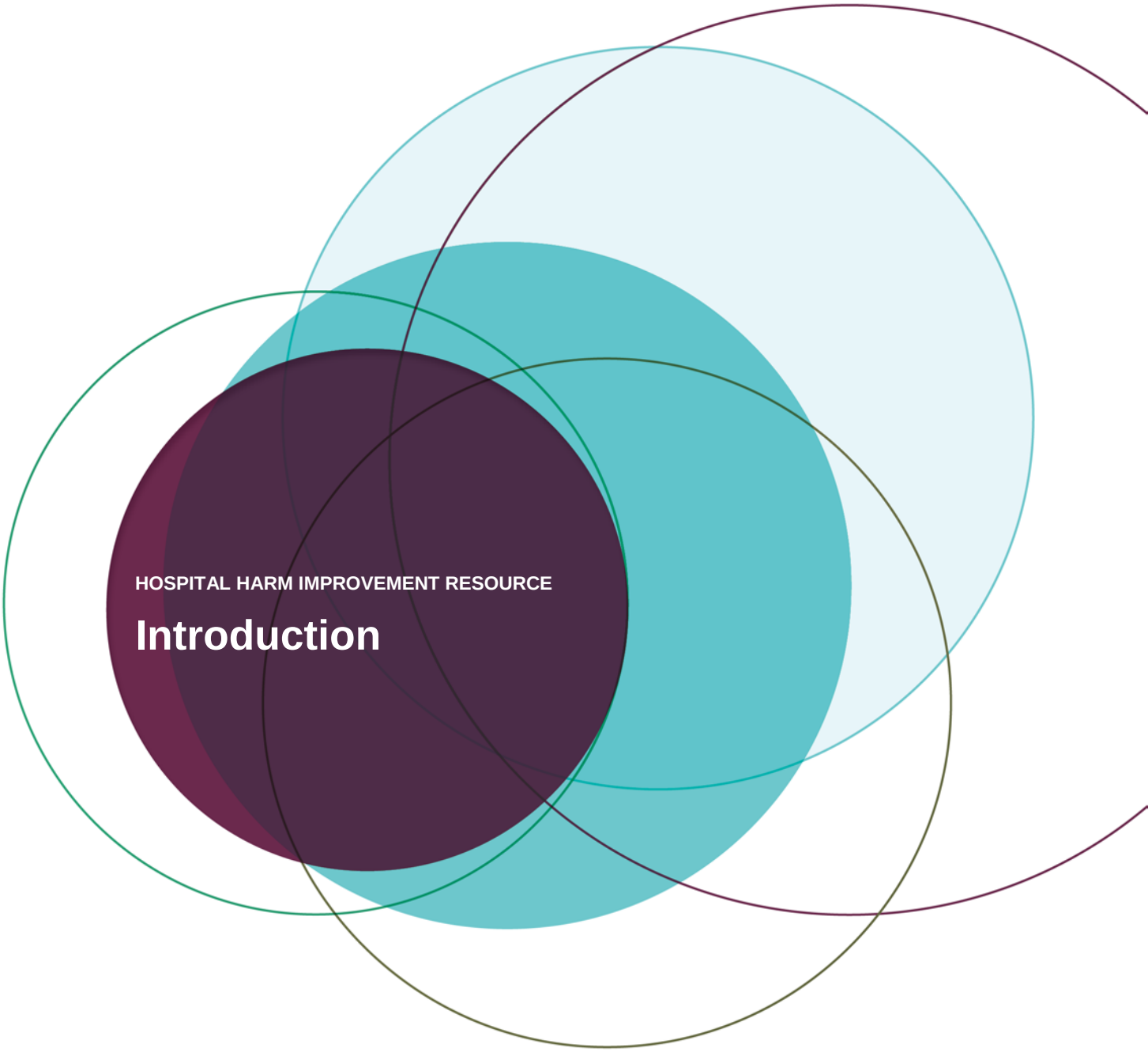

HOSPITAL HARM IMPROVEMENT RESOURCE

Introduction

cpsi icsp

Canadian Patient Safety Institute

Institut canadien pour la sécurité des patients

ACKNOWLEDGEMENTS

The Canadian Institute for Health Information and the Canadian Patient Safety Institute have collaborated on a body of work to address gaps in measuring harm and to support patient safety improvement efforts in Canadian hospitals.

The Hospital Harm Improvement Resource was developed by the Canadian Patient Safety Institute to complement the Hospital Harm measure developed by the Canadian Institute for Health Information. It links measurement and improvement by providing evidence-informed resources that will support patient safety improvement efforts.

The Canadian Patient Safety Institute acknowledges and appreciates the key contributions of the following individuals for the review and approval of this Improvement Resource:

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Background

Patients expect hospital care to be safe and for most people it is. However, a small proportion of patients experience some type of unintended harm as a result of the care they receive. The Canadian Institute for Health Information (CIHI) and the Canadian Patient Safety Institute (CPSI) have collaborated on a body of work to address gaps in measuring harm and to support patient safety improvement efforts in Canadian hospitals. The Hospital Harm Improvement Resource was developed by the Canadian Patient Safety Institute to complement the Hospital Harm measure developed by CIHI. It links measurement and improvement by providing evidence-informed practices that will support patient safety improvement efforts.

The purpose of measuring quality and safety is to improve patient care and optimize patient outcomes. The Hospital Harm measure should be used in conjunction with other sources of information about patient safety, including patient safety reporting and learning systems, chart reviews or audits, Accreditation Canada survey results, patient concerns and clinical quality improvement process measures. Together, this information can inform and optimize improvement initiatives.

The Improvement Resource is a compilation of evidence-informed practices linked to each of the clinical groups within the Hospital Harm measure to help drive changes that will make care safer. Through extensive research and consultation with clinicians, experts and leaders in quality improvement (QI) and patient safety, the Improvement Resource is intended to make information on improving patient safety easily available, so teams spend less time researching and more time optimizing patient care.

The Improvement Resource is a dynamic tool that the Canadian Patient Safety Institute will continue to develop and review every two years, or as new evidence emerge. If you have any suggestions for the Improvement Resource, please send your ideas to info@cpsi-icsp.ca.

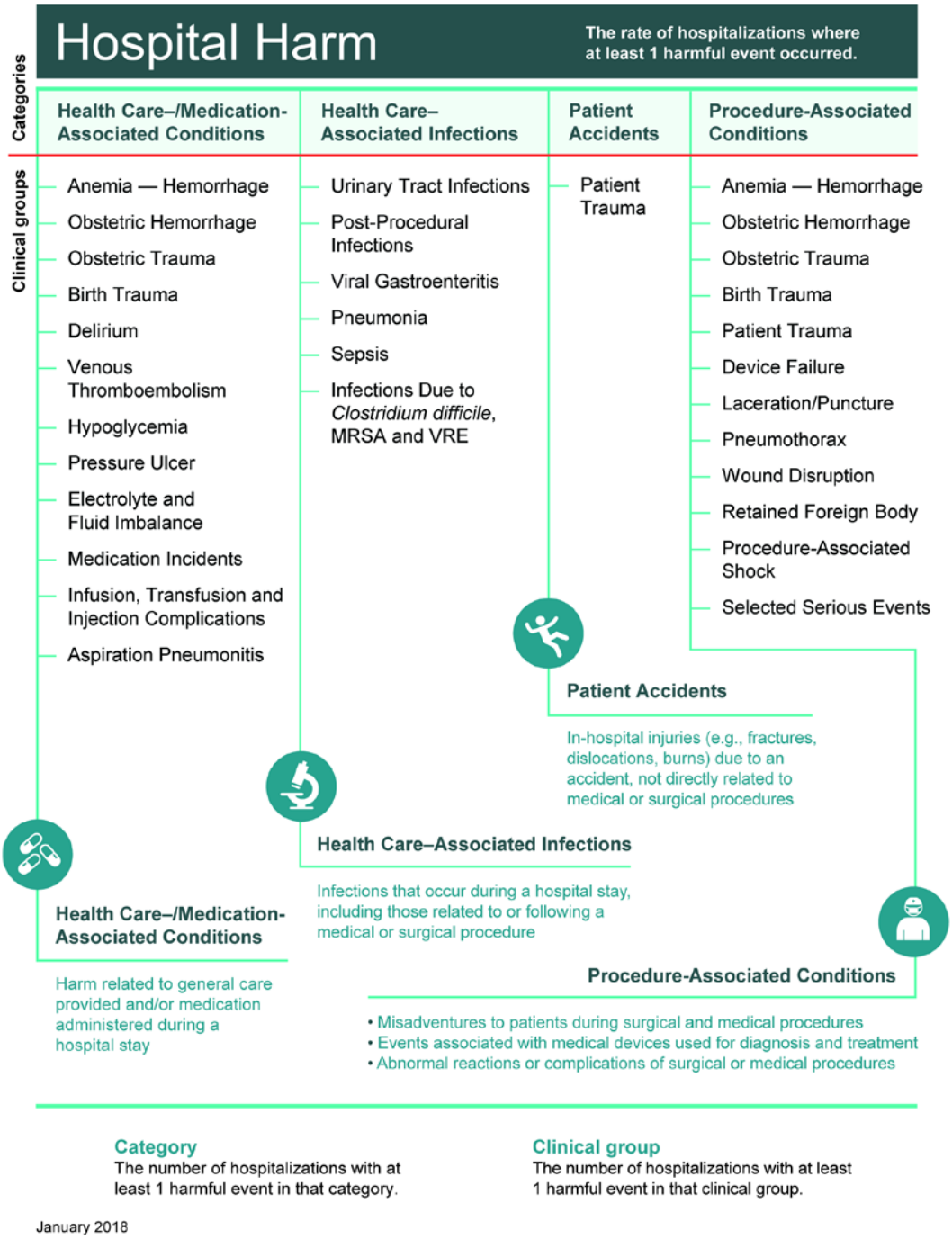
The layout of the Improvement Resource reflects the framework of the Hospital Harm measure (Figure 1) and focuses on actions that can be taken to decrease the likelihood of harm. The measure includes four major categories of harm and within each category is a series of individual clinical groups, or types of harm, each of which connects to evidence-informed practices for improvement.

For each clinical group, the Improvement Resource provides the following:

- An overview of the clinical group and goal for improvement.
- Implications for patients experiencing the type of harm and their importance to patients and family.
- Evidence-informed practices to reduce the likelihood of harm.
- Outcome and process improvement measures.
- Associated Accreditation Canada standards and Required Organizational Practices and Global Patient Safety Alerts recommended search terms.

- Success stories from organizations.
- References and key resources, including guidelines and select research articles.

Figure 1: Hospital Harm Measure Framework



Definitions

As patient safety terminology evolves it is important to be clear on the meaning and differences of specific words. For the purposes of the Hospital Harm measure, the following definitions apply:

- **Harm** – An unintended outcome of care that may be prevented with evidence-informed practices and is identified and treated in the same hospital stay.
- **Occurrence of harm** – Harmful event is synonymous with occurrence of harm.
- **Patient Safety** – The reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum. An acceptable minimum takes into consideration current knowledge, resources available and the context in which care was delivered weighed against the risk of non-treatment or other treatment.
- **Hospital Harm Measure** – Acute care hospitalizations with at least one unintended occurrence of harm that could be potentially prevented by implementing known evidence-informed practices.

For harm to be included in the measure, it must meet the following three criteria:

1. It is identified as having occurred after admission and within the same hospital stay.
2. It requires treatment or prolongs the patient's hospital stay.
3. **It is one of the conditions from the 31 clinical groups in the Hospital Harm Framework.**

How to Use the Hospital Harm Measure for Improvement

Occurrences of harm are often complex with many contributing factors. Organizations need to:

1. Measure and monitor the types and frequency of these occurrences.
2. Use appropriate analytical methods to understand the contributing factors.
3. Identify and implement solutions or interventions that are designed to prevent recurrence and reduce the risk of harm.
4. Have mechanisms in place to mitigate consequences of harm when it occurs.

To develop a more in-depth understanding of the care delivered to patients, chart audits, incident analyses and prospective analyses can all be helpful in identifying quality improvement opportunities. Links to key resources for analysis methods are included in the section "Resources for Conducting Incident and/or Prospective Analyses."

Chart audits are recommended as a good method to develop a more in-depth understanding of the care delivered to patients identified by the Hospital Harm measure. Chart audits help identify quality improvement opportunities.

Conducting a Chart Audit to Drive Quality Improvement

Step 1: Prioritize quality improvement opportunities

Prioritize the clinical groups for review with the help of your multidisciplinary team, and by considering the following factors:

- Clinical groups with a high volume of patients.
- Severity of harm including never events, serious reportable adverse events, serious safety events and critical incidents.
- Clinical groups that align with:
    - QI work already underway or planned in the organization.
    - Provincial/territorial or regional priorities or ministerial directives.
    - Priorities identified through the accreditation or risk assessment process.
    - Priorities from patient safety incident reporting and learning systems, patient safety or quality assurance reviews or patient complaints.

Step 2: Identify what you want to measure

Identify specifically what you want to measure through a chart audit. The input of experts is key in this step. Clinical groups are comprised of codes of different but related types of harm. Determine which codes contribute the most harm to the clinical group, what questions you need to answer and what information you need to collect. The Improvement Resource lists some suggested outcome and process measures for each clinical group.

For example, C21: Patient Trauma captures in-hospital injuries such as fractures, dislocations, burns and asphyxiation. If C21 has been identified as a “high volume” clinical group for your facility/organization you will want to determine which codes contribute the majority of harm (e.g. fracture, burns, etc.). If fractures are the focus of your audit, you may want to measure the number of fractures due to falls. To understand what contributed to the fall you may need to know where the fall occurred (from bed, wet floor, etc.) and if the patient had a fall risk assessment and medication review on admission, etc.

Step 3: Identify your patient population

Once your team has identified a clinical group to explore, with the help of the multidisciplinary team you will need to identify the patient population for study. For instance, you may decide to review all cases included in the clinical group or focus on a specific unit or patient population (e.g. medical, surgical, obstetrical, etc.).

Step 4: Determine your sample size for the chart audit

Sample size is at the discretion of your facility/organization. For a chart audit you may arbitrarily choose a sample size; the minimum is usually 10 to 20 charts or 10 per cent of the population. For steps on determining a statistically valid sample size see:
http://patientsafetyed.duhs.duke.edu/module_b/steps/step4.html

A small sample can be effective in QI to help identify themes, understand the patient experience and explore patient care processes. However, findings from a small sample should be used cautiously when considering applicability across an entire population.

Step 5: Create your audit tools

Determine the demographic and care processes that you want to capture in your audit. Hospitals may use existing audit tools from external organizations or create their own audit tool. Examples of audit tools can be found in several of the *Safer Healthcare Now!* Getting Started Kits (e.g. Surgical Site Infection, MedRec Acute Care, Preventing Falls and Injury from Falls). When creating an audit tool, the Improvement Resource is a valuable tool to determine the key process elements to audit.

Step 6: Collect your data

Members of the multidisciplinary QI team can conduct the chart audit of the sample cases, or it can be done by staff familiar with conducting audits (e.g. health information analysts, clinical educators, risk managers).

Step 7: Summarize your results

Summarize the chart audit results and share them with members of your team for additional insights. The input of those who provide the care on a regular basis is also very valuable at this stage. Have them reflect on: *"Does this match what you are experiencing in your day to day provision of care to our patients? Does it make sense to you or surprise you?"*

Step 8: Use your results to inform and launch a QI initiative

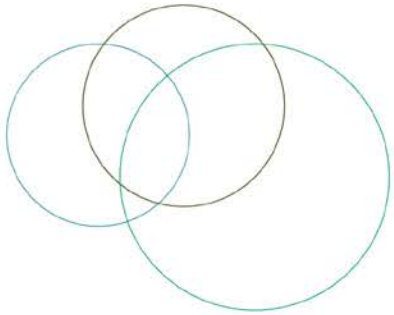
Pull together a multidisciplinary QI team inclusive of content and process experts and those who provide the care on a regular basis. Analyze the results from the chart audits to identify specific improvement opportunities. Embark on a journey using QI methodology such as the Model for Improvement or any quality framework used at your organization.

Use the experiences of others to identify how to make improvements. Find out what high performing organizations are doing, and look at other resources such as the results of previous audit events like the Canadian Patient Safety Institute Canadian Surgical Site Infection Prevention Audit or Global Patient Safety Alerts.

Remember to include ongoing measurement and evaluation to understand if changes have resulted in improvement (see process measures listed for each clinical group in the Improvement Resource). Identify any other sources of complementary information (e.g. patient safety incident reporting and learning system data, ongoing quality audits, quality of care reviews).

If your organization would like further information on how to conduct a chart audit for quality, some helpful references include:

- The retrospective chart review: important methodological considerations http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3853868/



- The How's and Why's of Chart Audits
  http://patientsafetyed.duhs.duke.edu/module_b/chart_audit.html

RESOURCES FOR CONDUCTING INCIDENT AND/OR PROSPECTIVE ANALYSES

Canadian Association of Paediatric Health Centres (CAPHC)

Trigger Tool

The CAPHC Paediatric Trigger Tool (CPTT) is a patient safety improvement tool developed in collaboration with patient safety and quality improvement experts from across Canada. Trigger tools have long been considered to be sensitive and efficient strategies for detecting adverse events and have been widely used in adult studies. The CPTT is available for download at no charge to be used by acute care paediatric hospitals and community hospitals as a tool to promote quality improvement and safer care for the paediatric population.

Canadian Patient Safety Institute

Canadian Incident Analysis Framework

The Canadian Incident Analysis Framework is a resource to support those responsible for, or involved in, managing, analyzing and/or learning from patient safety incidents in any healthcare setting. It provides analysis methods (comprehensive, concise and multi-incident) and tools to assist in answering the following questions:

- What happened?
- How and why did it happen?
- What can be done to reduce the likelihood of recurrence and make care safer?
- What was learned?

Canadian Patient Safety Institute

Global Patient Safety Alerts

Hosted by the Canadian Patient Safety Institute, Global Patient Safety Alerts is a publicly available web-based platform containing an evidence-informed collection of alerts, advisories, recommendations and solutions for improving care and preventing incidents. Recognized by the World Health Organization, Global Patient Safety Alerts provides access and the opportunity to learn from other organizations around the world about specific patient safety incidents. Learning from the experience of other organizations can accelerate improvement.

Canadian Patient Safety Institute

Patient Safety and Incident Management Toolkit

In spring 2015, the Canadian Patient Safety Institute released a new web-based resource that is based on the Canadian Incident Analysis Framework but extends the focus beyond incident analysis to look at the broader spectrum of patient safety and incident management. Canadian and international resources, tools and references are available at the fingertips of users through links and downloadable documents.

Institute for Healthcare Improvement (IHI)

Failure Modes Effects Analysis Tool

Failure modes and effects analysis (FMEA) is a systematic, proactive method for evaluating a process to identify where and how it might fail and to assess the relative impact of different failures, in order to identify the parts of the process that are most in need of change.

Teams use FMEA to evaluate processes for possible failures and to prevent them by correcting the processes proactively rather than reacting to adverse events after failures have occurred. This emphasis on prevention may reduce risk of harm to both patients and staff. FMEA is particularly useful in evaluating a new process prior to implementation and in assessing the impact of a proposed change to an existing process.

Institute for Healthcare Improvement (IHI)

Global Trigger Tool

The IHI Global Trigger Tool for Measuring Adverse Events (AEs) provides instructions for training reviewers in this methodology and conducting a retrospective review of patient records using triggers to identify possible AEs. This tool includes a list of known AE triggers as well as instructions for selecting records, training information, and appendices with references and common questions.

Institute for Safe Medication Practices Canada (ISMP Canada)

Canadian Failure Mode and Effects Analysis Framework©

Failure modes and effects analysis (FMEA) is a proactive safety technique that helps to identify process and product problems before they occur. It is one of several types of prospective risk assessment that can be used in healthcare settings. It is also widely used as an integral aspect of improving quality and safety in other industries (e.g., automotive, aviation, and nuclear power).

ISMP Canada has developed the Canadian Failure Mode and Effects Analysis Framework — Proactively Assessing Risk in Healthcare©, with assistance from healthcare and human factors engineering consultants. It can be applied to all healthcare processes, such as medication use, patient identification, specimen labelling, emergency room triage, identification of risk of patient falls, to list a few examples.

Patient Safety, Quality Improvement and Measurement Resources

Driving quality improvement in a focused area such as a clinical group requires an understanding of the foundational elements of quality improvement and measurement. Below is a list of quality improvement and measurement resources that can be used by quality improvement teams as well as resources for leaders.

British Columbia Patient Safety & Quality Council

Knowledge Centre

The Knowledge Centre is a hub of resources for quality improvement including a searchable database. Although constructed by the BC Patient Safety & Quality Council to support teams undertaking quality improvement within British Columbia, this searchable database has content that can be used by quality improvement teams across Canada. The BC-generated resources are available as well as links to many other organizations.

Canadian Foundation for Healthcare Improvement

The Canadian Foundation for Healthcare Improvement (CFHI) is a not-for-profit organization funded by the Government of Canada, dedicated to accelerating healthcare improvement. CFHI supports organizations to lead, implement and spread evidence-informed, patient-centred solutions. They focus on building leadership and skill capacity, enabling patient, family and community engagement, applying improvement methodology, and creating collaboratives to spread evidence-informed improvement. The CFHI improvement collaboratives such as the Acute Care for Elders Collaborative provide coaching to improvement teams working on selected initiatives. The CFHI Executive Training Program (EXTRA) enhances the capacity of teams of existing and emerging leaders to accelerate improvement.

Canadian Patient Safety Institute

Central Measurement Team

The Central Measurement Team (CMT) offers measurement support, coaching and advice to healthcare organizations working on improvement patient safety. They work with all sectors and organizational levels to help them understand the critical importance of evaluation as part of the improvement process as well as the impact of transparent communication between leaders, providers, families and patients. The CMT offers the tools providers need to achieve the most appropriate healthcare services guided by best practices, and the inspiration and practical guidance for all those faced with the challenge of keeping patients safe. They can be contacted at measurement@cpsi-icsp.ca

Canadian Patient Safety Institute

Deteriorating Patient Condition

Early warning signs of clinical deterioration are often unrecognized, leading to devastating results. Research shows that virtually all critical inpatient events are preceded by warning signs that occur approximately six-and-a-half hours in advance.

Click here to find information, tools and resources to not only help you recognize the deteriorating patient condition, but what you can do to act on it as a member of the public, a healthcare provider or leader.

Canadian Patient Safety Institute

Engaging Patients in Patient Safety – a Canadian Guide

Patient safety is the most important aspect of care according to patients/families. Patients, providers and leaders agree that when patients participate as partners in their own care and in patient safety improvements at an organizational/system level, harm can be prevented and incidents can be better managed. This guide is an extensive resource, based on evidence and leading practices, that aims to help patients and families, providers, and leaders partner more effectively to improve patient safety. The guide is regularly revised to include the most current evidence, resources and guidance to shape policies, practices and meet required standards. Access the guide and its many complementary resources at: www.patientsafetyinstitute.ca/engagingpatients

Share your feedback, evidence, practices or resources with us at patients@cpsi-icsp.ca

Canadian Patient Safety Institute

Improvement Frameworks Getting Started Kit

Improvement comes from the application of knowledge. It also comes from action: from developing, testing and implementing changes which alter how work or activity is done or the make-up of a product or service. The Improvement Frameworks Getting Started Kit provides an introduction to various improvement science methodologies and provides the foundational knowledge necessary for applying the Model for Improvement to an improvement project.

Canadian Patient Safety Institute

TeamSTEPPS Canada™

Patient safety experts agree that effective teamwork skills are essential for safe, quality healthcare that prevents and mitigates harm. TeamSTEPPS® is a teamwork system developed by the United States Department of Defense and the Agency for Healthcare Research and Quality to improve safety and transform culture in healthcare through better teamwork, communication, leadership, situational awareness, and mutual support. TeamSTEPPS Canada™ has been adopted and adapted by the Canadian Patient Safety Institute (CPSI) and made available to the Canadian healthcare field. The program includes a comprehensive set of

ready-to-use materials and a training curriculum to integrate teamwork principles into a variety of settings.

Click here to learn more about TeamSTEPPS Canada™

HealthCare*CAN*

HealthCare*CAN* is the national voice of healthcare organizations and hospitals across Canada. Their mission is to advance an integrated, innovative, sustainable and accountable healthcare system that provides the people of Canada with a world-leading health system by being the collective voice of Canada's healthcare organizations and by enhancing pathways to innovation, supporting service excellence across the continuum of care; and, developing the health leaders of today and tomorrow. The HealthCare*CAN* Integrated Quality Management program is designed to prepare leaders who can initiate and manage quality improvement in their healthcare organization.

Health Standards Organization (HSO)

Closely affiliated with Accreditation Canada, Health Standards Organization (HSO) builds standards, assessment programs, software and implementation services for accreditation bodies, governments, associations and others. Standards developed by HSO directly support patient safety improvement in organizations to foster inter-organizational learning. HSO maintains a Leading Practices Library that profiles nearly 1,000 practices recognized as being particularly innovative and effective in improving quality. The database also contains Commendable Practices, which, while not new or leading, are proven to be efficient and effective methods for improving quality.

Institute for Healthcare Improvement (IHI)

Knowledge Centre

The IHI Knowledge Center offers an extensive range of quality improvement resources. Resources include hands-on tools, IHI publications and white papers. A full explanation of the Model for Improvement is included as well as a good overview on establishing measures. Case studies and improvement stories about identified organizations are provided, and a number of audio and video clips round out a multi-media learning platform.

Additional Resources for Improvement

Many organizations provide improvement resources in the form of guidelines or standards. Some are available only to members while others are open access.

Canadian Agency for Drugs and Technology in Health

The Canadian Agency for Drugs and Technology (CADTH) is an independent, not-for-profit organization responsible for providing healthcare decision-makers with objective evidence to help make informed decisions about the optimal use of health technologies including drugs;

diagnostic tests; and, medical, dental and surgical devices and procedures. CADTH also provides advice, recommendations and tools.

Canadian Medical Protective Association

The Canadian Medical Protective Association (CMPA) mission is to protect the professional integrity of physicians and promote safe medical care in Canada. In addition to providing advice and assistance to their members when medical-legal issues arise, the CMPA provides professional development program and resources that help physicians to provide safe care, manage risk and be knowledgeable about their obligations.

Canadian Standards Association

The Canadian Standards Association Group (CSA) is an independent, not-for-profit membership association. CSA's knowledge and expertise encompass standards development; training and advisory solutions; and global testing and certification services across key business areas including hazardous locations and industrial, plumbing and construction, medical, safety and technology, appliances and gas, alternative energy, lighting and sustainability; as well as consumer product evaluation services.

Choosing Wisely Canada

Choosing Wisely Canada (CWC) is a campaign to help clinicians and patients engage in conversations about unnecessary tests and treatments and make smart and effective choices to ensure high-quality care. Canadian national specialty societies participating in the campaign, representing a broad spectrum of clinicians, have been asked to develop lists of "Five Things Clinicians and Patients Should Question." These lists identify tests and treatments commonly used in each specialty, but are not supported by evidence, and/or could expose patients to unnecessary harm.

Healthcare Insurance Reciprocal of Canada

The Healthcare Insurance Reciprocal of Canada (HIROC) is an insurance reciprocal with close to 600 subscribers across a wide range of healthcare facilities and organizations in Canada. The HIROC vision is "partnering to create the safest healthcare system." In addition to meeting the liability insurance needs of subscribers, HIROC is committed to working with their subscribers and partners to develop tools and solutions that minimize risk and improve the overall efficiency and safety of Canada's healthcare system. HIROC provides members a wealth of information in the form of risk resource guides and risk reference sheets designed to assist organizations identify strategies to prevent future harm.