Effects of a Professional Liability Crisis on Residents' Practice Decisions

Michelle M. Mello, JD, PhD, and Carly N. Kelly, JD

OBJECTIVE: Pennsylvania, like many states, is in a professional liability crisis characterized by escalating cost and decreasing availability of liability insurance. Medical and surgical specialists have experienced especially large increases in insurance premiums. The objective of this study was to estimate the impact of liability concerns during a professional liability crisis on Pennsylvania residents' decisions regarding their future practice. It was hypothesized that liability concerns would negatively affect Pennsylvania residents' propensity to practice in the state following residency.

METHODS: Statewide mail surveys were completed in 2003 by 68 Pennsylvania residency program directors and 360 residents nearing the end of their training in anesthesiology, general surgery, emergency medicine, obstetrics and gynecology, orthopedics, and radiology residencies.

RESULTS: One third of residents in their final or next-to-last year of residency planned to leave Pennsylvania because of the lack of availability of affordable malpractice coverage. Although, in general, residents' geographic decisions are influenced by a range of factors, those who are about to leave Pennsylvania named malpractice costs as the primary reason 3 times more often than any other factor. Seventy-one percent of residency program directors reported a decrease in retention of residents in the state since the onset of the professional liability crisis. For some programs the decreases were very large.

CONCLUSION: An environment of mounting liability costs in Pennsylvania appears to have dissuaded substantial numbers of residents in high-risk specialties from locating their clinical practices in the state. The impact of decreased resident retention on the future availability of specialist services in high-cost states merits close monitoring. (Obstet Gynecol 2005;105:1287–95. © 2005 by The American College of Obstetricians and Gynecologists.)

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From the Department of Health Policy and Management, Harvard School of Public Health, Boston, Massachusetts.

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Large increases in medical professional liability insurance premiums and decreasing availability of insurance, widely referred to as a "professional liability crisis," have occurred in states across the country, deepening to extreme levels in several states, including Pennsylvania, West Virginia, Nevada, and Florida.[1,2] Pennsylvania has seen the departure of major insurers from the professional liability market, and premiums for specialist physicians have increased dramatically. Obstetrician–gynecologists practicing in Philadelphia and insured by the largest of the remaining insurers paid $134,335 in 2003, including their mandatory contribution to the state's secondary-layer insurance fund, compared with $68,916 in 2000.[3] Physician groups have lobbied strenuously for tort reform legislation, arguing that rising liability costs are contributing to critical shortages of physicians in high-risk specialties and threatening access to care. Emerging empirical evidence suggests that such claims may be somewhat overstated, but there have been demonstrable effects on specialist supply and availability of services in some areas (Mello MM, Studdert DM, DesRoches CM, Peugh J, Zapert K, Brennan TA, et al. Effects of a professional liability crisis on specialist supply and patient access to care. Unpublished manuscript, 2005).[4] Many specialist physicians are restricting the scope of their practices to exclude high-risk services such as obstetrics and back surgery, and smaller numbers are discontinuing patient care altogether or relocating to states with lower malpractice costs (Mello et al, 2005).

Existing studies have focused on practicing physicians and have not examined how current medical residents in high-risk specialties may respond to the liability environment. If physicians-in-training, too, seek to avoid states with high liability costs, the professional liability crisis may have longer-range effects on the supply of specialist services in some states.

To investigate this issue, we administered surveys to residents and residency program directors in high-risk specialties in Pennsylvania concerning residents' career decisions. Our primary objective was to estimate the

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effect of the professional liability crisis on the willingness of residents in high-risk specialties to set up practice in Pennsylvania. We hypothesized that liability concerns would negatively affect residents' propensity to remain in the state. Secondary objectives were to elicit residents' perceptions of the liability environment in Pennsylvania and examine ways in which malpractice concerns may influence their views of patients and of the practice of medicine. The resident surveys were part of a larger Project on Medical Liability in Pennsylvania funded by the Pew Charitable Trusts and were inspired by findings from a series of key informant interviews[5] and a mail survey of practicing physicians, which suggested that Pennsylvania hospitals and physician practices were finding it increasingly difficult to recruit Pennsylvania trainees after residency (Mello et al, 2005).

MATERIALS AND METHODS

The sample frame consisted of every Pennsylvania residency program listed in the 2001–2002 *Graduate Medical Education Directory* in anesthesiology (n = 9), emergency medicine (n = 11), general surgery (n = 23), obstetrics and gynecology (n = 18), orthopedics (n = 10), and radiology (n = 15). These 6 specialties were selected based on findings from a series of 41 key informant interviews conducted with representatives of the Pennsylvania health care and insurance communities in 2002 for the purpose of determining which specialties were most affected by the current professional liability crisis.[5]

Following approval by the Harvard School of Public Health's institutional review board, we sought permission from each program director to survey residents who were currently in their last or next-to-last year of the residency program. We focused on those nearing the end of their training because they were more likely than more junior residents to have solidified their views about where they would practice after residency. This group also trained during a time of substantial deterioration in the malpractice environment in Pennsylvania, as measured by rising insurance premiums and malpractice awards.

We elicited residents' views by using a 26-item structured questionnaire. Topic areas included demographic characteristics; factors influencing choice of residency program, practice location, and setting after residency and choice of clinical practice versus research or other career path; and perceptions of the professional liability environment in Pennsylvania. Attitudinal questions were formatted as 5-point Likert scales, and the questionnaire also included space for free-form comments. Approximately half of the nondemographic questions were drawn from a larger survey of practicing physicians in Pennsylvania about the impact of professional liability concerns on their practice decisions (Mello et al, 2004).[6] That instrument in the larger physician survey was validated through pretesting with 10 physicians who were subsequently debriefed in cognitive interviews focusing on question topics, question wording, and response category structuring. Throughout the questionnaire, questions and response categories were worded so as to avoid "leading" respondents to focus on liability costs more than other aspects of the practice environment. For example, questions asking about drivers of respondents' practice decisions listed liability costs as the fourth or fifth option among 6–8 possible responses.

Resident surveys were mailed in summer 2003 along with a cover letter containing the standard elements for obtaining informed consent. Responses were identified only by a numeric code. A second mailing was sent to nonrespondents after approximately 2 weeks. This was followed by an email reminder after 4 weeks (except where the residency program refused to provide residents' e-mail addresses), accompanied by an electronic version of the questionnaire.

Survey responses were coded, manually entered into an Excel spreadsheet, and double-checked for accuracy. The analytical plan called for descriptive statistics; comparison of resident retention at the time of the survey and 3–5 years prior; and subgroup comparisons on all outcome variables by specialty, residency location (urban/suburban/rural), primary hospital type (academic/community), gender, personal ties to Pennsylvania, marital status, children, and perceptions of the burden of malpractice costs on practicing physicians in Pennsylvania. Population proportions were estimated with the Stata 8.2 statistical package (Stata Corporation, College Station, TX), incorporating appropriate corrections for clustered data. Subgroup comparisons were also performed using Stata's commands for complex survey data. For ordered categorical variables, an adjusted Wald test with an approximate F statistic was used. For other variables, the usual Pearson χ^2 statistic was transformed to an F statistic.

In summer 2003, each program director was asked to complete a separate program director survey, either personally or through a designee (eg, the program administrator). The purposes of the program director survey were 1) to obtain comparative data about resident retention and concerns in 2003 compared with the period before the onset of the professional liability crisis in Pennsylvania, and 2) to corroborate residents' own reports, in recognition of the fact that most surveys of medical residents do not garner high response rates.

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The program director questionnaire contained 11 items, 5 of which were drawn from the resident survey. Additional questions elicited respondents' perceptions of the extent to which their residents were concerned about the Pennsylvania malpractice environment and the approximate percentage of their residents nearing the end of their training who planned to practice in Pennsylvania, now and 3–5 years earlier.

Surveys were mailed to consenting directors in May 2003 and collected over the following 3 months. Program directors also provided a list of the names, contact information, postgraduate year (PGY), and gender of each resident in the last or next-to-last year of the program. Survey data were entered and analyzed as described above.

RESULTS

Sixty-eight of the 86 programs that were approached participated in the survey. Four were no longer operating, 10 refused to participate, and a response could not be obtained from 4 programs after multiple follow-up contacts. Most programs that refused explained that they were too busy to participate.

The program director sample (n = 68) consisted of 9 anesthesiology directors, 10 emergency medicine directors, 15 obstetrics and gynecology directors, 8 orthopedics directors, 9 radiology directors, and 17 general surgery directors. The adjusted response rate for program directors, after exclusion of the 4 nonexistent programs, was 83%. Sixty percent of the responding directors worked in academic medical centers and 40% in community hospitals. Sixty-nine percent were located in urban areas, 16% in suburban areas, and 15% in rural areas.

Of 771 surveys mailed to residents in the 68 participating programs, 360 responses were received and 41 surveys were undeliverable, yielding an adjusted response rate of 49% (unadjusted rate = 47%). Emergency medicine was the most heavily represented specialty in the sample (26%), followed by general surgery (19%), anesthesiology (17%), radiology (15%), orthopedics (12%), and obstetrics and gynecology (11%) (Table 1). Sixty-eight percent of respondents were male, 63% were married, and 32% had one or more children. Twenty-six percent grew up in Pennsylvania, and 34% attended medical school in the state. Seventy-one percent were training at an academic medical center, and 29% were at a community hospital.

Over three quarters (76.9%, 95% confidence interval [CI] 72.6–81.3%) of the residents who we surveyed planned to leave Pennsylvania, and 47.2% (95% CI 41.7–52.8%) of these departing residents cited malpractice as the primary reason. Thus, overall, 1 in 3 specialist residents surveyed planned to leave the state specifically because of liability costs. There were significant differ-

Table 1. Sample Characteristics*

	Residents (n = 360)		Program Directors (n = 68)	
	n	%	n	%
Specialty				
Anesthesiology	60	17	9	13
Emergency medicine	94	26	10	15
General surgery	69	19	17	25
Obstetrics and gynecology	39	11	15	22
Orthopedics	44	12	8	12
Radiology	54	15	9	13
Age (y)				
25 to 29	146	41		
30 to 34	155	43		
35 to 39	36	10		
≥ 40	23	6		
Gender				
Male	243	68		
Female	117	33		
Marital status				
Married	226	63		
Unmarried	133	37		
Number of children				
0	240	67		
1	55	15		
≥ 2	62	17		
Postgraduate year				
2	25	7		
3	106	30		
4	147	41		
5	65	18		
6	16	5		
Residency location				
Urban	281	78	47	69
Suburban	37	10	11	16
Rural	42	12	10	15
Primary hospital type				
Academic medical center	255	71	40	60
Community hospital	105	29	27	40
Ties to Pennsylvania				
Grew up in state	93	26		
Medical school in state	124	34		
Career plans				
Planning to see patients	347	97		
Full time	315	88		
Part time	32	9		
Planning to subspecialize	174	51		
Planning a fellowship	180	50		

* Percentages may not sum to 100 because of rounding. Frequencies may not sum to n because of missing data.

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ences across specialties in the likelihood of leaving Pennsylvania ($P = .013$), with orthopedic surgeons most likely, and general surgeons least likely, to have plans to leave. Marital status, children, and gender were not significant predictors of plans to leave. Residents who had a personal history in Pennsylvania (either grew up in the state, attended a Pennsylvania medical school, or both) were significantly less likely to have plans to leave than those without a tie (70% versus 82%, $P = .018$). However, even among these residents, the proportion of those with plans to stay in Pennsylvania decreased from 57% at the start of their residency to 14% as they neared the end of their training.

Both residents and program directors perceived that retention of residents in Pennsylvania has decreased markedly since the onset of the professional liability crisis in 1999. About two thirds (64.7%, 95% CI 59.8–69.7%) of residents reported that they were less likely to remain in Pennsylvania now than they were when they started their residency, which, for about 70% of the sample, was in 1999 or 2000. Only 9.2% (95% CI 6.2–12.2%) of residents said that, before beginning their residency, they definitely planned not to practice in Pennsylvania. Another 26.8% (95% CI 22.2–31.4%) felt at that time that they were not likely to stay in Pennsylvania (Fig. 1). Today, the proportion with definite plans to leave is 46.1% (95% CI 41.0–51.2%), with another 30.8% (95% CI 26.0–35.6%) not likely to stay.

These results corroborate findings from the program director survey. Seventy-one percent of program directors reported a decrease in the percentage of residents planning to practice in Pennsylvania, compared with 3–5 years ago. Twenty-five percent reported that retention was stable, whereas 5% said it had increased. There was considerable variation among programs in both the absolute level of retention 3–5 years ago and the change in retention over time (Fig. 2). For some programs, the drops were severe: for example, 3 obstetrics and gynecology programs decreased from more than 70% retention to 20% or less. These differences were not significantly associated with geographic location (urban/suburban/rural) or hospital type (academic/community).

Both residents and program directors indicated that, in general, the availability of affordable malpractice coverage is an important, but not paramount, influence on residents' choices of practice location after residency. However, residents about to leave Pennsylvania cited malpractice costs as the main reason 3 times more often than any other factor. Program directors indicated that residents are much more concerned about professional liability today than they were 3–5 years ago. Fifty-three percent of program directors said their current residents were very concerned, and 40% said residents were somewhat concerned, about the professional liability environment. In contrast, 2% said residents 3–5 years ago were very concerned (25% somewhat concerned).

Overall, 26.5% (95% CI 22.0–31.0%) of residents and 25% of program directors cited affordable malpractice insurance as 1 of the 2 factors most important to residents in choosing a geographic area in which to practice. Liability costs were outranked by quality of life concerns outside the professional environment (cited by 51.5%, 95% CI 46.4–56.6%, of residents and 48% of directors), proximity to family (41.6%, 95% CI 36.4–46.8%, and 48%, respectively), and physician salary levels (39.8%, 95% CI 34.8–44.8%, and 49%). Both groups ranked malpractice costs ahead of prestige or quality of hospitals, opportunities to pursue research, and health insurance reimbursement rates.

Decision making was similar for male and female residents, but there were significant differences in the importance that residents in different specialties placed on malpractice costs ($P < .01$). Obstetrics and gynecology and orthopedic residents were most likely (40% and 39%, respectively) to cite these costs as a strong influence on their choices of practice location. This finding was even more pronounced among residents who planned to leave Pennsylvania. Over 65% of obstetrics and gynecology and orthopedic residents who planned to leave cited malpractice costs as the primary reason.

Although 30.1% (95% CI 25.4–34.8%) of residents were very likely (and 39.6%, 95% CI 34.6–44.6%, somewhat likely) to recommend training in Pennsylvania to a graduating medical student, only 1.7% (95% CI 0.4–3.0%) were very likely (and 11%, 95% CI 7.8–14.2%, somewhat likely) to recommend setting up practice in Pennsylvania. Over half (51.9%, 95% CI 47.5–56.3%) believed that professional liability insurance premiums were an "extreme burden" for Pennsylvania physicians in their specialty, another 41.7% (95% CI 37–46.4%) characterized them as a "major burden," 6.4% (95% CI 3.9–8.9%) thought they were a "minor burden," and none characterized them as "not at all a burden." Those who perceived premium burdens to be heaviest and those in the most costly specialties to insure (obstetrics and gynecology and orthopedics) were least likely to recommend practicing in Pennsylvania ($P < .01$ for both). Residents' free-text comments also revealed negative attitudes toward practicing in Pennsylvania's current environment (box: "Residents Speak About Malpractice and Their Career Choices").

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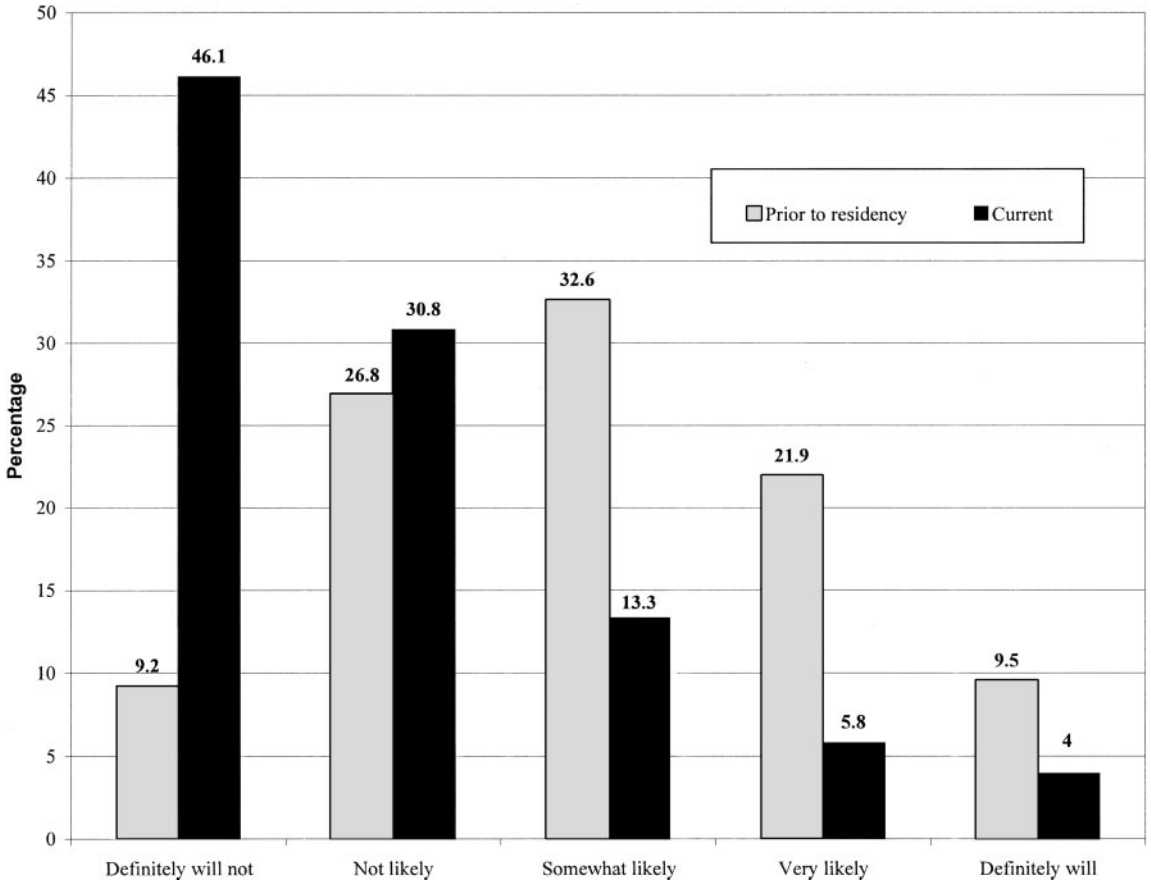

Fig. 1. Resident reports indicating likelihood of practicing in Pennsylvania.
Mello. Effects of Professional Liability Crisis on Residents. Obstet Gynecol 2005.

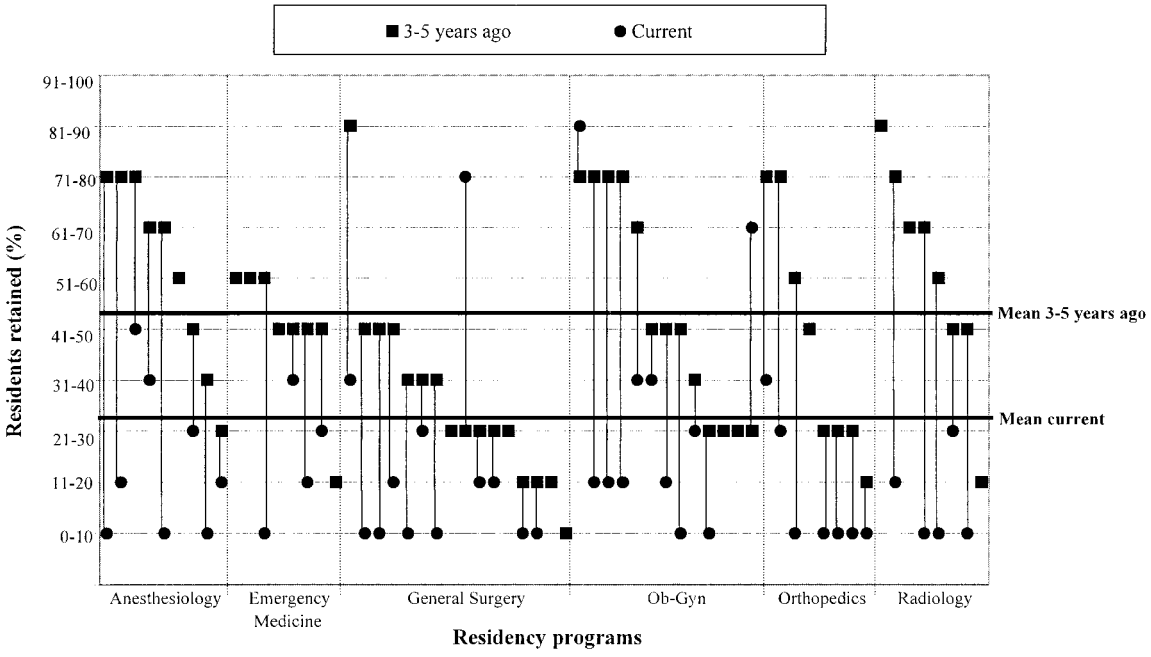

Fig. 2. Percentage of residents planning to practice in Pennsylvania from program director reports.
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RESIDENTS SPEAK ABOUT MALPRACTICE AND THEIR CAREER CHOICES*

"I'm leaving Pennsylvania the second my residency is finished. Why in the world would anybody want to practice in this state?"

"If not for family ties in Pennsylvania, I would definitely be looking to work in other areas of the country."

"I am very concerned about not being able to refer patients to subspecialists in the state (neurosurgery, orthopedics). For the first time, I am considering leaving the state, and my family, to Maryland, Virginia, or a nearby state because of malpractice issues. Why stay here for lower salaries and higher risk?"

"Patients and politicians in this state will get the medicine they ask for: few, mediocre, foreign medical grads."

"Everything about Pennsylvania other than the state of malpractice and litigation would encourage me to stay and practice here. I like Pennsylvania but it's not worth it."

"In emergency medicine the individual practitioner does usually not pay his/her own premium, but it's usually paid by the employer. Therefore, the financial burden is indirect, but still very real (ie, lower salaries, benefits, etc)."

"The impact of professional liability makes me very nervous about practicing in Pennsylvania, but I love it here and will deal with what it brings."

"Although premium cost is a burden, the factor most dissuading myself and my wife, a PGY2 family medicine resident, from staying in Pennsylvania is the lottery mentality and proliferation of attorneys looking to blame doctors for inevitable outcomes."

"I have had the unfortunate experience of watching a once-excellent department crumble under the financial pressures of insurance. Our attending staff has diminished by about 75% in two years and the morale is awful."

"The psychological stress is immense and persistent. Viewing every patient as a potential lawsuit or an 'enemy in disguise' has become necessary, but seems contrary to why I became a doctor."

"It's not merely the affordability of malpractice insurance, but the prospect in Pennsylvania of spending more time in courts and depositions than I would in other states. The process of being sued is not pleasurable and I feel that I would experience it more often in Pennsylvania."

"I am trying to avoid states with high premiums because I need enough income to start saving for retirement and repaying my school loans of more than $160,000."

"Having been a lifelong resident of Pennsylvania, it saddens me to have no interest in remaining here because of the current state of malpractice liability and sky-high premiums."

"I am disappointed that nothing is being done. I will not practice in Pennsylvania and will never treat a trial lawyer."

"I wish I had never come to Philadelphia, 'City of the Lawsuit.' I cannot believe I have dedicated my entire life to medicine just to be sued twice during my residency. I warn all students that I meet not to become a doctor, not to go into surgery, and above all, not to go to Philadelphia."

"Pennsylvania? Not a chance."

* No positive comments were received.

Residents' responses suggest that, in addition to prompting many residents to set up practice in a lower-cost state, malpractice concerns may affect new physicians' practice styles. Forty-one and a half percent (95% CI 36.6–46.5%) of residents reported that, because of the cost of malpractice insurance coverage, they were at least somewhat likely to reduce or eliminate high-risk aspects of clinical practice (13.4%, 95% CI 9.8–17.0%, very likely and 5.3%, 95% CI 2.9–7.7%, definitely will). There were no significant differences in the likelihood of reducing scope of practice between residents who planned to leave Pennsylvania and those who planned to stay. Examples of specific practices residents planned to avoid include regional blocks on extremities, cardiac anesthesiology, spinal surgery, bariatric surgery, high-risk transplants, obstetrics (especially high-risk obstetrics), amniocentesis, trauma care, complex fracture

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Table 2. Resident Reports: Impacts of Professional Liability Concerns on Practice*

Because of Concerns About Malpractice Liability…	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree
I feel that I am less candid with my patients	8.4 (5.8–11.0)	24.9 (20.3–29.5)	19.3 (15.3–23.3)	22.7 (18.3–27.1)	24.6 (20.1–29.1)
I view every patient as a potential malpractice lawsuit	38.1 (33.3–42.9)	42.6 (37.6–47.6)	9.0 (6.2–11.8)	6.4 (3.9–8.9)	3.9 (1.9–5.9)
I am less eager to practice medicine than I once was	30.6 (26.1–35.1)	36.8 (31.8–41.8)	14.0 (10.3–17.7)	10.7 (7.5–13.9)	7.9 (5.1–10.7)
I regret choosing medicine as my career	5.9 (3.5–8.3)	21.6 (17.3–25.9)	18.0 (14.0–22.0)	21.6 (17.4–25.8)	32.9 (28.0–37.8)

Data are expressed as % (95% confidence interval).
* Rounded percentage of completed responses.

care, revision arthroplasties, mammography, and interventional radiology procedures.

Liability concerns also appear to affect residents' attitudes toward their patients and their ability to care for them (Table 2). Residents were nearly unanimous (98.3%, 95% CI 97.0–99.7%) in their belief that the malpractice system limits the ability of doctors in Pennsylvania to provide the highest quality of medical care, with 70.6% (95% CI 65.9–75.2%) reporting that it limits quality "a great deal." Of those surveyed, 80.7% (95% CI 76.6–84.7%) agreed that, because of malpractice liability, they viewed every patient as a potential malpractice lawsuit. One third (33.3%, 95% CI 28.4–38.2%) said that they were less candid with their patients because of concerns about malpractice liability. Because of these concerns, 67.4% (95% CI 62.6–72.2%) of residents reported that they were less eager to practice medicine than they had once been. The higher that residents perceived premiums in their specialty to be, the more their eagerness to practice was dampened ($P < .01$).

DISCUSSION

Our findings suggest that the malpractice environment will have substantial effects on the number of young physicians in high-risk specialties establishing practices in Pennsylvania in the near future. In the specialties we surveyed, one third of residents nearing the end of residency planned to leave Pennsylvania specifically because of the lack of affordable malpractice insurance. Although, in general, residents' practice location decisions are influenced by a variety of factors, malpractice costs are the primary driver for those who plan to leave Pennsylvania. Obstetrics and gynecology and orthopedic residents were especially influenced by rising malpractice costs, and malpractice concerns are influential even for residents with personal ties to Pennsylvania.

Our results further indicate that many residents, including those who stay in Pennsylvania, may limit the scope of their clinical practice to lower their insurance costs and limit their liability risk. This could lead to a shortage of physicians willing to perform high-risk procedures or serve high-risk patients.

Our findings are corroborated by the results of a broader survey conducted in 2003 of 824 practicing Pennsylvania physicians in emergency medicine, general surgery, obstetrics and gynecology, neurosurgery, orthopedic surgery, and radiology (Mello et al, 2005).[6] In that survey, 85% of physicians whose practice or hospital had tried to recruit physicians in their specialty in the past 3 years reported difficulties attracting qualified candidates. Ninety percent of physicians who reported recruiting attempts said that candidates had voiced concern about the malpractice environment in Pennsylvania.

Aside from studies of residents' decisions to practice in rural areas, little prior work has examined the factors influencing U.S. residents' choices of practice location following residency (PubMed search on "physicians" and "career choice" or "professional practice location," in English language publication from 1985 to 2005). One study found that primary care physicians tend to move shorter distances than specialists to establish their first practice.[7] Another found that some of factors predicting practice within the state of residency training for physicians who were 1–13 years postresidency were gender, medical school location, generalist practice, and involvement in academic medicine. Overall, 49% of Pennsylvania specialist trainees in that study were retained in state.[8] Previous studies have identified decisions on the part of newly trained physicians to limit their scope of practice in response to liability concerns.[9–12] Studies examining choice of specialty have found that medical students select their specialty based on a constellation of factors, including income expectations, expected malpractice costs, work hours, the predictability of work schedules and vacations, the opportunity to perform procedures, the opportunity for patient contact, and

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personal fit.[13–18] Our findings suggest that, once they experience practice in a high-risk specialty, young physicians tend to place more importance on liability concerns than they did at the time of their initial choice of specialty.

A limitation of our study is the somewhat low response rate (49%) among residents despite 2 follow-up contacts. Response rates at this level or lower are common in resident surveys[19–23] because of the mobility residents, their demanding schedules, and the frequency of surveying. The similarity between the reports from residents and those from program directors, who responded at a much higher rate, imparts some confidence that resident responses were not biased. To investigate possible nonresponse bias, we compared participating and nonresponding residents on demographic information obtained from program directors. No significant differences were observed in χ^2 analyses of gender or program location (urban/suburban/rural) for the overall sample or for obstetrics and gynecology residents. Respondents were more likely than nonrespondents to be PGY6 and less likely to be PGY2.

We relied on program director estimates of historical retention of residents, which may be subject to recall bias. Finally, our study did not address the potential effect of the professional liability crisis on medical student interest in training in high-risk specialties such as obstetrics. The number of obstetrics and gynecology residents has remained essentially constant since the onset of the professional liability crisis in 1999–2000, but the percentage of obstetrics and gynecology residency slots filled by U.S. medical graduates has declined from 88.3% to 76.3%, which may indicate decreased interest, perhaps due to liability concerns.[24,25]

Our findings suggest that policy or market interventions may be necessary to avoid the flight of newly trained physicians from states with high liability costs. Pennsylvania, where liability costs have consistently been among the highest in the nation, has seen its percentage of physicians under the age of 35 drop from 15% in 1985 to less than 5% in 2000 (Foreman S. Unpublished data. Harrisburg, PA: Pennsylvania Medical Society Health Services Research Institute, 2003). This trend likely has been accelerated by developments in the liability environment since 2000.

If the liability climate improves in the very near future, resident retention may quickly revert to previous levels, but a more enduring crisis could lead to a decline in the supply of young specialists. The effect of this reduction on access to care would depend on the demand for specialist services, the supply of older specialists in the state, and the ease of attracting recruits (including foreign medical graduates) from other regions. Trends in these factors in Pennsylvania are not reassuring (Foreman, 2003).[4]

Many of the departing residents we surveyed indicated that their decision stemmed from a simple income equation: high malpractice premiums reduced net income, possibly delaying the repayment of educational loans or a home purchase. The average educational debt among the 81% of graduating American medical students who carried loans in 2003 was $109,457.[26] Subsidizing insurance premiums or offering higher salaries is one way to improve the income equation. Tort reforms would reduce the economic risk associated with practicing in Pennsylvania but do not address residents' concern that practicing in a professional liability crisis state involves not only high costs but also fear of suit and distrust of patients. Overall, the outlook for improving retention of residents is not promising, and problems with supply of specialist services seem poised to deepen in Pennsylvania and elsewhere.

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Address reprint requests to: Dr. Michelle M. Mello, Department of Health Policy and Management, Harvard School of Public Health, 677 Huntington Avenue, Boston, MA 02115; e-mail: mmello@hsph.harvard.edu.

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