Hospital Harm Project FAQ

What is the Hospital Harm Project?

This project is a partnership between the Canadian Institute for Health Information (CIHI) and the Canadian Patient Safety Institute (CPSI) aimed at answering the question "how often do patients experience harm in hospital?"

The result is a report that introduces a new measure of potentially preventable harm in hospitals; the measure is linked to an improvement resource containing evidence-informed practices and resources that can reduce the occurrence of harm.

The report, *Measuring Patient Harm in Canadian Hospitals*, provides an overview of the status of hospital harm in Canada (outside of Quebec[i]) and identifies how the data and associated improvement resource can be used for improvement.

The *Hospital Harm Improvement Resource* is a compilation of resources to complement the Hospital Harm measure. It links measurement and improvement by providing evidence-informed practices and resources that will support patient safety and improvement efforts.

Why is it important to measure harm?

Until now, there has been no single measure that provides a broad perspective on patient safety in Canadian hospitals or answers the question "how safe is my hospital?"

What are the results of the research?

The study shows that in 2014–2015, harm was experienced by patients in 1 of every 18 hospital stays, or 138,000 hospitalizations. Of those, 30,000 (or 1 in 5) involved more than 1 form of harm. The overall rate (5.6%) has remained stable over the past few years. The new data reflects hospitalizations with at least 1 occurrence of unintended harm — harm that could possibly have been prevented had known, evidence-informed practices been used.

i. Data from Quebec is excluded due to methodological issues.

cpsi icsp
Canadian Patient Safety Institute
Institut canadien pour la sécurité des patients

CIHI ICIS
Canadian Institute for Health Information
Institut canadien d'information sur la santé

FAQ

What is the Hospital Harm measure?

The Hospital Harm measure is a new approach to measuring patient safety developed jointly by CIHI and CPSI in consultation with leading patient safety experts. It is designed to help health system leaders identify patient safety improvement priorities and track progress over time.

The measure is defined as acute care hospitalizations with at least 1 occurrence of unintended harm (during the hospital stay) that could have potentially been prevented by implementing known evidence-informed practices.

For harm to be included in the measure, it must meet the following 3 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 (see the figure).

The measure is made up of 31 clinical groups that fall under 4 categories:

1. Health Care–/Medication-Associated Conditions
2. Health Care–Associated Infections
3. Patient Accidents
4. Procedure-Associated Conditions

The categories of harm included in the framework were determined through a review of the literature and clinical expert input. Only those clinical conditions that are known to be potentially preventable with the implementation of evidence-informed practices were included.

The 31 clinical groups have evidence-informed best practices associated with them; they provide the level of specificity that can help health system leaders identify priorities for improvement. Refer to the figure and to the technical report for more details on definitions and inclusions.

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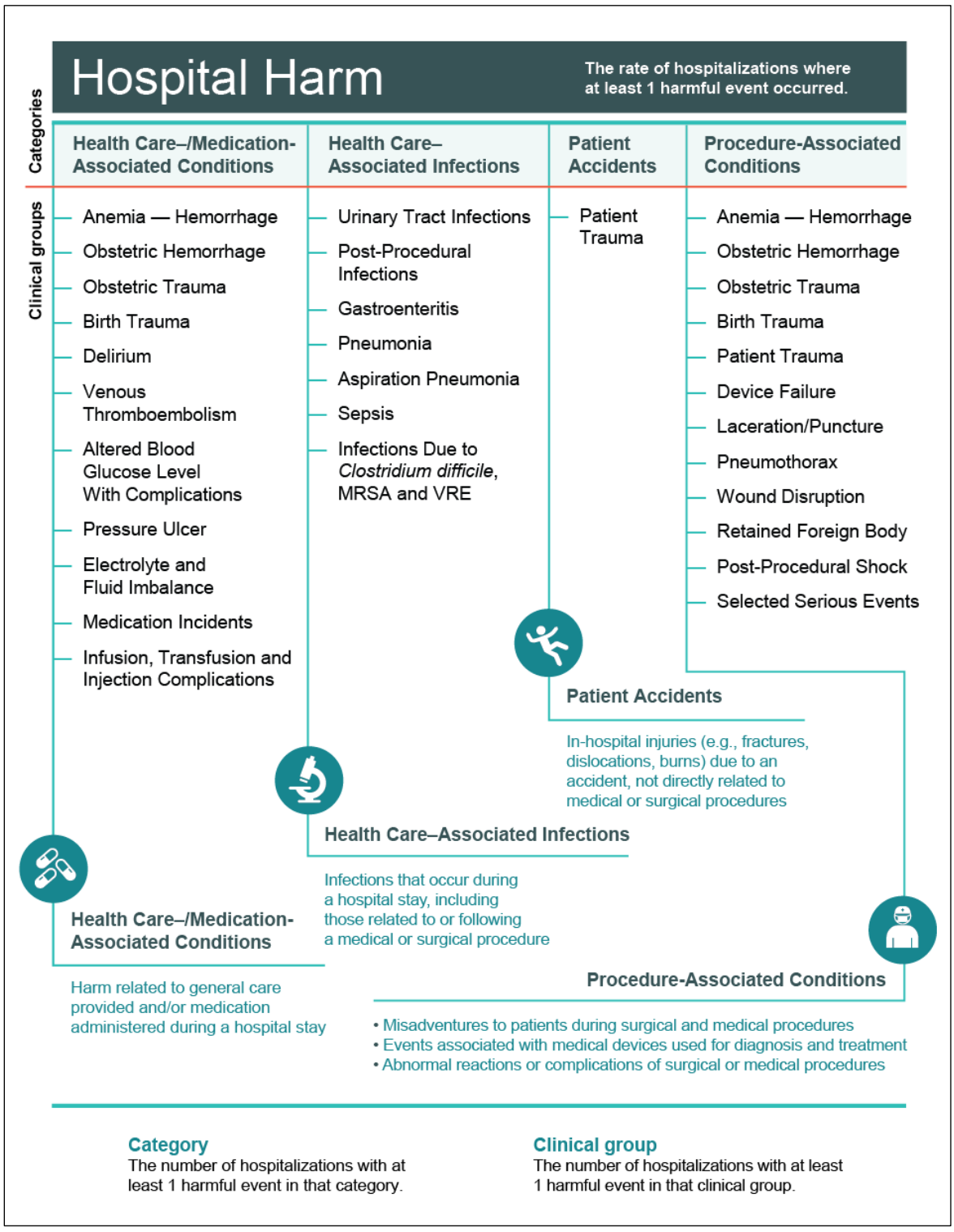
Figure Hospital Harm Framework



The measure does not capture all harmful events that occur in hospitals; the following are examples of what would not be captured:

- Near misses: incidents that did not reach the patient (e.g., wrong dose of a medication that was caught before it was given to the patient)
- Incidents or events that reached the patient and could potentially have caused harm or injury but did not (e.g., a fall that did not result in injury)
- Harm that was undetected during the hospital stay but discovered on a subsequent emergency department visit or admission (e.g., an infection of a hip joint after joint replacement surgery that was diagnosed at a follow-up visit)
- Harm to patients outside of acute inpatient care (e.g., harm that happens in other areas of a hospital such as in the emergency department, outpatient clinics, rehabilitation or long-term care)

How is harm identified for inclusion in the measure?

The measure is calculated using existing data from CIHI's Discharge Abstract Database (DAD). The DAD captures administrative, clinical and demographic information on hospital discharges (including deaths, sign-outs and transfers). No additional data collection is needed to calculate the measure.

Harm is defined by International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA) diagnosis codes or Canadian Classification of Health Interventions (CCI) codes, per the Canadian Coding Standards. The ICD-10-CA codes included in the measure are post-admission diagnoses that are significant enough to affect care.[ii]

For information on the patient cohort included in the measure and the selection criteria, refer to the technical report.

ii. The timing of obstetric conditions is indicated in the code itself rather than by diagnosis types.

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How was the measure developed?

The measure was developed in close consultation with hospitals, clinical experts and classifications specialists. It has gone through many steps and processes to date. Here is a summary of the major activities so far:

Major activities	Details
Research and development	Conducted a literature review; consulted with internal and external experts; reviewed ICD-10-CA diagnosis codes
Prototype testing with 7 pioneer hospitals (2 iterations)	Sought feedback on the measure prototype — input led to the development of the Hospital Harm Framework
Consultation with the World Health Organization Topic Advisory Group (WHO TAG) in quality and safety	Compared ICD-10-CA codes included in the measure with codes used by WHO-TAG to align codes where possible
Modified Delphi survey and face-to-face meeting	Sought input from clinical experts on face validity, scope and ability to take action — resulted in the removal of some clinical groups
Post-Delphi clinical consultation	Followed up with obstetricians, cardiac surgeons and general surgeons on selected clinical groups that did not have agreement during the Delphi process to finalize the scope of the measure
Data quality studies	Conducted a chart review study to understand how harm is captured in 4 hospitals in Ontario and Alberta The 2015 DAD reabstraction study focused, in part, on the capture of codes from selected clinical groups.
Refinement of definitions of clinical groups	Reviewed each clinical group with CIHI classifications specialists and clinical experts
Hospital validation	Hospitals and health authorities across Canada have reviewed the clinical groups, and their feedback will inform further refinements to the measure

Does the measure capture severity of harm?

No, the measure does not capture the severity of harm. However, it captures occurrences of harm that are severe enough to require medical treatment or to extend a patient's length of stay in hospital and therefore have been recorded in the DAD as significant diagnoses.

Are all occurrences of harm captured by this measure preventable?

The measure captures a range of harmful events, from "never events" — things that should never happen and are completely preventable (e.g., retained foreign body) — to events where implementation of evidence-informed practices should reduce the incidence of harm but may not prevent every occurrence (e.g., aspiration pneumonia). While not all instances of harm captured by this measure may be prevented, adopting evidence-informed practices can help to reduce the rate of harm.

How can this measure be used?

The purpose of measuring quality and safety is to improve patient care and optimize patient outcomes. The 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.

What is the *Hospital Harm Improvement Resource*?

This resource has been developed by CPSI to complement the Hospital Harm measure. This online resource links measurement and improvement by providing evidence-informed practices and resources that will support patient safety improvement efforts. It provides general patient safety information as well as quality improvement resources, tips on how to use the measure and resources specific to each clinical group, including

- An overview of the clinical group and goal for improvement;
- Implications for patients experiencing the type of harm and their importance to patients and families;
- Evidence-informed practices to reduce the likelihood of harm;
- Outcome and process improvement measures;
- Associated Accreditation Canada standards and Required Organizational Practices;
- Success stories from organizations; and
- References and key resources, including guidelines and selected research articles.

Why aren't facility-level results available?

The measure currently provides a national view of patient safety and the occurrence of harm in Canadian health systems. Hospitals serve different patient populations, so it's not appropriate to compare them without accounting for differences in their patient populations. At this stage, results for hospitals, health regions or provinces are not comparable. A methodology to adjust for these patient population differences has not yet been developed.

CIHI and CPSI are committed to working with stakeholders across the country to ensure this measure is a useful tool for monitoring and improving patient safety in acute care facilities. Work will continue to understand and improve the data as well as the underlying documentation and coding processes behind the measure. Investigation into the feasibility of developing this measure into a comparable indicator will also continue.

Some of the challenges around developing a comparable indicator include the following:

- The rate of hospital harm is subject to coding bias, so hospitals with better documentation may have higher rates.
- Hospitals that have more patients with highly complex conditions may not be fully accounted for.
- All occurrences of harm are considered to be of the same weight in terms of contribution to a hospital's overall rate, regardless of severity or type.

Patient safety indicators that relate to specific clinical groups are already available in CIHI's Your Health System web tool (e.g., Obstetric Trauma, In-Hospital Sepsis), and 3 new infection indicators will be available in spring 2017.

Appendix: Text alternative for the Hospital Harm Framework

The Hospital Harm Framework includes broad categories of harm, which are further broken down into 31 clinical groups.

The first category is Health Care–/Medication-Associated Conditions, which includes the following clinical groups: Anemia — Hemorrhage; Obstetric Hemorrhage; Obstetric Trauma; Birth Trauma; Delirium; Venous Thromboembolism; Altered Blood Glucose Level With Complications; Pressure Ulcer; Electrolyte and Fluid Imbalance; Medication Incidents; and Infusion, Transfusion and Injection Complications.

The second category is Health Care–Associated Infections, which includes the following clinical groups: Urinary Tract Infections; Post-Procedural Infections; Gastroenteritis; Pneumonia; Aspiration Pneumonia; Sepsis; and Infections Due to *Clostridium difficile*, MRSA or VRE.

The third category is Patient Accidents, which includes the Patient Trauma clinical group.

The fourth category is Procedure-Associated Conditions, which includes the following clinical groups: Anemia — Hemorrhage; Obstetric Hemorrhage; Obstetric Trauma; Birth Trauma; Patient Trauma; Device Failure; Laceration/Puncture; Pneumothorax; Wound Disruption; Retained Foreign Body; Post-Procedural Shock; and Selected Serious Events.

The framework has 3 levels:

1. Hospital Harm: The rate of hospitalizations where at least 1 harmful event occurred.
2. Category: The number of hospitalizations with at least 1 harmful event in that category.
3. Clinical group: The number of hospitalizations with at least 1 harmful event in that clinical group.