Studying Physicians’ Use of Electronic Health Records—and Their Benefits

Measuring progress toward meaningful use: A national survey of physicians

SUMMARY

A Boston-based research team designed and implemented a national survey of primary care and specialist physicians on their use of electronic health records (EHRs). The purpose was to track and evaluate the extent to which adoption of this new technology translates into improved patient management.

There is strong support among policymakers for the hypothesis that replacing paper medical records with electronic ones can increase the quality and reduce the cost of care. But in the real world how well are physicians employing EHRs and realizing their benefits?

This project, which ran from May 2011 through April 2014, sought answers to that and related questions. Karen Donelan, ScD, EdM, a senior scientist at the Mongan Institute for Health Policy, an affiliate of Massachusetts General Hospital, and Catherine DesRoches, DrPH, senior survey researcher at Mathematica Policy Research, co-directed the work.

Additional Context: Meaningful Use

Federal legislation enacted in 2009 authorized payments to providers who adopt EHRs and use the systems to increase the quality and efficiency of care. To qualify for these incentives, physicians must demonstrate that they meet meaningful use criteria set by the Centers for Medicare & Medicaid Services (CMS).

The criteria are technical and detailed, but in a nutshell, they are aimed at ensuring that providers use their electronic systems to assess and manage their patient populations. A key objective of the survey was to find out the proportion of physicians able to meet the meaningful use standard and the major challenges to compliance.

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1Health Information Technology for Economic and Clinical Health Act (HITECH)
Survey Details

The survey was administered by mail in two waves to a nationally representative panel of physicians. The first wave, conducted in late 2011–early 2012, drew 1,820 responses (1,164 from primary care physicians, 656 from specialists), representing a response rate of 60 percent. In 2013 the second-wave questionnaire went to all first-wave respondents.

Through this two-round process, the team intended to track and evaluate changes in the respondents’ EHR use and related aspects of their practice, including:

- Organization and payment structure
- Efforts to improve care coordination
- Exchange of electronic data with other health care providers and organizations

Key Findings

First-Wave Findings: Meaningful Use

In a 2013 article in *Annals of Internal Medicine*, the researchers reported on their analysis of the survey’s first-wave data, focusing on the meaningful use standard. The article included the following findings:

- Of the first-wave respondents, 43.5 percent reported having a basic EHR, but only 9.8 percent achieved meaningful use as defined by the team. Meaningful use compliance was higher for primary care providers (11.2%) than for specialists (7.6%).

- However, larger percentages of physicians in both categories met some meaningful use criteria. Among primary care physicians, 40.5 percent achieved between 8 and 10 of the 11 core functions selected by the team to define meaningful use. For specialists, it was 36.5 percent. The proportion of physicians performing zero functions was 14.6 percent and 12.0 percent respectively.

- The meaningful use functions most commonly adopted were:
  - Viewing laboratory results
  - Ordering prescriptions
  - Viewing radiology or imaging results

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2 To increase the response rate, the sampled physicians received up to four mailings and were offered an incentive payment of up to $45 ($35 on the first three mailings, increased to $45 on the fourth mailing) to complete the questionnaire. The team contracted with Harris Interactive, a market research firm, to administer the survey.

— Recording clinical notes

- Among physicians who were close to achieving—but had not achieved—meaningful use, three functions were the most challenging to adopt:
  - Exchanging patient clinical summaries and laboratory and diagnostic test results with providers outside the practice
  - Generating quality metrics
  - Providing patients with after-visit summaries and copies of their health information

- A quarter of the respondents had registered for the CMS incentive payment program authorized by the 2009 legislation to encourage adoption and effective use of EHRs; 17 percent were planning to register. But more than half (53.8%) either did not plan to participate in the incentive program or did not know if they would participate; 4 percent did not answer the question.

- Less than half of the respondents (44.4%) reported having a computerized system that could generate patient lists by diagnosis.

- Approximately a third had systems that could:
  - Track referral completions
  - Generate quality of care reports
  - Send reminders to patients for follow-up or preventive care
  - Produce lists of patients who had missed or were overdue for an appointment
  - Generate patients lists by laboratory results
  - Provide after-visit summaries to patients

- A substantial proportion of physicians reported difficulty using their computerized systems for certain patient management purposes. About a half said they either could not use their systems or found it very or somewhat difficult to use their systems to generate:
  - Lists of patients by laboratory result
  - Lists of patients overdue for care
  - Reports on quality of care
  - Referral tracking
Limitations

The article noted that as with all surveys, the results could have been influenced by response bias—that is, the physicians who responded may have differed in some important way from those who did not. One possibility is that those who filled out the questionnaire may have had a greater interest in the subject matter, the article suggested.

Among other limitations, the researchers noted that they could not verify that the physicians themselves filled out the questionnaires or reported their EHR use accurately.

Conclusion

The article abstract concludes:

“Few physicians could meet meaningful use criteria in early 2012 and using computerized systems for the panel management tasks was difficult. Results support the growing evidence that using the basic data input capabilities of an EHR does not translate into the greater opportunity that these technologies promise.”

First Wave Findings: Care Coordination

The researchers reported additional first-wave findings in a 2014 report on health information technology. These findings focused on care coordination and included the following:

- Both “primary care and specialist physicians with basic EHRs are more likely than those without basic EHRs to report always receiving timely communication about patient referrals, emergency department visits, and hospitalizations.” As an example, “33 percent of primary care physicians with a basic EHR reported always receiving timely information from specialists about clinical care and results of tests, as compared to 22 percent without a basic EHR.”

- However, regardless of EHR adoption status, less than half of the respondents reported that timely care coordination activities occur “always.” The majority of physicians said that communication about consultations, medications, hospitalizations, and emergency department visits occur “sometimes” rather than “always.”

This finding suggests that “more work needs to be done to improve timely care coordination.”

- **The survey found no significant difference between physicians with and without a basic EHR in communicating to the patient the outcome of a consultation with the patient.**

  This indicates “that having the capability to communicate with patients electronically does not necessarily improve the likelihood that the capability will be used to interact with patients.”

**Second-Wave Findings**

The researchers had not reported on the survey’s second wave at the time this report was prepared. An *Annals of Internal Medicine* article with some findings from the 2013 data was in press, and work on an additional manuscript was ongoing, according to co-director DesRoches.

**Lessons Learned**

1. **A recent increase in data on EHR adoption may have reduced media interest in new research on the subject.** When the team designed its survey, there were few national studies on EHR adoption. Now, however, a “plethora” of EHR data from policymakers may be meeting the needs of academic journals and the news media.

   While pleased with their survey’s response rate and data quality, the researchers were disappointed that their findings had not drawn more interest to date from journals and reviewers, according to co-directors DesRoches and Donelan.

2. **Give careful consideration to the measures incorporated into a multiround panel survey.** Determining in advance that the measures will remain relevant throughout the survey period is always a challenge.

   The activity measures in this survey were developed for the first wave. In designing this survey, the team perhaps could have spent more time thinking through certain measures, including those for care coordination. The measures were “decent” but might have been “more detailed and more refined.” (Co-director DesRoches and the project director’s final written report to RWJF)

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Afterward

The project team reported that it was continuing to analyze the survey data and planned to develop additional manuscripts.

“We are refocusing our analyses with an eye to stakeholder interactions in the health care system in the hopes that this approach will help clarify for reviewers and editors and the media what impacts we have seen in the lives of physicians during a time of substantial technological transition,” Donelan wrote in an email.
BIBLIOGRAPHY

(All citations and URLs are current as of date of this report; as provided by the grantee organization; not verified by RWJF; items not available from RWJF.)

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