



The Adoption and Use of Health Information Technology (HIT) by Rhode Island Physicians, 2009

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Electronic medical record (EMR) systems and e-prescribing by physicians have the potential to reduce the incidence of medical errors and to improve the provision of care to patients through better compliance with recommended standards, improved coordination of care, and ready access to current information.^{1,2} In 2008, after a national survey, the Centers for Disease Control and Prevention (CDC)³ reported that 41.5% of office-based physicians were using a medical record that was partly or fully electronic. About half of these, or 21% of all respondents, were using at least a “basic EMR” that included the following: electronic documentation of patient demographics, patient problem lists, and clinical notes; computerized orders for prescriptions; computerized receipt of imaging reports; and computerized receipt of and lab results.

Because of the expected impact of health information technology (HIT) on quality of care and the President’s goal that all Americans will be able to benefit from an electronic health record by 2014, the Rhode Island Department of Health’s legislatively-mandated public reporting program, the Health Care Quality Performance (HCQP) Program, performs an annual survey of physicians on their adoption and use of EMRs and e-prescribing. The survey results are reported both at an aggregate statewide level and for individual physicians.⁴ This report summarizes the statewide results for the 2009 Physician HIT Survey. (The 2010 Physician HIT Survey is underway.)

METHODS

In January and February 2009, the Rhode Island Department of Health electronically administered a survey to all physicians who were licensed in Rhode Island and who indicated they were in active practice and providing

Table 1. Definitions of Measures Used in 2009 Physician HIT Survey

Measure	Definition
Physicians with EMRs	Percent of responding physicians who indicate that they have “EMR components” in their main practice or another practice. [EMR Components: An integrated electronic clinical information system that tracks patient health data, and may include such functions as visit notes, prescriptions, lab orders, etc.]
Physicians with ‘qualified’ EMRs	Percent of responding physicians who indicate that they have an EMR with all of the following: <ul style="list-style-type: none"> • One or more clinical documentation functionalities • One or more reporting functionalities • One or more results management functionalities • One or more decision support functionalities • The ability to e-prescribe • Certification Commission on Health Information Technology (CCHIT) certification
Basic EMR functionality use	For physicians with EMRs, scale score (0-100) based on weighted frequency of use of the following six EMR functionalities: <ul style="list-style-type: none"> • Electronic visit notes • Electronic lists of each patient’s medications • Electronic problem lists • Patient clinical summaries for referral purposes • Lab test results via electronic interface and/or scanned paper lab test results • Radiology test results via electronic interface and/or scanned paper radiology test results
Advanced EMR functionality use	For physicians with EMRs, scale score (0-100) based on weighted freq. of use of the following ten EMR functionalities: <ul style="list-style-type: none"> • Drug interaction warnings • Letters or other reminders directed at patients regarding indicated or overdue care • Prompts to providers at the point of care • Electronic referrals • Secure emailing with providers outside the physician’s office • Laboratory order entry • Radiology order entry • Reports clinical quality measures • Reports patients out of compliance with clinical guidelines • Reports patients with a condition, characteristic, or risk factor
Physicians who are e-prescribing	Percent of responding physicians who indicate that they transmit some or all of their prescriptions or medication orders electronically to the pharmacy

* For detailed specifications, see the Health Care Quality Performance Program website: www.health.ri.gov/chic/performance.

Table 2. 2009 Physician HIT Survey Summary Results

Measure ¹	Score
Physicians with EMRs ²	67.6%
Physicians with 'qualified' EMRs ²	12.5%
Basic EMR functionality use, mean ³	63.6
Advanced EMR functionality use, mean ³	44.1
Physicians who are e-prescribing ²	41.2%

¹See Table 1 for definitions of measures

²Based on 1,888 responding physicians

³Based on 1,277 responding physicians with EMRs

direct patient care (or had missing responses to these questions). Of the 3,248 physicians included in the survey, 1,888 (58.1%) responded.

The 2009 survey, developed in collaboration with healthcare stakeholders in Rhode Island, reported five measures of HIT implementation and use: (1) Physicians with EMRs, (2) Physicians with "Qualified" EMRs, (3) Use of Basic EMR Functionality, (4) Use of Advanced EMR Functionality, and (5) Physicians Who are e-Prescribing.² (Table 1) The basic and advanced functionality scales were each calculated by giving equal weight to physicians' self-reported use of various EMR functions (six for the basic measure; 10 for the advanced measure), with points proportional to the frequency of use by the physician. (The functionality measure definitions were adjusted for hospital-based physicians to reflect the specific nature of their clinical practice.) Demographic, practice, and EMR information were also collected.

RESULTS

Of the 1,888 respondents, 1,277 (67.6%) reported having EMRs in their main practice or another practice location. However, only 236 (12.5%) reported having EMRs that met the standards adopted by the survey for 'qualified' systems. (Table 2)

Physicians who had access to EMRs (N=1,277) reported high rates of use for both basic and advanced features, with 731 (57.6%) of them using all six basic functions at least 60% of the time and 577 (45.2%) of them using all 10 advanced functions at least 60% of the time.

Among all 1,888 respondents, fewer than half (n=777, 41.2%) reported e-prescribing at all, and less than one-quarter (n=427, 22.6%) reported using an EMR, specifically, to e-prescribe at least 60% of the time.

DISCUSSION

Among respondents, more than two-thirds reported having EMRs in one or more of their practice locations. This high level of performance may be inflated if physicians with EMRs were more likely to respond to the survey than those without EMRs. However, a lower bound estimate (calculated by assuming all non-respondents lack EMRs) places the EMR adoption rate in Rhode Island at 39.3%, which is still substantial. The true figure likely lies somewhere between those two esti-

mates so is likely to be higher than national rates reported for 2008.³ (The statewide rate includes hospital-based physicians, whereas the national rate excludes them, so the figures are not exactly comparable.)

Unique local policies and incentives may have contributed to these high rates. For example, Rhode Island not only reports statewide performance on EMR adoption, it is the only state to publicly report individual physicians' use of HIT as a structural quality measure.⁴ Despite high penetration of EMRs in Rhode Island, the full use of EMR functionality is less widespread. Although public reporting of physician adoption is underway and expected to foster increasing rates of adoption in the state, several challenges remain, including defining "real" EMRs and capturing the actual use of available EMR functionality.

With national initiatives poised to stimulate HIT adoption, it is important to establish reliable baseline data and metrics upon which to measure change. This survey enables Rhode Island to do so and sets an important precedent for other states embarking on measurement strategies.

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Disclosure of Financial Interests

The authors and their spouses/significant others have no financial interests to disclose.

