A Medicolegal Curriculum for Internal Medicine Residents

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Many residents lack knowledge about medicolegal issues. To assess the ability of 64 primary care residents to learn legal medicine, we studied the impact of a medicolegal curriculum in a randomized, controlled study. We measured residents' medicolegal knowledge using a novel test, the Legal Medicine Evaluation (LME). We found that the mean LME score of residents exposed to the curriculum increased 15.5 points (on a 100-point scale) to 65.9 ($p < .01$), while the mean LME score of control residents increased only 3.5 points, to 53.5 ($p = .05$). Clearly, residents can learn basic medicolegal principles. Thus, observed deficiencies in medicolegal knowledge most likely arise from inadequate medicolegal instruction.

KEY WORDS: medicolegal curriculum; residents; internal medicine.

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Medicolegal issues play an important role in medical practice. Recognizing this, both medical and legal organizations have called for the study of legal medicine during medical school and residency.¹⁻³ Similarly, the Residency Review Committee for Internal Medicine requires programs to teach the basic principles of legal medicine.⁴

Many studies suggest that although most medical schools teach medicolegal issues, not all educators have embraced legal medicine education.⁵⁻⁹ The assertion that "residency programs cannot assume that residents have a common [medicolegal] knowledge base," by the Federal Council for Internal Medicine's Task Force on Internal Medicine Residency Curriculum,¹⁰ arose from this observation. In addition, a 1997 study found that internal medicine chief residents lack basic medicolegal knowledge.¹¹ Similarly a recent study of internal medicine program directors found that although most directors believed their programs taught legal medicine well, only 18% believed that residents understood medicolegal issues well.¹²

These findings raise the question of whether postgraduate educators teach legal medicine poorly or residents learn about medicolegal issues poorly despite adequate instruction. In this study, we examine this question by studying the impact of a didactic medicolegal curriculum on a group of resident physicians.

METHODS

Study Population, Design, and Measurements

The Geisinger Medical Center Institutional Research and Review Board approved this study before its initiation. The eligible population consisted of residents from four primary care residencies—internal medicine, pediatrics, family medicine, and medicine-pediatrics—at Geisinger Medical Center of Penn State Geisinger Health System, Danville, Pa, during the 1996-97 academic year. Residents who finished their training before June 30, 1997, were excluded.

We conducted a randomized trial of educational intervention versus no intervention. We measured residents' medicolegal knowledge 2 weeks before (preseminar) and 2 weeks after (postseminar) the intervention. We randomly assigned residents to intervention and control groups from a list arranged by residency and postgraduate year.

We measured residents' medicolegal knowledge using a novel examination called the legal medicine evaluation (LME). The examination contained 25 written questions of three types: true-or-false, fill-in-the-blank, and definition/brief discussion. Scoring reflected the clinical relevance of issues. The maximum LME score was 100 points, and the minimum score was 0.

Intervention

Residents in the intervention group were invited to a didactic medicolegal seminar. Seminar attendees received a guidebook¹³ to review at home later. Topics included legal aspects of consent, the physician-patient relationship, business issues in medicine (including peer review, contracts, and licensure issues, for example), and malpractice. Seminar attendees also received a grant-funded meal and a \$25 stipend to compensate their time.

Statistical Analysis

We compared study group characteristics using χ^2 or Fisher's Exact Tests. We analyzed changes in LME scores using an intention-to-treat approach according to group assignment. This conservatively evaluated differences in

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Figure 1. Study flowchart and group assignment.

LME scores from noncompliant invitees and from potential contamination by controls who acquired knowledge from attendees. We imputed missing postseminar LME scores under the assumption that these scores should not have been worse than preseminar LME scores.

Our hypothesis examined the effectiveness of the intervention. We tested this using a paired-samples *t* test of the mean difference between preseminar and postseminar LME scores. We analyzed all data using SPSS 6.1 (SPSS, Inc., Chicago, Ill, 1994) on a Macintosh Quadra 630 with type 1 error set at 5%.

RESULTS

Response Rates and Study Group Comparison

Sixty-four primary care residents enrolled in the study. Figure 1 shows the study's assignment flowchart.

Eleven nonattendees identified reasons for their absence, including child care/family obligation (3), on-call responsibility (3), forgot (2), vacation/off-site rotation (2), and lack of interest (1).

Control and intervention groups did not differ with regard to postgraduate year, residency, attitudes about legal medicine education, or past medicolegal education experience, reporting a mean of 15.4 hours of instruction in residency and medical school. There were twice as many women in the intervention group as in the control group, a statistically significant difference.

Effectiveness of the Intervention

Table 1 shows preseminar and postseminar LME scores using an intention-to-treat analysis. Mean (SD) LME scores for the intervention group improved 15.5 (19.3) points ($p < .01$) compared with only 3.5 (9.5) points

Table 1. Comparison of Intervention Group's and Control Group's Mean Legal Medicine Evaluation (LME) Scores

Postseminar LME Status	Control Group				Intervention Group			
	<i>n</i>	Preseminar LME	Postseminar LME	<i>p</i>	<i>n</i>	Preseminar LME	Postseminar LME	<i>p</i>
Completed	23	48.5	53.4	0.03	25	49.4	69.3	<0.01
Did not complete	9	53.8	53.8*	1.0	7	53.8	53.8*	1.0
Overall	32	50.0	53.5	0.05	32	50.4	65.9	<0.01
Change in mean LME score			+3.5				+15.5	<0.01

*Intention-to-treat analysis assumes that postseminar scores were no worse than preseminar scores for these residents.

($p = .05$) for the control group. Accounting for residents who did not complete the postseminar LME, the changes in LME scores remained statistically significant for both groups. Furthermore, the change in mean (SD) LME score for residents who attended the seminar and completed the postseminar LME was 27.3 (18.3) points ($p < .01$).

DISCUSSION

We conclude that presenting a medicolegal curriculum using a seminar and home-study guidebook improves residents' medicolegal knowledge. This finding supports the Federated Council for Internal Medicine's assertion that legal medicine "is a topic well-suited to didactic teaching."¹⁰ It also implies that residents' insufficient medicolegal knowledge does not reflect their inability to learn, but rather reveals poor medicolegal instruction. We contend that educators could develop programs similar to ours,¹⁴ to improve residents' medicolegal knowledge. We have developed a research tool, the LME, to facilitate further study of legal medicine education.

Although large enough to detect significant improvement in LME scores, our study group was small and from a single institution. For this reason, we cannot meaningfully discuss section-specific LME scores. Furthermore, we did not compare the efficacy of the seminar and guidebook. Because of this, we were unable to conclude that residents' improvement came from the seminar, or the guidebook, or both. Furthermore, we did not validate the LME owing to the absence of an existent standard for medicolegal knowledge. Our sample size also limited our ability to assess the reliability of the LME. Although seminar turnout was relatively poor (50%), future educators could mitigate the factors that we found hampered attendance.

As health care rapidly evolves, medicolegal issues play an increasingly important role. Residency programs must acknowledge the importance of legal medicine and improve the current quality of medicolegal education. Residents *can* master basic medicolegal principles; their lack of knowledge reflects educators' shortcomings, not

their own. We challenge educators, especially those in internal medicine, to critically examine their efforts to teach legal medicine—and to improve them.

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