

1 **MASSACHUSETTS MEDICAL SOCIETY**

2  
3 Investigation of Defensive Medicine in Massachusetts

4  
5 November 2008

6  
7 Current Environment

8 It is estimated that medical liability premiums in the United States have reached an  
9 astounding \$26 billion annually, representing a 2,000% increase since 1975.<sup>1</sup> At 12  
10 percent per year, the growth rate in medical malpractice premiums since 1975 is four  
11 times the rate of inflation and twice the rate of inflation in the cost of health care.<sup>2</sup> Million-  
12 dollar verdicts are now the norm in jury trials: 52% of all awards exceed \$1 million, while  
13 the average award now weighs in at \$4.7 million.<sup>3</sup> In the face of increasing risk, medical  
14 malpractice premiums have skyrocketed for doctors throughout all medical disciplines.

15  
16 In fear of the potentially devastating economic and professional consequences of  
17 medical liability lawsuits, physicians nationwide are engaging in the practice of defensive  
18 medicine. Defensive medicine can come in diverse forms, including the pursuit of  
19 unnecessary laboratory or radiographic information, prescriptions for unneeded  
20 medications such as antibiotics, medically unnecessary referrals to specialists and  
21 hospitalizations, the performance of invasive procedures to exclude or confirm  
22 diagnoses, and the avoidance of high-risk procedures, or in certain circumstances, the  
23 avoidance of high-risk patients entirely.<sup>4</sup>

24  
25 While the nature and prevalence of defensive medical practices have been widely  
26 debated, most agree that the costs are exorbitant. In fact, some estimates report that  
27 the practice of defensive medicine costs the American health care system in excess of  
28 \$100 billion dollars annually, which would account for up to 12% of all health care  
29 expenditures.<sup>5</sup> In a study published last year by the Pacific Research Institute, the total  
30 impact of the current tort system on medical expenditures was estimated to be \$124  
31 billion annually, with an additional \$38 billion in reduced access to health care.<sup>6</sup> A study  
32 conducted as early as 1987 estimated that expenditures resulting from defensive  
33 practices comprised over 15% of all health care dollars spent.<sup>7</sup> Tillinghast (2000)  
34 estimated the cost of defensive medicine at \$70 billion nationally and \$253 per person in  
35 Massachusetts, which with 6,000,000 citizens translates to over \$1.5 billion in  
36 unnecessary costs for the period reported on.<sup>8</sup> A recent study reported that over 93% of  
37 Pennsylvania physicians reported engaging in defensive medicine in various forms.<sup>9</sup>

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<sup>1</sup> Tillinghast-Towers Perrin, U.S. Tort Costs: 2003 Update, Trends and Findings on the Cost of the U.S. Tort System 17 (2003)

<sup>2</sup> *Ibid.*

<sup>3</sup> Jury Verdict Research: Verdicts, Settlements and Statistical Analysis 5, 8 (Brooke J. Doran, ed., 2005).

<sup>4</sup> Studdert DM, Mellow MM, Sage WM, et al. Defensive Medicine Among High-Risk Specialist Physicians in a Volatile Malpractice Environment. *JAMA*, June 05, Vol 293. No 21.

<sup>5</sup> Carroll. Going on the Offensive against Defensive Medicine. *Managed Care Magazine*. March 2005.

<sup>6</sup> McQuillan, LJ, Abramyan H, Archie A. JACKPOT JUSTICE: The True Cost of America's Tort System. Pacific Research Institute, 2007.

<sup>7</sup> Reynolds RA, Rizzo JA, Gonzalez ML. *The Cost of Medical Professional Liability*. *JAMA* 257(20): 2776-2781, May 22/29, 1987.

<sup>8</sup> Tillinghast-Towers Perrin: U.S. Tort Costs 2000 (2002)

<sup>9</sup> Studdert et al. *ibid.*

1  
2 Defensive medicine is not only costly; it is unsafe for patients and reduces access to  
3 care. For instance, patients subjected to unnecessary radiological imaging are exposed  
4 to the risks of radiation exposure and possible anaphylactic reactions to contrast dye.  
5 Even major surgical procedures such as Caesarean-sections have increased as a result  
6 of liability concerns.<sup>10</sup> In addition, given high rates of malpractice claims, many  
7 specialists have closed their practices, stopped performing high-risk procedures, or  
8 reduced their care of high-risk patients, leading to a situation in which many smaller  
9 towns and cities have little or no access to medical specialists. For example, over 48%  
10 of Massachusetts physicians surveyed in 2007 reported that they currently alter or limit  
11 their day-to-day practice activities because of the fear of being sued.<sup>11</sup>

12  
13 The Present Study

14 The American Medical Association classifies Massachusetts as a crisis state with  
15 respect to medical liability. Massachusetts ranks 6th in the nation for mean medical  
16 malpractice payments.<sup>12</sup> However, the medical liability environment in the  
17 Commonwealth has not been subjected to rigorous and comprehensive study. To  
18 address this problem, at A-07, the MMS HOD charged the Society to "...develop and  
19 conduct a comprehensive analysis of the practice of physicians in Massachusetts  
20 including a survey to examine the extent, character, and impact of the practice of  
21 defensive medicine in Massachusetts," and to produce a "...detailed report that  
22 discloses the impact of defensive medicine in Massachusetts on the cost of care, the  
23 physician workforce, patient safety, and access to care, and disseminate the report to  
24 support our efforts toward fundamental liability reform and eliminating the need for  
25 defensive medicine." This report presents results of a statewide survey of  
26 Massachusetts physicians to ascertain:

- 27
- 28 • The extent to which physicians alter their clinical behavior because of
  - 29 malpractice concerns, as indicated by the frequency of occurrence of laboratory
  - 30 tests, imaging studies, referrals, and hospitalizations for defensive reasons
  - 31 • The impact of the current liability environment on the scope of physicians'
  - 32 practices and access to patient care
  - 33 • An estimate of the cost of radiological imaging, laboratory testing, referrals and
  - 34 consultations and hospitalizations that are ordered due to liability concerns
- 35

36 Survey Method

37 To investigate these questions, the MMS conducted a statewide survey of practicing  
38 physicians in eight specialty areas from November 2007 to April 2008. The initial  
39 sample contained 3,650 physicians drawn from the current Board of Registration in  
40 Medicine database with full and active Massachusetts licenses and a primary specialty  
41 of anesthesiology, emergency medicine, family medicine, general surgery, internal  
42 medicine, neurological surgery, obstetrics/gynecology, and orthopedic surgery. A  
43 systematic probability sample containing 150 neurosurgeons and 500 physicians in each  
44 of the other specialty areas was selected for participation. All members of the sample  
45 received a 10–15 minute questionnaire by mail that they were asked to complete and  
46 return within 2–3 weeks. Members of the sample that did not respond with the allotted

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<sup>10</sup> Localio AR, Lawthers AG, Bengtson JM et al., "Relationship Between Malpractice Claims and Caesarean Delivery," *Journal of the American Medical Association* 269(3):366-373, Jan. 20, 1993.

<sup>11</sup> *Massachusetts Medical Society Physician Workforce Study, 2007*: 13.

<sup>12</sup> National Practitioner Data Bank (2005) *Annual Report* (available at: [http://www.npdb-hipdb.hrsa.gov/pubs/stats/2005\\_NPDB\\_Annual\\_Report.pdf](http://www.npdb-hipdb.hrsa.gov/pubs/stats/2005_NPDB_Annual_Report.pdf))

1 time received a second copy of the questionnaire and were again asked to return it  
2 within 2–3 weeks. Because of a limited response to the first two mailings, a third mailing  
3 of a truncated version of the original survey was conducted. A total of 838 physicians  
4 completed either version of the survey (long form: 484, short form: 354) which, after  
5 adjusting for eligibility, resulted in an overall response rate of 23.6%.\* A breakdown of  
6 responses by specialty area is presented in Figure 1 (see Appendix). All data presented  
7 in this report was derived from physicians' self-reports.

8  
9 Figures 2 and 3 (see Appendix) present a basic demographic profile of the physicians in  
10 the sample. The sample was 72% male and had a modal age category of 45–54. The  
11 most common employment arrangements were self-employed (32%) and employed by a  
12 medical group (32%), with slightly less than a quarter of respondents employed by  
13 hospitals (24%). Almost two-thirds of respondents described their main practice  
14 arrangement as single specialty (61%). The average number of hours of patient care  
15 per week was 40.3.

16  
17 **\* See addendum to response rate on last page of this report**

18  
19 Survey Results

20 Frequency of Defensive Medical Practices

21 The extent to which physicians alter their clinical behavior because of malpractice  
22 concerns was examined by asking: a) the frequency with which physicians ordered  
23 different tests, procedures, admissions, and consultations, and b) the frequency with  
24 which the same tests, procedures, admissions, and consultations were ordered due to  
25 concerns about liability (e.g., orders that were motivated more by liability concerns than  
26 by evidence-based medical need). Physicians were asked for the frequency with which  
27 they ordered the following in a typical month:

- 28 • Plain film x-rays
- 29 • CT scans
- 30 • MRI studies
- 31 • Ultrasound studies
- 32 • Specialty referrals or consultations
- 33 • Laboratory tests (e.g., CBC, Chem Profile, Thyroid Panel)
- 34 • Hospital admissions

35  
36 In all, the results showed that 83 percent of the physicians surveyed reported that they  
37 practiced defensive medicine.

38  
39 Results showing the percentages of each of these tests, procedures, admissions, and  
40 consultations that were ordered for defensive reasons are presented in Figures 4–10  
41 (see Appendix), separated by specialty. The “Total” at the bottom of each figure  
42 presents the average proportion of tests and procedures ordered for defensive purposes  
43 across all specialties included in the study, weighted to reflect the relative number of  
44 physicians in the Commonwealth in each specialty area.

45  
46 *Plain Film X-Rays*

47 Overall, 22% of x-rays ordered by physicians in these eight specialty areas were for  
48 defensive purposes. The proportion of x-rays ordered did not differ significantly among  
49 those in different specialty areas ( $F = 1.15, p = .33$ )

1 *CT Scans*

2 28% of all CT scans were ordered for defensive reasons. This percentage differed  
3 significantly by specialty ( $F = 2.39, p = .021$ ). Roughly 33% of the CT scans ordered by  
4 obstetrician/gynecologists, emergency physicians, and family practitioners were not  
5 motivated by medical need, in contrast to 20% of those ordered by neurosurgeons and  
6 orthopedic surgeons.

7  
8 *MRI Studies*

9 Similar results were observed for MRI studies. The overall rate of MRIs ordered for  
10 defensive purposes was 27%, and this rate varied significantly by specialty ( $F = 2.55,$   
11  $p = .014$ ). The highest rates of MRI studies motivated by defensive medical practice  
12 were reported by obstetrician/gynecologists, general surgeons, and family practitioners,  
13 while the lowest rates were reported by neurosurgeons and emergency physicians.

14  
15 *Ultrasound Studies*

16 Overall, 24% of ultrasound studies were ordered for defensive reasons. Statistically  
17 significant differences by specialty were observed ( $F = 3.62, p = .001$ ), with orthopedic  
18 surgeons (33%) and obstetrician/gynecologists (28%) reporting that roughly one-third of  
19 the ultrasound studies they ordered were motivated by liability concerns. In contrast,  
20 very few of the ultrasound studies ordered by neurosurgeons (6%) and anesthesiologists  
21 (9%) were motivated by liability concerns.

22  
23 *Specialty Referrals and Consultations*

24 Physicians in the sample reported that 28% of specialty referrals or consultations were  
25 motivated by liability concerns. There were statistically significant differences by  
26 specialty ( $F = 5.60, p = .000$ ). Obstetrician/gynecologists reporting that 40% of the  
27 referrals and consultations they ordered were not driven by medical need, as were  
28 roughly a third of the referrals/consultations ordered by anesthesiologists and family  
29 practitioners. Lower rates of defensively motivated consultations were reported by  
30 neurosurgeons (16%), emergency physicians (20%), and internists (21%).

31  
32 *Laboratory Tests*

33 Eighteen percent of laboratory tests ordered by physicians in these specialty areas were  
34 motivated by liability concerns. Statistically significant differences by specialty were  
35 observed ( $F = 2.50, p = .016$ ), with one quarter of the lab tests ordered by emergency  
36 physicians for defensive purposes, in contrast with 7% among neurosurgeons and 12%  
37 among orthopedic surgeons.

38  
39 *Hospital Admissions*

40 Physicians in these specialty areas reported on average that 13% of hospital admissions  
41 were motivated by liability concerns. Statistically significant variability by specialty was  
42 observed ( $F = 2.44, p = .018$ ), with the surgical specialties reporting lower rates of  
43 hospitalizations for defensive purposes than other specialties.

44  
45 Impact of the Medical Liability Environment on Patient Care

46 Data characterizing the extent to which concerns about medical liability affect the care  
47 provided to patients are presented in Figures 11–14. The results presented in the first  
48 three figures clearly indicate that professional liability concerns have had a substantial  
49 effect on the scope of physicians' practices over the past 5 years. Overall, 38% of  
50 physicians in the sample reported that they reduced the number of high risk services or  
51 procedures they performed (Figure 11), with this most pronounced among orthopedic

1 surgeons (55%), obstetrician/gynecologists (54%), and general surgeons (48%).  
 2 Lesser restrictions in the scope of practice were reported by emergency physicians  
 3 (15%), internists (19%), and anesthesiologists (23%). Differences by specialty were  
 4 statistically significant (chi square = 78.6,  $p = .000$ ).

5  
 6 A similar pattern was observed with respect to reductions in the number of high-risk  
 7 patients over the past 5 years (Figure 12). Overall, 28% of physicians in the sample  
 8 reported reducing the number of high-risk patients they saw. Statistically significant  
 9 differences by specialty were observed (chi-square = 77.9,  $p = .000$ ), with  
 10 obstetrician/gynecologists (44%) and the surgical specialties (37–42%) much more likely  
 11 to reduce their number of high-risk patients than emergency physicians (7%),  
 12 anesthesiologists (14%), internists (18%), and family practitioners (19%).

13  
 14 Smaller percentages of physicians reported reductions in the number of hours of patient  
 15 care they provide (Figure 13). Overall, 16% said they had reduced their hours of patient  
 16 care over the past 5 years, and differences between specialty groups were not  
 17 statistically significant (chi-square = 77.9,  $p = .000$ ).

18  
 19 Finally, in response to a question concerning whether professional liability concerns  
 20 affected the medical care they provided to their patients, 28% of physicians in the  
 21 sample said that liability concerns affected the care they provided “a lot” (Figure 14).  
 22 Responses to this question varied significantly by specialty (chi-square = 6.72,  $p = .459$ ),  
 23 with emergency physicians (38%) and obstetrician/gynecologists (35%) most likely to  
 24 endorse this response, and family practitioners (19%) and anesthesiologists (21%) least  
 25 likely.

#### 26 Impact of the Medical Liability Environment on Physicians’ Practices

27 Data describing the impact of the medical liability environment on physician practices are  
 28 presented in Figures 15–17 (see Appendix). Twelve percent of physicians in the sample  
 29 reported that they had increased their liability coverage limits over the past 5 years  
 30 (Figure 15). This was reported most often by emergency physicians (24%), and  
 31 least often by orthopedic and general surgeons (7–8%). Differences between specialty  
 32 groups were statistically significant (chi-square = 18.9,  $p = .009$ ).

33  
 34  
 35 In response to the question, “How much of a financial burden are your professional  
 36 liability insurance premiums?” (Figure 16, see Appendix), 32% of physicians in the  
 37 sample characterized their liability insurance premiums as “very burdensome.”  
 38 However, there was enormous variability by specialty in response to this question (chi-  
 39 square = 105.5,  $p = .000$ ), with neurosurgeons (69%) and obstetrician/gynecologists  
 40 (55%) much more likely to report that their premiums were financially burdensome as  
 41 compared with anesthesiologists (11%), internists (17%), family practitioners (20%), and  
 42 emergency physicians (23%). Not surprisingly, who pays for liability insurance (i.e., the  
 43 physician, their employer or a medical group) has a substantial impact on the financial  
 44 burden of liability premiums. Fifty-five percent of physicians who paid their own liability  
 45 insurance premiums said they were “very burdensome,” as opposed to 21% of those  
 46 whose premiums were paid by their employer or group (chi-square = 129.1,  $p = .000$ ).

47  
 48 Finally, in response to the question, “How concerned are you about the impact of a  
 49 lawsuit on your practice?”, 48% of physicians in the sample said that they were “very  
 50 concerned.” Statistically significant differences by specialty in response to this question  
 51 were observed (chi-square = 31.9,  $p = .000$ ), with 72% of neurosurgeons reporting that

1 they were “very concerned,” in contrast to slightly more than one-third of internists and  
 2 family practitioners. Responses to this question did not differ significantly by source of  
 3 payment for liability insurance premiums (physician vs. employer).

4  
 5 Estimating the Cost of Defensive Medicine in Massachusetts

6 In Table 1, we present data extrapolating from the numbers of tests ordered for  
 7 defensive purposes to provide an estimate of the total annual cost of defensive behavior  
 8 among Massachusetts physicians in the eight subspecialties surveyed. These estimates  
 9 were based on 2006 Massachusetts payment data obtained from the Centers for  
 10 Medicare and Medicaid Services (CMS) and two pieces of information obtained in our  
 11 survey: 1) the weighted proportions of the self-reported measures of defensive behaviors  
 12 examined in this study and 2) estimates of the total numbers of each of these tests  
 13 performed annually by Massachusetts physicians, which were calculated by multiplying  
 14 the annualized totals in each category reported by physicians in this study by the total  
 15 number of licensed physicians in the Commonwealth in these eight specialties (N =  
 16 11,457). Comparable payment data for hospital costs were not available from CMS at  
 17 the time of the submittal of this report. Assuming that the average cost of tests billed by  
 18 private insurers is similar to those reimbursed by CMS, these calculations indicate that  
 19 the total cost of these six categories of tests and referrals ordered due to liability  
 20 concerns approaches \$300 million annually in Massachusetts. Note: this number is  
 21 restricted to eight specialty areas, which constitute roughly 46% of the Massachusetts  
 22 physician population, and to the limited number of tests included in this study. It  
 23 excludes the cost of unnecessary hospitalizations, and thus represents a small percent  
 24 of actual defensive medicine costs.

25  
 26 Limitations

27 This study is based entirely on self-reported measures whose validity and reliability have  
 28 not been established. Physicians’ reports of the frequency of defensive practices may  
 29 have errors due to recall bias. In addition, social desirability may have lead physicians  
 30 to report higher rates of defensive practices in an effort to bring attention to what they  
 31 and the Society perceive to be a wasteful and potentially harmful situation. Conversely,  
 32 concerns over acknowledging tests and procedures that were not motivated by medical  
 33 necessity may have suppressed reports of defensive practices. Confirmation of these  
 34 patterns with data from chart reviews and other more objective measures would  
 35 enhance the validity of our results. Finally, the response rate for this survey, while in the  
 36 expected range for a study of physicians, was lower than what is considered optimal. To  
 37 address this issue, we conducted separate analyses using multiple imputations, a  
 38 simulation-based approach to the assignment of missing data. A manuscript based on  
 39 this work has been submitted for publication and is included in the Appendix.

40  
 41  
 42 Conclusions

43 Results from this survey of Massachusetts physicians reveal the profound impact of the  
 44 current medical liability environment on physicians and their patients:

- 45  
 46 1) The current medical liability environment appears to add significantly to the cost of  
 47 health care.
- 48 • A substantial proportion of laboratory tests, imaging studies, referrals and  
 49 consultations, and hospital admissions ordered by physicians in the eight  
 50 specialty areas included in this study were motivated by liability concerns,  
 51 ranging from of 13% of all hospital admissions to almost 30% of MRI studies, CT

1 scans, and referrals/consultations.

- 2
- 3 2) The cost of professional liability insurance and the risk associated with medical  
4 malpractice suits present significant financial concerns for Massachusetts  
5 physicians.
- 6 • One third of physicians in the sample, and a majority of neurosurgeons and  
7 obstetrician/gynecologists, characterized their liability insurance premiums as  
8 “very burdensome” financially.
  - 9 • Almost half of physicians in the sample, and nearly three-quarters of  
10 neurosurgeons, were “very concerned” about the impact of a malpractice suit on  
11 their practice.
- 12
- 13 3) Medical liability concerns have lead Massachusetts physicians to reduce the scope  
14 of their practices in ways that have clearly affected patients’ access to care
- 15 • More than one-quarter of physicians in the sample, and half of orthopedic  
16 surgeons, obstetrician/gynecologists, and general surgeons, reported that they  
17 reduced the number of high-risk services or procedures they performed.
  - 18 • More than one-quarter of physicians also reported reducing the number of high-  
19 risk patients they saw; this was most common among obstetrician/gynecologists  
20 and those in surgical specialties.
- 21
- 22 4) The estimated annual cost to the health care system in Massachusetts of defensive  
23 medical practices is substantial. Among the eight subspecialties in this study, the  
24 estimated cost of defensively-motivated radiological imaging, laboratory testing, and  
25 consultations or referrals was \$281 million in 2006 dollars. In addition, the cost of  
26 hospital admissions was estimated to be \$1.1 billion, for a combined estimate of  
27 nearly \$1.4 billion. The estimated cost of hospitalizations was determined by taking  
28 13% of admissions to Massachusetts hospitals in 2007 and multiplying by the  
29 average cost of a hospitalization for Massachusetts using data from the American  
30 Hospital Association. The subspecialties targeted in the survey constitute only 46%  
31 of the physicians in Massachusetts, so the dollar estimates do not include tests and  
32 diagnostic procedures ordered by physicians in other specialties. The dollar  
33 estimates also do not include the costs of observation admissions to hospitals,  
34 specialty referrals and consultations, or unnecessary prescriptions. Therefore, it is  
35 likely that the total cost of defensive medicine in Massachusetts accounts for billions  
36 of dollars – a conclusion that would be consistent with several other previous studies.

37

38 In reviewing the data from physicians across the state, it is quite clear that defensive  
39 medicine is highly prevalent in Massachusetts. This study is the first that we are aware  
40 of to have quantified the extent to which radiological imaging, laboratory testing,  
41 specialty referrals, and hospital admissions are ordered for defensive reasons. Medical-  
42 legal reform has always been portrayed as a “doctor-driven” cause, one in which only  
43 the physician would benefit. These results clearly indicate, however, that the current  
44 medical liability environment is a serious burden on the entire health care system due to  
45 the substantial costs of defensive medical practices and negatively impacts patient care  
46 and access to physicians.

47

48

49

50 Given these results, the MMS must aggressively advocate for a fundamental  
51 transformation of the current dysfunctional medical liability system through many diverse

1 avenues to reduce the impact of defensive medicine on health care costs and to  
2 increase access to care. While efforts targeting tort reform have been demonstrated to  
3 attenuate the rate of increase in liability premiums, it is only through a fundamental  
4 transformation of the medical liability system that we can reduce the practice of  
5 defensive medicine.

6  
7 There are multiple means to achieve such a fundamental transformation. The most  
8 comprehensive approach advocates investing in a baseline culture of safety at every  
9 health care enterprise fostering open communication (not the “blame game”), and  
10 analysis of every miss or near miss with loop closure to prevent recurrence followed by  
11 best-practice dissemination to improve patient safety universally. Further, when an  
12 adverse event occurs, there is full disclosure to the patient and, for avoidable injuries,  
13 there is an appropriate, sincere apology followed by an offer to provide fair and timely  
14 economic compensation. Disputes are resolved through mediation or arbitration.  
15 Litigation through the court system with its tremendous time and overhead inefficiencies  
16 and adversarial nature is used rarely as a last resort, a process which could potentially  
17 be improved with the establishment of health courts.

18  
19 This comprehensive approach fundamentally transforms the system from a reactive to a  
20 proactive model, from an adversarial to an advocacy model, from a “culture of secrecy”  
21 to a system of open disclosure and full transparency, from a culture of “blame and deny”  
22 to apology and healing, from a culture which isolates involved patients and providers to  
23 one of supportive assistance, from a system which thwarts patient safety to one which  
24 embraces it, and from a system that encourages defensive medicine to one of evidence-  
25 based medicine. It is a system that compensates a greater number of patients much  
26 more quickly and equitably while dramatically reducing the costly overhead of litigation  
27 and restores trust and open communication among all parties.

28  
29 This comprehensive approach is consistent with the recommendations in the Joint  
30 Commission’s Report, “Healthcare at the Crossroads,” and the Sorry Works! Coalition’s  
31 reform agenda and has shown dramatic success in environments where it has been  
32 instituted (e.g., University of Michigan).

33  
34 Another approach is to establish a system based on enterprise liability, a concept that  
35 would effectively remove physicians from the medical malpractice system. In other  
36 words, enterprise liability would retain the current malpractice system, but the physician  
37 would no longer be a named as defendant. Instead, the enterprise in which the  
38 physician practices would assume the liability for medical negligence. This policy would  
39 help to eliminate physician fear of medical liability and in turn the practice of defensive  
40 medicine, and would motivate organizational commitment to patient safety improvement  
41 initiatives.

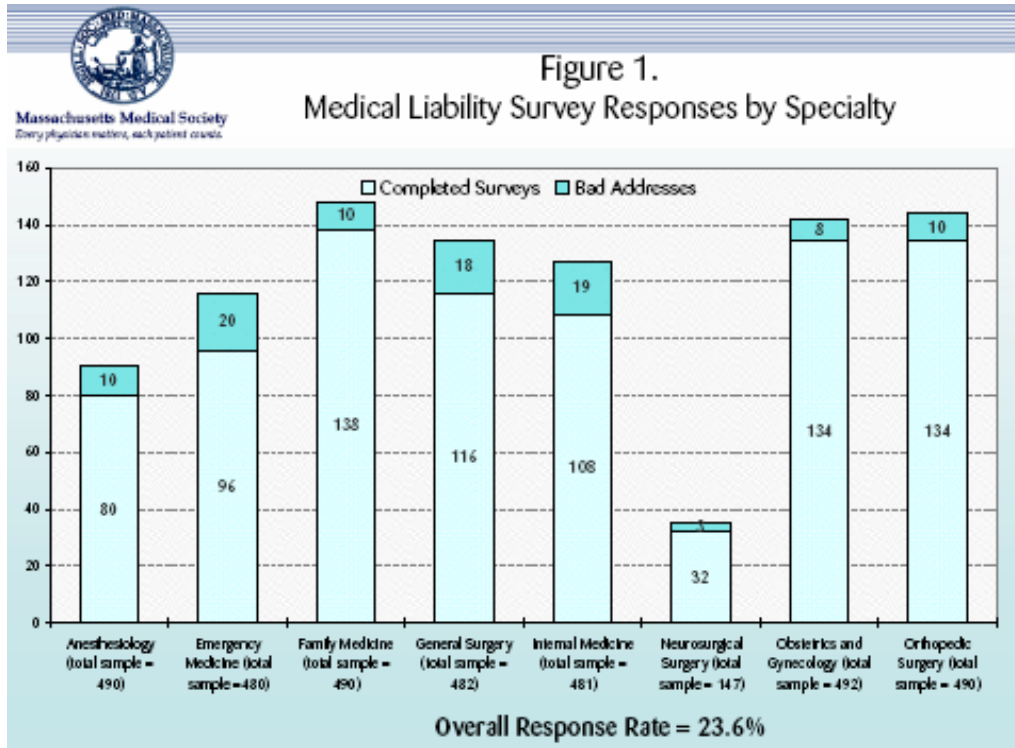
42  
43 As we approach a new era in American health care in which we will struggle to provide  
44 affordable quality care to every individual, we must explore new strategies to reduce cost  
45 and increase access. Through reducing the practice of defensive medicine our state  
46 health care system could dramatically reduce costs and simultaneously improve the  
47 quality of care and access to care.

48  
49 Based on the findings, the committees believe that this issue has been the most  
50 pressing concern for Massachusetts physicians surveyed in the Medical Society’s  
51 annual Membership Survey for five consecutive years, with the vast majority of members

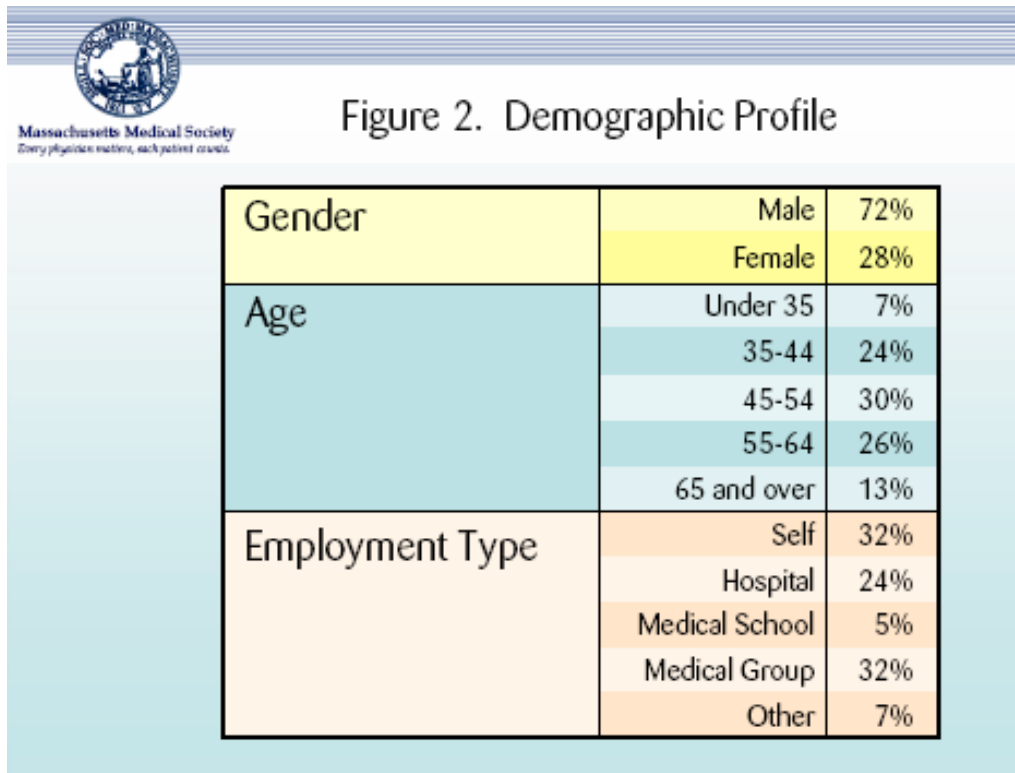


1 identifying it as one of their most critical priorities for the Society. Results from this study  
2 suggest that defensive medical practices fostered by the current liability climate have a  
3 substantial impact on the cost of health care. Moreover, our results have quantified the  
4 impact of liability concerns on patients' access to care, particularly for high-risk patients.  
5 Given the political sensitivity of both the cost of and access to care, such data should  
6 provide strong impetus for legislative initiatives promoting fundamental liability reform.

**Appendix**



\* 23.6% does not include additional telephone surveys. Revised response rate is 27%.





Massachusetts Medical Society  
Every physician matters, each patient counts.

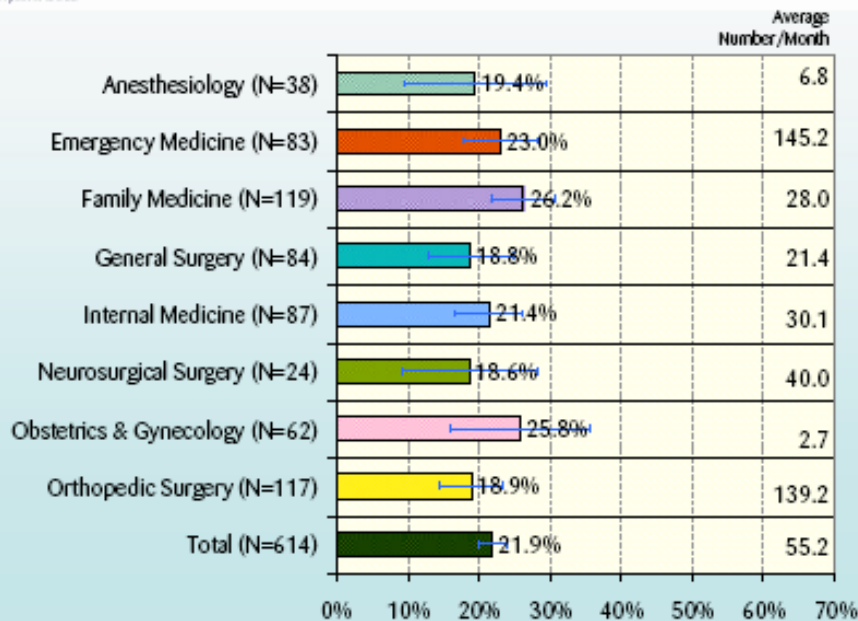
Figure 3.  
Demographic Profile (continued)

Direct Patient Care	Average Hours/Week	40.3
Practice Arrangement	Single Specialty Practice	61%
	Multi-specialty Practice	16%
	Academic/Teaching/Research	16%
	Administration	2%
	Other	5%



Massachusetts Medical Society  
Every physician matters, each patient counts.

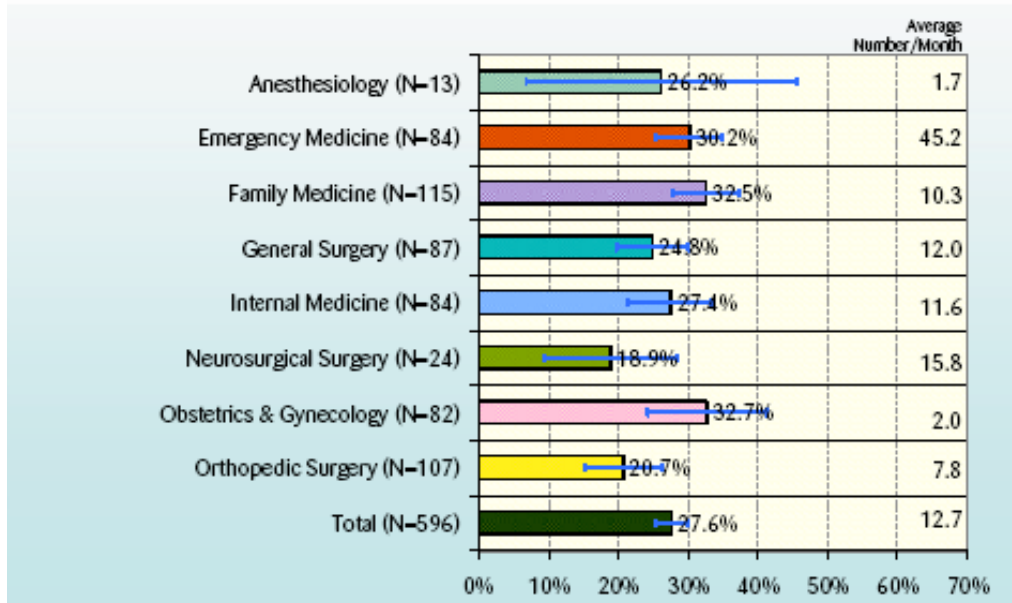
Figure 4.  
Percent of X-rays ordered for defensive reasons





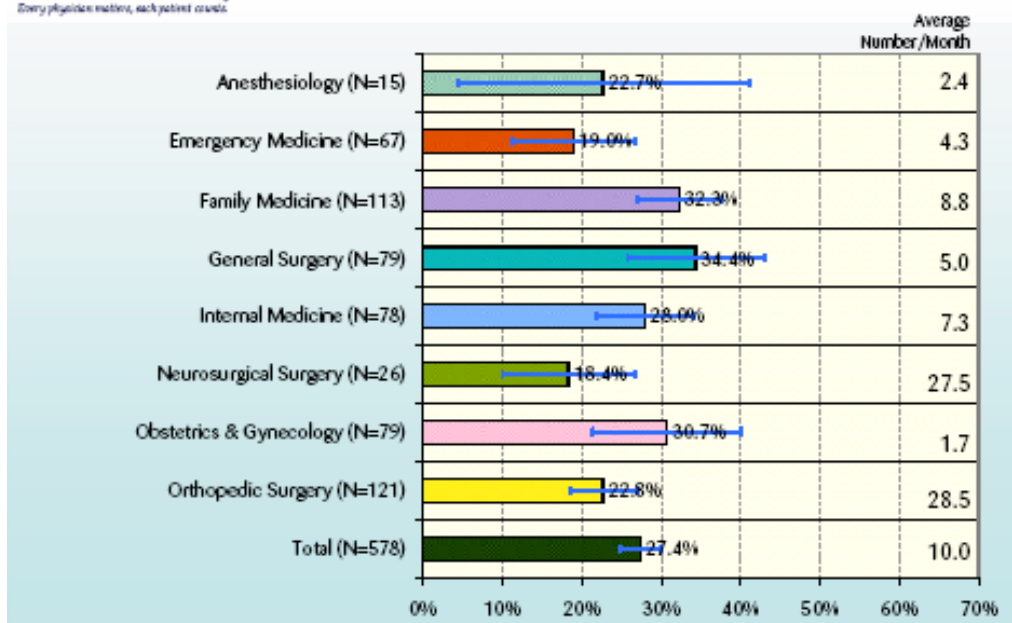
Massachusetts Medical Society  
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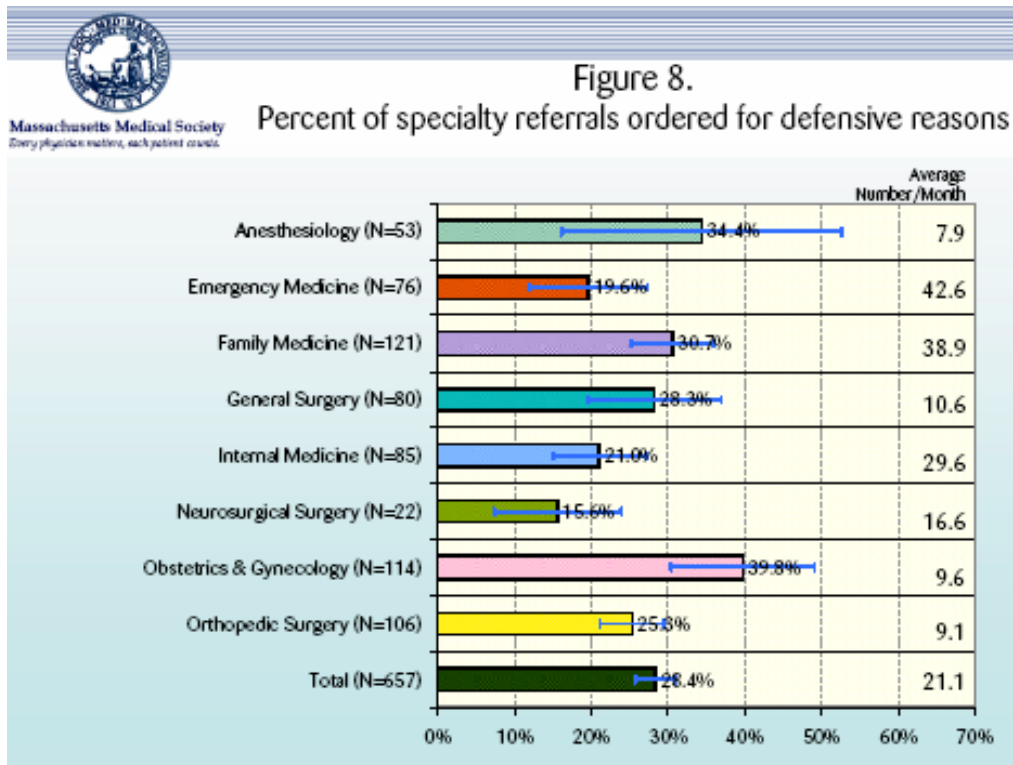
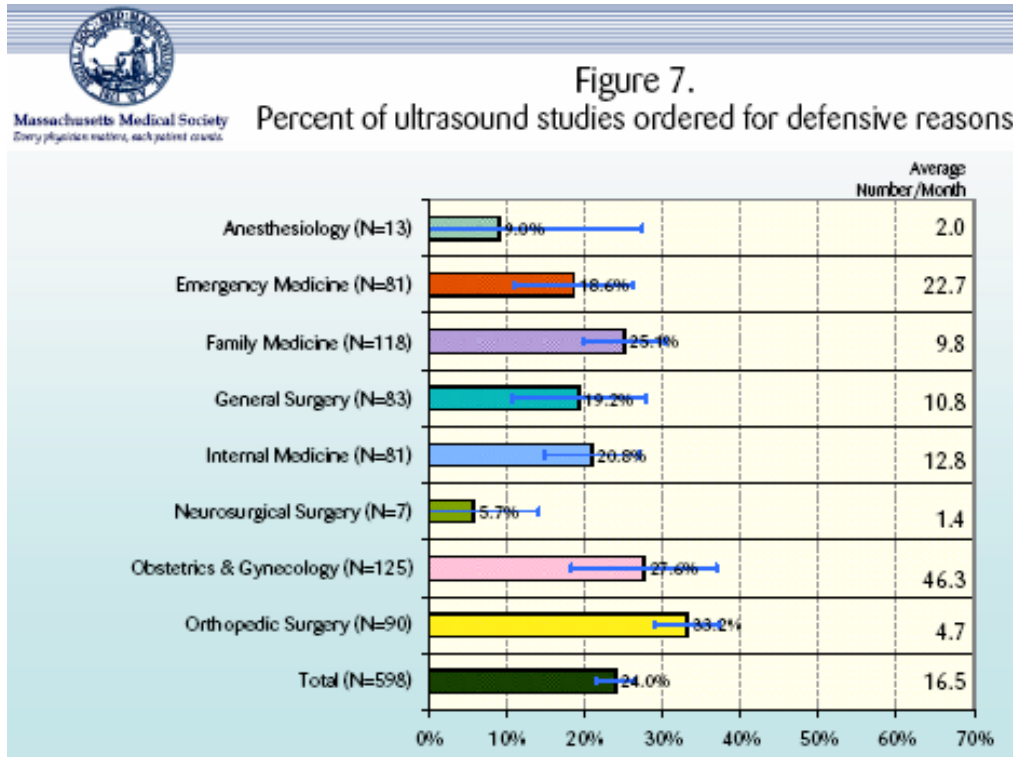
Figure 5.  
Percent of CT scans ordered for defensive reasons



Massachusetts Medical Society  
Every physician matters, each patient counts.

Figure 6.  
Percent of MRI studies ordered for defensive reasons

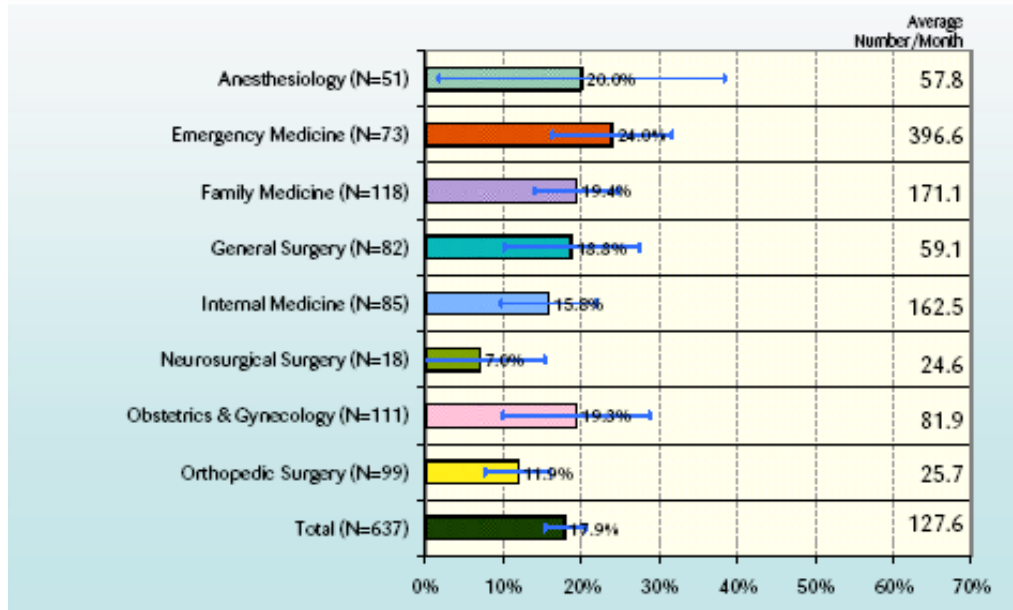






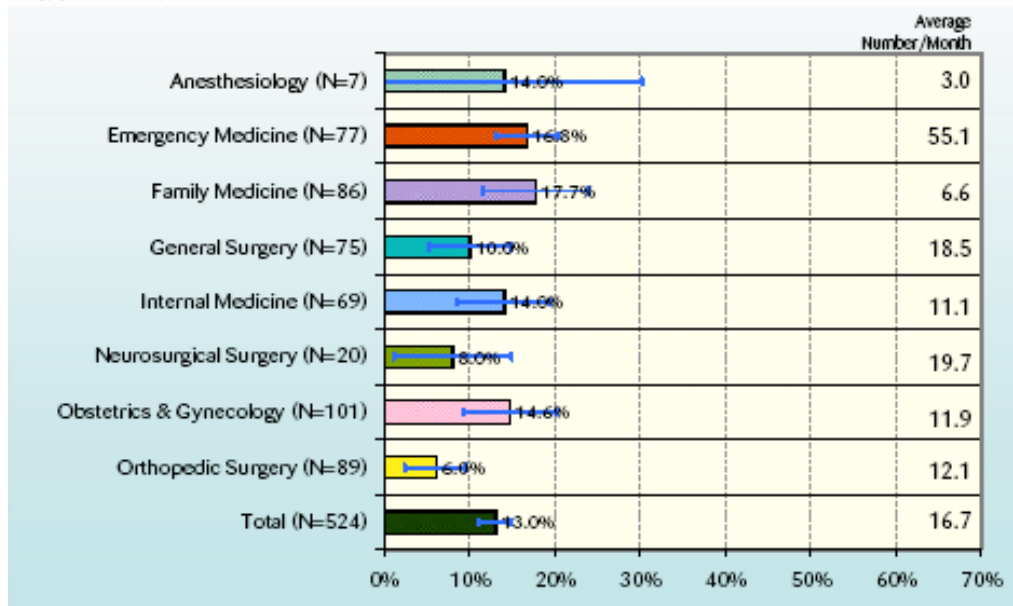
Massachusetts Medical Society  
Every physician matters, each patient counts.

Figure 9.  
Percent of lab tests ordered for defensive reasons



Massachusetts Medical Society  
Every physician matters, each patient counts.

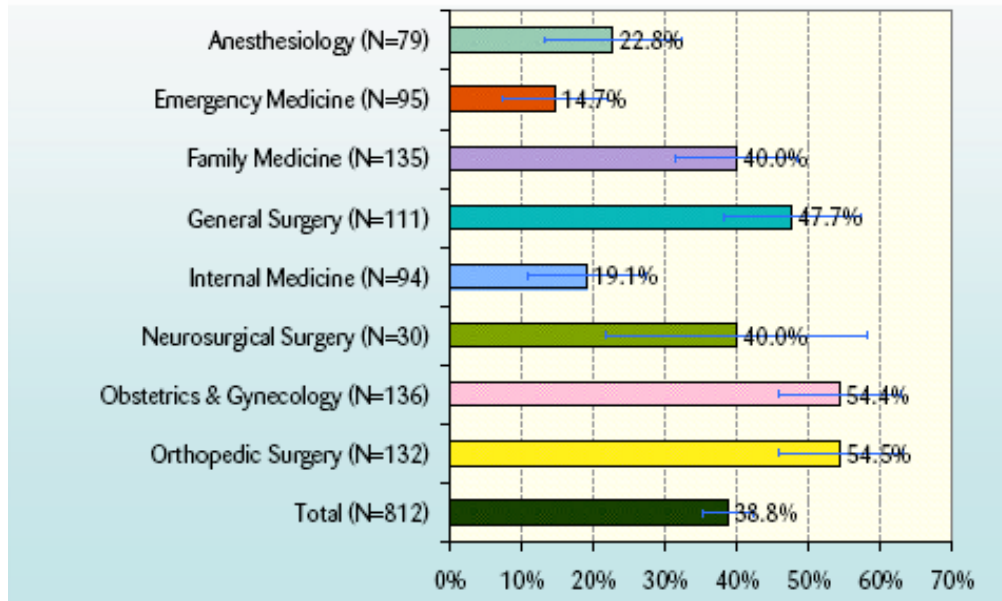
Figure 10.  
Percent of hospital admissions ordered for defensive reasons





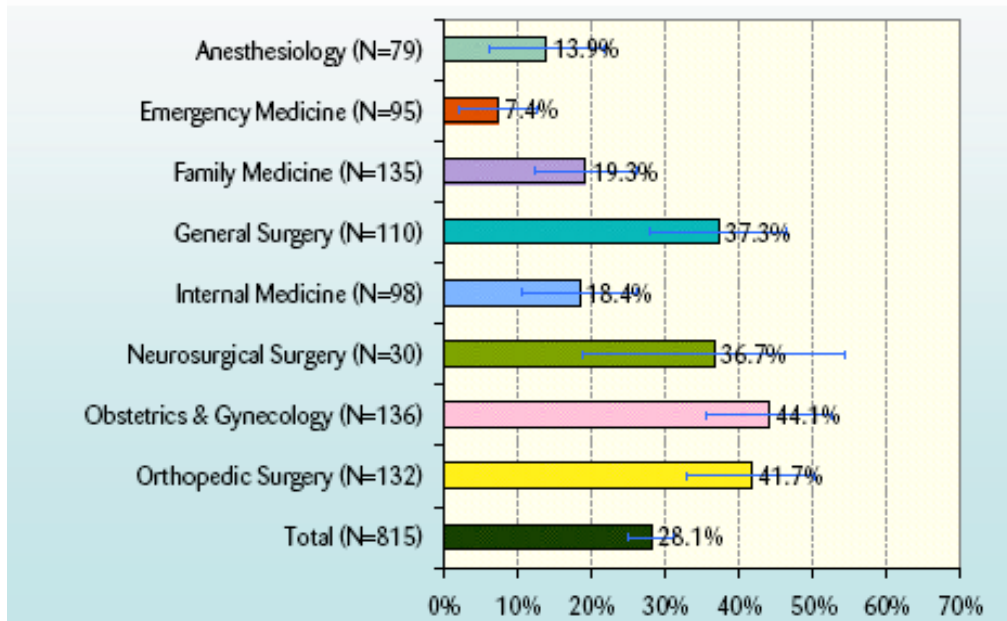
Massachusetts Medical Society  
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Figure 11. Percent reducing number of high risk services or procedures over the past 5 years



Massachusetts Medical Society  
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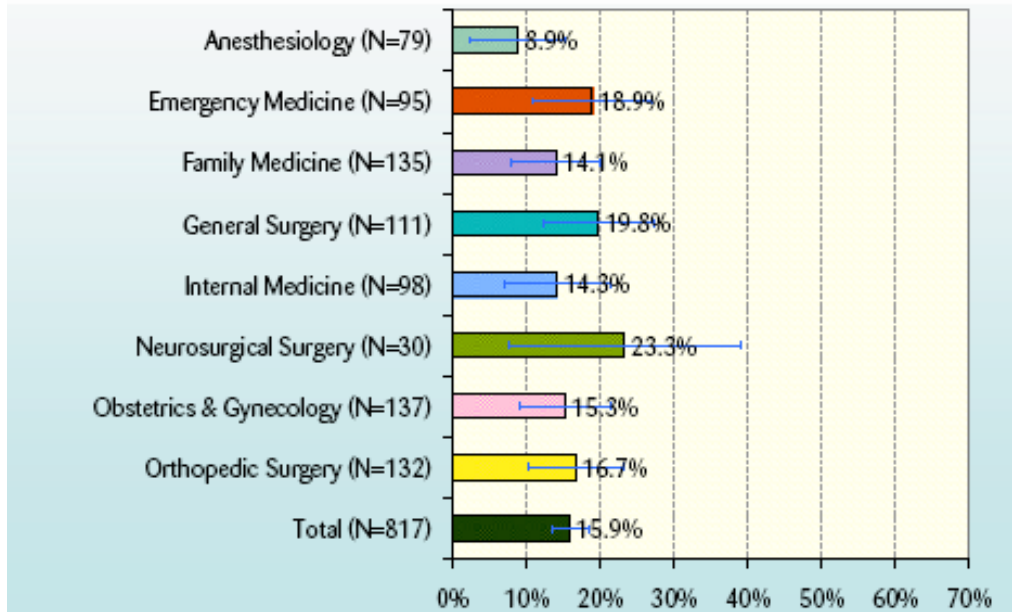
Figure 12. Percent reducing number of high risk patients over the past 5 years





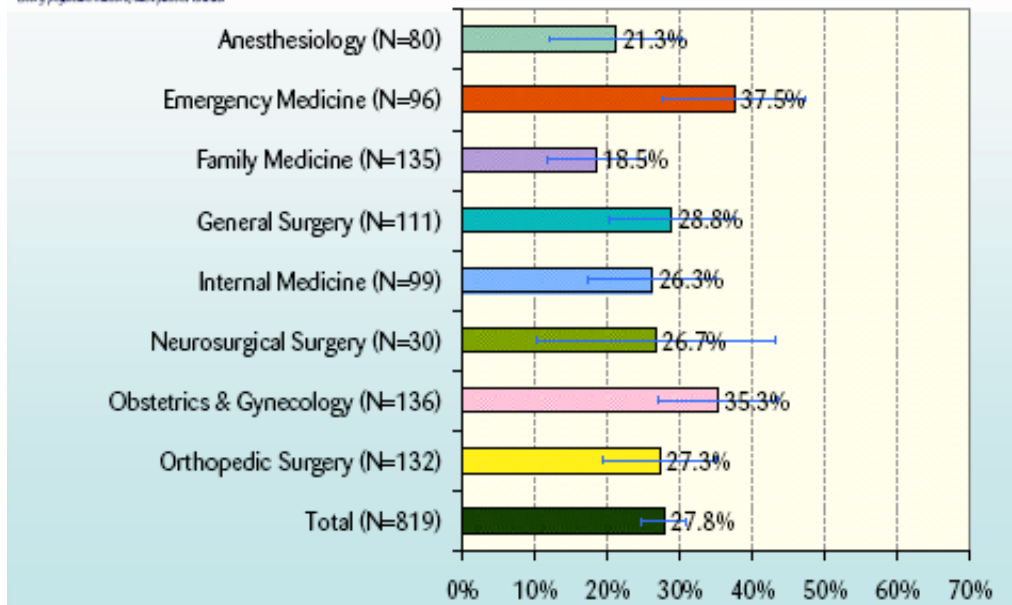
Massachusetts Medical Society  
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Figure 13. Percent reducing number of hours of patient care over the past 5 years



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Figure 14. Percent saying liability concerns affect medical care provided "a lot"

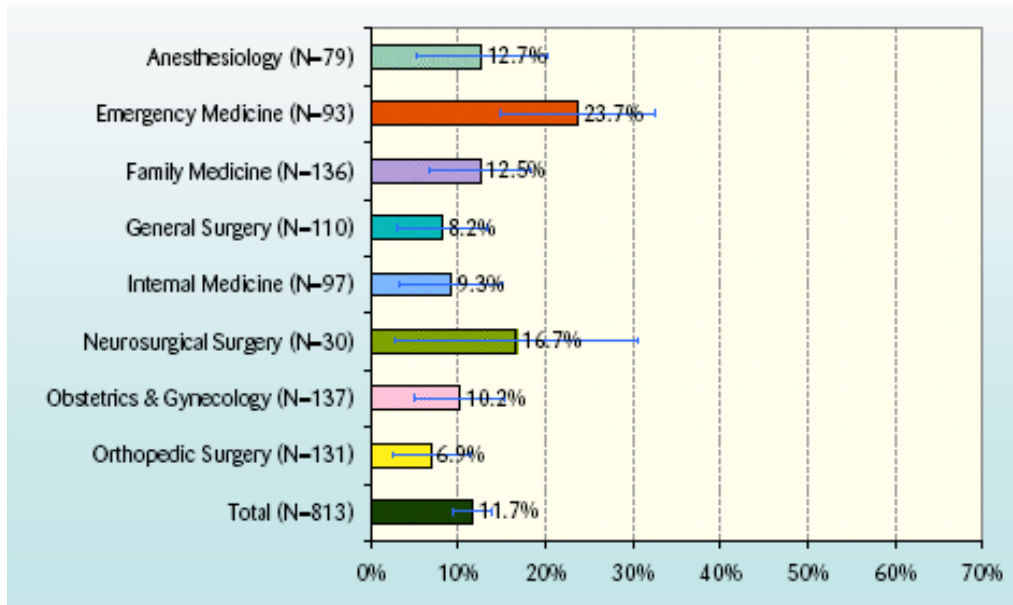






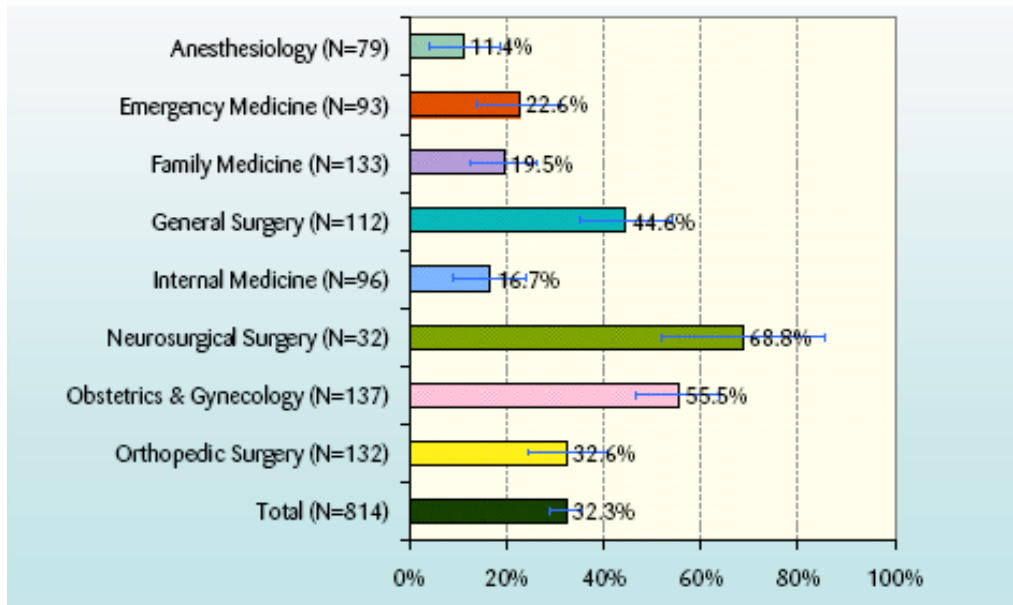
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Figure 15. Percent increasing liability coverage



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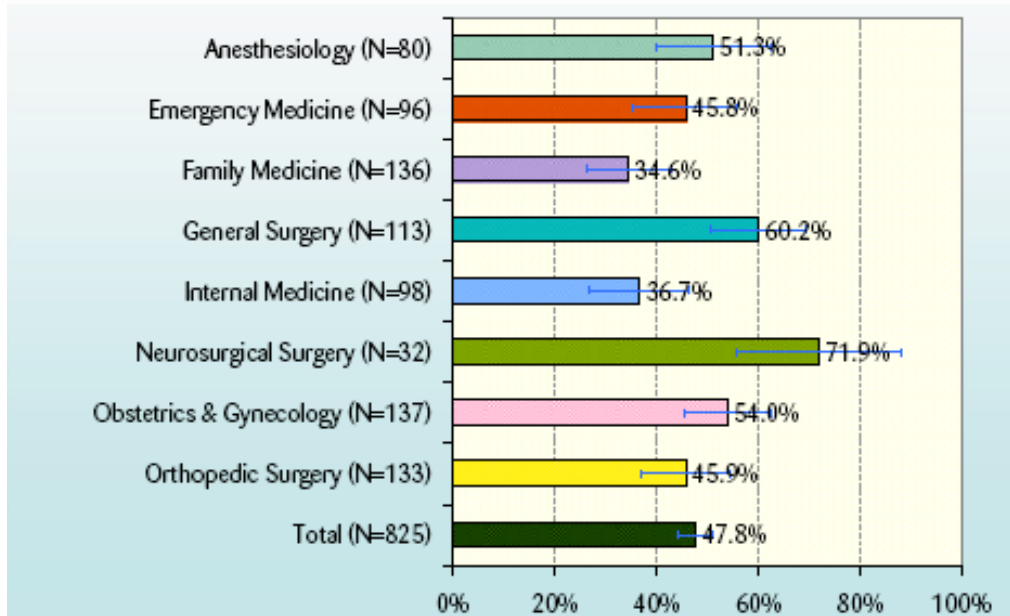
Figure 16. Percent saying liability insurance premiums are "very burdensome"





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Figure 17. Percent “very concerned” about the impact of a lawsuit on their practice



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Table 1. Estimated cost of selected defensive acts by Massachusetts physicians in eight specialty areas

	A	B	C	D
Test/	% Defensive	Total # Tests/ Per Year	Weighted Ave. Cost	Total Cost of Defensive Practices (= A * B * C)
X-rays	23.50%	5,830,260	\$25.60	\$35,875,446
CT scans	30.70%	1,704,087	\$80.83	\$47,513,141
MRI	26.70%	1,111,237	\$252.58	\$74,540,334
Ultrasono and	23.50%	2,037,364	\$43.23	\$22,030,328
Referrals	27.00%	3,431,810	\$67.13	\$62,222,237
Lab tests	21.20%	19,855,746	\$8.13	\$18,537,314

= \$280,925,220

\*Estimated using physician panels of typical monthly tests/procedures and extrapolating to the total population of Mass physicians in these areas.

\*\*Calculated using 2006 Massachusetts expenditures for Medical Services.

1 *Addendum to Response Rate*

2 N=883 physicians completed either version of the survey: original=484,  
3 abbreviated=399. N=98 surveys were returned as undeliverable with no forwarding address and  
4 deemed ineligible, resulting in an overall response rate of 24.9%. Follow-up telephone calls were  
5 attempted with a random subsample of 150 non-respondents. Sixteen members of this subsample  
6 (10.6%) were determined to be ineligible due to practice location, employment status, or current  
7 licensure. Projecting this rate of ineligibility to the entire sample resulted in an adjusted response  
8 rate of 27.0%. By specialty, response rates were: anesthesiology, 18%; emergency medicine,  
9 22%; family medicine, 30%; general surgery, 26%; internal medicine, 24%; neurological surgery,  
10 24%; obstetrics/gynecology, 30%; and orthopedic surgery, 30%.