

RUPRI Center for Rural Health Policy Analysis

Rural Policy Brief

Brief No. 2008-4

October 2008

www.unmc.edu/ruprihealth

Electronic Health Records Adoption: Rural Providers' Decision-Making Process

Li-Wu Chen, PhD, Anne Skinner, RHIA

Purpose

The purpose of this study was to examine the decision-making process that small rural physician clinics and hospitals use as they investigate and select an electronic health record (EHR) system and to understand the rationale for their decision. This research will help policy makers identify the challenges that rural health care providers may face in the process of adopting EHRs and develop incentives that promote the use of health information technology (HIT) in rural America.

Key Findings

- A major challenge to rural health care providers' implementing an EHR system is the complexity associated with the selection and adoption process, including lack of knowledge about EHR systems and industry, uncertainty about cost, and doubts about the quality of information presented by vendors.
- Rural providers' main rationale for implementing an EHR system is to increase their organizational efficiency, including

- Reducing the turnaround time for getting payment
- Reducing or eliminating transcription
- Reducing the time spent on paper-chart handling
- Reducing the space needed for chart storage
- Increasing staff availability for other tasks
- Increasing staff job satisfaction

- Hands-on experience with EHR systems and relationships with associated vendors usually trigger providers' final decision about which system to adopt.

Data and Method

Through key rural informants, we identified two rural physician clinics and two rural hospitals in Nebraska that have implemented an EHR system. We sent letters to the administrators of the hospitals and to the clinic managers inviting them to participate in this study. After they agreed to participate, a 90-minute site visit was scheduled with each facility. Information from a pre-visit survey helped us to tailor interview questions to each facility and provided a context for our study. The interview instrument was constructed based on a conceptual framework of the innovation-decision process, modified from Rogers' and RTI International's work.^{1,2} We followed a chronological progression, starting by asking the interviewees



**Rural Health Research
& Policy Centers**

Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

to tell us about their first exposure to an EHR system in the health care setting. Interviews were conducted in December 2007. In physician clinics, we interviewed clinic managers, and in hospitals we interviewed CEOs, CFOs, health information management staff, directors of nursing, and HIT personnel. Both physician clinics have a practice size of 5 to 10 physicians and have approximately 2,500 to 2,800 patient visits per month. Both hospitals are Critical Access Hospitals and have an average daily inpatient census of three to seven.

Findings

Based on our interview findings, we chronologically portrayed the decision-making process of EHR system adoption for small rural physician clinics and hospitals. The process starts with the key personnel's (usually the clinic administrator, hospital CEO, or physicians) first exposure to the knowledge of EHR systems, continues with the serious consideration of adoption by the organization, and ends with the adoption/purchase decision (Figure 1). We define the stage between First Exposure and Serious Consideration as the General Exploratory Stage and the stage between Serious Consideration and Final Adoption as the Specific Investigation Stage. During these two stages, decision makers evaluate EHR systems in terms of six innovation characteristics: relative advantage, observability, compatibility, trialability, complexity, and cost.

General Exploratory Stage

During this stage, providers form their initial attitude toward EHR systems in general, usually based on their limited knowledge of the field. In this stage, providers acquire more knowledge about how EHR systems function and whether an EHR system would meet the needs of their organization. Three innovation characteristics play a critical role for providers at this stage.

1. Complexity. Most of the providers we talked to thought that an EHR system or HIT in general was "too complex" when they were first exposed to it.

"We didn't know what questions to ask the vendors." "We didn't know whether the industry is solid (for us) to jump in." "We didn't know how long the company (vendor) will exist."

Decision makers' previous experience with HIT compensated for the complexity of an EHR system. In one case, the hospital CEO had extensive experience with HIT through his previous employment as the director of a laboratory information system and as the CEO of a rural hospital that, under his management, evaluated and implemented an HIT system. The director of nursing at this same hospital also had experience with HIT through previous work.

2. Observability. All of the providers we talked to felt that implementing an EHR system was "the right thing to do" and that they "must do it." Some providers expected that the government will mandate EHRs and that EHRs will be an industry standard in the future. Nevertheless, none of the providers considered "meeting regulatory requirements for data collection" and "meeting incentives from payers" as their immediate driving force for implementing an EHR system. In addition, all providers agreed that having an EHR system in place would make recruitment and retention of young (or new graduate) physicians and health care professionals much easier.

3. Cost. Most providers were uncertain at this stage whether they could afford an EHR system that would meet their needs. They were also uncertain about how much and what kind of savings they could expect from an EHR system that would offset some of the system's costs. To overcome the challenges of insufficient knowledge about an EHR

system and its cost, providers acquired information from peers and vendors and by attending conferences and vendor shows.

Specific Investigation Stage

During this stage, providers begin to seriously consider adopting an EHR system, and thus engage in specific investigation activities. Providers are seeking answers to two key questions: (1) Should the organization adopt an EHR system? (2) If so, what specific system should the organization adopt? The precursor to this stage may be a trigger that makes adopting a system inevitable. In our study, three out of four providers stated that they felt they must go forward with the next step because their current practice management system was going to be discontinued and would no longer be supported. Four innovation characteristics play an important role in the decision-making process at this stage.

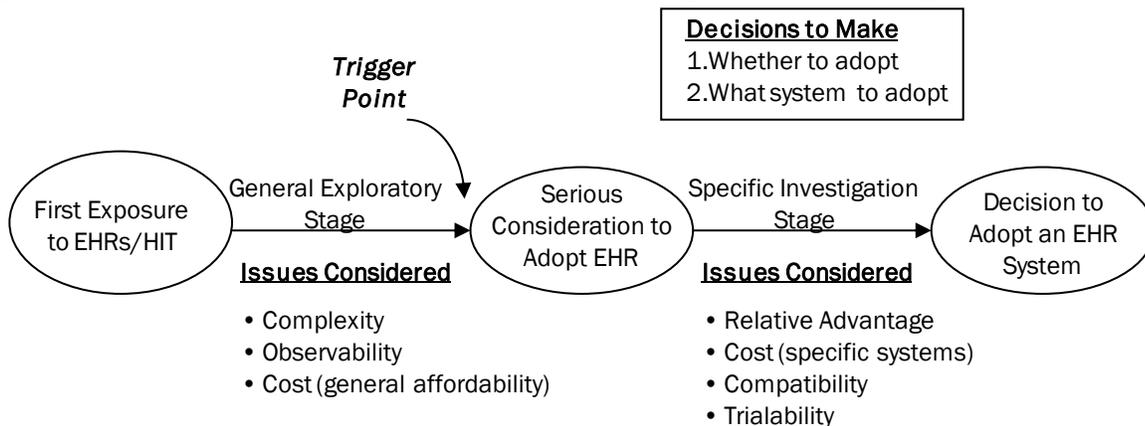
1. Relative advantage. All providers considered “increasing organizational efficiency” (especially on the business side) as a major relative advantage of an EHR system. Providers expected to reduce the turn-around time for getting payment (through reducing coding time and billing time), reduce the time spent on paper-chart handling, reduce the space needed for chart storage, increase staff availability for other tasks, and increase staff job satisfaction. Some providers also

considered “improving quality and patient safety” a relative advantage (through better tracking of patient outcomes data, reducing medication errors, and making better-informed clinical decisions).

2. Cost. Providers collected better information from potential vendors about the cost of various systems, reducing the uncertainty about cost they had felt earlier. As a result, they could better assess affordability. For instance, recognizing that the savings from eliminating outsourced transcription alone would offset the cost of EHR and practice management systems strongly persuaded a physician clinic to adopt an EHR system. After communicating with its accounting firm, a Critical Access Hospital confirmed its business case for adopting an EHR system because Medicare patients accounted for 81% of its patient population, and EHR costs are allowable/depreciable costs by Medicare.

3. Compatibility. Providers investigated the features and functionalities of various EHR systems and considered/selected the systems that most met their organizational needs and were compatible with their previous systems. They collected information about the relative advantage, cost, and compatibility of various EHR systems through vendor’s on-site presentations and their own site visits to locations that had implemented an EHR system

Figure 1. Rural Physician Clinics’ and Hospitals’ Decision-Making Process for Adopting EHR Systems



they were considering. The analysis of this information usually allowed them to decide whether to adopt an EHR system and to narrow their options to two or three systems (vendors).

4. Trialability. Providers usually made their final decision after users in their organizations had a hands-on trial of the systems under consideration. In one case, hospital staff asked to visit the offices of the two vendors being considered. The hospital staff thought it was important to talk to the vendors' salespeople and support staff and to see the place where they work. "We were not just buying a system, we were buying a long-term relationship," stated the CEO of the hospital.

Conclusion

A major challenge to rural health care providers' implementing an EHR system is the complexity associated with EHR system selection and adoption. A lack of knowledge about EHR systems in general and about specific systems may discourage or delay EHR system adoption. Rural providers can overcome their knowledge gap through good communication with peer providers and vendors and by obtaining information at conferences and vendor shows. Rural providers' main rationale for implementing an EHR system is to increase their organizational efficiency. Hands-on experience with the EHR systems being considered and the

associated vendors (trialability) usually trigger providers' final decision about which system to adopt. One lesson learned from the experiences of those we interviewed is that involving all relevant staff (both business and clinical, especially physicians) in the entire decision-making process is critical to successfully implementing an EHR system. Not doing so may diminish staff support for the decision, creating a significant barrier to operating and benefiting from the system after adoption.

Acknowledgements

We thank the interviewees from physician clinics and hospitals in Nebraska for their participation in this study. We also thank Jameca Price for her assistance with the project and Sue Nardie for her help with editing this brief.

References

- ¹Rogers EM. *Diffusion of Innovations*. 5th ed. New York, NY: Free Press; 2003.
- ²QSR International. *RTI International: Pulling Back the Curtain on Organizational Decision Making in the US Healthcare System*. Doncaster, Victoria, Australia: QSR. http://www.qsrinternational.com/FileResourceHandler.ashx/RelatedDocuments/DocumentFile/241/NVivo_7_User_Project-RTI_International.pdf. Accessed January 23, 2008.

Funded by the Federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services (Grant #1U1C RH03718)

RUPRI Center for Rural Health Policy Analysis, University of Nebraska Medical Center, 984350 Nebraska Medical Center, Omaha, NE 68198-4350, (402) 559-5260, <http://www.unmc.edu/ruprihealth>