

**POSTER SESSION 2 ABSTRACTS**  
12<sup>th</sup> Annual HMO Research Network Conference

May 1-3, 2006 Boston, MA

**Information Technology/Medical Informatics**  
**PS2-64**

**Types of Unintended Consequences of Computerized Physician Order Entry**

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**Background:** Computerized Physician Order Entry (CPOE) is increasingly being recognized as a necessary system for enhancing patient safety and reducing costs. We have been studying the unintended consequences of CPOE implementation for the last three years.

**Methods:** This work has taken the team to five U.S. hospitals, including academic and non-academic settings in multi-facility integrated health care delivery systems and community hospitals. Not only are the hospitals geographically dispersed, but the group also represents a mixture of homegrown CPOE implementations as well as vendor supplied products. These implementations have been studied using qualitative research methods. The POET team performed semi-structured interviews with key persons selected based on their long history and involvement with both their institutions and the implementation of the CPOE systems. The team also used focus groups and observation of health care providers in the clinical setting to gather data. All data were transcribed and then reviewed by the POET team to develop a classification scheme of unintended consequences.

**Results:** After several false starts, the team determined that the unintended consequences could be grouped in nine major categories, including: workflow issues, new kinds of errors, changes in communication patterns and practices, more/new work, never ending system demands, changes in the power structure, overdependence on technology, emotions, and paper persistence. We found that the boundaries between these groups were somewhat fuzzy, and that many unintended consequences could be placed in multiple groups. We were surprised that the typology we derived proved to be robust as we continued our research - over time we did not find unintended consequences that could not be readily placed in one or more of our nine categories.

We believe this research is useful as a starting point for all persons involved in CPOE design or implementation to prepare for the occurrence of unintended consequences when CPOE systems are implemented, and to look towards solutions that can make CPOE adoption easier.