lists premiums for the insurer's nineteen rate groups for \$1/3 million coverage and the percentage of physicians purchasing such policies by each rate group from 1990 to 2005. Online as in Note 11.
16. R. Moore, "Memorandum: Comparison of ProMutual Policy Counts to BRM Licensed Physician Counts" (Boston: ProMutual, 31 July 1997).
17. Massachusetts insurance rate filings, for ProMutual and Medical Protective.
18. T. Baker, "Medical Malpractice and the Insurance Underwriting Cycle," *DePaul University Law Review* 54, no. 2 (2005): 393-438.
19. K. Karl, T. Holzheu, and M. Raturi, "Capital Markets and Insurance Cycles," *Journal of Risk Finance* 4, no. 4 (2003): 40-46.
20. See B. Black et al., "Stability, Not Crisis: Medical Malpractice Outcomes in Texas, 1988-2002," *Journal of Empirical Legal Studies* 2, no. 2 (2005): 207-259.
21. E.A. Brunner, "The National Association of Insurance Commissioners Closed Claims Study," in *Analysis of Anesthetic Mishaps*, ed. C.P. Ellison Jr. and J.B. Cooper (New York: Little Brown, 1984), 17-30.
22. T.A. Brennan, "Methods for Setting Priorities for Guidelines Development: Medical Malpractice, Appendix C," in *Setting Priorities for Clinical Practice Guidelines*, ed. M.J. Field (Washington: National Academies Press, 1995), 111-132.
23. J.A. Henderson, "The Virginia Birth-Related Injury Compensation Act: Limited No-Fault Statutes as Solutions to the 'Medical Malpractice Crisis,'" in *Medical Professional Liability and Delivery of Obstetrical Care: An Interdisciplinary Review*, ed. V.P. Rostow and R.J. Bulger (Washington: National Academies Press, 1989), 194-212.
24. C.G. Phillips and E.H. Etsty, "A Fault-Based Administrative Alternative to Resolving Medical Malpractice Claims: The AMA-Specialty Society Medical Liability Project's Proposal and Its Relevance to the Crisis in Obstetrics," in *Medical Professional Liability*, vol. 2, ed. Rostow and Bulger, 136-160.
25. W.K. Mariner, "The National Vaccine Injury Compensation Program," *Health Affairs* 11, no. 1 (1992): 255-265.