

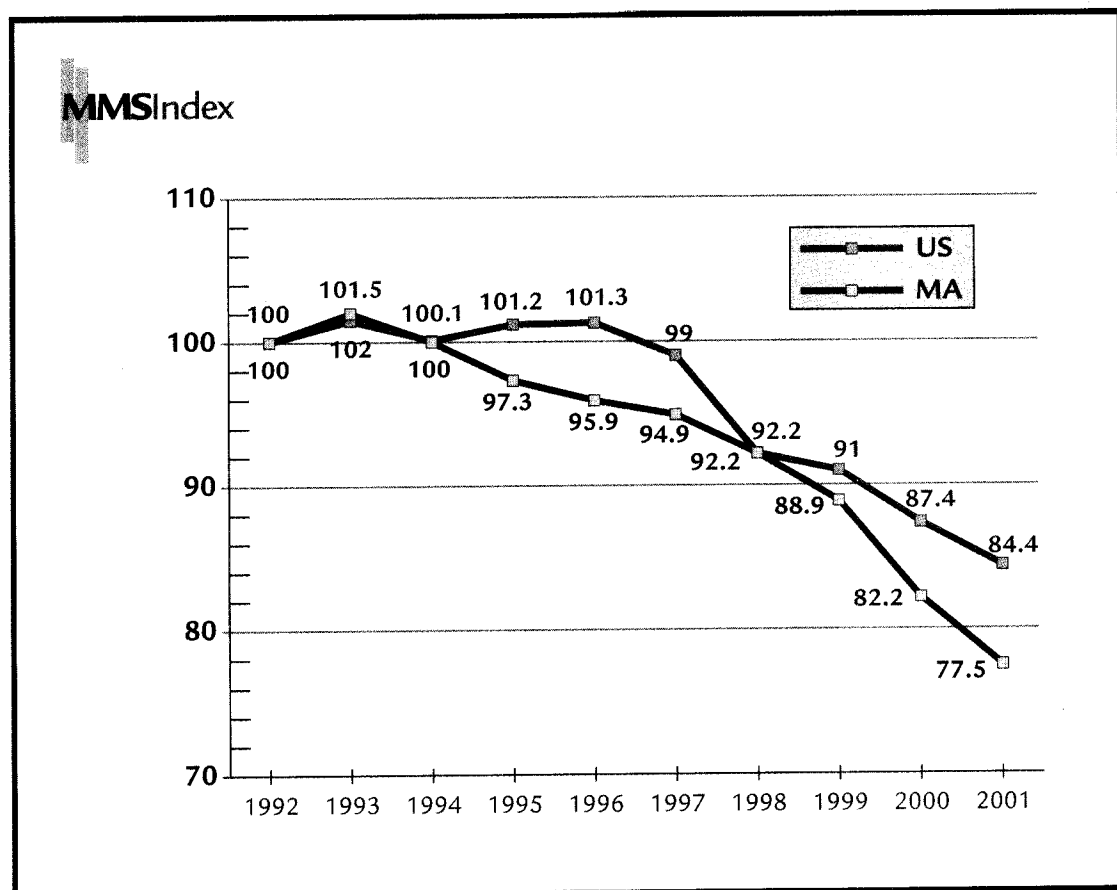
MMSIndex

THE MMS PHYSICIAN PRACTICE ENVIRONMENT INDEX REPORT MARCH 2002

*The Massachusetts Index Declined 5.7 Percent in 2001 — During the Same Period,
the Statistically Comparable Index for the United States Fell Only 3.4 Percent*

The Massachusetts Medical Society (MMS) Physician Practice Environment Index declined 5.7 percent in 2001 — the eighth consecutive yearly decline since 1993.

The MMS also released a second Index representing changes in the Physician Practice Environment for the United States as a whole. The new U.S. Index is statistically comparable to the Massachusetts Index and provides valuable benchmark data to judge the condition of the physicians' practice environment in Massachusetts vis-à-vis that of the country over time. The two Indexes for the period 1992–2001 are plotted on the accompanying chart.*



Changes in the Physician Practice Environment Indexes 2000–2001

	MA	U.S.
Change in Index	-5.7%	-3.4%
Most significant factors contributing to the change in the overall Index:		
• Malpractice Insurance	35%	59%
• Ratio of Housing Prices to Physician Income	26%	12%
• <i>New England Journal of Medicine</i> Employment Ad Count	18%	-

* A brief comment needs to be made about an important statistical adjustment to the MMS Index. The final MMS Index displayed in the accompanying chart is inverted; specifically, since increases in the ratio of housing prices to physician income adversely impact the ability to recruit and retain physicians in the Massachusetts market and, in the same context, an increase in malpractice costs is deemed to worsen the practice environment, these increases, once included in the Index, are inverted to indicate a deterioration in the practice environment.

A review of the performance of the individual indicators in each of the two Indexes highlights the factors that contributed to the 2001 decline. Three factors dominate the 2001 decline in Massachusetts, while only two factors account for the decline in the U.S. Index. The relevant data are shown in the brief table on page 2.

Interpretation of this data is straightforward. More than one-third of the 5.7 percent decline in the Massachusetts Index may be explained by higher malpractice insurance costs. In the U.S. Index, this ratio is even significantly higher, amounting to almost 60 percent of the 3.4 percent decline.

With regard to the other variables, the increase in the ratio of housing prices to physician income in Massachusetts – amounting to 21.7 percent in 2001 – implies a decline in physicians’ financial capacity to acquire a home, thereby adversely impacting the ability to recruit and retain physicians in the state. The Massachusetts employment ad count in the *New England Journal of Medicine* is considered a statistically reliable proxy for labor market conditions and increases in the count are symptomatic of the current difficulty in hiring physicians in the state.

In 2001, the cost of doing business – which had dominated in prior years – played a far less significant role in explaining the changes in the two Indexes, especially in the Massachusetts Index. The impact of the national recession took its toll on office rental rates. For instance, in the greater Boston urban area, rental rates declined nearly 30 percent; rental rates in other urban areas followed a similar pattern. As a result, the cost of maintaining a practice in Massachusetts actually declined 3.3 percent. In this context, it must be recognized that most business office suites are usually leased on a multiyear basis; thus, a single year’s decline provides a financial windfall for only a limited number of physicians, and of course other business costs have continued to rise.

The Performance of the Indexes Over the Period 1992–2001

A careful review of the behavior of these two Indexes over the 1992–2001 period reveals that both displayed their own unique characteristics. These may be summarized as follows:

- Over the entire 1992–2001 period, the Massachusetts Index declined 22.5 percent – an average annual rate of 2.5 percent. During the same period, the U.S. Index declined 15.6 percent – an average annual rate of 1.7 percent.
- The changes in the overall Index tend to mask over two important subtrends in the two Indexes. In the early years (1992–1996), the U.S. Index remained essentially flat in the 100 range, but after 1996, the U.S. Index has traced out a rather rapid deterioration in the physician practice environment. Specifically, the U.S. Index has declined at an average annual rate of 3.4 percent since 1996. During the same period, the Massachusetts Index declined at an average annual rate of 3.8 percent – or roughly 12 percent greater.
- The single most dominant variable that differentiates the sharper decline in the Massachusetts Index vis-à-vis the U.S. Index in the period 1992–2001 was the physicians' cost of maintaining a practice. Over this ten-year period, the cost of doing business in Massachusetts increased by 55.8 percent, but in the U.S. as a whole, it was up only 30.5 percent. This variable is actually an index number in itself as three individual business cost measures are combined to create the single cost of doing business variable; they are as follows: an annual composite of physician office wages, the annual cost of physician medical supplies, and the average cost per square foot of office space.

The Purpose of the MMS Index

Over the past decade, the MMS has noted the growing challenges facing physicians' practices in Massachusetts: concerns that external factors are causing an erosion in the quality of care physicians are able to provide to their patients, concerns about the financial viability of their practices, and strong evidence that it is increasingly difficult to recruit and retain the best and brightest physicians in Massachusetts.

The newly created MMS Index was designed to statistically measure the impact of specific factors that shape the overall environment in which Massachusetts physicians provide patient care. The base period that marks the beginning of the Index is 1992 – the end of the last recession and the beginning of a significant penetration by managed care into the employer health care market.

The Structure of the Index

Overall, the MMS Index is composed of nine individual indicators that represent three important factors affecting the practice environment:

1. Supply of Physicians

- Medical school applicants
- Percent physicians over 55 years of age
- Number of employment ads appearing in the *New England Journal of Medicine*

2. Practice Financial Conditions

- Median physician income
- Ratio of housing prices to physician income
- Malpractice costs

3. Physicians' Work Environment

- Business costs of maintaining a professional practice
- Mean weekly hours spent in patient care
- Visits to emergency departments

The specific variables included in the MMS Index are selected on the following criteria:

- Each variable captures statistically – indirectly or directly – the overall environment in which the physician engages in patient care.
- The selected variables represent distinctly separate practice characteristics and were collected from statistically diverse sources. Specifically, the nine variables in the Index were collected from eight different data sources.
- Together, the aggregation of the variables into a single Index number produced stable, intuitively acceptable performance variables for the physician, the policymaker, and the researcher.

Some data in 2001 Index has been revised from the 2000 Index released in July 2001 to reflect new statistical information that has been released by primary sources.



THE MMS PHYSICIAN PRACTICE ENVIRONMENT INDEX DATA SOURCES: MASSACHUSETTS INDEX, MARCH 2002

1. Number of Applicants to Massachusetts Medical Schools

Number of applicants to Massachusetts' four medical schools: Boston University, Harvard University, Tufts University, and the University of Massachusetts at Worcester.

Source: Association of American Medical Colleges

2. Percentage of Non-Federal Massachusetts Physicians Over 55

Number of non-federal physicians over 55 divided by total non-federal physicians, excluding residents and fellows.

Source: *Physician Characteristics and Distribution in the U.S.*, 1993 to 2002. American Medical Association

3. New England Median Physician Income

Annual median physician income in New England. This figure includes all income from fees, salaries, retainers, bonuses, deferred compensation, and other forms of monetary compensation, but not investment income from medical-related enterprises independent of the medical practice.

Source: *Physician Marketplace Statistics* and *Physician Socioeconomic Statistics*, 1993 to 2002. American Medical Association

4. Ratio of Housing Prices to Median Physician Income

Median home prices from the Case Shiller Home Price Index divided by New England Median Physician Income.

Source: *Physician Marketplace Statistics* and *Physician Socioeconomic Statistics*, 1993 to 2002. American Medical Association. Case-Shiller Home Price Index. Case Shiller Weiss, Inc.

5. Massachusetts Physician Cost of Maintaining a Practice

Comprised of three components:

- A composite of physician office hourly wages for accounting clerks, registered nurses, and secretaries from 1994 to 2000.

Source: U.S. Bureau of Labor Statistics' annual National Compensation Survey, 1992 to 2000

- Mean medical supply expenses per self-employed physician, such as drugs, x-ray films, and disposable medical products.

Source: *Physician Marketplace Statistics* and *Physician Socioeconomic Statistics*, 1995 to 2001. American Medical Association

- Annual rates of change in average cost per square foot for Class B office space in the Boston urban area.

Source: A sample of physician office per square foot costs and rates of changes from the Grubb & Ellis Research Department

6. New England Physician Mean Hours per Week Spent in Patient Care Activities

Mean number of hours spent per week in patient care activities. The patient care activity figure includes time spent seeing patients in all offices in which a physician practices; outpatient clinics or hospital emergency rooms; on house-calls; with patients in nursing homes, convalescent homes, extended care facilities; in the operating room, including waiting time before surgery; making hospital rounds; and having telephone conversations with other patients or their families, consulting with other physicians, and providing other services to patients such as interpreting lab tests and x-rays.

Source: *Physician Marketplace Statistics* and *Physician Socioeconomic Statistics*, 1993 to 2002. American Medical Association

7. Annual Number of Visits per Emergency Department in Massachusetts

Annual number of emergency department visits divided by the number of emergency departments in Massachusetts.

Source: *Hospital Statistics*, 1993 to 2000. American Hospital Association, for the number of patient visits. Number of emergency departments was a separate estimate developed independently by the Massachusetts Hospital Association

8. Change in Average Professional Liability ("Malpractice") Insurance Premiums for Physicians in Massachusetts

Percentage change in average malpractice rates in all specialties in Massachusetts.

Source: ProMutual Insurance Company

9. Annual Number of Advertisements for Unfilled Positions in Massachusetts listed in the *New England Journal of Medicine*

Source: *New England Journal of Medicine*

THE MMS PHYSICIAN PRACTICE ENVIRONMENT INDEX DATA SOURCES: U.S. INDEX, MARCH 2002

1. Number of Applicants to U.S. Medical Schools

Number of initial applicants annually to medical schools in the United States. The figures are drawn from the Association of American Medical Colleges (AAMC) database and have been verified by phone interviews with admissions officers at the individual medical schools.

Source: Association of American Medical Colleges

2. Percentage of Non-Federal U.S. Physicians Over 55

Number of non-federal physicians over age 55 divided by total non-federal physicians, excluding residents and fellows.

Source: *Physician Characteristics and Distribution in the U.S.*, 1993 to 2002. American Medical Association

3. U.S. Median Physician Income

Annual median physician income in the United States. This figure includes all income from fees, salaries, retainers, bonuses, deferred compensation, and other forms of monetary compensation, but not investment income from medical-related enterprises independent of the medical practice. For self-employed physicians, it includes contributions into pension, profit sharing, and other deferred compensation plans. For employed physicians, it does not include the estimated value of fringe benefits.

Source: *Physician Marketplace Statistics* and *Physician Socioeconomic Statistics*, 1993 to 2002. American Medical Association

4. Ratio of U.S. Housing Prices to U.S. Median Physician Income

Average purchase price for single-family, non-farm homes in the United States from the Federal Housing Finance Board. Data includes only purchases of homes, not refinance transactions, and only purchases using conventional mortgages, not including FHA or VA-insured loans. Divided by the U.S. median physician income data from above.

Source: *Physician Marketplace Statistics* and *Physician Socioeconomic Statistics*, 1993 to 2002. American Medical Association. Federal Housing Finance Board, Annual Summary Tables, 1992 to 2000

5. U.S. Physician Cost of Maintaining a Practice

A composite index comprised of three components:

- A composite of physician office hourly wages for accounting clerks, registered nurses, and secretaries.

Source: U.S. Bureau of Labor Statistics' annual National Compensation Survey, 1992 to 2000

- Mean medical supply expenses per self-employed physician, such as drugs, x-ray films, and disposable medical products.

Source: *Physician Marketplace Statistics* and *Physician Socioeconomic Statistics*, 1995 to 2001. American Medical Association

- Annual cost per square foot of Class B office space in large metropolitan areas.

Source: Grubb & Ellis Research Department national rent rates (Class B) 1994 Q1 to 2001 Q1.

6. U.S. Physician Mean Hours per Week Spent in Patient Care Activities

Mean number of hours spent per week in patient care activities. It includes time spent seeing patients in all offices in which a physician practices; outpatient clinics or hospital emergency rooms; on house-calls; with patients in nursing homes, convalescent homes, extended care facilities; in the operating room, including waiting time before surgery; making hospital rounds; and having telephone conversations with other patients or their families, consulting with other physicians, and providing other services to patients such as interpreting lab tests and x-rays.

Does not include time spent completing paperwork for services or negotiating coverage with insurance plans. This information is combined into values for the mean number of hours per week spent completing administrative duties.

Source: *Physician Marketplace Statistics* and *Physician Socioeconomic Statistics*, 1993 to 2002. American Medical Association

7. Annual Number of Visits per Emergency Department in the United States

Annual number of emergency department visits divided by the number of emergency departments in the United States

Source: *Hospital Statistics*, 1993 to 2000. American Hospital Association.

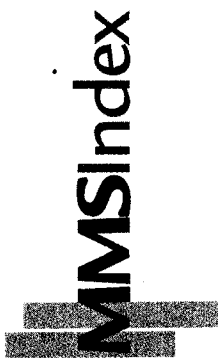
8. Rate of Change in Mean Professional Liability Premiums Paid by Self-Employed Physicians in the United States

Annual percent change in mean professional liability premiums paid by self-employed physicians in all specialties in the United States. Data is compiled from the AMA's annual survey of professional expenses of self-employed physicians.

Source: *Physician Marketplace Statistics* and *Physician Socioeconomic Statistics*, 1993 to 2002. American Medical Association

9. Annual Number of Advertisements for Unfilled Positions in the United States, listed in the *New England Journal of Medicine*

Source: *New England Journal of Medicine*



2001 MMS PHYSICIAN PRACTICE ENVIRONMENT INDEX DATA

	Mass. Med School Applicants	Mass. Physicians % Over 55	New Eng. Medial Phys. Income (\$000)	Ratio Housing Price to Median Physician Income	Mass. Cost of Doing Business	New Eng. Mean Hrs. Patient Care Activities	Mass. Visits per Emergency Department	Mass Chg. in Avg. Prof. Liability "Malpractice" Insurance Premiums	Mass. NEJM Employment Ad Counts
1992	15,824	30.0%	\$140.0	1.1370	—	49.5	34,597	100.0	—
1993	17,783	30.2%	\$140.0	1.1509	—	47.7	32,691	100.0	—
1994	20,694	30.3%	\$135.0	1.2337	100.0	48.5	32,882	107.5	—
1995	25,132	31.1%	\$140.0	1.2141	118.5	47.2	33,142	117.6	—
1996	28,737	32.1%	\$145.0	1.2264	125.1	51.3	31,865	117.6	—
1997	28,532	32.4%	\$150.0	1.2633	130.8	52.1	33,235	117.6	1,238
1998	26,054*	32.3%	\$150.0	1.3988	138.6	50.4	32,126	124.7	1,403
1999	24,165	32.8%	\$150.0*	1.5679*	145.4*	51.6*	35,404	124.7	1,465
2000	23,766	33.8%	\$145.0*	1.8884*	161.2*	52.8*	36,700	135.9	2,040
2001	23,479	34.3%*	\$140.0*	2.2219*	155.8*	52.8*	37,855*	154.9	2,626

	U.S. Med School Applicants	U.S. Physicians % Over 55	U.S. Median Physician Income (\$000)	U.S. Ratio Housing Price to Median Physician Income	U.S. Physician Cost of Doing Business	U.S. Mean Hrs. Patient Care Activities	U.S. Visits per Emergency Department	U.S. Chg. in Avg. Professional Liability "Malpractice" Insurance Premiums	U.S. NEJM Employment Ad Counts
1992	37,408	34.7%	\$150.0	0.9760	—	52.9	19,785	100.0	—
1993	42,808	34.5%	\$156.0	0.9173	—	52.9	20,325	104.3	—
1994	45,364	34.5%	\$150.0	0.9467	100.0	52.1	20,752	109.2	—
1995	46,591	35.1%	\$160.0	0.8925	98.4	51.3	22,688	108.5	—
1996	46,967	35.8%	\$166.0	0.8343	98.7	53.4	23,168	102.5	—
1997	43,018	36.0%	\$158.0	1.0411	102.8	53.2	21,788	103.2	19,252
1998	40,998	36.1%	\$150.0	1.1560	115.3	51.7	23,452	121.5	22,585
1999	38,449	36.7%	\$157.0*	1.1732*	119.4*	51.6	24,247	124.2	22,697
2000	37,092	36.9%	\$162.2*	1.2263*	128.7*	52.8*	24,884	135.4	25,560
2001	34,859	37.2%*	\$167.9*	1.2892*	130.5*	52.8*	25,392*	154.4	26,662

1992=100

*=Numbers estimated by The Howell Group