

## Turning administrative data into real-time clinically useful information

The delivery of clinical care in isolation of data and information is no longer prudent or acceptable. Cardiothoracic surgical programs face increasingly more complex procedures performed on evermore challenging patients. Public and private stakeholders are demanding these programs report process-level and clinical outcomes as a mechanism for enabling informed clinical decision-making. Increasingly these measures are tied to reimbursement and institutional accreditation. This report describes the development of a system for linking administrative and clinical registries, in real-time, to track performance to satisfy both the needs of patients and stakeholders. Institutional performance is displayed over time using process control charts, and compared to both internal and regional benchmarks. Quarterly reports are automated for five surgical cohorts and are displayed externally on a dedicated website, and internally in the cardiothoracic surgical office suites, operating theatre, and nursing units. Monthly discussions are held with the clinical staff. Expanded applications are serving to integrate these data further into clinical care to drive process improvement. (*See page 399*)

## Pharmacist-acquired histories improve medication reconciliation at hospital admission

There is growing interest in the accurate identification of medications—so called medication reconciliation—at the time of hospital admission. This report from Belgium describes a study of the measurement of discrepancies in medication histories that were carried out by pharmacy staff employing a standardized form in the emergency department and reviewed with the medical admitting team. Fifty-nine percent of medication histories recorded by physicians were different from those

obtained by pharmacy staff. The most common discrepancy was omission of a drug (61% of discrepancies) and dose (18%). Psycholeptic, acid suppression and beta blocking agents were the most commonly involved. An accompanying commentary expands on the critical components of a system for patient medication reconciliation at hospital admission. (*See pages 369 and 371*)

## Enhanced strategy for finding papers in systematic reviews of patient safety

The number of scholarly patient safety papers has expanded dramatically since the publication of the US Institute of Medicine Report 'To Err Is Human'. A substantial proportion of these papers are indexed in MEDLINE, EMBASE and CINAHL—3 well known databases in the medical and paramedical area. This article proposes three kinds of search filters designed to meet the needs of clinicians, researchers or decision makers. They were developed by determination of sensitivity, precision and specificity of a series of candidate terms using these three databases. The search strategies were validated and compared to other strategies used in the literature. They offer a useful compromise between sensitivity and precision for scholars searching for papers on patient safety. (*See page 452*)

## Trigger tools for two serious adverse drug events in a US paediatric hospital

This report describes an in-depth analysis of the characteristics of two common paediatric adverse drug events—identified by an automated trigger system—to determine underlying causes and identify targets for intervention and improvement. Administration of an intravenous glucose bolus for patients who are also receiving routine insulin was the trigger for insulin-related hypoglycemia, and Naloxone

administration was the trigger for opiate-related over-sedation. Thirty insulin-related hypoglycemia events and 34 opiate-related over-sedation events were identified over 16 and 21 months, respectively. In the opinion of subject experts, patients receiving continuous infusion insulin and those receiving dextrose only via parenteral nutrition were at increased risk for insulin-related hypoglycemia. Lack of standardisation in insulin dosing decisions and variation regarding when and how much to adjust insulin doses in response to changing glucose levels were identified as common causes of the adverse events. Opiate related over-sedation events often occurred within 48 h of surgery. Variation in pain management in the operating room or post-anesthesia care unit was identified as a potential cause. Variations in practice, multiple services writing orders, multi-drug regimens, and variations in interpretation of patient assessments were also noted as potential contributing causes. (*See page 435*)

## A proposal for an international incident reporting system

Incident reporting systems collect aggregates of hazards, mistakes, and system failures occurring in healthcare. These data repositories are a cornerstone of patient safety improvement. Compared to systems in other high risk industries, such systems in health care are fragmented, isolated, and have not established best practices for implementation and utilisation. The WHO World Alliance for Patient Safety, convened patient safety experts from 8 countries in 2008 to establish a global community to advance the science of learning from mistakes. The convenience sample of experts all had experience managing large incident reporting systems. This report offers guidance through a presentation of expert discussions about methods to identify, analyse and prioritise incidents, mitigate hazards, and evaluate risk reduction. (*See page 446*)