

# Health Information Technology in the United States:

Better Information Systems for Better Care, 2013



## Executive Summary



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# Executive Summary

## Chapter 1: Progress on Adoption of Electronic Health Records

Chapter 1 summarizes the adoption of electronic health records (EHRs) in the United States using data from the 2012 National Ambulatory Medical Care Survey and the National Survey of Practice Physicians to assess physician EHR adoption, and the 2012 American Hospital Association Health Information Technology Supplement to track hospital EHR adoption. This chapter examines progress toward EHR adoption since 2008, and describes physician and hospital ability to meet stage 1 and stage 2 meaningful use objectives.

### *Key Findings:*

- In 2012, 40 percent of office-based physicians had adopted at least a basic EHR. These physicians were most likely to be primary care physicians, in a practice of 11 or more physicians owned by a hospital, academic medical center, health maintenance organization, or other health care organization in rural practices.
- At least 50 percent of respondents adopted each meaningful use stage 1 core criteria, with the exception of one: reviewing data on quality of care measures, which was adopted by 43 percent of respondents.
- Approximately one-half of physicians with the following functionalities reported that it was very difficult, somewhat difficult, or they could not generate lists of patients by lab results or need for overdue care, track referrals, or reports on quality of care. However, physicians with an EHR that met the proxy for stage 1 meaningful use objectives were more likely to report that panel management functionalities were easy to use compared to physicians who did not meet the objectives.
- Forty-four percent of hospitals reported having at least a basic EHR, an increase of more than 17 percentage points since 2011 and nearly tripling since 2010. Hospitals most likely to have a basic EHR were large, major teaching, private nonprofit hospitals located in urban areas.
- In 2012, 42 percent of hospitals reported implementing all 14 core functionalities for stage 1 meaningful use, increasing substantially from 4 percent in 2010 and 18 percent in 2012. Like those most likely to have a basic EHR, hospitals meeting stage 1 meaningful use objectives are large, major teaching, private nonprofit hospitals located in urban areas.
- Only 5 percent of hospitals could meet all 16 core objectives for stage 2 meaningful use; however, 63 percent reported meeting 11–15 of the functionalities, suggesting a large proportion of hospitals are close to meeting these objectives. The functions least likely to be implemented are functions that require health information exchange and patient access to health information.

## Chapter 2: Mitigating Disparities in Electronic Health Record Adoption

Chapter 2 analyzes EHR adoption in hospitals caring for vulnerable populations using data from the 2012 American Hospital Association Health Information Technology Supplement, focusing specifically on the trends of adoption in smaller, rural hospitals as compared to large, urban, teaching hospitals. This chapter also reviews state progress and challenges in implementing the Medicaid EHR Incentive Program, which is designed to incentivize providers that serve vulnerable populations to adopt EHR technology.

### *Key Findings:*

- While small, rural, teaching hospitals are still less likely to have a basic EHR, these hospitals are adopting these functions at a faster rate than large, urban, teaching hospitals. For example, the proportion of rural hospitals with at least a basic EHR increased by a relative change of 257 percent from 2010 to 2012, while the corresponding relative change among urban hospitals was 180 percent.
- EHR adoption rates among hospitals were similar across disproportionate share hospital (DSH) index quartiles. Basic EHR adoptions increased by a relative change of 345 percent in hospitals in the lowest DSH quartile. Similarly, hospitals in the highest DSH quartile increased by a relative change of 378 percent.
- Of the six states Medicaid agencies interviewed, all reported the importance of partner organizations and other stakeholders, such as Regional Extension Centers (RECs), in successfully implementing the Medicaid EHR Incentive Program.
- The primary barriers to implementing the Medicaid EHR Incentive Program identified by states were the availability of resources within the Medicaid agency and adapting quickly to CMS guidance. Overall, these states believe the Medicaid EHR Incentive Program payments are going to providers who serve vulnerable populations.

## Chapter 3: International Comparisons: Benchmarking HIT Adoption and Cross-Country Learning

Chapter 3 describes the context for government efforts to develop HIT adoption strategies in multiple countries and summarizes an array of efforts to estimate the level of international HIT adoption. This chapter also addresses the potential for cross-country learning and describes innovative international approaches that may inform the U.S. approach to HIT adoption.

### *Key Findings:*

- Across countries, a recent international survey found four common core objectives for HIT implementation: increasing quality and efficiency of care; reducing operating costs of clinical service; reducing the administrative costs of running health care systems; and enabling new models of health care delivery.
- Many international entities, including The World Health Organization, the European Commission, and the Organisation for Economic and Cooperative Development (OECD), have made substantial efforts to engage in broad

measurements of EHR and related HIT adoption. The OECD is leading an effort to develop benchmark measures of adoption and use of health information and communication technologies to track progress across countries.

- While high-income countries across the globe are making major investments in EHRs, middle income countries, such as China and Brazil, are also seeing substantial investments. Over the next few years, efforts toward EHR adoption in countries such as India and South Korea are anticipated.
- The United States can garner key lessons from other countries' efforts in EHR adoption, including taking a more regional approach compared to a national approach, letting patients become the source of interconnectivity and exchange rather than health care providers, and a single lifetime EHR where information is contributed from multiple sources.

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## Chapter 4: Health Information Exchange Under HITECH: Progress and Challenges

Chapter 4 presents data from a national survey of health information exchange (HIE) efforts and describes the progress, gaps, and barriers to nationwide HIE in the United States. This chapter includes policy recommendations to spur the implementation of HIE throughout the United States.

### *Key Findings:*

- Hospitals and ambulatory practices were most common participants in HIE efforts. Thirty percent of U.S. hospitals and 10 percent of ambulatory practices send and receive data through HIE efforts.
- Test results and patient summary care records were the most common type of data exchanged (in 82% and 79% of HIE efforts, respectively), while public health reports were the least common type of data exchanged (30%).
- Most HIE efforts reported using a query model as their technical approach, where users actively search for available data. Other common technical approaches include a push model, where data is actively sent out to users; end-to-end integration, where data is included in the user's electronic system; and Direct, which facilitates point-to-point transport of health information.
- The majority of HIE efforts enabled participants to meet the core stage 1 meaningful use criteria of demonstrating the capability to exchange key clinical information electronically. The two public health-related stage 1 meaningful use criteria (syndromic surveillance and reportable lab results) were least likely to be supported by the HIE efforts. A small subset of HIE efforts supported all six HIE-related meaningful use functionalities.
- HIE efforts continue to struggle with financial viability, with 74 percent of efforts identifying that developing a sustainable business model was a moderate or substantial barrier. Currently, grants and contracts are the most substantial source of support for the majority of operational HIE efforts.



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**Chapter 5: Improving Patient Education With Electronic Health Records**

Chapter 5 reviews the work of a Technical Expert Panel developing guidelines to maximize the potential of electronic health records (EHRs) in delivering patient education materials. This chapter continues with an environmental scan of patient education capabilities in current EHR products, in addition to case studies of EHR vendors and physicians' offices in which the EHR was implemented. Finally, Chapter 5 proposes best practices for EHR vendors, health care organizations, and health care professionals.

- Electronic access and delivery of tailored patient education materials might include a library of information that may be: (1) suggested to physicians by the EHR based on diagnoses, symptoms, procedures, or medications; (2) accessed by patients directly through a patient portal; (3) prescribed tools ordered by physicians through EHR and disseminated to patients via mail, email, or phone; and (4) generated population or system-prescribed information for all patients meeting a certain condition or criteria in a practice.
- To maximize potential, EHR should: (1) stimulate patient and clinician discussion; (2) be easy for clinicians to access; (3) allow tailored information to be delivered to the patient; (4) record what information was delivered to the patient; (5) be monitorable; and (6) include appropriate delivery modes and literacy levels for the patient.
- Based on the vendor review, a variety of patient education technology exists in theory and practice for tailoring materials on at least some demographic and diagnostic criteria. However, case studies reveal many challenges to the optimal use of EHRs for patient education. Workarounds for accessing patient education materials appear to be common; tailoring materials is still more a manual than electronic process; and accessing content with appropriate language and literacy remains a challenge.
- Several improvements are needed in order to realize the vision of EHR-enabled tailored patient education at the point of care and through patient portals. Particular challenges include providing materials that are readily accessible, linked to patient needs, and appropriate for patients with low literacy and limited English proficiency.

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