THE VALUE IN IMPLEMENTING ELECTRONIC HEALTH RECORDS

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ABSTRACT

The Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 that was signed into law as part of the "stimulus package" represents the largest US initiative to date that is designed to encourage widespread use of electronic health records ("EHRs") (Menachemi and Collum, 2011). Hundreds of studies of EHRs and decision support systems across the country have demonstrated the benefits of such tools. EHRs can slash drug-drug interaction rates, decrease mortality rates among the chronically ill, cut nurse staffing needs, and lower costs (Shilling, 2011). Obviously, the government saw a need to incentivize EHRs in order for patients to obtain the best care possible. No longer would patients have to complete the same paperwork at various physician offices. No longer would physician's work in silos they would be able to access various patient information to help ensure the highest quality and accuracy of care.

INTRODUCTION

The use of EHRs are defined as "a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting (Menachemi and Collum, 2011). Included in this information are patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data, and radiology reports (Menachemi and Collum, 2011). Essentially, an EHR is a digital version of a patient's paper chart. EHRs are real-time, patient-centered records that make information available instantly and securely to authorized users (Menachemi and Collum, 2011). While an EHR contains the medical and treatment histories of patients, an EHR system is built to go beyond standard clinical data collected in a provider's office and can be inclusive of a broader view of a patient's care (Electronic Health Records). EHRs can contain a patient's medical history, diagnoses, medications, treatment plans, immunization dates, allergies, radiology images, and laboratory and test result; allow access to evidence-based tools that providers can use to make decisions about a patient's care; and automate and streamline provider workflow (Electronic Health Records). One of the key features of an EHR is that health information can be created

and managed by authorized providers in a digital format capable of being shared with other providers across more than one healthcare organization (Electronic Health Records).

HITECH was signed into law with an explicit purpose of incentivizing providers (e.g., hospitals and physicians) to adopt EHR systems. Many view electronic health records and other forms of health information technology as essential to achieving the goals of the nation's "Triple Aim": enhancing the patient experience of care, improving the health of populations, and reducing the per capita cost of health care (*Engaging Patients and Families*, 2014). This paper will discuss the value to both healthcare facilities as well as to patients in implementing EHRs.

VALUE TO HEALTHCARE FACILITIES

The Centers for Medicare and Medicaid Services (CMS) has identified the electronic collection and reporting of health-related information in the form of EHRs as a central objective in the effort to improve the quality, effectiveness, and cost of health care in the United States (Evans, 2008). Hospitals are also eligible for incentives under the HITECH Act. The amount of the incentives they receive depends on a number of factors, but the base amount to each hospital that complies with the meaningful use criteria will be more than US$2 million (Menachemi and Collum, 2011). Given that a bare-bone EHR system provides only partial benefits to patients and society, the HITECH Act requires that providers adopt EHRs and utilize them in a "meaningful" way, which includes using certain EHR functionalities associated with error reduction and cost containment (Menachemi and Collum, 2011).

Electronic health record systems can decrease the fragmentation of care by improving care coordination. EHRs have the potential to integrate and organize patient health information and facilitate its instant distribution among all authorized providers involved in a patient's care (HealthIT.gov). For example, EHR alerts can be used to notify providers when a patient has been in the hospital, allowing them to proactively follow up with the patient (HealthIT.gov). With EHRs, every provider can have the same accurate and up-to-date information about a patient and can share across multiple platforms to ensure they are providing the best quality of care. This is especially important with patients who are seeing multiple specialists, making transitions between care settings, and receiving treatment in emergency settings (HealthIT.gov). Better availability of patient information can reduce medical errors and unnecessary tests. Better availability of information can also reduce the chance that one specialist will not know about an unrelated (but relevant) condition being managed by another specialist (HealthIT.gov).

The National Partnership for Women and Families study (*Engaging Patients,* 2014) outlines seven strategies that our survey findings suggest will engage patients and families in their health and care using health IT, which will, in turn, provide value to healthcare facilities. These strategies include: 1) Continue to adopt and use EHRs to improve patient care, experience, access and use; 2) integrate more "convenience" features as standard features of patient portals;

3) Strengthen and expand electronic access to and use of clinical health information throughout new models of care delivery and payment; 4) Enhance functionalities for patients to communicate with and share information with healthcare providers and others; 5) Build robust functionality to support patients and families in health and care planning; 6) Foster trust with patients by showing how their health information is stored, exchanged, used and protected.; and 6) Build tools and systems that recognize and reflect demographic diversity, with particular attention to language and cultural competency issues. All stakeholders should partner with patients and families to learn about their needs and priorities, and what health IT functionalities best serve those needs.

The National Partnership for Women and Families study also notes that as of publication of their study, a wide range of health care providers — hospitals, physician practices, nurse practitioners, dentists and others — have registered for and received incentive payments under the Meaningful Use program (*Engaging Patients*, 2014). Since the first fielding of this survey in 2011, nearly all hospitals in the United States have registered for these incentives (95 percent as of June 2014), with 91 percent receiving incentive payments under the Meaningful Use program (*Engaging Patients*, 2014). The average physician with at least 30 percent of his or her patients covered by Medicare is eligible for up to $44,000 in total incentives (Shilling, 2011). A physician with at least 30 percent of his or her patients covered by Medicaid is eligible for even more, up to $63,750 (Shilling, 2011). Nearly 60 percent of Medicare providers and nearly 30 percent of Medicaid providers have registered for the program, with 48 percent and 22 percent, respectively, earning incentive payments (*Engaging Patients*, 2014). Sixty-eight percent of Medicare- and Medicaid-eligible providers have made financial commitments to EHR implementation as of June 2014.

To encourage physicians to make the investment of time and staff resources necessary for implementation, EHR advocates often point to the operational benefits of such systems (Shilling, 2011). Daniel Saylak, D.O., chair of the board of trustees of the American Osteopathic Association for Medical Informatics, a specialty affiliate of the American Osteopathic Association (AOA), notes EHRs help practices run more smoothly and, perhaps consequently, make more money (Shilling, 2011). They also improve quality and safety. EHRs have built-in checks to ensure that no drug/drug interactions take place and can eliminate problems related to poor handwriting (Shilling, 2011). Other quality gains that typically follow EHR adoption are attributed to the system capabilities that help physicians keep abreast of medical advances, match patients with appropriate therapies, coordinate prescriptions, and communicate with diverse, geographically separated treatment teams (Shilling, 2011). Continuing dialogue will help to ensure both health care facilities as well as patients are able to receive the valuable benefit from implementation of EHRs (*Engaging Patients*, 2014).

VALUE TO PATIENTS

A growing number of consumers are embracing EHRs and the significant boost in online access to health information is increasing patient engagement, according to findings from a

study released by the Washington, D.C.-based National Partnership for Women and Families (Leventhal, 2014). The National Partnership for Women and Families utilized Harris Poll, one of the nation's leading polling organizations, to conduct the online survey between April 22 and May 7, 2014, from a sample of respondents' representative of the total U.S. population of adults 18 and older (*Engaging Patients*, 2014). To focus on those patients who have some experience with a medical record system (whether paper or electronic), the survey identified patients who met two criteria: (1) they had an ongoing relationship with a main doctor, and (2) they knew what kind of record system, electronic or paper, the provider used (Engaging Patients, 2014). This yielded a pool of 2,045 adults — representing 68 percent of the adult population, after the data were weighted to represent the demographics of the national adult population (*Engaging Patients,* 2014). The qualified pool comprised 1,192 patients whose main doctor was using an EHR and 853 patients whose main doctor was using a paper-based system (*Engaging Patients*, 2014). Their findings included the following: Patients believe that EHRs have far greater impact and usefulness for both themselves and their doctors than paper record systems; Eighty percent of adults in the United States with a main doctor said that their doctors use an EHR system (up from 64 percent in 2011); Between 85-96 percent of all patients said that the EHR was useful in various aspects of care delivery, while by comparison, only 57-68 percent saw paper records as useful; When asking consumers about the impact of their doctors' record systems on the doctor and on the patient personally, patients rated the helpfulness to their physicians much higher on several elements than the helpfulness to themselves; Of patients with EHR systems, 70-80 percent rated those systems positively as helping doctors and their staffs provide these vital services. By contrast, only 39-55 percent of patients in paper-record systems rated them as helpful to doctors and staff; and EHR patients were more likely than paper-record patients to state that their record system helped them personally for various purposes (64 percent to 35 percent, compared with 43 percent to 31 percent).

Further, the study found that 11 patients, regardless of record type, see the value of EHR systems with respect to privacy. While people continue to be concerned about the safety of their health information, those concerns are increasingly seen in the fuller context of the benefit of EHRs. Researchers found that the more patients experience the benefits of EHRs, the more they trust providers to protect their privacy; and the more they trust that their privacy is protected, the more they use and benefit from EHRs. However, more work needs to be done to educate consumers about how their information is collected, used and protected.

The study noted that compared with 2011, patients in 2014 are more likely to believe that EHRs are useful in giving patients more control over how personal medical information is used, earning the trust of patients in the way their medical information is being handled, complying with privacy and confidentiality laws, and giving patients confidence that their information is safe. Online access is a key strategy for improving patient trust in EHRs. Patients with online access to their health information trust their provider significantly more than patients with EHRs, but without online access (77 percent, compared with 67 percent). High numbers of both EHR and paper-record patients stated that it was important to them to

know how their information was being collected and used (88 percent of EHR patients and 82 percent of paper-record), but less than 60 percent stated that their doctors and staff did a good job of explaining how their information is used, with only 55 percent and 51 percent, respectively, reporting "well" or "very well" explained (*Engaging Patients*, 2008).
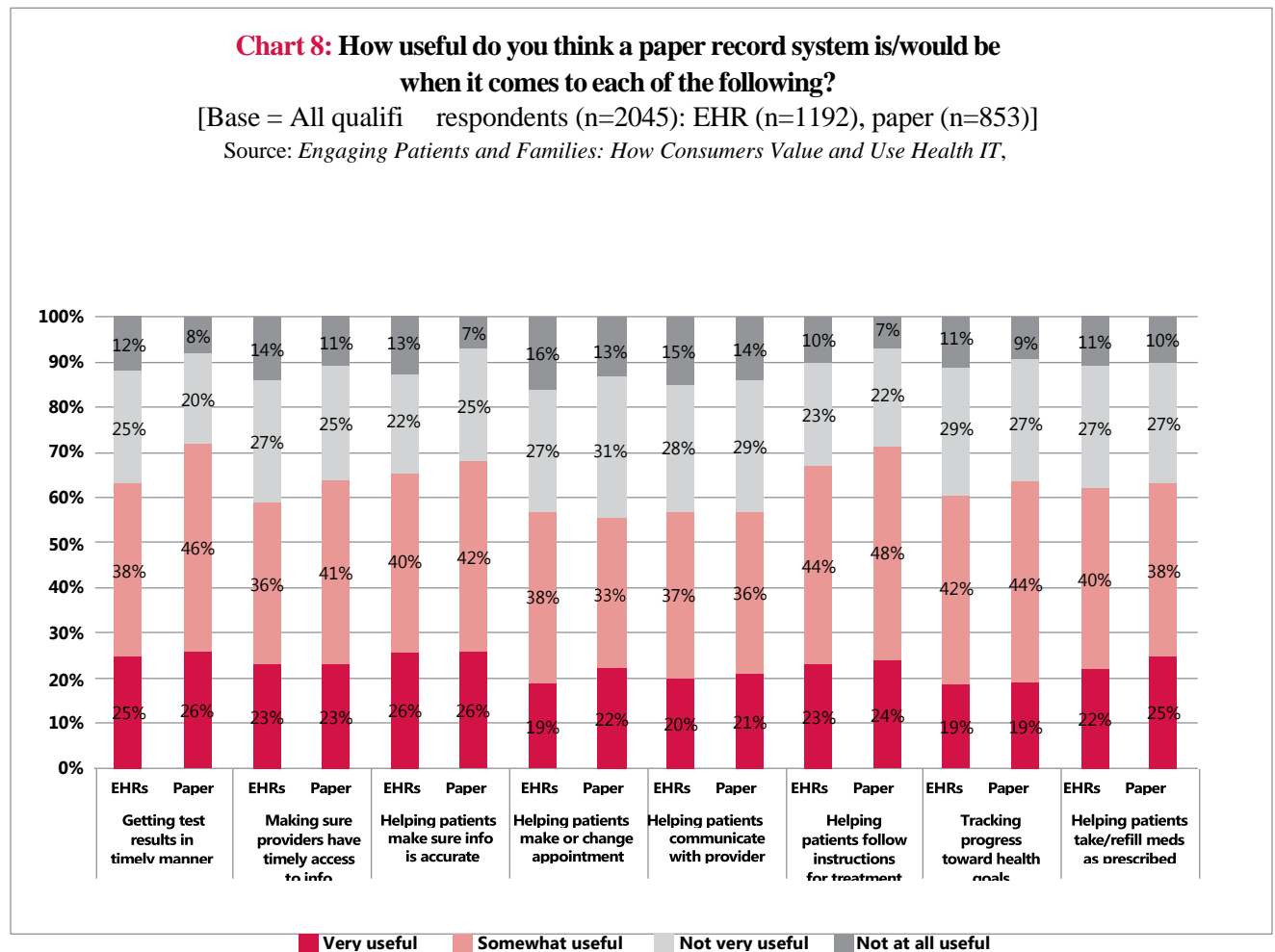
CRITICAL RECEPTION

Critics of EHRs cite reports of computer hackers targeting insurers and health care providers, raising concerns about medical identity theft. Some physicians are reluctant to adopt EHRs, claiming they are costly, difficult to use and lack interoperability, meaning different computer systems can't communicate with each other (Olivero, 2015). The electronic systems include valuable personal data wanted on the black market. Thieves use the data to get medical services leaving victims financially liable. Sixty-five percent of medical theft victims paid an average of $13,500 to resolve their cases, according to the Ponemon Institute's Fifth Annual Study on Medical Identity Theft (Olivero, 2015).

The inability of EHRs to exchange health information electronically was also a disappointing factor to physicians, who continued to rely on faxed medical documents from outside providers (Friedberg, Crosson and Tutty, 2014). Physicians also expressed concerns about potential misuse of template-based notes. Such notes, which contain pre-formatted, computer-generated text, can improve the efficiency of data entry when used appropriately (Friedberg, Crosson and Tutty, 2014). However, when used inappropriately, template-based notes were described as containing extraneous and inaccurate information about patients' clinical histories, with some physicians questioning the fundamental trustworthiness of a medical record containing such notes (Friedberg, Crosson and Tutty, 2014). In addition, EHRs were reported as being significantly more expensive than anticipated, creating uncertainties about the sustainability of their use (Friedberg, Crosson and Tutty, 2014).

There are also several other challenges that may occur when implementing EHRs including potential HIPAA violations, empty data fields, and the "copy and paste" phenomenon. Since EHRs allow for easier access to sensitive information, there is an increased risk of privacy violations (Palma, 2013). These may include intentional "snooping" or may be accidentally caused by the use of improper security measures (Palma, 2013). Thankfully, many systems have implemented a forensics piece to track what files are accessed when and by whom (Palma, 2013). Many EHR systems allow for auto-population of data for new records. While these shortcuts save some time and effort on behalf of the physician, they can also result in inaccurate new records if the previous auto-populated record is not current (Palma, 2013). For example, if a patient went in for surgery in June and this was not properly documented, a "no data available" empty data field error message or, even worse, inaccurate information could be displayed (Palma, 2013). Finally, "copy and paste" is by and large the biggest ugly of all the shortcomings of EHRs (Palma, 2013). Because documentation is more involved with EHRs, physicians may rely on the copy and paste function as a shortcut, particularly for routine or follow-up visits (Palma, 2013). While this may save time for the physician, this puts the

patient's safety at risk and impairs quality of care as updates or changes between visits can be overlooked or not documented properly (Palma, 2013).

Finally, below is a chart that shows patient responses to how useful they think a paper record system is/would be when it comes to various factors including, "getting test results in a timely manner", "making sure providers have timely access to information", and "helping patients make sure info is accurate". As you can see, even when it seems the benefits may be intrinsically valuable to patients, there is a significantly high percentage of people who believe that the paper system still is still useful.

Chart 8: **How useful do you think a paper record system is/would be when it comes to each of the following?**
[Base = All qualifi   respondents (n=2045): EHR (n=1192), paper (n=853)]
Source: *Engaging Patients and Families: How Consumers Value and Use Health IT*,

CONCLUSION

Despite the potential benefits of electronic medical records, many practitioners/practices are hesitant to purchase and adopt these systems because they believe that the cost far outweighs the financial benefit (Menachemi and Collum, 2011). To help combat the technological problems faced by providers, the federal government, through HITECH, has committed

approximately US$650 million for the establishment of a network of up to 70 regional health information technology extension centers (Menachemi and Collum, 2011). The primary purpose of these organizations is to offer advice to physicians on which information technology systems they should purchase and assistance on how to become meaningful users of EHRs (Menachemi and Collum, 2011).

To address some of the logistical problems associated with EHRs, the federal government has entrusted an additional US$560 million under the HITECH Act to state governments for the development of infrastructure to facilitate the exchange of health information (Menachemi and Collum, 2011). However, the United States continues to lag behind other developed countries in the use of health IT (Evans and Stemple, 2008). EHR systems have the potential to transform the health care system from a mostly paper-based industry to one that utilizes clinical and other pieces of information in electronic form to assist providers in delivering higher quality of care to their patients (Menachemi and Collum, 2011). The financial incentives in HITECH, which are made available through the Medicare and Medicaid programs, are also an attempt to correct some of the misalignment of incentives associated with EHR, especially because the US Government, through the Medicare and Medicaid programs, is the largest insurer in the country (Menachemi and Collum, 2011).

Extending the benefits and value of electronic health records requires a healthcare organization that has a data-driven culture – a culture that understands that what can be measured can be improved and that improvement depends upon data that is both real and trustworthy (Probst, 2016). Creating that culture starts at the top: the CEO and the Board of Trustees must be focused on data and view it as essential to the performance of the healthcare system and to their own performance (Probst, 2016). But building that culture requires two other key groups of people: clinicians, who understand how to define analytics, develop them and use them; and statisticians, who can build algorithms that are useful to those clinicians (Probst, 2016). EHRs are built to share information with other health care providers and organizations – such as laboratories, specialists, medical imaging facilities, pharmacies, emergency facilities, and school and workplace clinics – so they contain information from all clinicians involved in a patient's care (Electronic Health Records). Therefore, once fully implemented across all medical systems, it seems to be a "win-win" for both healthcare facilities as well as patients.

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