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Adoption Rate of a Certified EHR at Medical Practices with Five or Fewer Physicians

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Abstract

The adoption rate of a certified electronic health record (EHR) for small medical practices have been the subject of discussion because prior research shows that larger medical practices have a higher rate of adoption than small medical practices. The major reason for this disparity has been the cost of adoption and implementation as many small practices are not financially equipped to shoulder this burden. The purpose of this research was to determine the adoption rate of a certified EHR for medical practices with five or fewer physicians. Through a google search and filtering the results of the search, the office managers of 20 medical practices in the Metro Atlanta Area (state of Georgia) were interviewed in-person or by phone to assess the certified EHR adoption rate, meaningful use (MU) utilization rate and challenges encounter with implementation. The results showed that the adoption rate of a certified EHR system was 90% among small medical practices with five or fewer physicians and the MU utilization was at 72%. These results showed that despite the challenges that small medical practices face, the majority of them are complying with government mandates in the effort to advance technology in healthcare.

Table of Contents

Abstract.....	2
Chapter 1 – Introduction.....	4
Background.....	4
Purpose.....	8
Chapter 2 – Methodology.....	10
Chapter 3 – Results.....	11
Chapter 4 – Discussion.....	12
Chapter 5 – Conclusion.....	15
References.....	16
Appendix – Tables and Figures	
Tables	
Table 1.....	18
Table 2.....	18
Table 3.....	19
Table 4.....	19
Table 5.....	19
Table 6.....	19
Figures	
Figure 1.....	20

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Chapter 1

Introduction

Information technology is a key component for advancement in today's economy and several major industries are taking advantage of this concept to improve their business quality and lower costs while simplifying business processes for key constituents. Health care has long lagged behind in the adoption of information technology but through government intervention, the healthcare industry is now making significant strides in technological advancement with mandates in the adoption and utilization of a certified electronic health record (EHR). Use of a certified EHR system has the promise of providing significant improvements in different aspects of healthcare in the United States. Despite the multitude of government mandates and incentive programs, EHR adoption rates are constantly being researched to acknowledge the progress of technology in healthcare as the years go by. Prior research shows that larger healthcare facilities have a faster rate of adoption than smaller practices. This led me to the topic of researching the EHR adoption rate of practices with five or fewer physicians. This paper seeks to examine the adoption rate of smaller practices and obtain more detailed information about the adoption process for these practices.

Background

The fundamental believe is that electronic health record (EHR) will be a key foundational tool for improving patient safety and quality of care while reducing costs (Classen & Bates, 2011). With this believe, the federal government has implemented substantial incentives for providers to adopt EHRs through the Health Information Technology for Economic and Clinical Health (HITECH) Act (Classen & Bates, 2011). Observing that the HITECH Act alone was not

enough to make an impact in EHR adoption, the Centers for Medicare and Medicaid Services (CMS) established the Meaningful Use (MU) incentive program. “The objectives of the HITECH Meaningful Use program extend beyond stimulating mere acquisition of an EHR, but increasing the rate of EHR adoption was an important initial goal for the incentives program” (Cohen, 2016, p. 144). In order to participate in MU and utilize government funds, providers had to utilize EHR products that were certified for the MU incentive program. The Office of the National Coordinator for Health Information Technology (ONC) had the privilege of designing a certification program that was intended to be open, competitive, and conducive to innovation (Blumenthal, 2011).

Despite the fact that the ONC was responsible for developing the certification process, the CMS and the Office of the National Coordinator for Health Information Technology (ONC) established standards and other criteria for structured data that EHRs must utilize in order to qualify as certified for this incentive program (CMS, 2015). The purpose for this certification process was to assure purchasers and other users that the EHR system offers the necessary technological capability, functionality, and security to help them meet the meaningful use criteria (CMS, 2015). This standardized the structure of certified EHR systems being utilized. The EHR system also has to be interoperable by having the capability of working with other systems to share information that can be easily retrieved and transferred in a structured format that aids in efficient patient care. There are several certified EHR products on the market but for providers to successfully participate and meet the recommended standards for the meaningful use incentive program, they have to utilize EHR products that were specifically certified to easily accommodate the objectives of the program. The ONC certification program allows providers to purchase only those certified health information technology components that met their needs

(Heisey-Grove & Patel, 2015). By meeting the MU criteria for a required level of EHR functionality, the providers are then able to qualify for Medicaid or Medicare incentive payments (Mack et al., 2016). The maximum incentive payments that can be earned over five years for physicians in the Medicare EHR incentive program cumulatively amount to \$43,720; for physicians in the Medicaid EHR incentive program, the maximum incentive payments cumulatively amount to \$63,750 (Cohen, 2016). The HITECH Act has distributed billions of dollars to physicians as incentives for adopting certified EHRs through the MU program ultimately aimed at improving healthcare outcomes (Mennemeyer, Menachemi, Rahurkar, & Ford, 2015). Physicians that failed to demonstrate MU are subject to financial penalties through progressively larger reductions in their Medicare payments, starting with a 1% reduction in 2015 (Cohen, 2016).

In an effort for the ONC to accommodate the timeline for the meaningful use incentive program, they created the temporary certification program (TCP) for Health Information Technology (Health IT) to provide a way for organizations to become authorized by the National Coordinator to certify and test Electronic Health Record (EHR) technology (Health IT, 2014). ONC-Authorized Testing and Certification Bodies (ONC-ATCBs) certified and tested EHR technology at Accredited Testing Laboratories (ATLs), while the National Institute of Standards and Technology (NIST) developed the functional and conformance testing requirements, test cases, and test tools to support the proposed health IT certification programs in an effort to help ensure compliance with meaningful use technical requirements and standards (Health IT, 2014). The TCP began in July 2010 and was replaced on October 4, 2012 by the ONC HIT Certification Program which is also known as the permanent certification program (PCP). During this transition from the TCP to the PCP, no new application for EHR product certification would be

accepted and the ONC-ATCBs would have six months to complete all pending applications for EHR certification. There was approximately 1,138 vendors that were certified in the TCP with about 861 ambulatory EHR vendors and about 277 inpatient EHR vendors (Posnack & Charles, 2013).

Vendor-improvement cycles have been interrupted by the rush to achieve meaningful use as vendors focus the majority of their efforts on speeding up their implementations of EHRs to achieve meaningful-use incentives which has further increased the vendor workload, and as a result could generate unintended consequences, such as unplanned system shutdowns or system-induced errors in patient care (Classen & Bates, 2011). It is imperative that both vendors and providers need to intensively focus on the various details of planning the EHR implementation (Palvia, Jacks, & Brown, 2015). To prevent implementation issues, the EHR vendor must detail the service-level agreement with the adopting organization such as details on technical support of the system, upgrades to the system, and problem resolution channels (Palvia et al., 2015). Prior to the meaningful use incentive program, many providers were utilizing EHR systems that were not certified but currently, they have to either certify the program or transition into a meaningful use certified EHR. Vendors have to scramble to make sure that their certified EHR products meet the objectives and criteria for the meaningful use program, educate providers on how to utilize the system for maximum benefit and continuously upgrade the system to add other software systems such as computerized physician order entry (CPOE) and Systematized Nomenclature of Medicine--Clinical Terms (SNOMED CT). Successful implementations should align with both clinical and operational processes to achieve an optimal level of integration between the EHR and the adopting organization's current IT to support the healthcare organizations business strategy (Palvia et al., 2015). Although it is ideal for the system to match the business processes,

financial constraints usually dictate the type and capacity of EHR systems that healthcare organizations adopt and implement.

Healthcare organizations usually have the option of implementing a partial (base/basic) or complete (comprehensive) EHR system. The 2012 rule temporarily eliminated penalties of MU stage 1 for radiologists, pathologists, and anesthesiologists and the purpose for this was significant hardship exemptions in purchasing a certified Complete EHR system as opposed to purchasing a Base EHR (Siddiqui, Nagy, Bonekamp, & Dreyer, 2014). Complete EHR systems meet all the required certification criteria and Base EHR (EHR Module) meet only a few specific certification criteria. It was later realized that a complete and fully integrated EHR system was necessary for technological advancement in all aspects of healthcare for significant benefits in electronic billing, electronic order entry, electronic progress notes, and creation of clinical decision support engines, outcome-based research databases, patient health portals, and nationwide healthcare information exchange (Siddiqui et al., 2014). A certified complete EHR system increases the amount and timeliness of clinical information available at the point of care with embedded decision support and order entry as well as suggests that the EHR may be a powerful tool to help clinicians deliver well-targeted, high-quality care of chronic disease and improve patient outcomes (Reed et al., 2012).

Purpose

Electronic health record is the way forward for healthcare in terms of technological advancement but the challenge is getting providers to adopt a certified EHR system (basic or comprehensive). The objective of this study is to evaluate adoption rate of a certified EHR at medical practices with five or fewer physicians. There is a significant disparity in EHR adoption rates for primary care providers. This was evident in a study that showed that providers in

smaller practices (one-10 providers) have twice the chance of not implementing EHR systems as providers in larger practices (10 providers) (Mack et al., 2016). According to another study, data demonstrated that as of 2014, a majority of office-based physicians have adopted EHRs (Heisey-Grove & Patel, 2015). Many smaller facilities that don't have the financial capabilities of implementing an EHR system are either partnering with large healthcare organizations or selling their respective facilities to work for larger healthcare organizations. EHR adoption is an ongoing process that will continuously evolve through system upgrades, interoperability, and continued education and training of staff (Mack et al., 2016). As health care organizations at different levels transition into the new electronic era by implementing and adopting EHR systems, new job roles will be needed for this transition and some current job roles will inevitably become obsolete due to the change (Zeng, 2016). "Because an EHR is an enterprise information system that will affect all users, additional training on information technology and informatics competencies are needed for all current health care personnel" (Zeng, 2016, p. 114). A study indicated that the majority of physicians regardless of EHR adoption status, agree that EHR use results in overall clinical benefits, more efficient practices, and financial benefits (Jamoom, Patel, Furukawa, & King, 2014). Major barriers that prevent physician practices from adopting an EHR system include but are not limited to purchase cost, productivity loss, implementation concerns with EHR complexity, and challenges with the vendor selection process; and factors with the greatest influence on EHR adoption are MU financial incentives and penalties, technical assistance, and the capability for electronic health information exchange (Jamoom et al., 2014). Findings from another study were consistent with the view of EHRs as a particularly complex innovation, with many physicians uncertain about EHR usability and disruption of workflow among other risks (Cohen, 2016).

Chapter 2

Methodology

A google search was conducted with the title “small medical practices city, GA” for numerous cities in the Metro Atlanta Area in the state of Georgia which included but was not limited to Atlanta, Decatur, Stone Mountain, Norcross, Snellville, Duluth, Dunwoody etc. The list was filtered to medical practices that were privately owned and had five or fewer physicians. Once the filtering was complete, the office managers of these medical practices were contacted by phone to schedule an interview that dealt with EHR adoption and implementation. This process was very tedious because many smaller practices have partnered with major healthcare entities in an effort not to shoulder the cost of implementation as well as prevent practice closure. Questions (Figure 1) were developed to perform in-person or phone interviews of 20 medical practices. These questions assessed the specialty of the practice; the number of physicians in the practice; if the practice uses an EHR system; whether the EHR system is basic or comprehensive; if the EHR system is certified; the number of years the practice has used an EHR system; if the practice participates in the MU incentive program; the barriers the practice faced during implementation; and the impact of EHR implementation on daily workflow processes and quality of patient care. These questions would determine the adoption rate of a certified EHR among smaller practices and the challenges that smaller practices are encountering with technological advancement to be in compliance with government mandates.

Chapter 3

Results

Data was obtained from 20 medical practices and their specialties were family medicine, internal medicine, psychiatry/behavioral health, orthopedic and sports medicine and OB/GYN (Table 2). The two dominant specialties in the research were family medicine and internal medicine; out of the 20 medical practices, 9 were family medicine and 8 were internal medicine. The number of physicians in the practice ranged from 1-5; there were 8 solo practices, 7 two-physician practices, 2 three-physician practices, 2 four-physician practices and 1 five-physician practice (Table 3). The results showed that 18 physician practices were using a certified EHR system and 2 physician practices were still using paper-based records (Table 4). From the 18 medical practices that were using a certified EHR system, 15 were using a comprehensive system and 3 were using a basic system; and 13 medical practices were participating in MU while 5 medical practices were not (Table 5). Some of the different EHR systems used were Allscripts Pro, Health Fusion, Nexus Clinical, E-Clinical Works, EPIC, Amazing Charts, Medisoft, GE Centricity etc. About half of the medical practice were using an EHR system prior to 2010 and either certified the system that they were using or transition to a completely different system while the other half implemented an EHR system due to government mandates, incentives and penalties.

Chapter 4

Discussion

According to the results, the adoption rate of a certified EHR at medical practices with five or fewer physicians was 90% which shows that the majority of smaller practices are complying with government mandates for EHR adoption despite the overwhelming challenges that they face with EHR implementation (Table 5). 10% of the medical practices were still using paper-based records and their reason was to protect patient confidentiality as well as focus on the personalized quality of patient care being administered by the providers; these practices stated that they will not use an EHR system and are willing to take the pay cut for services provided. If enough medical practices in the nation take such a stance in EHR implementation, how would that impact technological advancement in healthcare? This is something that needs further evaluation to ensure that all medical practices are using an EHR system.

The study results showed that 72% of the medical practices were participating in the MU incentive program while 28% were not (Table 6). The practices that are not participating in MU are being penalized for noncompliance because the penalty went into effect in January 2015 and will progressively increase as the years go by. The study revealed that the cost of implementation ranged from \$20,000 - \$100,000 based on the system used and the number of providers in the medical practice; the more physicians in the practice resulted in a higher implementation cost. According to the results, a few reasons for EHR system selection by the medical practices were that the system was user friendly, cheaper cost, ease with interfacing, paperless and more efficient, it provided what the practice needed. The results of the study showed that the barriers during implementation were cost, lack of proper training, cumbersome and time consuming in reestablishing patient charts, getting used to an electronic system versus paper, learning how to

navigate a new system, system shutdowns and provider reluctance. The ways that these medical practices overcame these barriers were to have the vendor staff on site for the first month of implementation; lock up paper records in an effort to force staff to use the system; hired administrative staff to work after hours to reestablish patient charts in an effort not to disrupt daily workflow; work with vendor to fix system problems; enforced training protocol for providers; and shut down the practice for more staff training. A few practices stated that they did not experience any barriers during EHR implementation.

In terms of the impact of EHR implementation on daily workflow, the study results were both positive and negative; some positive results were that it smoothed the data capturing process, it was easy to access patient charts, improved the documentation process and kept track of things easier; and some negative results were that it was cumbersome, reduced the number of patients seen daily, and slowed down the daily workflow. According to the study results, the impact of EHR implementation on the quality of patient care were both positive and negative; some positive results were that the providers were more thorough in patient care, significantly minimized charting errors, and patient information was easily accessible for efficient patient care; and some negative results were that the providers spent less time on personalized patient care and more time trying to adhere to government regulations for the EHR system. Majority of the practices that were interviewed expressed frustration with their current EHR systems and were in the process of looking for a better system that is efficient and easy to navigate. This study showed that medical practices with five or fewer physicians are still surviving and making significant strides in EHR adoption despite the many challenges that they face. It was evident during the data collection process that many practices have gone out of business and others have

partnered up with larger healthcare organization to ease the transition and minimize the cost of implementation.

This study provided general information that was essential in understanding the EHR adoption rate and process for small medical practices with five or fewer physicians but also had limitations. The major limitation for this study is that the sample size was too small and need to be conducted on a larger scale to obtain a better account of the EHR adoption rate. Another limitation was the validity of the information obtained because the information was not verify by use or demonstration of the systems being used by the medical practice; information was obtained from the office manager in the medical practice. Future research could evaluate the number of times that medical practices have switched vendors and detailed reasons for the switch; and to research if small medical practices have an EHR system with the server on site or if they are using a cloud based EHR and find out the comparison between both.

Chapter 5

Conclusion

The certification process for an EHR system is tedious for vendors and even more hectic for providers. Vendors have to create these systems based on specifications necessary to accommodate the meaningful use criteria for providers. Providers have a specific timeframe to implement these systems. The problem that many providers are facing is the cost of implementation and continuous maintenance because many did not budget for these expenditures. This fact alone is negatively affecting the adoption rate of a certified EHR system. Despite this major obstacle, small medical practices have a high percentage with EHR adoption and MU participation. Continuous technological advancement in healthcare and government mandates will significantly impact the adoption rate of a certified EHR system and more research will be performed to examine the growth in the adoption of a certified EHR for all facilities especially small medical practices as well as more research to substantiate the theory that a certified EHR system has the promise of providing significant improvements in different aspects of healthcare in the United States.

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Appendix

Tables

Table 1

Metro Atlanta Cities in the State of Georgia used in the Google search.

Cities
Stone Mountain
Decatur
Atlanta
Snellville
Clarkston
Tucker
Norcross
Grayson
Lawrenceville
Loganville
Marietta
Alpharetta
Smyrna
Sandy Springs
Griffin
Stockbridge
McDonough
Union City
Johns Creek
Suwanee

Table 2

Number of medical specialties interviewed in the study

Medical Practice Specialties	No. Interviewed
Family Medicine	9
Internal Medicine	8
Psychiatry/Behavioral Health	1
Orthopedic/Sports Medicine	1
OB/GYN	1

Table 3

Number physicians (1-5) of the medical practices interviewed in the study.

No. of Physicians (1-5) Practices	# Interviewed
One-Physician Practice (Solo Practice)	8
Two-Physician Practice	7
Three-Physician Practice	2
Four-Physician Practice	2
Five-Physician Practice	1

Table 4

Percentage of medical practices with/without an EHR system

Certified EHR System Use	No. of Medical Practices	Percent of Total Medical Practices
Yes	18	90%
No	2	10%
Total	20	100%

Table 5

Percentage of medical practices using a basic/comprehensive EHR system

EHR System Used	No. of Medical Practices	Percent of Total Medical Practices
Basic	3	17%
Comprehensive	15	83%
Total	18	100%

Table 6

Percentage of medical practices participating in Meaningful Use (MU)

Participation in MU	No. of Medical Practices	Percent of Total Medical Practices
Yes	13	72%
No	5	28%
Total	18	100%

Figures

1. What is the specialization for the practice (e.g. Family Medicine, OB/GYN, Pediatrics etc.)?
2. How many doctors are in the practice?
3. Does your practice use an EHR system? If no, why is your practice not using an EHR system and are there any consequences for noncompliance with government mandates for EHR use?
4. What type of EHR (basic or comprehensive) does your practice use?
5. Why did your practice choose that particular EHR system?
6. Is the EHR system certified? If no, what is the delay in obtaining a certified EHR system?
7. Does your practice participate in the Meaningful Use incentive program?
8. What was the estimated cost in the adoption and implementation of an EHR system at your practice?
9. How long has your practice used an EHR system?
10. What major barriers did your practice face during EHR implementation?
11. What did your practice do to overcome these barriers?
12. What impact has EHR implementation had on daily workflow processes?
13. What impact has EHR implementation had on the quality of patient care?
14. Knowing what you know now, what would you change about the EHR implementation process at your practice?

Figure 1. Questions used to conduct the interviews.