Community Hospital Physician Adoption of a CPOE System: Perceptions of Readiness, Usefulness, and Satisfaction

Rita Snyder, PhD, RN and Willa Fields, DNsC, RN  
1University of Nebraska Medical Center College of Nursing, Omaha, NE  
2San Diego State University School of Nursing, San Diego, CA

Abstract. Successful adoption of commercial computerized physician order entry (CPOE) systems remains low. This is particularly troublesome in community hospitals where the bulk of health care is provided in the United States. The purpose of this poster is to report survey findings from a study conducted with community hospital physicians participating in a pilot CPOE system implementation. Variables assessed were perceptions of readiness (pre-implementation) and usefulness and satisfaction (post implementation).

Introduction. The Institute of Medicine has stressed the need for health care organizations to increase their use of information technology (IT) to create safer health care environments. However, the rate of successful IT innovation remains low and this is often attributed to a lack of sensitivity to provider needs and preferences. This is particularly true with CPOE system implementation. Despite research findings that have indicated that CPOE systems can improve medication prescribing safety, physician dissatisfaction with these systems remains high, particularly in community hospitals. A better understanding of community hospital physician perceptions of CPOE systems is essential to increasing system adoption and realizing its potential contributions to medication safety.

Method. The study was undertaken as part of a multi-site study examining the impact of a commercial CPOE system on adverse drug event outcomes. It was conducted between January and August 2006 in a 19-bed MICU/CCU in a tertiary community hospital in an integrated healthcare delivery system in Southern California. The pilot CPOE implementation involved 7 physicians practicing in the MICU/CCU. All participated in a pre-implementation survey. One physician withdrew from the pilot implementation and study. Post-implementation surveys were conducted at 3 (n=6) and 6 (n=5) months. The pre-implementation survey assessed perceptions of CPOE readiness;1 Identical 3 and 6 month post implementation surveys assessed perceptions of CPOE usefulness and degree of satisfaction.

Results. Respondents were predominantly white (86%) males (86%) with 18 (median) years of professional practice and 10 (median) years at the study hospital, primarily in the pulmonary/critical care specialty (71%). At baseline most (57%) respondents had never used CPOE. Training was done primarily with 2-3 individual training sessions per respondent. From baseline to 3 months post implementation, there was a pattern of increasing system time and use. However, from 3 to 6 months post implementation, this pattern was reversed to limited system use and a return to paper ordering. Pre-implementation findings indicated moderate to strong agreement for CPOE readiness in IT support resources; end-user preparation; technology support; IT administrative knowledge and experience; IT innovation processes; and IT management support structures. Respondents had no opinion about readiness related to IT executive and administrative aspects such as decision making, and budget and departmental management. No areas of low readiness were identified.

Post implementation assessment of CPOE usefulness indicated an increasing perception from 3 to 6 months that it was not easy to use and did not improve work process quality, control, and effectiveness. In contrast, respondents became increasingly more satisfied from 3 to 6 months with IT support resources, processes, and training. Less satisfaction was expressed for system reliability, precision, accuracy, and customizability.

Conclusion. Findings supported CPOE readiness and satisfaction with innovation processes. However, CPOE usefulness was perceived as poor indicating problems with the CPOE product. Perceived usefulness is a prerequisite for continued CPOE use.

References

Supported by AHRQ grant R01 HS13131.