

Supporting Continuity of Care for Poisonings with Electronic Information Exchange

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Target Population: General

Summary: Exchange of information between poison control centers (PCCs) and emergency departments (EDs) is almost entirely conducted via telephone. In these high-volume and often chaotic settings, however, reliance on verbal communication increases the potential for data loss, delayed time to treatment, and medical error. The electronic exchange of information can improve continuity of care for poisonings, reduce time-to-treatment and medical errors, facilitate communication and availability of data to clinicians at the point of care, and ensure timely followup.

This project will describe the data requirements for electronic information exchange between PCCs and EDs to support individual patient care and care transitions. It will also describe current information exchange scenarios and identify important clinical, operational, and legal considerations. The project team will use multiple approaches, including interviews with clinicians and stakeholders, document review, analysis of recorded PCC calls, storyboarding, and domain-analysis modeling. In addition, a four-round Delphi study will determine consensus among national experts on significant clinical, operational, and legal considerations.

The results of this study will provide concrete guidance for efficient research and development on PCC-ED information exchange, including information technology solutions, standards adoption or development, and policy. Long-term implications include the study of outcomes, quality improvement innovations, and the potential for computerized decision support.

Specific Aims:

- Describe information requirements for electronic information exchange between PCCs and EDs. **(Ongoing)**
- Describe current data and information exchange scenarios between a regional PCC and an ED. **(Upcoming)**
- Identify salient clinical, operational, and legal considerations related to electronic exchange of data and information between PCCs and EDs. **(Ongoing)**

2010 Activities: 2010 activities for this project focused on the preparation and recruitment of participants for the modified Delphi study to identify the clinical, operational, and legal considerations important for electronic information exchange between EDs and PCCs. Monthly team meetings addressed the

content and conduct of Delphi study. The study team updated and expanded the literature search on electronic information exchange between PCCs and EDs. The literature was reviewed, synthesized, and illustrated with mind mapping software. The following thematic elements were identified: workflow integration, communication, medical error, data ownership, medico-legal issues, financing and sustainability, and adoption. Infrastructure development in support of the Delphi study was completed with the creation of recruitment materials, including letter and e-mail templates, documentation for survey rounds, and a timeline for materials distribution. Delphi participant recruitment was achieved using various methods, including in-person at conferences, word-of-mouth, and via informatics and emergency medicine listservs. By September 2010, the team exceeded their recruitment goal, identifying 71 committed Delphi study panelists, divided between PCC and ED as the primary domain of expertise. The Delphi study was conducted between September and December 2010. In round one, an initial subgroup (n=8) of experts responded to open-ended questions. Using thematic analysis, the study team converted responses to statements representing the spectrum of panelist opinion. Additional statements reflected literature-based concepts and analysis by the research team. In three subsequent rounds, the full panel reviewed statements describing potential outcomes of electronic information exchange, as well as issues affecting adoption and implementation. Results of the modified Delphi study were accepted for a presentation at the Society for Academic Emergency Medicine's 2011 annual meeting.

In addition, work began analyzing the PCC to ED call recordings. The study team received University of Utah institutional review board approval for this study aim. The call-sampling plan was reviewed, and the team completed call sampling and initiated linkage to files. They will initially analyze 60 cases. If they do not achieve saturation of information (e.g. no new types of data or information), they will sample in 20-case increments until they achieve saturation.

Grantee's Most Recent Self-Reported Quarterly Status (as of December 2010): Project progress is completely on track, meeting all milestones on time. Project spending is somewhat underspent, approximately 5 to 20 percent.

Preliminary Impact and Findings: The response rate for the modified Delphi study was high and stable. The first round response rate was 0.73 (n=8), the second round response rate was 0.77 (n=55), the third round response rate was 0.75 (n=53), and fourth round response rate was 0.75 (n=53). Upon completion of the fourth round, most (115/122) statements had reached consensus. Seven statements failed to reach consensus. Panelists agreed upon importance of most outcomes including effects on communication, information availability for decisionmaking, and medical error. They also agreed upon key aspects of adoption and implementation, and favor systems that support, but do not replace verbal communication and consultation.

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

Business Goal: Knowledge Creation