

Supporting Continuity of Care for Poisonings with Electronic Information Exchange

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Summary: Exchange of information between poison control centers (PCCs) and emergency departments (EDs) is conducted almost entirely by telephone. In these high-volume and often chaotic settings, reliance on verbal communication increases the potential for data loss, delayed time to treatment, and medical error. The electronic exchange of information could 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 identified the data requirements for electronic information exchange between PCCs and EDs to support individual patient care and care transitions. The team described current information exchange scenarios as well as important clinical, operational, and legal considerations. The project team used multiple approaches, including interviews with clinicians and stakeholders, document review, analysis of recorded PCC calls, and a four-round Delphi study, to determine consensus among national experts on significant clinical, operational, and legal considerations.

Specific Aims:

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

2012 Activities: The research team completed the analyses for the first two aims based on multiple data sources: a review of documents, interviews with ED and PCC staff, and a detailed analysis of call recordings. Because all calls to and from PCCs are routinely recorded and archived, the team was able to analyze actual communication between EDs and PCCs with a non-intrusive approach. In 20-case increments, they analyzed information content in incremental batches using a saturation sampling approach. The research team completed analyzing the PCC to ED call recordings, including the analysis of inefficiencies and poor data quality. More than 120 unique data and information types were identified. In addition, the team completed interviews with ED providers (physicians and nurses) from Intermountain Medical Center and Primary Children's Medical Center, as well as poison-control specialists to identify current

data information exchange and user needs related to information exchange. Based on this work, the team developed process diagrams depicting the sequence of information exchange.

In the original grant proposal, Dr. Cummins had proposed to inventory the types of information exchanged, but during call analysis the research team also found many examples of inefficient data processes and poor data quality. The team decided to develop a taxonomy of the types of data process inefficiencies and poor data quality and went back and noted frequencies in order to more fully describe the data exchange process. The additional analysis provides valuable information about the nature and frequency of inefficiencies and poor data quality inherent in the current verbal information exchange process.

The results of the third aim were published in the July 2012 volume of *Clinical Toxicology*: [Electronic information exchange between emergency departments and poison control centers: a Delphi study](#). Another manuscript – Inefficiencies and vulnerabilities of telephone based communication between U.S. poison control centers and emergency departments – is in press at *Clinical Toxicology* based on analysis of the call recordings conducted in 2012.

As last self-reported in the AHRQ Research Reporting System, project progress and activities are completely on track, and project budget spending is on target. Due to the added task of developing the taxonomy of the types of data processes and data quality, as well as the unanticipated amount of time it took to prepare the audio files for analysis, Dr. Cummins used a 1-year no-cost extension to complete the project.

Preliminary Impact and Findings: The process diagrams revealed that the current process is dependent upon verbal telephone communication between PCCs and EDs. ED-PCC collaboration occurs almost entirely between the physician and the poison control center, and multiple phone conversations support collaboration, monitoring, and followup of poisoned patients. There are many safety issues in terms of handoffs with different ED staff and playing “telephone” with information. Because it is difficult for the PCC staff to reach those caring for the patient on the phone, the information is given to an available person and is passed from person to person. As a result, encounter documentation and sharing of information across organizations is poor.

Target Population: General

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
