



## Root Cause Analysis: A patient safety tool

By Julie Greenall and David U

**M**edical error has become a frequent headline in Canada and elsewhere in the world. The most recent example is a study published by Health Affairs that surveyed nearly 7000 patients in six countries (Australia, Canada, Germany, New Zealand, the United Kingdom and the United States) who had recently been hospitalized, had surgery or reported health problems.<sup>1</sup> All countries reported safety risks, poor coordination of care and deficiencies in care of chronic conditions, with no country clearly leading or lagging across the board. 30 per cent of Canadian patients surveyed described medical, medication or lab errors. 46 per cent of these patients indicated that the error caused a serious health problem and 74 per cent reported that they were not told about the error by the doctors involved in their care.

Although awareness of patient safety issues has been growing in all these countries, actual progress has been slow. There are many barriers to change, with human and finan-

cial resource challenges generally appearing at the top of the list. A significant, often unrecognized barrier is organizational culture. Other industries which must deal with significant risk in day to day operations, such as the aviation and nuclear power industries, have much better safety records. These industries are known as "high reliability organizations" and their one common feature is a collective preoccupation with the possibility of failure, which helps to lay the foundation for a "culture of safety". In order for health-[JA]care organizations to improve their safety record, a significant culture shift must occur. We have begun to see such a shift in Canada, with many organizations participating in local and national patient safety initiatives. A key feature of this culture shift is an emphasis on systemic issues underlying process failures instead of focus on individual actions. Organizational leaders need to recognize that, with the exception of a small percentage of malicious and egregious acts, error is systemic in nature and not related to individual competence. Accidents typically result from a sequence of events and tend to fall in recurrent patterns regardless of the personnel

involved. All staff, even the most experienced and dedicated professionals can be involved in preventable adverse events.

New tools are being adapted from other sectors such as high reliability organizations to assist health-care providers to look at system issues underlying process failures. Root Cause Analysis (RCA) is a systematic method used to retrospectively analyze events. The Canadian Root Cause Analysis Framework was developed as a collaborative project between ISMP Canada, the Canadian Patient Safety Institute and Saskatchewan Health. The Canadian framework defines RCA as "an analytic tool that can be used to perform a comprehensive, system-based review of critical incidents. It includes the identification of the root and contributory factors, determination of risk reduction strategies, and development of action plans along with measurement strategies to evaluate the effectiveness of the plans."<sup>2</sup>

An organization would undertake a root cause analysis after a serious event or near miss with significant potential for harm has occurred. The goals of root cause analysis are to determine what happened, why it happened and what can

be done to reduce the likelihood of a recurrence. RCA is an interdisciplinary team-based approach in which analysis is directed away from actions of individuals at the point of care delivery, often called the "sharp end", to the broader management, organizational, environmental and regulatory or "blunt end" factors. These "blunt end" factors influence how work is configured and accomplished but are beyond the control of individuals. RCA does not assign blame to individuals.

RCA is outcome directed, with an emphasis on concrete actions and sustainable changes. Other incident investigation processes may fail to identify the true underlying causes of events and thus actions taken may be inadequate to prevent future occurrences. Another key component of RCA is measurement which ensures changes have led to the desired positive impact. Completion of a thorough and credible root cause analysis, with implementation of concrete actions, provides tangible evidence that patient safety is a core value in an organization.

The principles of root cause analysis can be applied to failures at all levels of healthcare. In addition, sharing of informa-

tion about error and strategies for prevention can prevent future errors beyond the walls of an individual institution or organization. System failings that underlie errors occur repetitively in many settings. Collaboration and sharing of strategies to reduce error-prone processes at all levels will result in a safer system overall.

The Canadian Root Cause Analysis Framework can be accessed at [www.patientsafetyinstitute.ca](http://www.patientsafetyinstitute.ca). In order to make best use of the tool, training is suggested and can be arranged by contacting any of the collaborating authors of the framework.

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#### References:

<sup>1</sup> Schoen C, Osborn R, Huynh PT, Doty M, Zapert K, Peugh J, Davis K. *Taking the Pulse of Health Care Systems: Experiences of Patients with Health Problems in Six Countries.* Health Affairs - Web Exclusive. 2005.

<sup>2</sup> Canadian Patient Safety Institute, Institute for Safe Medication Practices Canada, Saskatchewan Health. *Canadian Root Cause Analysis Framework.* Canadian Patient Safety Institute. 2005.