A Provider’s Perspective on Electronic Health Record Systems Adoption in Small Practices

Research-in-Progress

Chi Zhang
Southern Polytechnic State University
chizhang@spsu.edu

ABSTRACT
This research-in-progress investigates EHR adoption in small primary care practices. By surveying 19 small physician offices, the preliminary findings suggest that small practices who have adopted EHRs perceive substantial benefits in ensuring that patients benefit from the quality care. The findings also imply that more small practices need to be reached out and small practices physicians be assisted on adoption and use of EHRs. Future research plan is presented. The study intends to help the Health Information Technology Regional Extension Centers to identify and share best practices in EHR adoption, effective use, and provider support.

Keywords
Electronic health record (EHR) systems, EHR adoption, health information technology (HIT), small practices, Regional Extension Center (REC).

INTRODUCTION
Under the Health Information Technology for Economic and Clinical Health Act (HITECH Act, 2009), healthcare providers can qualify for Medicare and Medicaid incentive payments when they adopt and meaningfully use certified electronic health record (EHR) technology. The adoption and meaningful use of EHR systems will lead to “more coordination of patient care, reduced medical errors, elimination of duplicate screenings and tests, and greater patient engagement in their own care” (U.S. Department of Health & Human Services, 2012a). The Centers for Medicare & Medicaid Services, collaborating with federal and state health agencies, launched an incentive program in 2008 to assist the adoption of EHRs specifically for small- to mid-size physician practices (U.S. Department of Health & Human Services, 2008).

Small practices are usually referred to the practices that focus on primary care which include physicians (internal medicine, family practice, OB/GYN, pediatrics) and other healthcare professionals (practitioner assistant, nurse practitioner, nurse midwife) with prescribing privileges, have 10 or fewer physicians (U.S. Department of Health & Human Services, 2012b), and are more likely to practice in non-hospital based settings and in rural areas (Rao et al., 2011). Prior work shows that lack of funding, lack of standardized implementation process, and lack of skilled workforce are the major difficulties for the small practices (Horowitz and Zhang, 2012). The small practices are also reported to have concerns about future obsolescence (Rao et al., 2011).

To provide assistance for small practices and other medical practices lacking resources to implement and maintain EHRs, Regional Extension Centers (RECs) funded by the Office of the National Coordinator for Health Information technology (ONC) were established to provide information, guidance, and technical assistance for EHR implementation (ONC, 2012). The extension program established an estimated 64 regional centers, each serving a defined geographic area. The nationwide key performance indicators show that RECs have achieved their enrollment goals as of September 2012 (U.S. Department of Health & Human Services, 2012b). However, data from the National Electronic Health Records Survey (NEHRS) conducted by the National Center for Health Statistics (NCHS) (Jamoom et al., 2012) shows that EHR adoption increased as the size of the practice increased. 86% of physicians in practices with 11 or more physicians having adopted EHR systems, whereas 62% of physicians were adopters in 3-to-10-physician practices, and decreased to 29% among solo practitioners.

The extension program also established a national health information technology research center (HITRC) to gather relevant information on EHR adoption and effective use for better provider support (ONC, 2012). This study-in-progress intends to start the investigation of the adoption of EHR and Electronic Practice Management Systems by the small practices specifically in the state of Georgia. The goal is to provide information and recommendations to the REC Georgia with which our institution works together to assist EHR adoption and health information technology workforce training. We sought to answer the questions: 1. What functionalities do the small practices use with their EHRs and Electronic Practice Management...
Systems? 2. What are most important functionalities to them when adopting and utilizing EHRs? 3. Do they know who their Regional Extension Center is, and did the Regional Extension Center contact them regarding EHR adoption?

METHODS

We surveyed a convenience sample for this research in progress. The purpose of the survey is to get preliminary information on EHR adoption in small practices and refine the survey questions for further study. The questionnaire was distributed and collected through email or in-person visit. Of 25 sampled small practices, 19 completed the survey, yielding a response rate of 76%. The survey questions used the National Electronic Health Records 2012 Survey (CDC, 2012) as reference and developed on advice from an expert panel consisting of people from Georgia HIT regional extension center, HIT consulting company, and faculty in HIT field. There was a total of 10 questions along with one open-ended question for their comments on EHR adoption. The original survey questions and the response choices are provided in the appendix.

The survey questions were intended to be short and simple. The HIT regional extension center – the regional HIT resource and support center, intends to get a snapshot of the EHR adoption in the region and to direct their future effort and collaboration with federal and state agencies in assisting EHR adoption. Thus the information not directly related to the adoption and the use of EHR was also collected, such as patient demographics and patient insurance coverage.

PRELIMINARY ANALYSIS RESULTS

Of 19 completed surveys, 18 report that they are using EHRs in their practice. The functionality they use the most with their EHRs is patient charts followed by lab results and e-prescriptions. Some of them also use referrals with EHRs. Other functionalities mentioned include patient registration, drug inventory, dictation, and workflow.

The top five items that are most important to them when adopting and utilizing EHRs are:

1. Maintaining quality of care for patients
2. Privacy and Security
3. Financial costs
4. Reporting (e.g. population health, quality improvement, management), and
5. Reaching meaningful use criteria.

When responding to the functionality of electronic practice management systems, the surveyed practices report that they use the systems for billing, scheduling, appointment reminders and online portal. Patient coverage shows that most of the surveyed small practices serve Medicare and Medicaid patients which qualify for the EHR incentive programs, along with patients with private insurance or uninsured (Table 1).

<table>
<thead>
<tr>
<th>Patient Coverage</th>
<th># out of 19 surveys</th>
</tr>
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<tbody>
<tr>
<td>Medicare</td>
<td>16</td>
</tr>
<tr>
<td>Medicaid</td>
<td>14</td>
</tr>
<tr>
<td>Private Insurance</td>
<td>19</td>
</tr>
<tr>
<td>Uninsured</td>
<td>16</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
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</tbody>
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Table 1. Patient Coverage Results

Interestingly, 13 out of 19 practices report that they do not know their Regional Extension Center. Additionally, 11 practices point out that the Regional Extension Center has not contacted them regarding Electronic Health Records either directly or indirectly whereas two respondents are not certain about it. All practices report that they are HIPAA compliant.

Additional Comments from Surveyed Practices

With regard to the open-ended question “What else do you want to tell me about EHR adoption in your practice”, the surveys show that the practices have both positive and negative comments.

Positive comments

- EHR has revitalized our practice. It makes life easier. It keeps patients safer and makes healthcare coordination among specialties more efficient. It also saves valuable time for documentation.
- It is very helpful/practical when it comes to finding information quickly; more private & secure than paper charts.
- The EHR adoption in my practice has been very good. It was tedious from the beginning of the implementation with all the learning curves and the culture change that was making staff to be resistant to the new technology. Now everybody is used to it, we become a better practice in offering healthcare by driving cost down.
Currently using EHR to reach Meaningful Use criteria due to government funding.
- It is not perfect but is much easier than paper charts.
- We have been using EHR since 2007. Only within the last 3-4 months, have we been learning features and trying to adopt the practices so that we can become compliant with meaningful use.
- Everyone should do EHR.
- We used “Phases” for adding functionality and that has worked well. There are some disadvantages however in being a hybrid system at present that will be nullified when everything is done in the EHR.

The negative comments about the EHRs
- It is time consuming. EHR systems need to be more user-friendly.
- Very long (and) expensive process.
- The major obstacles are Money and the cost of Training.
- It is difficult to adopt, but it will be great once it's up running.
- We have a homegrown system. It's not user friendly and is very time consuming.
- EHR systems are not fully developed to accommodate compound prescription requests from MD offices. Because they are combinations of various ingredients, they do not have a specific NDC number assigned to a specific compound. Additionally, EHR systems do not provide the flexibility required to fill out a prescription electronically because of the various drug concentrations, dosage forms and methods of use associated with compounded prescriptions. This result in increased possibility for medication errors and additional time needed to verify and clarify the contents of the prescription.

Plan on EHR adoption and Utilization
The surveyed practices also show us their future plan on utilizing EHR and Electronic Practice Management Systems:
- Our clinic has started using the Electronic Health Records recently. At present we are using the EHR system in scheduling patient’s appointment and to Lab results, later on we are trying to implement and use in all aspects.
- We have recently implemented online services for patients. It’s the hot topic in the office where we are encouraging patients to register to manage services online.
- Since our Clinic is in the initial stage of using the EHR, we applied Electronic Practice Management Systems only to Billing. If we are successful in this, we will upgrade eventually.
- We have completed the Assessment Phase and are currently trying to acquire funding for the search, selection, purchase, and training of an EHR.

DISCUSSION
A majority of Americans receive their healthcare from physicians in small practices (Liebhaber and Grossman, 2007). This research-in-progress investigates the current EHR adoption in small practices in the state of Georgia and examines perceived barriers to and benefits of EHR adoption among healthcare providers. The major limitation of this introductory study is the invalidated survey questions. Furthermore, it would be helpful if the information of what EHR systems they use can be collected so that the perceived benefits of using the system can be better analyzed. Nevertheless, the survey and the open-ended question have collected valuable information on providers’ experience of EHR adoption and utilization. The preliminary findings point out the most important functionalities to small practices when adopting and utilizing EHRs. It suggests that small practices who have adopted EHRs perceive the substantial benefits ensuring that patients benefit from the effective and efficient quality care. The study provides practical suggestions to the Regional Extension Center that more small practices need to be reached out and small practices physicians need assistance to adopt and use EHRs.

EHR adoption can be seen as a case of technology adoption at organization level. Thus the theories for technology adoption at the organization level can be applied to provide directions. Two major theories are Diffusion of Innovation (DoI) theory (Rogers, 1995) and the Technology, Organization, and Environment (TOE) framework (Tornatzky and Fleischer, 1990). DoI theory emphasizes that innovativeness is impacted by characteristics of individual (leader), internal characteristics of organizational structure, and external characteristics of the organization. TOE framework defines three aspects of an organization that influence the technological innovation decision making – environmental context (industry characteristics and market structure, government regulation), organizational context (size, managerial structure), and technological context (current practices and equipment, available technologies external to the firm). Both theories provide useful analytical frameworks to study the adoption of IT innovation.

In the context of EHR adoption, the factors that influence the adoption and utilization of EHR systems include HIT incentive programs, federal and state regulations, different healthcare settings (for example, hospitals and ambulatory settings) and
different sizes for each setting, different level of readiness in terms of IT infrastructure and IT support staff, among others. These factors can be categorized into three aspects specified by the TOE framework.

Future research can be conducted on both theoretical side and practical side. On theoretical side, barriers and enablers for EHR adoption can be further studied with technology adoption theories and organizational theories. On the practical side, to continue with the preliminary study, survey questions need to be refined based on the preliminary survey result and national electronic health record survey (CDC, 2012) and sample size of small practices need to be expanded. It is our hope that the further study will find out the unique barriers the small practices in the region are facing and the way to assist them meaningfully use the EHRs to its full potential after adoption.

REFERENCES


APPENDIX: CLINIC SURVEY QUESTIONS

1. Are you using Electronic Health Records in your practice/clinic? If yes, check all that apply from the list below. Yes No
   - Lab results
   - e-Prescriptions
   - Patient Charts
   - Referrals
   - Other

2. Please select the top 5 items from the list below, according to what is most important to you when adopting and utilizing EHRs for your practice.
• Reporting (e.g. population health, quality improvement, management)
• Interoperability
• Mobile capability
• Maintaining quality of care for my patients
• Equipment/Software selection
• Reaching meaningful use
• Technical support
• Financial costs
• Privacy and security
• Staff support and training
• Patient awareness
• Other

3. Is your practice using Electronic Practice Management Systems? If yes, check all that apply from the list on next page. Yes No

• Scheduling
• Appointment reminders
• Billing
• Online portal
• Other

4. Are you in a solo or small group practice (10 providers or less)? Yes No

5. Are you a Primary Care Provider? If not, what is your specialty? Yes No

   Specialty:

6. Describe the patient population that you care for. (Check all that apply and give percentage if possible) - Race/Ethnicity

   • White (non Hispanic)
   • Black
   • Native American
   • Asian/Pacific Islander
   • Hispanic
   • Non-Hispanic
   • Other

7. Describe the patient population that you care for. (Check all that apply and give percentage if possible) - Patient Coverage

   • Medicare
   • Medicaid
   • Private Insurance
   • Uninsured
   • Other

8. Do you know who your Regional Extension Center is? Yes No

9. Has your Regional Extension Center contacted you regarding Electronic Health Records either directly or indirectly? Yes No

10. Is your practice HIPAA compliant? What are the reasons if you select No? Yes No
Reasons:

11. What else do you want to tell me about EHR adoption in your practice?