

ELECTRONIC HEALTH RECORDS AND THE IMPACT ON PATIENT CARE

By

Megan Melissa Charney

And

Ross Paul DuMonthier

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By

Megan Charney

And

Ross DuMonthier

Has been approved

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31 May 2017

APPROVED:

_____ 

Faculty Advisor:

ACCEPTED:




Faculty Course Supervisor


Ferris State University
Doctor of Optometry Paper
Approval and Release

ELECTRONIC HEALTH RECORDS AND THE IMPACT ON PATIENT CARE

We, Megan Charney and Ross DuMonthier, hereby release this paper as described above to Ferris State University with the understanding that it will be accessible to the general public. This release is required under the provisions of the Federal Privacy Act



Doctor of Optometry Candidate



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ABSTRACT

Background: Electronic health records have been encouraged throughout the United States in every health profession. Electronic health records and meaningful use are intended to improve patient care not only from one office visit, but to assess progression over time. Providing better communication between health care professionals regarding a mutual patient is also a goal with the implementation of electronic health record systems and meaningful use. However, the ultimate goal according to Centers for Medicare and Medicaid Services (CMS) is to deliver better quality care at less cost. Some studies have been conducted regarding improved patient care with paper records being replaced by electronic health records, however, the studies show mixed results. For this study, individual practicing optometrists have been surveyed to inquire about their experience with electronic health records and to determine if their patient care has improved.

Methods: A ten-question survey was sent to approximately 100 licensed and practicing optometrists in the state of Michigan. Each question was analyzed for significance of improvement of patient care. **Results:** Analysis of the survey will show improvement, no improvement, or decreased improvement of overall patient care and efficiency.

Conclusions: Electronic health records have improved patient care, but not efficiency.

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CHAPTER 1

INTRODUCTION OF ELECTRONIC HEALTH RECORDS AND THE IMPACT ON
PATIENT CARE

When electronic health record systems were introduced in the 1970s, there were high hopes for improvement of overall patient care at less cost. Centers for Medicare and Medicaid Services (CMS) implemented electronic health records because they theoretically allow physicians to document more thoroughly, have better communication between other physicians with regards to a mutual patient, improve efficiency of patient encounters, and improve office efficiency with regards to ancillary testing, billing, and coding. Because the medical world along with third parties is so large and complex, there are issues between different electronic health record systems and different providers. However, CMS is currently changing the idea and big picture of electronically documenting to be under one big program in hopes of making documentation and data collecting easier and less time-consuming.

Studies have been performed to determine whether the implementation of electronic health records so far have bettered patient care, however, results are mixed. Now, electronic health records are being encouraged nation-wide in hopes of uniformity among health care providers and third parties. Along with improved patient care from the

physician, electronic health records also give the opportunity for the patients to access their current and past medical records for better self-care through an electronic portal system.

The study this paper focuses on is a questionnaire about the use of electronic health records which was sent to currently practicing optometrists in Michigan.

CHAPTER 2

METHODS

An electronic survey consisting of thirteen questions were sent to optometrists in Michigan who were currently practicing. The questions were as follows:

1. Do you use an Electronic Health Record system to record your patient information and findings? **Yes** or **No**

If No, the survey is finished.

2. For how many years have you been practicing since graduation?

1. 0-10 years
2. 11-20
3. 21-30
4. 30+

3. For how many years have you been using an electronic health record system?

1. 0-2 years
2. 3-5 years
3. 6-8 years
4. 9+ years

For questions 4 through 12, please select your response with 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4= Agree, 5=Strongly Agree

4. Electronic health records have improved overall efficiency of your patient examinations.

1 2 3 4 5

5. Electronic health records have improved patient care due to better documentation.

1 2 3 4 5

6. Electronic health records have improved patient compliance with filling medications due to electronic prescriptions.

1 2 3 4 5

7. Electronic health records have been beneficial to improving patient understanding with regards to your patient education.

1 2 3 4 5

8. Electronic health records have improved transfer of care of your patients due to better communication between health professionals.

1 2 3 4 5

9. Your EHR system has improved staff efficiency in regards to recall system.

1 2 3 4 5

10. Your EHR system has improved staff efficiency in regards to ancillary testing.

1 2 3 4 5

11. Your EHR system has improved efficiency with inter-office communication.

1 2 3 4 5

12. Your EHR system has improved accuracy and efficiency of your practice with regards to patient health history.

1 2 3 4 5

13. [Optional] Please add any thoughts about your electronic health record system (i.e. pros or cons, obstacles, high points, etc.).

The survey was sent via email to members of the Michigan Optometric Association and was released on the 16th of November 2016. The survey tool used was Survey Monkey, which is a secure system that does not reveal the identification of any individual who took the survey. The survey was open for twelve weeks to allow ample time for participants to respond. The participants had the option to skip any question they did not feel could be answered. If the first question was answered as 'no', the participants were to stop the survey.

CHAPTER 3

RESULTS

A total of 65 responses were collected. Of the 65 participants, 53 (81.54%) responded 'yes' to currently using an electronic health record system to record their patient information and findings, and 12 (18.46%) responded 'no'. Sixty participants responded to the following question regarding the amount of time they have been in current optometric practice. Twenty-four (40.00%) of the participants have been practicing for 0-10 years, 8 (13.33%) have been practicing for 11-20 years, 6 (10.00%) have been practicing for 21-30 years, and 22 (36.67%) have been practicing for 30 years or more.

Fifty-nine responses were collected on question number 3. Eighteen (30.51%) participants have been using an electronic health record system for 0-2 years, 32 (54.24%) have been using an EHR system for 3-5 years, 5 (8.47%) have been using an EHR system for 6-8 years, and 4 (6.78%) have been using an EHR system for 9 or more years.

The results to question number 4 are as follows:

Question: electronic health records have improved overall efficiency of your patient examinations.

Answer Choices	Responses	
Strongly disagree	17.54%	10
Disagree	38.60%	22
Neutral	21.05%	12
Agree	14.04%	8
Strongly agree	8.77%	5
<i>Total</i>		57

The results to question number 5 are as follows:

Question: electronic health records have improved patient care due to better documentation.

Answer Choices	Responses	
Strongly disagree	14.04%	8
Disagree	22.81%	13
Neutral	14.04%	8
Agree	40.35%	23
Strongly agree	8.77%	5
<i>Total</i>		57

The results to question number 6 are as follows:

Question: electronic health records have improved patient compliance with filling medications due to electronic prescriptions.

Answer Choices	Responses	
Strongly disagree	1.75%	1
Disagree	29.82%	17
Neutral	43.86%	25
Agree	19.30%	11
Strongly agree	5.26%	3
<i>Total</i>		57

The results to question number 7 are as follows:

Question: electronic health records have been beneficial to improving patient understanding with regards to your patient education.

Answer Choices	Responses	
Strongly disagree	17.54%	10
Disagree	31.58%	18
Neutral	33.33%	19
Agree	12.28%	7
Strongly agree	5.26%	3
<i>Total</i>		57

The results to question number 8 are as follows:

Question: electronic health records have improved transfer of care of your patients due to better communication between health professionals.

Answer Choices	Responses	
Strongly disagree	15.79%	9
Disagree	14.04%	8
Neutral	22.81%	13
Agree	43.86%	25
Strongly agree	3.51%	2
<i>Total</i>		57

The results to question number 9 are as follows:

Question: Your electronic health record system has improved staff efficiency in regards to recall system.

Answer Choices	Responses	
Strongly disagree	5.36%	3
Disagree	17.86%	10
Neutral	26.79%	15
Agree	32.14%	18
Strongly agree	17.86%	10
<i>Total</i>		56

The results to question number 10 are as follows:

Question: Your electronic health record system has improved staff efficiency in regards to ancillary testing.

Answer Choices	Responses	
Strongly disagree	10.53%	6
Disagree	33.33%	19
Neutral	33.33%	19
Agree	19.30%	11
Strongly agree	3.51%	2
<i>Total</i>		<i>57</i>

The results to question number 11 are as follows:

Question: Your electronic health record system has improved efficiency with inter-office communication.

Answer Choices	Responses	
Strongly disagree	7.02%	4
Disagree	24.56%	14
Neutral	19.30%	11
Agree	43.86%	25
Strongly agree	5.26%	3
<i>Total</i>		<i>57</i>

The results to question number 12 are as follows:

Question: Your electronic health record system has improved accuracy and efficiency of your practice with regards to patient health history.

Answer Choices	Responses	
Strongly disagree	5.26%	3
Disagree	31.58%	18
Neutral	10.53%	6
Agree	47.37%	27
Strongly agree	5.26%	3
<i>Total</i>		57

Question number 13 of the survey was an optional to respond. Twenty-one participants responded. The free responses were to address any further thoughts about electronic health record systems (i.e. pros or cons, obstacles, high points, etc.).

CHAPTER 4

DISCUSSION

Electronic health record systems were brought about with intentions to improve overall patient care at less cost¹. They have their benefits and they have their flaws. Some studies show EHR systems have improved efficiency and overall patient care^{2,3}. Some studies show there are too many glitches in all of the different EHR systems to overcome.

Our study also showed mixed results. From question number 1, a trend already shows most people are converting to electronic health records as opposed to continuing with paper medical records. Also, most participants stated having used an electronic health record system in the last 5 years. Most participants stated having better documentation of patient examinations and thus improved overall patient care, as well as improved communication between the health care providers of their patients. The ability to easily review a patient's health history has also improved the accuracy and efficiency of patient examinations. Electronic health record systems have improved their staff efficiency due to recall systems implemented in the EHR system. An automatic recall system allows extra time to the staff to perform other job requirements. Electronic health record systems have also improved communications within the office. Unfortunately,

most participants feel that electronic health records have not improved their overall efficiency of their patient examinations and are taking extra time to fulfill all of the documentation needed.

Overall, electronic health record systems have their pros, but they also have their cons. Although this study contained opinions of a small group of the same medical profession, studies from larger groups in different medical professions show similar trends as our study. Results seem to be mixed. However, with ever-improving technology, the medical world has the potential to significantly improve patient care and efficiency of patient examinations with less cost. Currently, Centers for Medicare and Medicaid Services are attempting a new strategy with data collection, which is a more streamlined process using one program, Merit-Based Incentive Payment System (MIPS)⁴. There are new measures and information that must be documented, but it is all in one program with hopes that this new system will rectify the previous problem of disruption of workflow and extra time needed to document. When a provider uses MIPS and sends their documentation and data to CMS, CMS rewards providers monetarily: the incentive. The only way the system can perform properly is if all providers help by submitting their data and documenting properly⁴. With all of the data being collected by CMS, statistical analysis of the data will hopefully reveal evidence to show electronic health record systems have improved quality of patient care at less cost.

References

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APPENDIX A

IRB APPROVAL FORM

FERRIS STATE UNIVERSITY

Institutional Review Board for Human Subjects in Research

Office of Research & Sponsored Programs, 1010 Campus Drive, FLITE 412F · Big Rapids, MI 49307

Date: November 1, 2016

To: Dr. David Durkee, Ms. Megan Charney and Mr. Ross DuMonthier
From: Dr. Gregory Wellman, IRB Chair
Re: IRB Application #160810 (*Electronic Health Records and the Impact on Patient Care*)

The Ferris State University Institutional Review Board (IRB) has reviewed your application for using human subjects in the study, "*Electronic Health Records and the Impact on Patient Care*" (#160810) and determined that it meets Federal Regulations *Exempt-category 1C*. This approval has an expiration date of three years from the date of this letter. **As such, you may collect data according to the procedures outlined in your application until November 1, 2019.** Should additional time be needed to conduct your approved study, a request for extension must be submitted to the IRB a month prior to its expiration.

Your protocol has been assigned project number (#160810), which you should refer to in future correspondence involving this same research procedure. Approval mandates that you follow all University policy and procedures, in addition to applicable governmental regulations. Approval applies only to the activities described in the protocol submission; should revisions need to be made, all materials must be approved by the IRB prior to initiation. In addition, the IRB must be made aware of any serious and unexpected and/or unanticipated adverse events as well as complaints and non-compliance issues.

Understand that informed consent is a process beginning with a description of the study and participant rights, with the assurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document and investigators maintain consent records for a minimum of three years.

As mandated by Title 45 Code of Federal Regulations, Part 46 (45 CFR 46) the IRB requires submission of annual reviews during the life of the research project and a Final Report Form upon study completion. Thank you for your compliance with these guidelines and best wishes for a successful research endeavor. Please let us know if the IRB can be of any future assistance.

Regards,

Ferris State University Institutional Review Board
Office of Research and Sponsored Programs