

CANADIAN Healthcare Technology

Sunnybrook Hospital Tests New Patient Safety Alert System

By Laura Bristow



Dr. Bill Sibbald, Dr. Ed Etchells, Sherman Quan and Sam Marafioti are leading Sunnybrook's evaluation of a clinical alerting system that will instantly inform caregivers when lab test results are abnormal.

Sunnybrook & Women's is the first hospital in Ontario to evaluate a new software program, called New Age, for its ability to improve patient safety by instantly alerting clinicians of abnormal lab results.

New Age is handheld software that will display Sunnybrook & Women's Electronic Patient Record data, including laboratory results, radiology reports, admission and discharge information, and patient specific transcription – all in an integrated fashion. The software is web-based, meaning that all relevant clinical data can be accessed from any internet browser within Sunnybrook & Women's, including handheld devices at the point of care. This program allows physicians to monitor a patient's condition in real-time and creates instant alerts that can be sent wirelessly to the physician's pager or cell phone if a potentially serious lab abnormality or drug interaction is detected.

“Timely communication of abnormal test results is critical to developing safe and reliable hospital systems,” says Dr. Bill Sibbald, physician-in-chief of the Department of Medicine. “Adverse events are prevented when physicians receive timely notice of a problem in its earliest stages of evolution.”

With the current approach to notifying care providers of potentially serious problems, there is a significant potential for error, as information about test results must be communicated through at least three people before it reaches the attending physician.

New Age's automated system will significantly decrease the chance of error by also sending an alert directly to the physician when a problem is detected, and continuing to escalate the alert message until it is addressed.

“The New Age trial is an important step for Sunnybrook & Women's as we move toward our goal of becoming the safest hospital in Canada,” says Dr. Ed Etchells, primary investigator for the trial and director of Sunnybrook & Women's Patient Safety Service. “It shows that we are committed to finding ways to improve our patient care.”

“The New Age system will also improve staff efficiency, as it can automatically monitor patients' conditions, while continuously scanning for problems that meet predefined guidelines,” Sam Marafioti, vice president, corporate strategy and development and chief information officer. “Staff will be able to use the time saved to address other high-priority concerns.”

The trial is being sponsored by Dr. Sibbald in partnership with Sam Marafioti, and Corporate Information Services. The trial will be conducted with one General Internal Medicine physician team and two of Sunnybrook & Women's Critical Care Units.

The evaluation team includes Dr. Robert Fowler, Dr. Mark Cheung, Dr. Neill Adhikari, and Dr. Martin Chapman. Sherman Quan, health informatician for the Department of Medicine, is leading the implementation of the software, developed by New Age Systems Inc., of Inglesfield, Indiana. (www.newagesystemsinc.com) The trial is scheduled to begin in the Fall of 2005.

According to the company, the New Age Systems solution is a clinical decision support tool that harnesses the power of information already captured in disparate computer systems. It detects potential ADEs before they occur, and prevents them by triggering alerts to caregivers.

In this way, a healthcare organization will better utilize and communicate knowledge, so that appropriate changes can be made in orders without finger-pointing or blame.

Here's how it works:

- Data is captured from HL7 interface messages, such as pharmacy orders, laboratory results, and others.
- HL7 data is converted to XML.
- XML data is parsed into a database.
- Rules are applied against the data using Microsoft BizTalk.
- Patient safety alerts are triggered to clinicians.

Example: An alert will be sent to the ordering physician if a medication order is received for the drug Flurazepam in a patient who is more than 65 years of age.

The alert will indicate that this patient is at risk for fall, and will suggest that a change in dosage may be indicated or a less sedating medication should be considered. In addition, this data will be retained in a database, along with other relevant information about the patient, such as data from the risk management incident reporting system indicating if the patient actually fell.

This accumulated data is used to measure the effectiveness of the alerting process (i.e., percentage of orders changed and correlation with fall/no fall outcome), as well as other measures to identify future opportunities for improving patient safety.

(For example, the correlation between fall risk score and actual falls, actual falls correlated with types of medication patients were on, etc.)

Laura Bristow is a Communications Advisor at Sunnybrook and Women's College Health Sciences Centre

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