Electronic Health Record Use: Health Care Providers' Perception at a Community Health Center
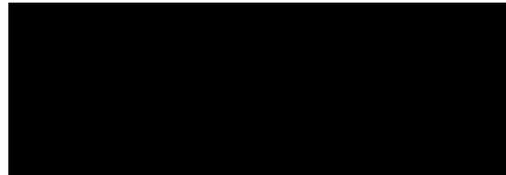
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Introduction

- The Health Information Technology for Economic and Clinical Health (HITECH) Act was signed into law in 2009 to promote the adoption and meaningful use of health information technology

- Electronic health record (EHR), a longitudinal electronic record of patients' medical information, used in health care facilities

- American Recovery and Reinvestment Act (AARA) established **criteria** for clinicians to be recognized as "meaningful EHR users" [1]

  - using **electronic prescribing, exchanging health information and using data exchanged** to advance the quality of healthcare delivery and **reporting clinical measures**

Background

- In 2012, 9 out of 10 federally qualified heath centers (FQHC) adopted a EHR system [2]

- In 2013, ███████ adopted NextGen healthcare information systems' EHR and required health care providers to use the EHR

- In Texas, primary care providers affiliated with three health systems reported a high level of use and satisfaction with EHR functions such as electronic prescribing [3]

- However, there was a high degree of variability in use and satisfaction with functions aimed at facilitating medical decision-making, including clinical documentation, health maintenance and preventive screening [3]

Methodology

- **Sampling**

  - Identified physicians, physician assistants and nurse practitioners from acute care, family medicine, obstetrics/ gynecology and pediatrics specialties practicing at ████████ 21 medical clinics

  - 35 health care providers were included in the final sample

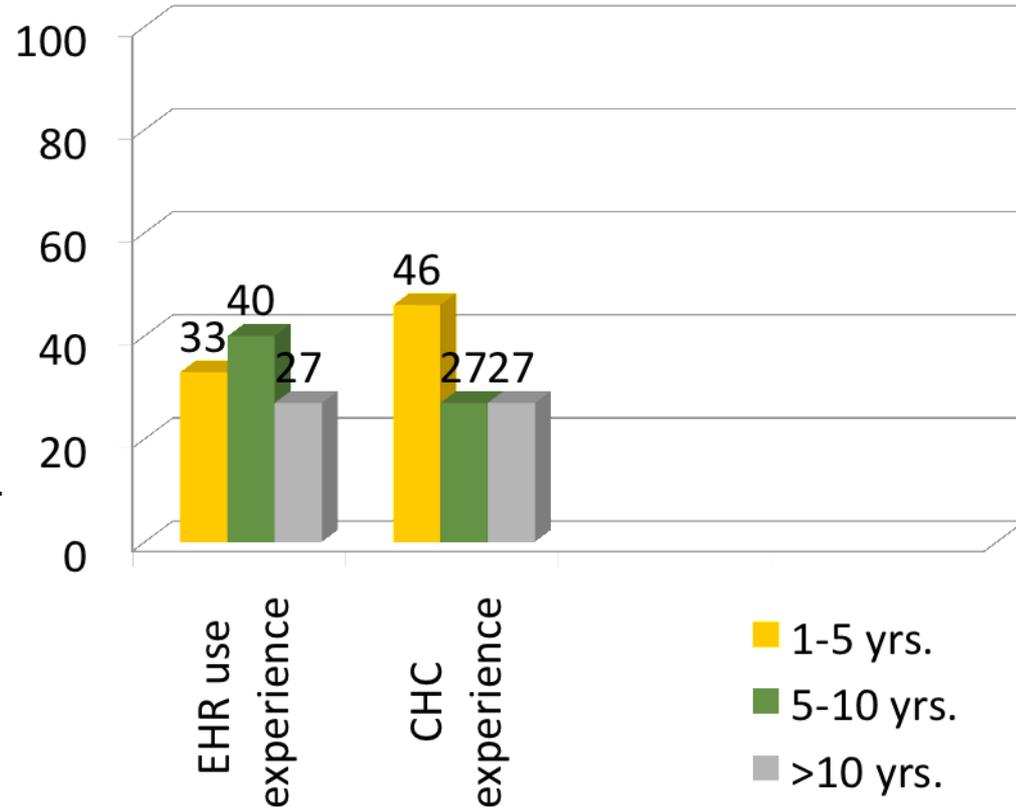 - 15 out of 35 health care providers responded to the 2014 questionnaire

- **Questionnaire and questionnaire administration**

  - Developed a two-page paper questionnaire that asked questions about health care providers' demographics and new opportunities EHRs created in patient care

  - Health care providers indicated on a 3-point Likert-type scale

  - For analysis, results of this 3-point Likert-type scale were dichotomized (respondents indicated that they agree, are neutral, or disagree)

  - Questionnaire administered at a providers' meeting in August 2014

Results
Health Care Providers' Demographics

Age

Pie chart:
- 25-39: 47%
- 40-54: 20%
- 55 and over: 33%

Bar chart:

EHR use experience:
- 1-5 yrs.: 33
- 5-10 yrs.: 40
- >10 yrs.: 27

CHC experience:
- 1-5 yrs.: 46
- 5-10 yrs.: 27
- >10 yrs.: 27

Legend:
- 1-5 yrs.
- 5-10 yrs.
- >10 yrs.
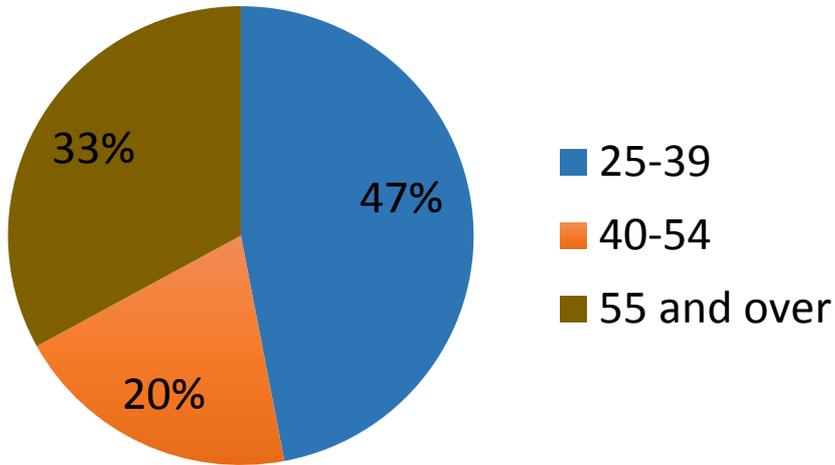
Results
Questionnaire Responses

CHC experience: 1-5 years Abbreviated questionnaire statements	Agree	Neutral	Disagree
Coordinated care between staff	75%	12.5%	12.5%
Coordinated care between departments	63%	25%	12.5%
Medical errors	88%	12.5%	0%
Information retrieved	75%	25%	0%
Up-to-date information	75%	12.5%	12.5%
Information stored	86%	0%	12.5%
Productivity	12.5%	25%	63%
Patient time per visit	50%	38%	12.5%
Documentation skills	38%	38%	25%
Medical record legibility	100%	0%	0%
E-prescribing	88%	12.5%	0%
Easy and intuitive to use	38%	38%	25%
Satisfied	63%	25%	12.5%

CHC experience: more than 10 years Abbreviated questionnaire statements	Agree	Neutral	Disagree
Coordinated care between staff	50%	50%	0%
Coordinated care between departments	75%	25%	0%
Medical errors	50%	25%	25%
Information retrieved	75%	25%	25%
Up-to-date information	50%	50%	0%
Information stored	100%	0%	0%
Productivity	0%	50%	50%
Patient time per visit	25%	25%	50%
Documentation skills	25%	50%	25%
Medical record legibility	100%	0%	0%
E-prescribing	75%	25%	0%
Easy and intuitive to use	50%	25%	25%
Satisfied	50%	25%	25%

CHC experience: 5- 10 years Abbreviated questionnaire statements	Agree	Neutral	Disagree
Coordinated care between staff	67%	0%	33%
Coordinated care between departments	67%	0%	33%
Medical errors	0%	67%	33%
Information retrieved	67%	0%	33%
Up-to-date information	67%	33%	0%
Information stored	100%	0%	0%
Productivity	0%	0%	100%
Patient time per visit	0%	0%	100%
Documentation skills	67%	33%	0%
Medical record legibility	100%	0%	0%
E-prescribing	67%	0%	33%
Easy and intuitive to use	33%	33%	33%
Satisfied	33%	33%	33%

Summary Abbreviated questionnaire statements	Agree	Neutral	Disagree
Coordinated care between staff	67%	20%	13%
Coordinated care between departments	67%	20%	13%
Medical errors	60%	27%	13%
Information retrieved	73%	14%	13%
Up-to-date information	67%	27%	6%
Information stored	87%	7%	6%
Productivity	6%	27%	67%
Patient time per visit	33%	27%	40%
Documentation skills	40%	40%	20%
Medical record legibility	100%	0%	0%
E-prescribing	80%	14%	6%
Easy and intuitive to use	53%	20%	27%
Satisfied	53%	27%	20%

Discussion

- Possibility that some health care providers are technologically challenged

- Age could be a contributory factor to the difficulty experienced by health care providers

- Varying degree of experience in terms of EHR use and previous clinical setting i.e. inpatient and outpatient may contributed to respondents' perception on EHR use

- Additional studies of nurses, medical assistants and administrative staff need to be done to reveal their perception on EHR use that could offer insight on how substantial EHR is used based on their position responsibilities

Recommendations

- Create a handbook that outlines the intended use of the EHR system and documentation expectations for health care providers and supporting staff

  - include ARRA's "meaningful EHR users" criteria and ███████ goals for EHR use

- EHR training and 24/7 support

  - webinar, on-site, online technical live chat and telephone

- Annual questionnaire

Conclusion

- Investigate areas of improvement highlighted in the questionnaire: coordinated care, medical error reduction, up-to-date patient information, productivity and user satisfaction

- Identify key internal and external barriers and possible solutions for these areas

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References

[1] Bowens FM, Frye PA, Jones WA. Health Information Technology: Integration of Clinical Workflow into Meaningful use of Electronic Health Records. Perspect Health Inf Manag. 2010; 7:1-24.

[2] Jones EB, Furukawa MF. Adoption And Use Of Electronic Health Records Among Federally Qualified Health Centers Grew Substantially During 2010-12. Health Affairs. 2014; 7:1254-1261.

[3] Makam AN, Lanham HJ, Halm EA, et al. Use and satisfaction with key functions of a common commercial electronic health record: a survey of primary care providers. BMC Med Inform Decis Mak. 2913; 13: 86.