

## Use of Electronic Health Records May Influence Rates of Paid Malpractice Claims

Virapongse A, Bates DW, Shi P, et al. Electronic health records and malpractice claims in office practice. *Arch Intern Med* 2008;168:2362–7.

### Study Overview

**Objective.** To examine whether implementation of electronic health records (EHRs) correlates with lower rates of paid malpractice claims for physicians in Massachusetts.

**Design.** Observational study of a representative sample of Massachusetts ambulatory care physicians.

**Setting and participants.** Practicing physicians identified by the Massachusetts Board of Registration in Medicine (BRM) were grouped by practice, and a random sample of practices was chosen. One physician randomly selected from each practice was sent an 8-page survey that assessed personal and practice demographics as well as the practice's use of EHRs and other health information technology.

**Main outcome measures.** Paid malpractice claims within 10 years among physicians using EHRs and those not using EHRs.

**Main results.** Of a survey sample of 1884 Massachusetts physicians, 1345 physicians completed the survey (response rate, 71.4%), and 1140 responses were included in the final analysis. Respondents provided information including race, sex, age, number of years since graduation from medical school, whether the practice employed EHRs (and if yes, whether use was high or low, as determined by the use of specific functions, such as computerized physician order entry). These data were linked to information from the BRM Web site, which specifies physician specialties and the number of paid malpractice claims in the past 10 years. Of the 1140 respondents, 6.1% of physicians that used EHRs had paid malpractice claims as compared with 10.8% of non-EHR users (unadjusted odds ratio [OR], 0.54 [95% confidence interval [CI], 0.33–0.86];  $P = 0.01$ ). After controlling for sex, race, year of medical school graduation, specialty, and practice size, the relationship between EHR use and paid malpractice claims was no longer significant (adjusted OR, 0.69 [95% CI, 0.40–1.20];  $P = 0.18$ ). Among EHR users, 5.7% of those classified as “high” users had paid malpractice claims compared with 12.1% of “low” users ( $P = 0.14$ ).

**Conclusion.** In a sample of Massachusetts physicians, the use of EHRs in the ambulatory care setting appeared to correlate with lower rates of paid malpractice claims. Further investigation is needed to determine whether this link is causal as well as whether these findings are applicable nationwide.

### Commentary

The quality of care that Americans receive is an ongoing concern for patients, providers, and policy makers [1]. With health care costs that are the highest in the world and rising faster than inflation, key health care stakeholders have been looking for solutions that will both improve quality of care and lower costs. The adoption and effective use of health information technology such as EHRs presents such an opportunity.

Most studies that have examined the impact of EHRs have focused on improving quality (eg, receipt of appropriate preventive therapies), improving safety (eg, reducing medication errors) [2], or improving costs (eg, by eliminating redundant tests) [3]. However, there have been no prior data on the impact of EHRs on malpractice claims. Given that malpractice claims typically represent both poor care (usually leading to patient harm) and high costs, determining whether EHRs can help in this arena would provide a major impetus for physicians and hospitals looking to adopt these systems.

The study by Virapongse and colleagues is very intriguing but not definitive. The findings suggest a modest size effect. In unadjusted analyses, there was a greater than 40% reduction in malpractice claims. However, the 2 populations of physicians (those with EHRs and those without EHRs) are very different, and the statistically significant relationship disappeared when these baseline factors were accounted for in a multivariable model. However, physicians with EHRs seemed to have 30% lower odds of having paid a malpractice claim. Whether this result is due to a true cause-effect relationship or due to residual confounding is unclear. The strength of the findings suggests that there may be a real relationship. However, the small number of physicians examined is one reason why the study may have lacked power

to find a difference.

Other issues also affect the interpretability of the findings. The study was conducted in Massachusetts, a state that is atypical for several reasons. First, a much larger proportion of physicians in Massachusetts participate in multiple-physician practices, and these practices have much higher rates of EHR adoption. Further, malpractice rates vary widely from state to state and likely reflect factors beyond underlying quality of care, including the culture of litigation in that state. A larger study across multiple states would make the results more robust.

### Applications for Clinical Practice

The study by Virapongse et al suggests that EHR adoption might be related to lower rates of malpractice claims. While the relationship was hardly proven in this study, the size of

the potential impact offers one more reason for physicians to consider adopting EHRs and for patients to push for care that is based in 21st-century technology.

—Review by Ashish K. Jha, MD, MPH

### References

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