FAQ | February 2017

Hospital Harm Indicator: Frequently Asked Questions

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FAQ

1. What is the Hospital Harm indicator?

The Hospital Harm indicator is a new patient safety indicator developed jointly by the Canadian Institute for Health Information (CIHI) and the Canadian Patient Safety Institute (CPSI) in consultation with leading patient safety experts. It is designed to help organizations identify patient safety improvement priorities and track progress over time.

The Hospital Harm indicator is defined as the risk-adjusted rate of acute care hospitalizations with at least 1 occurrence of unintended harm during a hospital stay that could have been potentially prevented by implementing known evidence-informed practices.

For a harm to be included in the Hospital Harm indicator, it must meet the following 3 criteria:

1. It is identified within the same hospital stay.
2. It requires treatment or prolongs the patient's hospital stay.
3. It is 1 of the conditions from the 31 clinical groups in the Hospital Harm Framework (see the figure).

2. 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?" Hospital Harm includes a range of occurrences of harm that can be tracked over time; this new indicator will help organizations assess the effectiveness of their clinical quality improvement strategies. Comparing rates across similar facilities, regions and provinces/territories can promote shared learning and collaboration.

The Hospital Harm indicator is designed to help organizations identify patient safety improvement priorities and track progress over time.

3. What is captured in this indicator?

The Hospital Harm indicator captures unintended occurrences of harm that happen during a hospital stay as defined in the Technical Report. The indicator is made up of 31 clinical groups that fall under 4 categories:

- Category A: Health Care–/Medication-Associated Conditions
- Category B: Health Care–Associated Infections
- Category C: Patient Accidents
- Category D: 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.

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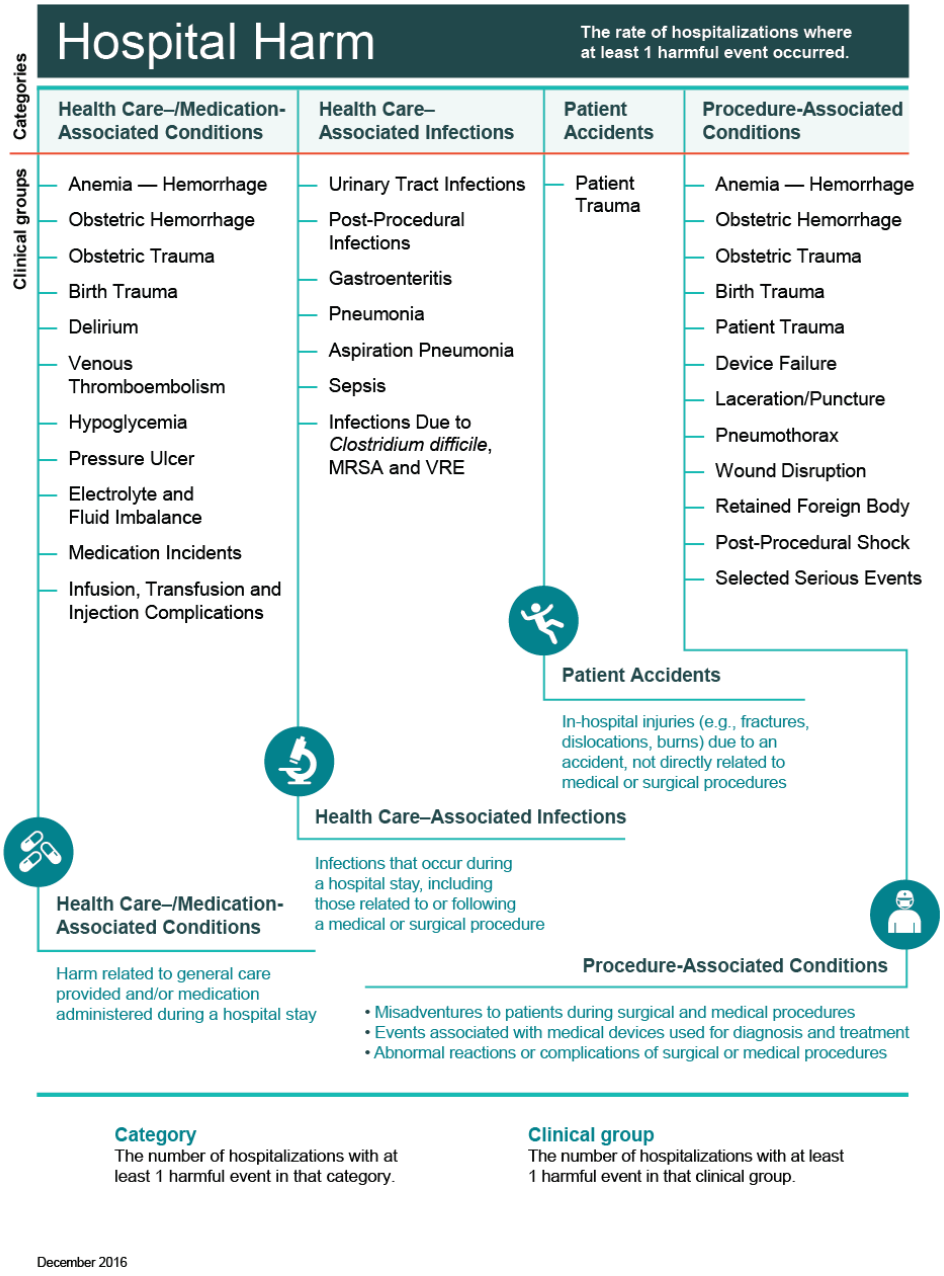
The 31 clinical groups have evidence-informed best practices associated with them; they provide the level of specificity that can help organizations identify priorities for improvement. Refer to the figure below and to the Technical Report for more details on definitions and inclusions.

Figure Hospital Harm Framework



4. What is not captured in this indicator?

The Hospital Harm indicator does not capture harm that occurred beyond what is included in the 31 clinical groups. It does not determine the severity of the harm. Near misses and no-harm incidents are not included.

Table 1 below summarizes what is not captured by the Hospital Harm indicator.

Table 1 Harm not captured in the Hospital Harm indicator

Harm not captured	Example
It [harm] was not noted on a patient's chart.	A patient experienced a laceration during surgery that was repaired but not recorded.
It does not fall into 1 of the 31 selected clinical groups.	A patient experienced a cardiac arrest while in hospital.
It occurred outside of the acute care portion of a patient's stay.	A patient fell in the emergency department and suffered a hip fracture before a decision to admit was made.
It occurred after discharge from the hospital.	A patient developed an infection from a joint replacement after discharge from hospital.
It resulted in harm but did not require treatment nor prolong the hospital stay.	A rash resulted from a medication; the medication was discontinued and rash resolved.
It could have potentially caused harm but did not.	The wrong medication was given without any adverse effects.
It did not reach the patient (near miss).	The wrong blood type was sent for transfusion but discovered prior to administration.

5. How is harm identified for inclusion in the Hospital Harm indicator?

The indicator 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 Hospital Harm indicator.

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 Hospital Harm indicator are post-admission diagnoses that are significant enough to affect care.[i]

For information on the patient cohort included in the indicator and the selection criteria, refer to the Technical Report.

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

6. How are occurrences of harm counted in the Hospital Harm indicator?

Each hospitalization with at least 1 occurrence of harm is counted only once in the clinical group, category of harm and overall measure. Patients may experience more than 1 occurrence of harm during a hospitalization, and these events may belong to different clinical groups and/or different categories. Refer to the Technical Report for details.

7. How was the indicator developed?

The indicator was developed in close consultation with hospitals, clinical experts and classifications specialists. It has gone through many steps and processes. Table 2 below provides a summary of the major activities so far.

Table 2 Hospital Harm indicator development process

Major activities	Details
Research and development	Conduct literature review; consult with internal and external experts; review ICD-10-CA diagnosis codes
Prototype testing with 7 pioneer hospitals (2 iterations)	Seek feedback on indicator prototype — input led to development of big dot indicator framework
Consultation with World Health Organization–Technical Advisory Group (WHO-TAG) in patient safety	Compare ICD-10-CA codes included in indicator with codes used by WHO-TAG to align codes where possible
Modified Delphi survey and face-to-face meeting	Seek input from clinical experts on face validity, scope and ability to take action — resulted in reduction of the 40 clinical groups
Post-Delphi clinical consultation	Follow up with obstetricians, cardiac surgeons and general surgeons on selected clinical groups that did not have agreement during Delphi process to finalize scope of the indicator
Chart review study	Conduct a chart review study to understand how harm is captured in 4 hospitals in Ontario and Alberta
Refinement of definitions of clinical groups	Review each clinical group with CIHI classifications specialists and clinical experts
Validation of results	Privately release facility-level results; collect and incorporate feedback from hospitals and health care jurisdictions (both all hospitals/jurisdictions and those that specifically volunteered for data validation)

8. Does the indicator capture severity of harm?

No, the indicator 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 a significant diagnosis.

9. Are all occurrences of harm that are captured by this indicator preventable?

The indicator 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 indicator may be prevented, adopting evidence-informed practices can help to reduce the rate of harm.

10. How can this indicator be used?

The purpose of measuring quality and safety is to improve patient care and optimize patient outcomes. The indicator 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 clinical groups in the framework provide a finer level of detail that may be sensitive enough to detect the effects of targeted improvement efforts. When this finer level of detail is used in conjunction with clinical quality process improvement measures, as well as other CIHI patient safety measures, it can assist with monitoring progress toward achieving targeted clinical outcomes for safe patient care. Furthermore, hospitals can begin to compare their measure results with those of their peers and with the national experience.

11. What is the Hospital Harm Improvement Resource?

The Hospital Harm Improvement Resource was developed by CPSI to complement the Hospital Harm indicator. This online resource links measurement and improvement by providing evidence-informed resources that will support patient safety improvement efforts. It also provides information on general patient safety tools, on quality improvement resources and on how to use the indicator, as well as references 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 family;
- 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.

12. Can I compare a specific clinical group with a stand-alone CIHI indicator?

Several clinical groups have stand-alone CIHI indicators: Obstetric Trauma (With Instrument), In-Hospital Sepsis, In-Hospital Enterocolitis Due to *C. difficile* and In-Hospital Infections Due to MRSA. The definitions and case selections for these groups have been aligned. However, because the Hospital Harm indicator encompasses many different types of harm, it is not possible to apply all of the general inclusion and exclusion criteria for the denominators that are used when only a single condition is of interest. Therefore, the case counts for a specific clinical group as part of the Hospital Harm indicator may be slightly different from the case counts of the corresponding individual stand-alone indicators.

13. How different is this release of the Hospital Harm indicator compared with previous releases?

The Hospital Harm measure was released privately in February 2016 to allow hospitals to validate their results. In October 2016, CIHI also released *Measuring Patient Harm in Canadian Hospitals*, a national-level report on hospital harm. Table 3 below highlights the differences between those releases and the current report.

Table 3 Differences among releases

Report	Release access	Reporting level	Reported results	Updates
February 2016	Hospitals, regional and provincial health authorities	Facilities, peer groups, regions, provinces/territories, Canada	• Counts for clinical groups, categories of harm, overall measure	Not applicable
October 2016	Public	Canada	• Counts for clinical groups, categories of harm, overall measure • National crude rate of the overall measure	Changes based on validation feedback (see below for items marked with an asterisk)
February 2017	Hospitals, regional and provincial health authorities	Facilities, peer groups, regions, provinces/territories, Canada	• Counts for clinical groups, categories of harm, big dot indicator • National crude rate of the big dot indicator • Crude and risk-adjusted rates (95% confidence intervals) of overall hospital harm for facilities, peer groups, regions, provinces/territories	Additional changes based on validation feedback (see below)

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Following is the list of updates to the definitions in the Technical Report:

Calculations

The risk-adjustment methodology was added to this release, and crude and risk-adjusted rates for the overall indicator are provided.

General exclusions*

Non-Canadian residents are no longer excluded from the indicator.

Rationale: Patient safety practices are expected to be the same for all hospital stays.

General exclusions

Discharges with invalid admission or discharge dates are now excluded.

Rationale: The calculations of length of stay used in the exclusion terms of some clinical groups require valid dates of admission and discharge from hospital.

General exclusions

The exclusion of selected mental health diagnoses (i.e., most responsible diagnosis code of F10–F99) is no longer limited to patients older than age 15 years.

Rationale: Adults with selected mental health diagnoses are excluded due to limitations of the Discharge Abstract Database; it is methodologically sound to apply this exclusion to all age groups. Similar to their adult counterparts, children with selected mental health diagnoses are at a low risk of most of the harm types captured by this indicator, and their discharge data is likely to be submitted to the Ontario Mental Health Reporting System.

A01/D01: Anemia — Hemorrhage

These clinical groups are limited to only cases with blood transfusion.

Rationale: There are variations in documentation of hemorrhage and the volume of blood loss. In addition, identified cases are not well linked with preventability. Therefore, experts have suggested limiting these clinical groups and using blood transfusion as an indication of severe blood loss.

A02/D02: Obstetric Hemorrhage*

These clinical groups are limited to only cases with blood transfusion.

Rationale: There are variations in documentation of obstetric hemorrhage and the volume of blood loss. In addition, identified cases are not well linked with preventability. Therefore, experts have suggested limiting these clinical groups and using blood transfusion as an indication of severe blood loss.

A03/D03: Obstetric Trauma

These clinical groups are limited to outcome of delivery using ICD-10-CA codes O10–O16, O21–O26, O28-O37, O40–O46, O48.–, O60–O75, O85–O92, O95.– and O98–O99 with a sixth digit of 1 or 2, as well as Z37.–

Rationale: These clinical groups are aligned with the methodology used for the stand-alone CIHI indicators. The additional codes ensure consistency of the definition of "outcome of delivery" across the data of different fiscal years.

A05: Delirium

ICD-10-CA codes R41.80 and R41.88 were removed from the selection criteria.

Rationale: These codes may capture a broad range of symptoms and signs due to different conditions that may not meet the criteria for diagnosis of delirium.

A07: Hypoglycemia

This clinical group is limited to hypoglycemia, and its title was changed accordingly. ICD-10-CA codes E10.11, E11.11, E13.11 and E14.11 were removed from the selection criteria.

Rationale: Based on clinical consultations, cases of lactic acidosis (part of the clinical course of diabetes complications) may have started before admission and therefore not be preventable by hospitals.

A11: Infusion, Transfusion and Injection Complications*

The ICD-10-CA code J95.81 *Transfusion-related acute lung injury (TRALI)* was removed from the selection criteria.

Rationale: Experts have indicated that the prevention of TRALI does not lie with hospitals. To prevent these injuries, transfusion policies should exclude female plasma donors, or plasma must be converted to low-TRALI-risk plasma.

B14: Gastroenteritis

ICD-10-CA code A09.9 was removed from the selection criteria.

Rationale: This code may be used for a diagnosis of diarrhea with unspecified origin and therefore is not necessarily due to infections.

B17: Sepsis

Abstracts with a most responsible diagnosis of palliative care (Z51.5) are excluded.

Rationale: This clinical group is further aligned with CIHI's In-Hospital Sepsis indicator. Whether to treat infections in patients on palliative care is influenced by the risks versus benefits of antibiotic therapy; therefore, treatment may not follow best practices for prevention of sepsis.

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B18: Infections Due to *Clostridium difficile*, MRSA or VRE

C. difficile is no longer captured in infants younger than 1 year.

Rationale: This clinical group is further aligned with CIHI's In-Hospital Enterocolitis Due to *C. difficile* indicator. Infants are not likely to develop *C. difficile* and are not tested for this microorganism.

B18: Infections Due to *Clostridium difficile*, MRSA or VRE

The selection criteria also include ICD-10-CA codes A49.0, J15.2, G00.3, L00 and M00.0– identified as diagnosis type (2) **and** U82.1 *Resistance to methicillin* as diagnosis type (1) or (2) in the same diagnosis cluster.

Rationale: The Canadian Coding Standards allows for the capture of infections due to MRSA using the ICD-10-CA codes that describe both the site of infection and the *Staphylococcus*, without the need for the ICD-10-CA code for *Staphylococcus aureus* (B95.6) in the same diagnosis cluster.

C19: Patient Trauma

This clinical group is limited to abstracts with hospital as the place of occurrence (ICD-10-CA code U98.20).

Rationale: The Canadian Coding Standards has mandated the use of the place of occurrence for accidents, applicable to fiscal years 2015–2016 onward.

D23: Wound Disruption*

The title of this clinical group was changed from Obstetric Wound Dehiscence to Wound Disruption, and other surgical wound disruption cases were added.

Rationale: Experts recommended that "wound disruption" is the appropriate terminology. They also indicated that the basics of best practices are similar for all wound disruptions, regardless of the surgical discipline.

D23: Wound Disruption

ICD-10-CA code T81.83 *Postoperative leak* was added to the selection criteria.

Rationale: The Canadian Coding Standards has introduced this code, applicable to fiscal years 2015-2016 onward.

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; Hypoglycemia; 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.