

Selected research, publications, and resources to promote evidence-informed safety and risk management in Canadian healthcare organizations. Prepared by Healthcare Risk Management staff at the Healthcare Insurance Reciprocal of Canada (HIROC). Titles with an open lock icon  indicate that a publication is open access. For all others a subscription or library access is required; the librarian at your organization may be able to assist you. Please contact riskmanagement@hiroc.com for assistance if required.

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EDITOR'S NOTE



Sara Chow

This month's Risk Watch features several international articles that tie together aspects of safety and training. Kwok et al. recommend formal training in human factors and improvement science for incident review teams to facilitate the development of more effective recommendations. In respect of managers' roles in building safety culture, Quenon et al. found two expectations expressed by frontline care providers that were not perceived by managers: allocating time to talk about safety issues, such as in the form of safety walkarounds, and implementing preventive risk management approaches rather than reactive ones. They note these findings could help inform training programs for healthcare managers on their pivotal role in developing organizational safety culture. Finally, Sweet et al. discuss implementation of a medical device sterilization program which includes an annual training and competency validation structure for clinic staff, who now "are highly engaged in protecting our patients against infections."

If you have comments about any of the articles, please email me at schow@hiroc.com.

HOT OFF THE PRESS

ROOT CAUSE ANALYSIS/SAFETY

[Our first review: an evaluation of effectiveness of root cause analysis recommendations in Hong Kong public hospitals](#)

Kwok Y, Mah A, Pang K. *BMC Health Serv Res.* 2020 (online, June):1-9.

Study in Hong Kong to evaluate the effectiveness of the 760 recommendations generated from 214 root cause analysis (RCA) reports across 43 hospitals; most were rated as weak (82%) and only 2% as strong. Authors found RCA panel members, especially seasoned clinical experts, had limited understanding in RCA, safety systems and improvement science, due to lack of training opportunities and because these topics appeared in education curriculums only within the last decade. They recommended RCA members "be formally trained in human factors to support incident investigation and identification of system issues, make use of different tools and techniques to facilitate the investigation and analysis, and understand improvement science to implement action plans effectively" (p. 6).

DIAGNOSTIC ERRORS/SAFETY

[Rate of diagnostic errors and serious misdiagnosis-related harms for major vascular events, infections, and cancers: toward a national incidence estimate using the “Big Three”](#)

Newman-Toker D, Wang Z, Zhu Y, et al. *Diagnosis*. 2020 (online, May):1-18.

Study in the US to measure diagnostic error and harm rates for 15 conditions responsible for almost half of all serious misdiagnosis-related harm in malpractice claims. Literature review of 28 studies involving more than 91,000 patients derived a median diagnostic error rate of 13.6% and a median serious misdiagnosis-related harm rate of 5.5%. Authors estimated one in 10 patients with a dangerous infection, major vascular event, or cancer is misdiagnosed, and 54% of these are permanently disabled or die as a result. The least common infections (e.g. endocarditis) and vascular events (e.g. spinal abscess) were most likely to be misdiagnosed.

MEDICATIONS/SAFETY

[Work effort, readability and quality of pharmacy transcription of patient directions from electronic prescriptions: a retrospective observational cohort analysis](#)

Zheng Y, Jiang Y, Dorsch M, et al. *BMJ Qual Saf*. 2020 (online, May):1-9.

Study in the US to quantify the work effort of pharmacists to transcribe free-text directions generated by prescribers in electronic prescriptions into directions understandable by patients, evaluate the readability level before and after transcription, and assess the quality of directions before and after transcription. Nearly 530,000 prescription directions processed at a mail-order pharmacy were analyzed. Approximately 84% of prescriptions were edited on review by pharmacy staff, over 51% of all prescription instructions had defined quality issues, which may include missing essential information, or use of medical jargon or abbreviations. Authors concluded techniques to help standardize patient directions, such as a comprehensive set of structured direction components, could support efficient and safe transcription for pharmacy staff, and enhance patient safety.

SAFETY CULTURE/LEADERS

[Exploring the role of managers in the development of a safety culture in seven French healthcare facilities: a qualitative study](#)

Quenon J, Faget M, Levif-Lecourt M, et al. *BMC Health Serv Res*. 2020 (online, June):1-11.

Study in France to explore caregivers' and managers' perceptions of safety, and the role and activities of managers in the development of safety culture. Authors noted that while managers favoured reactive risk management approaches to safety, such as adverse event analyses (traditional, Safety-I perspective), caregivers expected implementation of initiatives based on a proactive view of safety (the Safety-II perspective). “This result highlights the need to train managers in the most up-to-date safety management models, which place greater emphasis on proactive, rather than reactive, risk management methods” (p. 9).

QUALITY IMPROVEMENT/CANCER CARE

[A method to audit and score implementation of knowledge translation \(KT\) interventions in large health regions – an observational pilot study using rectal cancer surgery in Ontario](#)

Simunovic M, Fahim C, Coates A, et al. *BMC Health Serv Res*. 2020 (online, June):1-9.

Study in Canada to pilot a method to audit and score knowledge translation (KT) interventions implemented across 14 Ontario health regions. Interviews with stakeholders to audit KT interventions used over an 8 year period and KT experts scored implementation of KT interventions using a 20-item KT Signature Assessment Tool. Two regions that scored the highest had in common: 1) quality improvement activities being initiated by clinician-researchers with expertise in KT and quality improvement, 2) explicit attempts to engage surgeons, 3) using region-level data in an iterative fashion to pursue improvement. Despite the considerable resources deployed in many jurisdictions to implement KT interventions, authors could identify no method in the literature to audit and score the implementation of region-level KT interventions.

SAFETY REPORTING/CLINICAL INFORMATICS

[A sociotechnical framework for safety-related electronic health record research reporting: the SAFER Reporting Framework](#)

Singh H, Sittig D. *Ann Intern Med.* 2020 (June);172(11_Suppl):S92-S100.

Article from the US to describe the Safety-related EHR Research (SAFER) Reporting Framework, to enable reporting of patient safety-focused EHR interventions while accounting for the multifaceted, dynamic sociotechnical context affecting intervention implementation, effectiveness, and generalizability. Authors utilized a previously-developed eight-dimension model that accounts for design, development, implementation, use, and evaluation of health information technology. The dimensions include: hardware and software, clinical content, human-computer interface, workflow and communication, people, internal organizational features, external rules and regulations, measurement and monitoring. Authors proposed using SAFER to help guide successful implementation of highly complex EHR interventions targeting preventable harm.

ADVANCED ANALYTICS/HEALTHCARE

[Connecting data to insight: A Pan-Canadian study on AI in healthcare](#)

Hakim Z, Ierasts T, Hakim I, et al. *Healthc Q.* 2020 (April);23(1):13-19.

Article providing a summary of the current state of healthcare analytics, through use of a survey and interviews across hospitals, provincial health authorities, research institutes, provincial agencies and not-for profit organizations in Canada. Included are results from 26 organizations on current level of investment, data governance maturity, perceptions of artificial intelligence (AI), goals and advanced analytics being pursued, analytics talent, top tools and models being leveraged. Authors noted the findings point to an opportunity for enhanced collaboration in advanced analytics and adoption of nascent AI technologies in healthcare. "The recommendations will help drive adoption in Canada, ultimately improving the patient experience and promoting better health outcomes for Canadians" (p13).

COMMUNICATION/HANDOFFS

[Implementing receiver-driven handoffs to the emergency department to reduce miscommunication](#)

Huth K, Stack A, Hatoun J, et al. *BMJ Qual Saf.* 2020 (online, April):1-8.

Study at a paediatric emergency department in the US to explore whether a receiver-driven structured handoff intervention is associated with increased inclusion of standardized elements, reduced miscommunications and increased perceived quality, safety, and efficiency. Adherence to the 10 standardized elements in the verbal handoff was measured across 162 handoffs. Results showed inclusion of the elements increased significantly including illness severity, tasks completed, expectations, pending tests, contingency plans, detailed callback request and synthesis. Further, the overall rate of miscommunications decreased from 48% to 26% post-intervention. Omissions of clinically relevant information decreased from 43% to 19% post-intervention. Authors noted perceptions of quality, safety and efficiency improved significantly.

INFECTION PREVENTION/DEVICE REPROCESSING

[Design and implementation of the infection prevention program into risk management: managing high level disinfection and sterilization in the outpatient setting](#)

Sweet W, Snyder D, Raymond M. *J Healthc Risk Manag.* 2020 (online, May):1-6.

Article from the US to describe the design and implementation of a medical device reprocessing program within the Risk Management Department of a healthcare system consisting of 33 outpatient clinics. The system performs approximately 2000 different invasive procedures and has 400,000 patient encounters annually. Key components of the program involved: inventory of devices in the 33 clinics, hiring a sterile processing expert, adhering to rigorous auditing processes and establishing a staff competency training structure. Authors noted outcomes two years after starting the program included identification of high risk practices and "immediate" resolution, increased reprocessing compliance from 88% to 99%, relocation of 39% of instrument sterilization and 71% of scope high-level disinfection reprocessing to centralized sterilization, and development of a staff competency training structure.

Other Resources of Interest (all)

[2019 annual report: looking back, moving forward](#) (May 2020). Office of the Information and Privacy Commissioner of Ontario annual report; includes health sector privacy complaints of note.

[“Is it safe for me to go to work?” Risk stratification for workers during the COVID-19 pandemic](#) (May 2020). New England Journal of Medicine (US) article proposing a framework to help clinicians counsel patients about continuing to work during the pandemic.

[Managing teamwork in the face of pandemic: evidence-based tips](#) (May 2020). BMJ Quality & Safety (UK) viewpoint article offering research-based advice on team effectiveness in a crisis that may be applicable to the pandemic.

[Public health ethics framework: a guide for use in response to the COVID-19 pandemic in Canada](#) (June 2020). Public Health Agency of Canada framework supporting ethics deliberation and decision-making in the public health response to the COVID-19 pandemic, including the transition to a new normal.

[Quality and safety in the time of Coronavirus: design better, learn faster](#) (June 2020). International Journal for Quality in Health Care (IE) article setting out the principles of quality improvement and patient safety science that may be useful in crisis situations such as the current pandemic.

[Quality improvement in the time of coronavirus disease 2019 – a change strategy well suited to pandemic response](#) (May 2020). Canadian Journal of Emergency Medicine article describing five strategies for preparing the emergency department using quality improvement principles.

[Quality improvement into practice](#) (March 2020). British Medical Journal article for those new to quality improvement, highlighting what it is and where it fits with other approaches to improving care.

[Reducing the risk of diagnostic error in the COVID-19 era](#) (May 2020). Journal of Hospital Medicine (US) article proposing a new typology of diagnostic errors of concern anticipated in the COVID-19 pandemic.

[Repositioning for pressure injury prevention in adults](#) (June 2020). Cochrane (UK) review assessing clinical and cost effectiveness of repositioning regimens on the prevention of pressure injuries in any setting.

[Staying cyber-healthy during COVID-19](#) (June 2020). Canadian Centre for Cyber Security guidance offering cyber safety tips.

[The improvement project version of 20 Questions](#) (June 2020). KaiNexus (US) blog post reviewing 20 questions that, if considered at the outset, can help set up improvement projects for success.

[Virtual learning hour special series: COVID-19: grief leadership and system supports](#) (June 2020). Institute for Healthcare Improvement (US) video with experts discussing specific leadership behaviours and system supports to address caregiver mental health and well-being.