ABSTRACT

Objective: Assess the use of electronic health information systems (eHIS) by HCPs and the perception of its value in reducing medication risks and safety for patients.

Methods: A cross-sectional online survey of HCPs was conducted (FDA cooperative-agreement SU1BF004653-01) in Nov-Dec 2013 using a U.S. HCP panel. A geographically diverse sample of HCPs (Primary Care Physicians (PCPs), Pharmacists, Nurse Practitioners (NPs) and Physician Assistants (PAs)) spending >=50% of time in direct ambulatory patient care (PCP/PNP/PA) or working in a retail pharmacy (Pharmacists), with >=2 yrs of practice experience and seeing/consulting >=20 pts/wk were recruited. Survey collected beliefs about medication risks, information seeking behavior and communication on medication risk/safety.

Results: Eight hundred HCPs (200 each of PCPs/NPs/PAs/Pharmacists) participated. Approximately two-thirds reported using eHIS for >50% of their patients in respective clinical practices/pharmacies. HCPs reported following computerized eHIS capabilities in their settings: record patient history/demographic information (87%), record clinical notes (incl. patient’s medications/allergies) (86%), order medications (82%), view/oper lab tests (75%), eHIS ability provide warnings of drug interaction/contraindications (to prescriber) (46%), share patient information electronically with other prescribers/providers (53%), provide patients with clinical summaries for each visit (52%), provide reminders for guideline-based interventions or screening tests (46%), provide patients with alerts if medications they take receives an FDA safety alert or recall notice (44%), allow patients to access their medical records or information on medications they are taking, incl. risk/safety information (34%), and exchange secure messages with patients (31%). These responses varied by HCP type. Eighty-two percent of HCPs agreed their eHIS adds value to their practice by reducing medication risks/safety for patients.

Conclusions: eHIS was widely used and was reported to provide value in reducing medication risks/safety. However, eHIS use to provide medication alerts regarding medicine risk/safety or provide patients access to medical records or information on medication risks/safety was reported by only one-third of study participants.

INTRODUCTION

- Reports1,2 from the Office of the National Coordinator of Health Information Technology acknowledged that as electronic Health Information Systems (eHIS) and Electronic Health Records (EHR) become more widespread, it may create a unique opportunity to improve patient safety. For example, eHIS/EHR can:
  - Increase clinicians’ awareness of potential medication errors and adverse interactions
  - Improve the availability and timeliness of information to support treatment decisions, care coordination, and care planning
  - Make it easier for clinicians to report safety issues and hazards
  - Give patients the opportunity to more efficiently input on data accuracy than what paper records would allow

- Amidst these expectations, the diffusion of eHIS/EHR in clinical practice settings in the U.S. and the perceptions of healthcare professionals (HCPs) towards eHIS/EHR warrants scrutiny

- Rapid transformation of the U.S health care system with increasing emphasis on patient engagement and quality of care delivery, focus on eHIS/EHR assumes importance

OBJECTIVES

- The objectives of this analysis were to assess the use of eHIS/EHR by HCPs and the perception of its value in reducing medication risks and safety for patients.

METHODS

- A cross-sectional online survey of HCPs was conducted in Nov-Dec 2013
- Commercially available panels in the U.S were used to recruit a diverse sample of HCPs, using a geo-dispersion sampling method
- HCP selection criteria:
  - Either a primary care physician (PCP), pharmacist, nurse practitioner (NP) or physician assistant (PA)
  - PCP/NP/PA spending >=50% of time in direct ambulatory patient care, with >=2 yrs of practice experience and seeing >=20 patients/week
  - Pharmacist working in a retail pharmacy (pharmacists), with >=2 yrs of practice experience and consulting >=20 patients/week
- Pre-specified HCP sampling frame included the following:
  - 200 PCPs, 200 Pharmacists, 200 NPs and 200 PAs
- HCP survey collected practice characteristics, beliefs about medication risks, information seeking behavior (self, and that of pts) and communication on medication risk/safety.
- Specific questions were asked about the availability and use of eHIS in their respective practice settings.
- Web-based surveys were approximately 15-20 minutes in length. Respondents were nominally compensated for completing their survey.
- Research protocol was reviewed and granted an exemption status by a central IRB as well as FDA’s RHSC (within DHHS)
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REFERENCES & ACKNOWLEDGEMENT

RESULTS

- Eight hundred HCPs completed the survey
- PCPs/NPs/PAs: private office-based solo or group practice – 72%, community health center – 5%
- Pharmacists: urban – 37%, suburban – 33%, small town – 23%, rural – 8%; % working in more than one pharmacy – 24%
- Mean age (yrs): PCP – 51.6, PA – 42.3, NP – 47.2, pharmacist – 48.2
- Race (Caucasian): PCP – 74%, PA – 84%, NP – 87%, pharmacist – 79%
- Main source of patients/revenue:
  - PCP: Medicare – 27%, Medicaid / CHIP – 11%, Private insurance – 51%
  - PA: Medicare – 29%, Medicaid / CHIP – 18%, Private insurance – 43%
  - NP: Medicare – 26%, Medicaid / CHIP – 25%, Private insurance – 38%
  - Pharmacist: Medicare – 27%, Medicaid / CHIP* – 11%, Private insurance – 51%

- **Example**

- **Rating of “Overall Quality” of eHIS/EHR (n=800):**
  - **Good**/Very Good/Excellent

CONCLUSION

- eHIS/EHR was widely used and was reported to provide value in safe prescribing of medications.
- However, eHIS/EHR use to provide medication alerts regarding medicine risk/safety or provide patients access to medical records or information on medication risks/safety was reported by only one-third of study participants.

*Note: Author Siva Narayanan conducted this research for NCPIE while he was part of a team, a national research agency.*