RISK WATCH

January 2020

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.

Jodi Potter

EDITOR'S NOTE

In this month's Risk Watch, we feature a number of articles, many of them focusing on medication safety and transfer of care. Härkänen et al. review incident reports to gather more information about medication administration errors. Melton et al. assess whether smart pumps are effective in reducing dosing errors in the neonatal unit noting, "Smart pumps have the ability to improve neonatal medication safety when compliance with dose error reducing software is high." Machen et al. discuss the impact of organizational culture on medication safety practices. Rungvivatjarus et al. conducted a QI project aimed to increase medication reconciliation. Barasch et al. discuss how to integrate medication infusion pumps into electronic medical records. Bai et al. review data to determine the impact ALC patients have on healthcare resources. Finally, Skelton et al. discuss adequate handover practices on the weekend at a psychiatric hospital.

If you have any comments about these articles or Risk Watch, please email me at jpotter@hiroc.com We look forward to hearing from you.

HOT OFF THE PRESS

DISCHARGE PLANNING/ALTERNATE LEVEL OF CARE

Risk factors, costs and complications of delayed hospital discharge from internal medicine wards at a Canadian academic medical centre: retrospective cohort study

Bai A, Dai C, Srivastava S, et al. *BMC Health Serv Res*. 2019 (online, December):1-9.

Study to assess the impact alternate level of care (ALC) patients have on healthcare costs and complications at a large tertiary care hospital in Canada. Results showed on average, ALC patients had longer lengths of stay, higher healthcare costs and more complications in hospital than non-ALC patients. Authors identified seven risk factors and developed a clinical prediction tool to successfully identify patients at risk for ALC.

QUALITY IMPROVEMENT HANDOVERS/MENTAL HEALTH

Development and implementation of electronic medical handovers across psychiatric hospitals: quality improvement initiative

Skelton L, Rogers J, Kalafatis C. *BMJ Open Qual*. 2019 (online, November):1-6.

Quality improvement project in the UK with an aim to reduce the number of out-of-hours medical errors by ensuring there is a consistent and transparent weekend medical handover. The improvement project focused on creating an electronic handover system which is easy to use, robust and embedded into the existing IT systems in a psychaitric hospital.

PATIENT SAFETY/SURGICAL SAFTEY

Spinal surgery complications: an unsolved problem—is the World Health Organization Safety Surgical Checklist an useful tool to reduce them?

Barbanti-Brodano G, Griffoni C, Halme J, et al. *Eur Spine J.* 2019 (online, November):1-10.

Study to assess the effectiveness of the World Health Organization's Surgical Safety Checklist on reducing complications from spinal surgery. Following implementation of the checklist authors noted a decrease in post-operative complications (24.2% vs. 11.7%). Authors suggest using the checklist in the pre-operative and post-operative stages as well as intraoperatively to further improve surgical safety.

MEDICATION RECONCILIATION/PAEDIATRICS

Medication reconciliation improvement utilizing process redesign and clinical decision support

Rungvivatjarus T, Kuelbs C, Miller L, et.al. *Jt. Comm J Qual Patient Saf.* 2020 (January);46(1):27-36.

Quality improvement project in the US to increase the percentage of hospital admission medication reconciliation completion to greater than or equal to 95% at a large academic children's hospital. The improvement project utilized an interdisciplinary team and interventions were implemented through sequential Plan-Do-Study-Act cycles. Baseline data from 12,481 admission encounters and 13,082 post-intervention admission encounters were examined. Results showed the completion rate increased from 73% to 95% within seven months of the project and was sustained at 94% post-intervention.

MEDICATION ADMINISTRATION/PAEDIATRICS

Smart pumps improve medication safety but increase alert burden in neonatal care

Melton K, Timmons K, Walsh K, et al. *BMC Med Inform Decis Mak*. 2019 (online, November):1-11.

Study in the US using data from over 370,000 infusion starts in a neonatal intensive care unit to assess whether smart pumps were effective in reducing medication errors. Overall, 87% of infusions were started using the drug library with dose error reducing software. There were 160 attempts to exceed hard maximum limits for high-risk medications, and 2,093 attempts to exceed soft maximum limits resulted in infusions being cancelled or reprogrammed. Alerts were generated for 3-5% of infusion starts, with 17% clustering around specific patients and medications, e.g. at end-of-life which require higher amounts of sedatives and analgesics.

MEDICATION ADMINISTRATION/SAFETY

Automation and interoperability of a nurse-managed insulin infusion protocol as a model to improve safety and efficiency in the delivery of high-alert medications

Barasch N, Romig M, O Demko Z, et.al. *J Patient Saf Risk Manag*. 2019 (online, December):1-10.

Study at an academic hospital in the US to assess the ability to integrate medication infusion pumps with electronic medical records systems that have existing dose adjustment algorithims for insulin infusion to improve safety. Authors stated, "In this study, we demonstrated, for the first time, the feasibility of substituting an electronic for a human double check on high-alert medication administration" (p.6). Authors provided the process flow map and a visual insulin infusion protocol.

MEDICATION ADMINISTRATION/DATA MINING

Identifying risks areas related to medication administrations - text mining analysis using free-text descriptions of incident reports

Härkänen M, Paananen J, Murrells T, et al. *BMC Health Serv Res*. 2019 (online, November):1-9.

Study in the UK to identify high risk areas for medication administration using data mined from the free-text section of incident reports. Results identified seven high risk areas for medication administration. Authors suggest interventions to improve medication administration safety and identify high risk medications.

MEDICATION SAFETY/CULTURE

The role of organizational and professional cultures in medication safety: a scoping review of the literature
Machen S, Jani Y, Turner S, et al. *Int J Qual Health Care*. 2019 (online, December):1-12.

Study synthesizing 42 articles on the role of culture in medication safety. Four themes describing the direct and indirect impact of organizational and professional culture on medication safety practices emerged: professional identity, fear of litigation and punishment, hierarchy, and pressure to conform to established culture. Authors noted three of the four themes crosscut across professional and organizational levels, alluding to the difficulties in disentangling professional and organizational cultures, as individuals and communities may be a function of both their profession and their organizational setting.

Other Resources of Interest (all)

A primer on disclosing personal health information to police (December 2019). Borden Ladner Gervais LLP (CND) article on whether to disclose personal health information about a current or former patient to police.

Addressing need and formulating ideas to mitigate prescribing errors in pediatric settings (December 2019). *Journal of Patient Safety and Risk Management* (US) editorial with three recommendations.

ECRI update: patient lifts can handle the load, but which designs are best? (January 2020). TechNation (US) article with an overview of patient lift designs and four areas to consider when making purchasing decisions.

Ontario hospitals - leaders in efficiency (December 2019). Ontario Hospital Association report on the fiscal efficiency of Ontario hospitals, including descriptive charts and pressures they face today.

Patient safety pearls (December 2019). *Journal of Patient Safety and Risk Management* (US) article which provides medicine "bon mots" on topics such as teaming up, dealing with failure, communicating with patients.

PHIPA decision 103 (November 2019). Information and Privacy Commissioner of Ontario decision regarding correction of the complainant's personal health information (PHI) relating to a hospital admission.

Recent amendments to Ontario's Ambulance Act (December 2019). Borden Ladner Gervais LLP (CND) article on amendments to *Ambulance Act* regulations which took effect on November 1, 2019.

Reports on value-for-money audits (December 2019). Office of the Auditor General of Ontario annual reports on a number of public sector services, including hospitals and long term care homes.

Telephone triage hotlines: effective screen or open gate? (December 2019). Canadian Medical Association Journal News article summarizing the impact tele-triage service has on attendance to emergency rooms in Canada.

The role of the bedside nurse in antibiotic stewardship interventions (November 2019). Agency for Healthcare Research and Quality (US) video on role of nurses in antibiotic stewardship interventions with case examples.