UNIVERSITY

OPTIMIZING THE ELECTRONIC HEALTH RECORD FOR CARDIAC CARE

A.L. Fruhling, J. Windle
College of Information Science and Technology, University of Nebraska at Omaha, Omaha, NE 68182

- The electronic health record (EHR) was expected to transform the delivery of health care services in the United States; reducing costs and improving health outcomes through standardizing practice and reducing medical errors.
- However, EHR adoption has not consistently lowered healthcare costs or improved patient care. As a result, the physician adoption has been slow.
- There is a growing body of evidence that adoption has been delayed, in part, by the negative impact of current EHRs on clinician workflow, communications, and patient safety.

- Attention to usability for EHR system designs that support the cognitive work of clinical users is recognized as a requirement by the Healthcare Information and Management Systems Society.
- In this model, improving efficiency reduces cognitive overload (good for the patient safety) and short cut necessary safety checks. Thus workflow, information flow and patient safety will be components of each segment of usability, efficiency, effectiveness and satisfaction.
- By layering patient safety with workflow and information flow on top of efficiency, effectiveness and satisfaction, patient safety can be explored in a more holistic manner.
- Improving the efficiency, effectiveness and satisfaction of the EHR will lead to improved adoption and acceptance of the EHR, and will ultimately lead to improved, safer patient care.
- This research project is also a strong candidate to improve the knowledge of what providers want and the need to improve the health and safety of their patients.

Innovations

Innovations

Innovation 3: This project partners experienced computer scientists, measurement science experts, and clinical content experts to build credible clinical scenarios that closely emulate the complexity of a patient moving through the healthcare system.

Innovation 4: This study measures usability as defined by efficiency, effectiveness and satisfaction of the EHR through use of convergent parallel mixed methods. To understand the best practices, different methods are used and brought together in this project. Prospective task lists measure the efficiency of a system. Cognitive walkthroughs determine workflow, information flow, satisfaction and provide understanding of provider rationale. An expert evaluation is used to capture different patterns of workflow and information flow.

Innovation 5: In this project, the University of Nebraska's association with the American College of Cardiology is a unique opportunity to control all aspects of data and information use.

By creating a robust yet constrained EHR testing environment, this study intends to challenge assumptions of current EHR design and to fully explore the significance

mputer Interaction Technology, ier Interaction, inter.compuFLD7x

U

Omaha