



# Measuring Patient Harm in Canadian Hospitals

## Technical Report

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For permission or information, please contact CIHI:

Canadian Institute for Health Information  
495 Richmond Road, Suite 600  
Ottawa, Ontario K2A 4H6

Phone: 613-241-7860

Fax: 613-241-8120

[www.cihi.ca](http://www.cihi.ca)

[copyright@cihi.ca](mailto:copyright@cihi.ca)

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# Correction to *Measuring Patient Harm in Canadian Hospitals: Technical Report*

The following correction has been made to the chapter Clinical groups: Definition, concept and methodology, in the section Category A: Health Care–/Medication-Associated Conditions, on page 15 of *Measuring Patient Harm in Canadian Hospitals: Technical Report*, published on October 26, 2016. The correction is specific to sub-section A02: Obstetric Hemorrhage, Selection criteria.

## Original

### A02: Obstetric Hemorrhage

#### Selection criteria

Codes	Conditions
O72.002 O72.102 O72.202 O90.202	Identified as diagnosis type (M), (1), (W), (X) or (Y) <b>AND</b> documentation of blood transfusion (blood received indicator = 1)*

\* Coding of blood transfusion is optional in British Columbia.

## Correction

### A02: Obstetric Hemorrhage

#### Selection criteria

Codes	Conditions
O72.002 O72.102 O72.202 O90.202	Identified as diagnosis type (M), (1), ( <b>2</b> ), (W), (X) or (Y) <b>AND</b> documentation of blood transfusion (blood received indicator = 1)*

\* Coding of blood transfusion is optional in British Columbia.

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# Definitions and scope

## Background

A measure of hospital harm has been developed by the Canadian Institute for Health Information (CIHI) in partnership with the Canadian Patient Safety Institute (CPSI) to help stakeholders monitor their improvement efforts in patient safety over time.

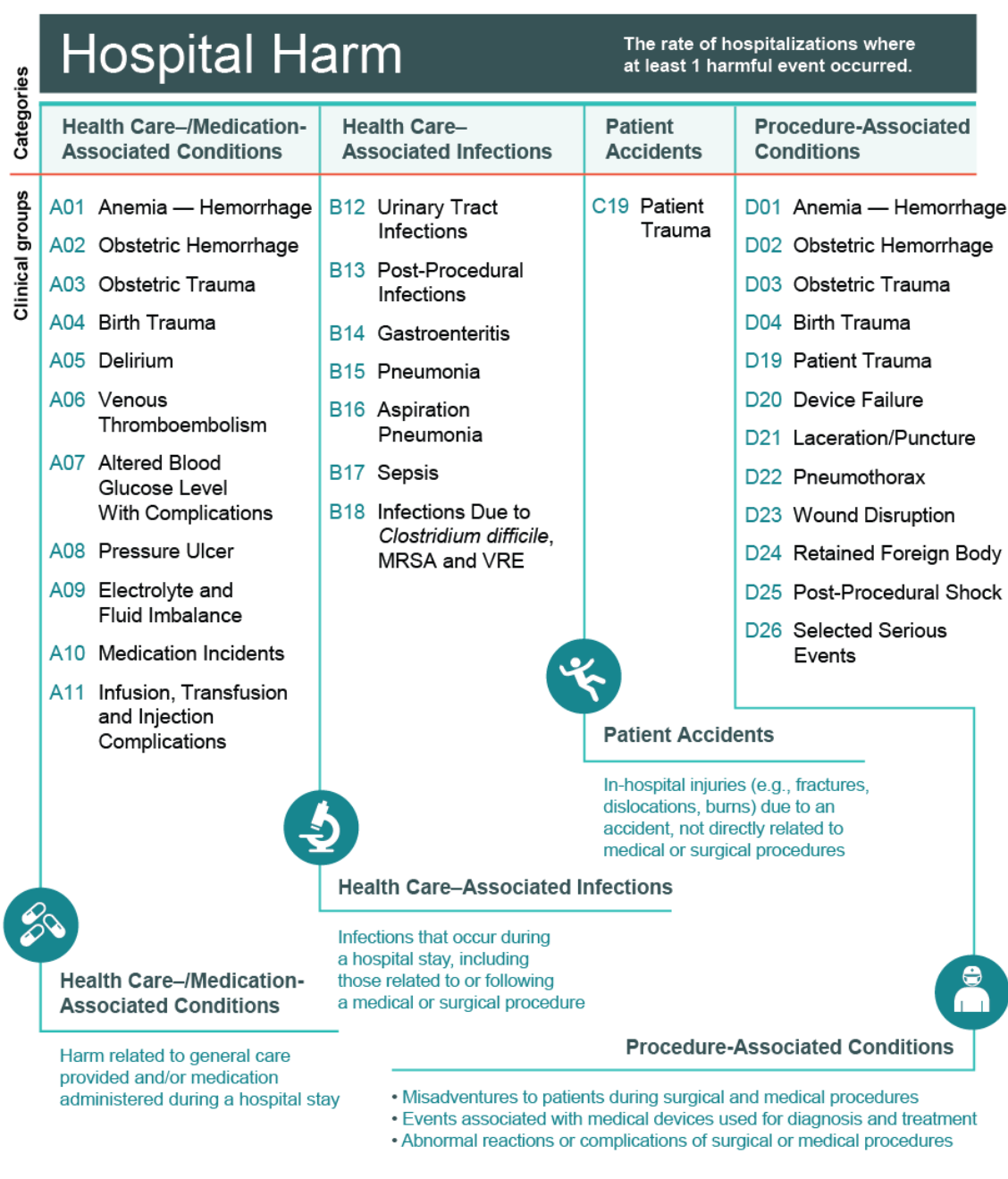
Patient safety is defined as “the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum.”<sup>1</sup>

## Definition

Hospital harm captured by this measure is defined as **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**. This includes many types of harm at a system level. It also classifies harm into actionable clinical groups; therefore, improvement efforts can be tracked both overall and for each specific clinical group.

While not all instances of harm captured here can be prevented, adoption of evidence-informed practices can help to reduce the occurrence of harm.

# Hospital Harm Framework



## Category

The number of hospitalizations with at least 1 harmful event in that category.

## Clinical group

The number of hospitalizations with at least 1 harmful event in that clinical group.

## Note

An alphanumeric numbering system is used in this technical report to refer to the categories of harm and clinical groups.

## Scope of the measure

- Harm is captured only when it
  - Is identified as having occurred after admission and within the same hospital stay;
  - Requires treatment, alters treatment or prolongs the hospital stay; and
  - Is one of the conditions from the 31 clinical groups in the Hospital Harm Framework (refer to page 6).
- The following are not captured:
  - Near misses or incidents that did not reach the patient; and
  - Reportable incidents or events that reached the patient and could potentially have caused harm or injury but did not.

Harm that is accounted for in the Hospital Harm Framework is not reflective of all harm occurring in facilities. Most facilities will have patient safety reporting and learning systems, and the Hospital Harm measure provides a complementary source of information to guide patient safety improvement efforts.

## Clinical group selection

Codes for inclusion were gathered from other existing patient safety measures,<sup>2–9</sup> a review of the International Statistical Classification of Diseases and Related Health Problems (ICD-10-CA)<sup>10</sup>/Canadian Classification of Health Interventions (CCI)<sup>11</sup> and the Canadian Coding Standards<sup>12</sup> by CIHI classifications specialists. In consultation with clinical experts, CIHI first identified clinical groups related to harm that are associated with medical care, medication and surgical care, as well as health care–associated infections and patient accidents. The ICD-10-CA codes of these clinical groups were then defined in consultation with clinical experts and with feedback from a group of 7 selected hospitals. A modified Delphi process was employed to refine the scope of the big dot measure, and the definitions and concepts of the remaining clinical groups were fine-tuned in close consultation with CIHI's classifications specialists and clinical experts. At this point, there are 31 clinical groups in the framework falling under 4 **categories of harm**. Please refer to the framework on page 6.

### Category A: Health Care–/Medication-Associated Conditions

This category includes harm related to general care provided as well as medication administered during a hospital stay. Harm associated with medications may be the result of medication administered appropriately (adverse effects in therapeutic use) or in error (incorrect medication or dosage).



## **Category B: Health Care–Associated Infections**

This category includes infections that occur during a hospital stay, including those related to or following a medical or surgical procedure.

## **Category C: Patient Accidents**

This category includes in-hospital injuries (e.g., fractures, dislocations, burns) that happen due to a patient accident, not directly related to medical or surgical procedures. Patient injuries that occur during a procedure are captured in Category D: Procedure-Associated Conditions.

## **Category D: Procedure-Associated Conditions**

This category includes conditions associated with medical or surgical procedures. These include misadventures to patients during surgical and medical procedures, events associated with medical devices used for diagnosis and treatment, and abnormal reactions to or complications of surgical or medical procedures.

# **General methodology**

## **Data source**

### **Discharge Abstract Database (DAD), Canadian Institute for Health Information**

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 occurrence of hospital harm.

Harm is defined by ICD-10-CA codes or CCI codes in the Canadian Coding Standards.<sup>11</sup> Diagnosis and intervention codes are used, as are a number of data elements that are uniquely suited to capturing harm in hospital, such as diagnosis types and diagnosis clusters (refer to [Appendix 1](#) for definitions).

Descriptions of the ICD-10-CA codes and CCI intervention codes included in the calculations are provided under each clinical group definition in this document.

## Denominator: Hospital discharges

The denominator includes all discharges from acute care institutions.

### Inclusion criteria

- Sex recorded as male or female

### Exclusion criteria

- Discharges from Quebec acute care institutions
  - Quebec does not collect data in a way that allows for comparable identification of diagnostic timing, which is required for this measure.
- Stillbirths and cadaveric donors
- Discharges with unknown age
- Patients with selected mental health diagnoses (i.e., most responsible diagnosis code of F10–F99) who are 15 and older, in order to create a comparable hospital population across regions
  - In Ontario, mental health discharges are submitted to the Ontario Mental Health Reporting System (OMHRS) and are therefore not in the DAD. In order to create a standard hospital population, mental health patients were excluded from all provinces.

## Numerator: Discharges with at least 1 occurrence of harm

The numerator includes a subset of the hospital discharges: discharges with at least 1 occurrence of harm identified during the hospital stay.

## Counting harm

Each occurrence of harm is categorized into 1 clinical group only (i.e., clinical groups are mutually exclusive).<sup>i</sup> For example, if a patient developed a urinary tract infection (UTI) after surgery, this would be counted in the UTI clinical group, not as a post-procedural infection. However, some patients may experience *more than 1* occurrence of harm during a hospital stay (e.g., a UTI and a fall). In this case, each event would be counted within its respective clinical group.

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i. An exception is infections due to MRSA or VRE, which are captured in 2 clinical groups — 1 for the type of infection and another for the site of the infection (e.g., a urinary tract infection due to MRSA is captured in both the **Urinary Tract Infections** and **Infections Due to *C. difficile*, MRSA or VRE** clinical groups).

At each level of the Hospital Harm Framework, the number of hospital stays with at least 1 occurrence of harm is counted. The table below details how harm is tabulated in a clinical group, in a category of harm and at the overall level.

**Table 1** Counting harm for hospital stays with multiple occurrences of harm

Patient record	Harm	Clinical group: Pneumonia	Clinical group: Sepsis	Clinical group: Patient Trauma	Category B: Health Care–Associated Infections	Category D: Procedure–Associated Conditions	Hospital Harm (overall)
<b>A</b>	2 episodes of pneumonia	1	0	0	1	0	1
<b>B</b>	Pneumonia and trauma	1	0	1	1	1	1
<b>C</b>	Pneumonia and sepsis	1	1	0	1	0	1

Patient record A: The patient has experienced 2 occurrences of the same type of harmful event. This harm is counted once in the Pneumonia clinical group and once in the Health Care–Associated Infections category.

Patient record B: The patient has experienced 2 different harmful events that fall into different categories of harm. This harm is counted once in the Pneumonia clinical group and once in the Patient Trauma clinical group, and it is counted once in the overall Health Care–Associated Infections category and once in Procedure–Associated Conditions.

Patient record C: The patient has experienced 2 different types of harm and both fall into the same Health Care–Associated Infections category. This harm is counted once in the Pneumonia clinical group and once in the Sepsis clinical group, but it is counted only once in the Health Care–Associated Infections category.

Each patient record is counted once in the overall measure.

## Complexity score

A complexity score was assigned to each patient based on his or her pre-admit conditions and the number of different types of physicians that cared for the patient. The Charlson Index was used to identify comorbid conditions; each was weighted according to the Charlson Index (i.e., indexed against risk of death).<sup>13</sup> As well, each additional type of physician contributed a single point to the summed total score.

**Table 2** Example calculation of complexity score

Comorbidities (weight*)	Physician listed on record	Complexity score
None	General practitioner	1 (low)
Dementia (2)	General practitioner	3 (medium)
Renal disease (1)	General practitioner, orthopedic surgeon	3 (medium)
Diabetes (1) Dementia (2)	General practitioner, endocrinologist	5 (high)

\* Weighting of comorbidities was assigned according to the Charlson Index.

Patients were then divided into high (score = 4+), medium (score = 2–3) and low (score = 1) scoring groups. The cut-off points for complexity were determined by a notable rise in the harm rate in patients with a complexity score of 4+ (i.e., rates went from 2.6% in the low group, to 6.0% to 9.6% in medium group, to 15.0%+ in the high complexity group).

## Additional resource estimates

### Costing

Additional costs associated with harmful events were calculated by fitting a regression model with Resource Intensity Weight (RIW) (log transformed) as the response variable, and the following independent variables:

- Harm status (0 or 1)
- Age category

CMG* age category	CMG age category description
A	0 day (newborns)
B	0–7 days (neonates)
C	8–28 days (neonates)
F	29–364 days (pediatric)
G	1–7 years (pediatric)
H	8–17 years (pediatric)
R	18–59 years (adult)
S	60–79 years (adult)
T	80+ years (adult)

\* Case Mix Group.

- Out-of-hospital indicator (0 or 1)
- Comorbidity level<sup>ii</sup>

CMG comorbidity factor range	CMG comorbidity level
1.00–1.24	0 (no significant comorbidity)
1.25–1.49	1
1.50–1.99	2
2.00–2.99	3
3.00+	4

- Major clinical category group (20 groups based on type of admission). Note: MCC 14 (neonates) is excluded from the model because it is equal to the CMG age category variables.
- Number of intervention events (3 categories: 1, 2, 3+)

The coefficient associated with harm status gives a multiplicative factor of how the occurrence of harm affected each patient's expected RIW value. These differential RIW values are summed and multiplied by the 2014–2015 Cost of a Standard Hospital Stay value of \$5,789 to estimate the total additional cost of acute care due to harm.

## Notes

- Long-stay patients (based on atypical stay codes 10, 11, 12, 13, 14, 16 and 17, that is, long stays greater than the trim point<sup>iii</sup> with or without any combination of transfer in/out or death) are excluded from the analysis because estimates are likely to be inflated.
- When calculating cost of infection, the population was limited to patients experiencing an infection classified in Health Care–Associated Infection (category B). In cases where a patient experienced infection and another type of harm, the costs were adjusted to recognize this. For example, if a patient had a urinary tract infection and a device failure, then the cost would be adjusted by 50%.

## Bed days

Additional bed days associated with harmful events were calculated by fitting the same predictive variables above into a regression model as above, to an outcome of a log-transformed length of stay (LOS<sup>iv</sup>).

ii. Refer to the [Case Mix Group \(CMG\) manual](#) for further details on comorbidity factor calculations.

iii. The trim point defines the extreme long stays as defined by the data in each data year. It represents the top 4.5% of all cases with the longest stays.

iv. LOS refers to only the acute portion of a patient's stay, excluding days spent in alternate level of care.

The coefficient associated with harm status gives a multiplicative factor of how the harm occurrence affected each patient's expected LOS. These differential LOS values are summed across hospital stays to estimate the total additional LOS due to harmful events.

## Notes

- Long-stay patients (based on atypical stay codes 10, 11, 12, 13, 14, 16 and 17, that is, long stays greater than the trim point<sup>iii</sup> with or without any combination of transfer in/out or death) are excluded from the analysis because estimates are likely to be inflated.
- Hospital stays with acute LOS days less than or equal to 0 are excluded from the modelling analysis, as it requires data transformation not feasible on these values. This impacts a small number of hospital stays (less than 1%).

# Clinical groups: Definition, concept and methodology

## Category A: Health Care—/Medication-Associated Conditions

This category includes harm related to general care provided as well as to medication administered during a hospital stay. Harm associated with medications may be the result of medication administered appropriately (adverse effects in therapeutic use) or in error (incorrect medication or dosage).

### A01: Anemia — Hemorrhage

#### Concept

Hemorrhagic anemia or hemorrhagic disorders identified during a hospital stay, related to the health care delivered or therapeutic use of anticoagulants.

#### Notes

This clinical group excludes obstetric hemorrhage (refer to A02: Obstetric Hemorrhage) and hemorrhage or hemorrhagic anemia associated with a medical or surgical procedure (refer to D01: Anemia — Hemorrhage).

## Selection criteria

Codes	Conditions
D62 D68.3	Identified as diagnosis type (2) <b>not in a diagnosis cluster</b>  <b>OR</b> Identified as diagnosis type (2) <b>AND</b> Y44.2 (anticoagulants causing adverse effects) <b>in the same diagnosis cluster</b>

## Excludes

Y60–Y84 (complications of medical or surgical care) **in the same diagnosis cluster**. For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Code descriptions

Codes	Code descriptions
D62	Acute posthemorrhagic anemia
D68.3	Hemorrhagic disorder due to circulating anticoagulants

### Additional codes: Inclusion

Codes	Code descriptions
Y44.2	Drugs, medicaments and biological substances causing adverse effects in therapeutic use, anticoagulants

## A02: Obstetric Hemorrhage

### Concept

Hemorrhage from the pelvic area, genital tract or perineum following non-instrumented vaginal delivery that requires blood transfusion identified during the delivery episode of care.

### Notes

This group includes hemorrhage due to episiotomy.

Refer to D02: Obstetric Hemorrhage for hemorrhage after an instrument-assisted delivery or Caesarean section delivery.

## Selection criteria

Codes	Conditions
<b>072.002</b> <b>072.102</b> <b>072.202</b> <b>090.202</b>	Identified as diagnosis type (M), (1), (W), (X) or (Y) <b>AND</b> documentation of blood transfusion (blood received indicator = 1)*

\* Coding of blood transfusion is optional in British Columbia.

## Excludes

Abstracts with intervention codes for instrument-assisted or Caesarean section delivery (5.MD.53.^^, 5.MD.54.^^, 5.MD.55.^^, 5.MD.56.NN, 5.MD.56.PC, 5.MD.56.NR, 5.MD.56.PF, 5.MD.56.NW, 5.MD.56.PJ or 5.MD.60.^^)

## Code descriptions

Codes	Code descriptions
<b>072.002</b>	Third-stage hemorrhage; delivered with mention of postpartum complication
<b>072.102</b>	Other immediate postpartum hemorrhage; delivered with mention of postpartum complication
<b>072.202</b>	Delayed and secondary postpartum hemorrhage; delivered with mention of postpartum complication
<b>090.202</b>	Hematoma of obstetric wound, delivered with mention of postpartum complication

## Additional codes: Exclusions

Codes	Code descriptions
<b>5.MD.53.^^</b>	Forceps traction and rotation delivery
<b>5.MD.54.^^</b>	Vacuum traction delivery
<b>5.MD.55.^^</b>	Combination of vacuum and forceps delivery
<b>5.MD.56.NN</b>	Breech delivery without episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
<b>5.MD.56.PC</b>	Breech delivery with episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
<b>5.MD.56.NR</b>	Breech delivery without episiotomy, total breech extraction with forceps to aftercoming head
<b>5.MD.56.PF</b>	Breech delivery with episiotomy, total breech extraction with forceps to aftercoming head
<b>5.MD.56.NW</b>	Breech delivery without episiotomy, unspecified breech extraction with forceps to aftercoming head
<b>5.MD.56.PJ</b>	Breech delivery with episiotomy, unspecified breech extraction with forceps to aftercoming head
<b>5.MD.60.^^</b>	Caesarean section delivery



## A03: Obstetric Trauma

### Concept

Third- or fourth-degree perineal lacerations or other obstetric injuries to pelvic organs during a non-instrumented vaginal delivery identified during the delivery episode of care.

### Notes

Refer to D03: Obstetric Trauma for obstetric trauma during an instrument-assisted vaginal delivery.

### Selection criteria

Codes	Conditions
<b>O70.201</b> <b>O70.301</b> <b>O71.181</b> <b>O71.301</b> <b>O71.401</b> <b>O71.501</b> <b>O71.601</b>	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y) <b>AND</b> Z37. – (outcome of delivery) <b>on the same abstract</b>
<b>5.PC.80.JH</b> <b>5.PC.80.JJ</b> <b>5.PC.80.JR</b> <b>5.PC.80.JQ</b> <b>5.PC.80.JU</b> <b>5.PC.80.JL</b>	Identified as an intervention <b>AND</b> Z37. – (outcome of delivery) <b>on the same abstract</b>

### Excludes

Abstracts with intervention codes for instrument-assisted or Caesarean section delivery (5.MD.53.^, 5.MD.54.^, 5.MD.55.^, 5.MD.56.NN, 5.MD.56.PC, 5.MD.56.NR, 5.MD.56.PF, 5.MD.56.NW, 5MD.56.PJ or 5.MD.60.^)

Abstracts indicating a pregnancy with abortive outcome (O04.– **OR** 5.CA.20.^, 5.CA.24.^, 5.CA.88.^, 5.CA.89.^ or 5.CA.93.^, not abandoned)

### Code descriptions

Codes	Code descriptions
<b>O70.201</b>	Third-degree perineal laceration during delivery; delivered with or without mention of antepartum condition
<b>O70.301</b>	Fourth-degree perineal laceration during delivery; delivered with or without mention of antepartum condition
<b>O71.181</b>	Other rupture of uterus during labour; delivered with or without mention of antepartum condition
<b>O71.301</b>	Obstetric laceration of cervix; delivered with or without mention of antepartum condition

<b>Codes</b>	<b>Code descriptions</b>
<b>071.401</b>	Obstetric high vaginal laceration alone; delivered with or without mention of antepartum condition
<b>071.501</b>	Other obstetric injury to pelvic organs; delivered with or without mention of antepartum condition
<b>071.601</b>	Obstetric damage to pelvic joints and ligaments; delivered with or without mention of antepartum condition
<b>5.PC.80.JH</b>	Surgical repair, postpartum of obstetric laceration of corpus uteri (body of uterus)
<b>5.PC.80.JJ</b>	Surgical repair, postpartum of current obstetric laceration of cervix occurring at vaginal delivery
<b>5.PC.80.JR</b>	Surgical repair, postpartum of current obstetric laceration of bladder and urethra
<b>5.PC.80.JQ</b>	Surgical repair, postpartum of current obstetric laceration of rectum and sphincter ani
<b>5.PC.80.JU</b>	Surgical repair, postpartum of current obstetric high vaginal laceration
<b>5.PC.80.JL</b>	Surgical repair, postpartum of current obstetric laceration of broad ligament(s) of uterus

### Additional codes: Inclusion

<b>Codes</b>	<b>Code description</b>
<b>Z37.-</b>	Outcome of delivery

### Additional codes: Exclusions

<b>Codes</b>	<b>Code description</b>
<b>O04.-</b>	Medical abortion
<b>5.CA.20.^</b>	Pharmacotherapy (in preparation for), termination of pregnancy
<b>5.CA.24.^</b>	Preparation by dilating cervix (for), termination of pregnancy
<b>5.CA.88.^</b>	Pharmacological termination of pregnancy
<b>5.CA.89.^</b>	Surgical termination of pregnancy
<b>5.CA.93.^</b>	Surgical removal of extrauterine pregnancy
<b>5.MD.53.^</b>	Forceps traction and rotation delivery
<b>5.MD.54.^</b>	Vacuum traction delivery
<b>5.MD.55.^</b>	Combination of vacuum and forceps delivery
<b>5.MD.56.NN</b>	Breech delivery without episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
<b>5.MD.56.PC</b>	Breech delivery with episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
<b>5.MD.56.NR</b>	Breech delivery without episiotomy, total breech extraction with forceps to aftercoming head
<b>5.MD.56.PF</b>	Breech delivery with episiotomy, total breech extraction with forceps to aftercoming head
<b>5.MD.56.NW</b>	Breech delivery without episiotomy, unspecified breech extraction with forceps to aftercoming head
<b>5.MD.56.PJ</b>	Breech delivery with episiotomy, unspecified breech extraction with forceps to aftercoming head
<b>5.MD.60.^</b>	Caesarean section delivery

## A04: Birth Trauma

### Concept

Injuries to the newborn during non-instrumented vaginal delivery identified during the birth episode of care.

### Notes

Refer to D04: Birth Trauma for injuries during an instrument-assisted or Caesarean section delivery.

### Selection criteria

Codes	Conditions
<b>P10–P15</b>	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y) <b>AND</b> Entry Code N*

\* Entry Code N indicates an infant was born alive in the reporting facility.

### Excludes

Newborns whose mother's abstract has intervention codes for instrument-assisted or Caesarean section delivery,<sup>†</sup> (5.MD.53.^, 5.MD.54.^, 5.MD.55.^, 5.MD.56.NN, 5.MD.56.PC, 5.MD.56.NR, 5.MD.56.PF, 5.MD.56.NW, 5MD.56.PJ or 5.MD.60.^)<sup>‡</sup>

### OR

Newborn abstracts with P10.–, P11.1 or P11.2 (brain damage due to birth injury) as diagnosis type (M) or (1) **AND** P07.– (preterm and low birth weight) as diagnosis type (M), (1) or (2)

### OR

Newborn abstracts with P96.4 (termination of pregnancy affecting fetuses and newborns)

### OR

Newborn abstracts with Q00–Q07 (congenital malformations of the central nervous system) as diagnosis type (M) or (1)

### OR

Newborn abstracts with Q65–Q79 (congenital malformations and deformations of the musculoskeletal system) as diagnosis type (M) or (1)

<sup>†</sup> Due to the unavailability of chart numbers for Prince Edward Island, birth trauma with and without the assistance of instruments cannot be differentiated; therefore, all birth trauma in P.E.I. is included in this group regardless of the use of instruments or method of delivery.

<sup>‡</sup> Newborns whose mothers are discharged from acute care facilities in a different fiscal year cannot be linked to their mothers' records; therefore, as the linkage is done within a fiscal year, a few birth trauma cases that belong to D04 could be misclassified to A04. A fiscal year is defined based on a discharge date from April 1 of the current year to March 31 of the subsequent year.

## Code descriptions

Codes	Code descriptions
P10.–	Intracranial laceration and hemorrhage due to birth injury
P11.–	Other birth injuries to central nervous system
P12.–	Birth injury to scalp
P13.–	Birth injury to skeleton
P14.–	Birth injury to peripheral nervous system
P15.–	Other birth injuries

## Additional codes: Exclusions

Codes	Code descriptions
O04.–	Medical abortion
P07.–	Disorders related to short gestation and low birth weight, not elsewhere classified
P10.–	Intracranial laceration and hemorrhage due to birth injury
P11.1	Other specified brain damage due to birth injury
P11.2	Unspecified brain damage due to birth injury
P96.4	Termination of pregnancy, affecting fetus and newborn
Q00.–	Anencephaly and similar malformations
Q01.–	Encephalocele
Q02.–	Microcephaly
Q03.–	Congenital hydrocephalus
Q04.–	Other congenital malformations of brain
Q05.–	Spina bifida
Q06.–	Other congenital malformations of spinal cord
Q07.–	Other congenital malformations of nervous system
Q65.–	Congenital deformities of hip
Q66.–	Congenital deformities of feet
Q67.–	Congenital musculoskeletal deformities of head, face, spine and chest
Q68.–	Other congenital musculoskeletal deformities
Q69.–	Polydactyly
Q70.–	Syndactyly
Q71.–	Reduction defects of upper limb
Q72.–	Reduction defects of lower limb
Q73.–	Reduction defects of unspecified limb
Q74.–	Other congenital malformations of limb(s)
Q75.–	Other congenital malformations of skull and face bones
Q76.–	Congenital malformations of spine and bony thorax

Codes	Code descriptions
<b>Q77.–</b>	Osteochondrodysplasia with defects of growth of tubular bones and spine
<b>Q78.–</b>	Other osteochondrodysplasias
<b>Q79.–</b>	Congenital malformations of the musculoskeletal system, not elsewhere classified
<b>5.CA.20.^^</b>	Pharmacotherapy (in preparation for), termination of pregnancy
<b>5.CA.24.^^</b>	Preparation by dilating cervix (for), termination of pregnancy
<b>5.CA.88.^^</b>	Pharmacological termination of pregnancy
<b>5.CA.89.^^</b>	Surgical termination of pregnancy
<b>5.CA.93.^^</b>	Surgical removal of extrauterine pregnancy
<b>5.MD.53.^^</b>	Forceps traction and rotation delivery
<b>5.MD.54.^^</b>	Vacuum traction delivery
<b>5.MD.55.^^</b>	Combination of vacuum and forceps delivery
<b>5.MD.56.NN</b>	Breech delivery without episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
<b>5.MD.56.PC</b>	Breech delivery with episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
<b>5.MD.56.NR</b>	Breech delivery without episiotomy, total breech extraction with forceps to aftercoming head
<b>5.MD.56.PF</b>	Breech delivery with episiotomy, total breech extraction with forceps to aftercoming head
<b>5.MD.56.NW</b>	Breech delivery without episiotomy, unspecified breech extraction with forceps to aftercoming head
<b>5.MD.56.PJ</b>	Breech delivery with episiotomy, unspecified breech extraction with forceps to aftercoming head
<b>5.MD.60.^^</b>	Caesarean section delivery

## A05: Delirium

### Concept

Temporary disturbance in consciousness with changes in cognition identified during a hospital stay.

### Selection criteria

Codes	Conditions
<b>F05.–</b> <b>R41.80</b> <b>R41.88</b>	Identified as diagnosis type (2)

### Code descriptions

Codes	Code descriptions
<b>F05.–</b>	Delirium, not induced by alcohol and other psychoactive substances
<b>R41.80</b>	Transient alteration of awareness
<b>R41.88</b>	Other unspecified symptoms and signs involving cognitive functions and awareness

## A06: Venous Thromboembolism

### Concept

Embolism, thrombosis, phlebitis or thrombophlebitis of the pulmonary vein or other veins (excluding superficial veins) identified during a hospital stay.

### Selection criteria

Codes	Conditions
I26.– I80.1 I80.2 I82.2 I82.8 I82.9	Identified as diagnosis type (2)  <b>OR</b> Identified as diagnosis type (3) <b>AND</b> T80.1, T81.7, T82.8, T83.8, T84.8 or T85.8 (complications of surgical and medical care) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>
O87.102 O87.902	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y)

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

### Code descriptions

Codes	Code descriptions
I26.–	Pulmonary embolism
I80.1	Phlebitis and thrombophlebitis of femoral vein
I80.2	Phlebitis and thrombophlebitis of other deep vessels of lower extremities
I82.2	Other venous embolism and thrombosis: embolism and thrombosis of vena cava
I82.8	Embolism and thrombosis of other specified veins
I82.9	Embolism and thrombosis of unspecified vein
O87.102	Deep phlebothrombosis in the puerperium, delivered with mention of postpartum complication
O87.902	Venous complication in the puerperium, unspecified delivered with mention of postpartum complication

### Additional codes: Inclusion

Codes	Code descriptions
T80.1	Vascular complications following infusion, transfusion and therapeutic injection
T81.7	Vascular complications following a procedure, not elsewhere classified
T82.8	Other specified complications of cardiac and vascular prosthetic devices, implants and grafts
T83.8	Other complications of genitourinary prosthetic devices, implants and grafts
T84.8	Other complications of internal orthopedic prosthetic devices, implants and grafts
T85.8	Other complications of internal prosthetic devices, implants and grafts, not elsewhere classified

## A07: Altered Blood Glucose Level With Complications

### Concept

Lactic acidosis or hypoglycemia in diabetic and non-diabetic patients identified during a hospital stay.

### Selection criteria

Codes	Conditions
<b>E10.11</b> <b>E10.63</b> <b>E11.11</b> <b>E11.63</b> <b>E13.11</b> <b>E13.63</b> <b>E14.11</b> <b>E14.63</b> <b>E15</b>	Identified as diagnosis type (2)
<b>E16.0</b>	Identified as diagnosis type (2) <b>AND</b> Y40–Y59 (drugs, medicaments and biological substances causing adverse effects in therapeutic use)* <b>in the same diagnosis cluster</b>

\* For the descriptions of drugs, medicaments and biological substances causing adverse drug effects in therapeutic use (Y40–Y59), please see Appendix 2.

### Code descriptions

Codes	Code descriptions
<b>E10.11</b>	Type 1 diabetes mellitus with lactic acidosis
<b>E10.63</b>	Type 1 diabetes mellitus with hypoglycemia
<b>E11.11</b>	Type 2 diabetes mellitus with lactic acidosis
<b>E11.63</b>	Type 2 diabetes mellitus with other specified complications: type 2 diabetes mellitus with hypoglycemia
<b>E13.11</b>	Other specified diabetes mellitus with lactic acidosis
<b>E13.63</b>	Other specified diabetes mellitus with hypoglycemia
<b>E14.11</b>	Unspecified diabetes mellitus with lactic acidosis
<b>E14.63</b>	Unspecified diabetes mellitus with other specified complications: unspecified diabetes mellitus with hypoglycemia
<b>E15</b>	Nondiabetic hypoglycemic coma
<b>E16.0</b>	Drug-induced hypoglycemia without coma

## A08: Pressure Ulcer

### Concept

Any stage of pressure ulcer identified during a hospital stay.

### Selection criteria

Codes	Conditions
L89.–	Identified as diagnosis type (2)

### Code descriptions

Codes	Code descriptions
L89.–	Decubitus (pressure) ulcer and pressure area

## A09: Electrolyte and Fluid Imbalance

### Concept

Electrolyte, fluid or acid-base imbalance identified during a hospital stay.

### Notes

This clinical group excludes procedure-associated hypovolemic shock (refer to D25: Post-Procedural Shock).

### Selection criteria

Codes	Conditions
E86.– E87.–	Identified as diagnosis type (2)
E87.7	Identified as diagnosis type (3) <b>AND</b> T80.8 (complications following infusion, transfusion and therapeutic injection) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>
R57.1	Identified as diagnosis type (2) <b>not in a diagnosis cluster</b>

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

### Code descriptions

Codes	Code descriptions
E86.–	Volume depletion
E87.–	Other disorders of fluid, electrolyte and acid-base balance
E87.7	Fluid overload
R57.1	Hypovolemic shock



## Additional codes: Inclusion

Codes	Code descriptions
<b>T80.8</b>	Other complications following infusion, transfusion and therapeutic injection

## A10: Medication Incidents

### Concept

Medication-related events involving incorrect administration of medications or dosage identified during a hospital stay.

### Notes

Medication incidents are included only in this clinical group. This clinical group excludes medication-related events in therapeutic use.

### Selection criteria

Codes	Conditions
<b>T36–T50</b>	Identified as diagnosis type (2)

### Code descriptions

Codes	Code descriptions
<b>T36.–</b>	Poisoning by systemic antibiotics
<b>T37.–</b>	Poisoning by other systemic anti-infectives and antiparasitics
<b>T38.–</b>	Poisoning by hormones and their synthetic substitutes and antagonists, not elsewhere classified
<b>T39.–</b>	Poisoning by non-opioid analgesics, antipyretics and antirheumatics
<b>T40.–</b>	Poisoning by narcotics and psychodysleptics (hallucinogens)
<b>T41.–</b>	Poisoning by anesthetics and therapeutic gases
<b>T42.–</b>	Poisoning by antiepileptic, sedative-hypnotic and antiparkinsonism drugs
<b>T43.–</b>	Poisoning by psychotropic drugs, not elsewhere classified
<b>T44.–</b>	Poisoning by drugs primarily affecting the autonomic nervous system
<b>T45.–</b>	Poisoning by primarily systemic and hematological agents, not elsewhere classified
<b>T46.–</b>	Poisoning by agents primarily affecting the cardiovascular system
<b>T47.–</b>	Poisoning by agents primarily affecting the gastrointestinal system
<b>T48.–</b>	Poisoning by agents primarily acting on smooth and skeletal muscles and the respiratory system
<b>T49.–</b>	Poisoning by topical agents primarily affecting skin and mucous membrane and by ophthalmological, otorhinolaryngological and dental drugs
<b>T50.–</b>	Poisoning by diuretics and other and unspecified drugs, medicaments and biological substances

# A11: Infusion, Transfusion and Injection Complications

## Concept

Complications from infusions, transfusions and injections, including those related to therapeutic substances or procedures.

## Notes

This clinical group excludes venous thromboembolism, electrolyte and fluid imbalance, infection, trauma, and pneumothorax due to infusions, transfusions and injections (refer to A06: Venous Thromboembolism, A09: Electrolyte and Fluid Imbalance, B13: Post-Procedural Infections, D19: Patient Trauma and D22: Pneumothorax).

## Selection criteria

Codes	Conditions
T80.0 T80.1 T80.3 T80.4 T80.5 T80.6 T80.8 T80.9	Identified as diagnosis type (2)

## Code descriptions

Codes	Code descriptions
T80.0	Air embolism following infusion, transfusion and therapeutic injection
T80.1	Vascular complications following infusion, transfusion and therapeutic injection
T80.3	ABO incompatibility reaction
T80.4	Rh incompatibility reaction
T80.5	Anaphylactic shock due to serum
T80.6	Other serum reactions
T80.8	Other complications following infusion, transfusion and therapeutic injection
T80.9	Unspecified complication following infusion, transfusion and therapeutic injection

## Category B: Health Care–Associated Infections

This category includes infections that occur during a hospital stay, including those related to or following a medical or surgical procedure.

### B12: Urinary Tract Infections

#### Concept

Urinary tract infections identified during a hospital stay.

#### Notes

Urinary tract infections due to methicillin-resistant *Staphylococcus aureus* (MRSA) or vancomycin-resistant enterococci (VRE) are also included in B18: Infections Due to *Clostridium difficile*, MRSA or VRE.

In the neonatal age group, underestimation is probable, due to the exclusion of cases where identification of in-utero or birth process infections versus environment-acquired infections has been documented as a challenge.

#### Selection criteria

Codes	Conditions
<b>N39.0</b>	Identified as diagnosis type (2)  <b>OR</b> Identified as diagnosis type (3) <b>AND</b> T83.5 (infection and inflammatory reaction due to prosthetic device, implant and graft in urinary system) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>
<b>O86.202</b>	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y)

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

#### Excludes

Abstracts with a length of stay less than 2 days

#### Code descriptions

Codes	Code descriptions
<b>N39.0</b>	Urinary tract infection, site not specified
<b>O86.202</b>	Urinary tract infection following delivery; delivered with mention of postpartum complication

## Additional codes: Inclusion

Codes	Code descriptions
<b>T83.5</b>	Infection and inflammatory reaction due to prosthetic device, implant and graft in urinary system

## B13: Post-Procedural Infections

### Concept

Infections associated with a medical or surgical procedure.

### Notes

Post-procedural infections due to methicillin-resistant *Staphylococcus aureus* (MRSA) or vancomycin-resistant enterococci (VRE) can also be included in B18: Infections Due to *Clostridium difficile*, MRSA or VRE.

This clinical group excludes post-procedural urinary tract infection, gastroenteritis, pneumonia and aspiration pneumonia (refer to B12: Urinary Tract Infections, B14: Gastroenteritis, B15: Pneumonia and B16: Aspiration Pneumonia).

This clinical group may include inflammatory reactions in the absence of infection.

### Selection criteria

Codes	Conditions
<b>O86.002</b>	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y)
<b>T80.2</b> <b>T81.4</b> <b>T82.6</b> <b>T82.7</b> <b>T83.6</b> <b>T84.5–</b> <b>T84.6–</b> <b>T84.7</b> <b>T85.7</b> <b>T87.0*1</b> <b>T87.1*1</b> <b>T87.201</b> <b>T87.4–</b>	Identified as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>

## Code descriptions

Codes	Code descriptions
<b>O86.002</b>	Infection of obstetric surgical wound; delivered with mention of postpartum complication
<b>T80.2</b>	Infections following infusion, transfusion and therapeutic injection
<b>T81.4</b>	Infection following a procedure, not elsewhere classified
<b>T82.6</b>	Infection and inflammatory reaction due to cardiac valve prosthesis
<b>T82.7</b>	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts
<b>T83.6</b>	Infection and inflammatory reaction due to prosthetic device, implant and graft in genital tract
<b>T84.5–</b>	Infection and inflammatory reaction due to internal joint prosthesis
<b>T84.6–</b>	Infection and inflammatory reaction due to internal fixation device (any site)
<b>T84.7</b>	Infection and inflammatory reaction due to other internal orthopedic prosthetic devices, implants and grafts
<b>T85.7</b>	Infection and inflammatory reaction due to other internal prosthetic devices, implants and grafts
<b>T87.0*1</b>	Complication of reattached (part of) upper extremity; infection
<b>T87.1*1</b>	Complications of reattached (part of) lower extremity; infection
<b>T87.201</b>	Infection of other reattached body part
<b>T87.4–</b>	Infection of amputation stump

## B14: Gastroenteritis

### Concept

Gastrointestinal infections during a hospital stay, excluding infections due to *Clostridium difficile*.

### Notes

Gastroenteritis due to *C. difficile* is excluded from this clinical group (Refer to B18: Infections Due to *Clostridium difficile*, MRSA or VRE).

## Selection criteria

Codes	Conditions
A02.0	Identified as diagnosis type (2)
A04.0	
A04.1	
A04.2	
A04.3	
A04.4	
A04.5	
A04.6	
A04.8	
A04.9	
A08.–	
A09.–	

## Excludes

Abstracts with a length of stay less than 2 days

## Code descriptions

Codes	Code descriptions
A02.0	Salmonella enteritis
A04.0	Enteropathogenic Escherichia coli infection
A04.1	Enterotoxigenic Escherichia coli infection
A04.2	Enteroinvasive Escherichia coli infection
A04.3	Enterohemorrhagic Escherichia coli infection
A04.4	Other intestinal Escherichia coli infections
A04.5	Campylobacter enteritis
A04.6	Enteritis due to Yersinia enterocolitica
A04.8	Other specified bacterial intestinal infections
A04.9	Bacterial intestinal infection, unspecified
A08.–	Viral and other specified intestinal infections
A09.–	Other gastroenteritis and colitis of infectious and unspecified origin

## B15: Pneumonia

### Concept

Pneumonia identified during a hospital stay, excluding aspiration pneumonia.

### Notes

When both aspiration pneumonitis and pneumonia are coded on the same abstract, the event will be assigned to B16: Aspiration Pneumonia.

Pneumonia due to methicillin-resistant *Staphylococcus aureus* (MRSA) or vancomycin-resistant enterococci (VRE) can also be included in B18: Infections Due to *Clostridium difficile*, MRSA or VRE.

## Selection criteria

Codes	Conditions
J10.0	Identified as diagnosis type (2)
J11.0	<b>OR</b>  Identified as diagnosis type (3) <b>AND</b> J95.88 (other post-procedural respiratory disorders) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>
J12.–	
J13	
J14	
J15.–	
J16.8	
J18.–	
J85.1	

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Excludes

Abstracts with J69.– (pneumonitis due to solids and liquids) identified as diagnosis type (2)

Abstracts with J69.– (pneumonitis due to solids and liquids) identified as diagnosis type (3) **AND** J95.88 (other post-procedural respiratory disorders) as diagnosis type (2) **AND** Y60–Y84 (complications of medical or surgical care)\* **in the same diagnosis cluster**

Abstracts with a length of stay less than 2 days

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Code descriptions

Codes	Code descriptions
J10.0	Influenza with pneumonia, other influenza virus identified
J11.0	Influenza with pneumonia, virus not identified
J12.–	Viral pneumonia, not elsewhere classified
J13	Pneumonia due to streptococcus pneumoniae
J14	Pneumonia due to haemophilus influenzae
J15.–	Bacterial pneumonia, not elsewhere classified
J16.8	Pneumonia due to other specified infectious organisms
J18.–	Pneumonia, organism unspecified
J85.1	Abscess of lung with pneumonia

## Additional codes: Inclusion

Codes	Code descriptions
J95.88	Other post-procedural respiratory disorders <i>Includes:</i> Ventilator associated pneumonia (VAP)

## Additional codes: Exclusions

Codes	Code descriptions
J69.–	Pneumonitis due to solids and liquids
J95.88	Other post-procedural respiratory disorders <i>Includes:</i> Ventilator associated pneumonia (VAP)

# B16: Aspiration Pneumonia

## Concept

Inflammation and infection of the lungs caused by aspiration of solids or liquids during a hospital stay.

## Notes

When both aspiration pneumonitis and pneumonia are coded on the same abstract, the event will be included in this clinical group only.

This clinical group may include inflammation due to aspiration in the absence of infection.

Aspiration pneumonia due to methicillin-resistant *Staphylococcus aureus* (MRSA) or vancomycin-resistant enterococci (VRE) can also be included in B18: Infections Due to *Clostridium difficile*, MRSA or VRE.

## Selection criteria

Codes	Conditions
J69.–	Identified as diagnosis type (2)  <b>OR</b> Identified as diagnosis type (3) <b>AND</b> J95.88 (other post-procedural respiratory disorders) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical procedures)* <b>in the same diagnosis cluster</b>

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Excludes

Abstracts with a length of stay less than 2 days



## Code descriptions

Codes	Code descriptions
J69.–	Pneumonitis due to solids and liquids

### Additional codes: Inclusion

Codes	Code descriptions
J95.88	Other post-procedural respiratory disorders <i>Includes:</i> Ventilator associated pneumonia (VAP)

## B17: Sepsis

### Concept

Sepsis identified during a hospital stay, excluding neonatal sepsis.

### Notes

This clinical group includes an episode of sepsis that developed in hospital; however, the infection which led to sepsis might have been acquired in the community or hospital.

Coding aligns with the existing CIHI indicator [In-Hospital Sepsis](#).

### Selection criteria

In abstracts with age on admission greater than 1 year

Codes	Conditions
A40.– A41.– B37.7 R57.2 R65.1	Identified as diagnosis type (2)  <b>OR</b>  Identified as diagnosis type (3) <b>AND</b> T80.2, T81.4, T82.6, T82.7, T83.5, T83.6, T84.5–, T84.6–, T84.7, T85.7 or T88.0 (complications of surgical and medical care) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>  <b>OR</b>  Identified as diagnosis type (3) <b>AND</b> O03.0, O03.5, O04.0, O04.5, O05.0, O05.5, O07.3 or O08.0– (obstetric infections) as diagnosis type (2) <b>on the same abstract</b>  <b>OR</b>  Identified as diagnosis type (3) <b>AND</b> O98.502 or O98.802 (obstetric infections) as diagnosis type (M), (1), (2), (W), (X) or (Y) <b>on the same abstract</b>
<b>O85.002</b>	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y)
<b>R57.2</b>	Identified as diagnosis type (3) <b>AND</b> T81.1 (shock during or resulting from a procedure) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Excludes

Abstracts with a length of stay less than 2 days

Abstracts where sepsis is also identified as a pre-admit condition are excluded from the numerator:

- Abstracts with sepsis codes (ICD-10-CA: A40.–, A41.–, B37.7, R65.1, R57.2) or the associated post-procedural complication codes (ICD-10-CA: T80.2, T81.1, T81.4, T82.6, T82.7, T83.5, T83.6, T84.5–, T84.6–, T84.7, T85.7, T88.0) identified as pre-admit (type (M), (1), (W), (X) or (Y))
- Abstract with sepsis in obstetric patients where the puerperal sepsis code or the associated obstetric infection code is identified as pre-admit (ICD-10-CA: O85.004, O85.009, O98.501, O98.503, O98.504, O98.509, O98.801, O98.803, O98.804, O98.809 — any diagnosis type **or** O03.0, O03.5, O04.0, O04.5, O05.0, O05.5, O07.3, O08.0 as type (M), (1), (W), (X) or (Y))

As an exception, sepsis is not considered as a pre-admit condition when the above codes identified as type (M), (W), (X) or (Y) also appear as type (2) or within a post-admit sepsis coding scenario (sepsis code as type (2); sepsis code as type (3) or an associated infection code as type (2) in sepsis as post-procedural or obstetric complications).

## Code descriptions

Codes	Code descriptions
<b>A40.–</b>	Streptococcal sepsis
<b>A41.–</b>	Other sepsis
<b>B37.7</b>	Candidal sepsis
<b>O03.0</b>	Spontaneous abortion, incomplete, complicated by genital tract and pelvic infection
<b>O03.5</b>	Spontaneous abortion, complete or unspecified, complicated by genital tract and pelvic infection
<b>O04.0</b>	Medical abortion, incomplete, complicated by genital tract and pelvic infection
<b>O04.5</b>	Medical abortion, complete or unspecified, complicated by genital tract and pelvic infection
<b>O05.0</b>	Other abortion, incomplete, complicated by genital tract and pelvic infection
<b>O05.5</b>	Other abortion, complete or unspecified, complicated by genital tract and pelvic infection
<b>O07.3</b>	Failed attempted abortion, complicated
<b>O08.0–</b>	Complications following abortion and ectopic and molar pregnancy; genital tract and pelvic infection
<b>O85.002</b>	Puerperal sepsis, delivered with mention of postpartum complication
<b>O98.502</b>	Other viral diseases complicating pregnancy, childbirth and the puerperium; delivered with mention of postpartum complication
<b>O98.802</b>	Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium; delivered with mention of postpartum complication
<b>R57.2</b>	Septic shock
<b>R65.1</b>	Systemic inflammatory response syndrome of infectious origin with acute organ failure

## Additional codes: Inclusion

Codes	Code descriptions
<b>T80.2</b>	Infections following infusion, transfusion and therapeutic injection
<b>T81.1</b>	Shock during or resulting from a procedure, not elsewhere classified
<b>T81.4</b>	Infection following a procedure, not elsewhere classified
<b>T82.6</b>	Infection and inflammatory reaction due to cardiac valve prosthesis
<b>T82.7</b>	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts
<b>T83.5</b>	Infection and inflammatory reaction due to prosthetic device, implant and graft in urinary system
<b>T83.6</b>	Infection and inflammatory reaction due to prosthetic device, implant and graft in genital tract
<b>T84.5–</b>	Infection and inflammatory reaction due to internal joint prosthesis
<b>T84.6–</b>	Infection and inflammatory reaction due to internal fixation device (any site)
<b>T84.7</b>	Infection and inflammatory reaction due to other internal orthopedic prosthetic devices, implants and grafts
<b>T85.7</b>	Infection and inflammatory reaction due to other internal prosthetic devices, implants and grafts
<b>T88.0</b>	Infection following immunization

## Additional codes: Exclusions

Codes	Code descriptions
<b>O85.004</b>	Puerperal sepsis, postpartum condition or complication
<b>O85.009</b>	Puerperal sepsis, unspecified as to episode of care, or not applicable
<b>O98.501</b>	Other viral diseases complicating pregnancy, childbirth and the puerperium; delivered with or without mention of antepartum condition
<b>O98.503</b>	Other viral diseases complicating pregnancy, childbirth and the puerperium; antepartum condition or complication
<b>O98.504</b>	Other viral diseases complicating pregnancy, childbirth and the puerperium; postpartum condition or complication
<b>O98.509</b>	Other viral diseases complicating pregnancy, childbirth and the puerperium; unspecified as to episode of care, or not applicable
<b>O98.801</b>	Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium; delivered with or without mention of antepartum condition
<b>O98.803</b>	Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium; antepartum condition or complication
<b>O98.804</b>	Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium; postpartum condition or complication
<b>O98.809</b>	Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium; unspecified as to episode of care, or not applicable

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

### Concept

Bacterial infections identified during a hospital stay due to *Clostridium difficile* (*C. difficile*), methicillin-resistant *Staphylococcus aureus* (MRSA) or vancomycin-resistant enterococci (VRE).

### Notes

This clinical group includes infections due to MRSA or VRE irrespective of the site of infection. The same occurrence of infection may be captured by other relevant clinical groups within the Health Care–Associated Infections category.

### *C. difficile*

#### Selection criteria

Codes	Conditions
<b>A04.7</b>	Identified as diagnosis type (2)

### Excludes

Abstracts with a length of stay less than 3 days

## MRSA

#### Selection criteria

Codes	Conditions
<b>A41.0</b>	<p>Identified as diagnosis type (2) <b>AND</b> U82.1 (resistance to methicillin) as diagnosis type (1) or (2) <b>in the same diagnosis cluster</b></p> <p><b>OR</b></p> <p>Identified as diagnosis type (3) <b>AND</b> U82.1 (resistance to methicillin) as diagnosis type (1) or (2) <b>AND</b> T80.2, T81.4, T82.6, T82.7, T83.5, T83.6, T84.5–, T84.6–, T84.7, T85.7 or T88.0 (complications of surgical and medical care) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b></p> <p><b>OR</b></p> <p>Identified as diagnosis type (3) <b>AND</b> U82.1 (resistance to methicillin) as diagnosis type (1) or (2) <b>AND</b> O03.0, O03.5, O04.0, O04.5, O05.0, O05.5, O07.3 or O08.0– (obstetric infection) as diagnosis type (2) <b>in the same diagnosis cluster</b></p> <p><b>OR</b></p> <p>Identified as diagnosis type (3) <b>AND</b> U82.1 (resistance to methicillin) as diagnosis type (1) or (2) <b>AND</b> O98.502 or O98.802 (obstetric infection) as diagnosis type (M), (1), (2), (W), (X) or (Y) <b>in the same diagnosis cluster</b></p>
<b>B95.6</b>	Identified as diagnosis type (3) <b>AND</b> U82.1 (resistance to methicillin) as diagnosis type (1) or (2) <b>AND</b> a site of infection code <sup>†</sup> as diagnosis type (2) <b>in the same diagnosis cluster</b>

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

† For the descriptions of site of infection codes, please see Appendix 3.

## Excludes

Abstracts with a length of stay less than 2 days

## VRE

### Selection criteria

Codes	Conditions
<b>A41.80</b>	<p>Identified as diagnosis type (2) <b>AND</b> U83.0 (resistance to vancomycin) as diagnosis type (1) or (2) <b>in the same diagnosis cluster</b></p> <p><b>OR</b></p> <p>Identified as diagnosis type (3) <b>AND</b> U83.0 (resistance to vancomycin) as diagnosis type (1) or (2) <b>AND</b> T80.2, T81.4, T82.6, T82.7, T83.5, T83.6, T84.5–, T84.6–, T84.7, T85.7 or T88.0 (complications of surgical and medical care) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b></p> <p><b>OR</b></p> <p>Identified as diagnosis type (3) <b>AND</b> U83.0 (resistance to vancomycin) as diagnosis type (1) or (2) <b>AND</b> O03.0, O03.5, O04.0, O04.5, O05.0, O05.5, O07.3 or O08.0– (obstetric infections) as diagnosis type (2) <b>in the same diagnosis cluster</b></p> <p><b>OR</b></p> <p>Identified as diagnosis type (3) <b>AND</b> U83.0 (resistance to vancomycin) as diagnosis type (1) or (2) <b>AND</b> O98.502 or O98.802 (obstetric infections) as diagnosis type (M), (1), (2), (W), (X) or (Y) <b>in the same diagnosis cluster</b></p>
<b>B96.81</b>	<p>Identified as diagnosis type (3) <b>AND</b> U83.0 (resistance to vancomycin) as diagnosis type (1) or (2) <b>AND</b> a site of infection code<sup>†</sup> as diagnosis type (2) <b>in the same diagnosis cluster</b></p>

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

† For the descriptions of site of infection codes, please see Appendix 3.

## Excludes

Abstracts with a length of stay less than 2 days

### Code descriptions

Codes	Code descriptions
<b>A04.7</b>	Other bacterial intestinal infections: enterocolitis due to <i>Clostridium difficile</i>
<b>A41.0</b>	Sepsis due to <i>Staphylococcus aureus</i>
<b>A41.80</b>	Sepsis due to <i>Enterococcus</i>
<b>B95.6</b>	<i>Staphylococcus aureus</i> as the cause of diseases classified to other chapters
<b>B96.81</b>	<i>Enterococcus</i> as the cause of diseases classified to other chapters

## Additional codes: Inclusion

Codes	Code descriptions
<b>O03.0</b>	Spontaneous abortion, incomplete, complicated by genital tract and pelvic infection
<b>O03.5</b>	Spontaneous abortion, complete or unspecified, complicated by genital tract and pelvic infection
<b>O04.0</b>	Medical abortion, incomplete, complicated by genital tract and pelvic infection
<b>O05.0</b>	Other abortion, incomplete, complicated by genital tract and pelvic infection
<b>O05.5</b>	Other abortion, complete or unspecified, complicated by genital tract and pelvic infection
<b>O07.3</b>	Failed attempted abortion, complicated
<b>O08.0–</b>	Genital tract and pelvic infection following abortion and ectopic and molar pregnancy
<b>O98.502</b>	Other viral diseases complicating pregnancy, childbirth and the puerperium; delivered with mention of postpartum complication
<b>O98.802</b>	Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium; delivered with mention of postpartum complication
<b>T80.2</b>	Infections following infusion, transfusion and therapeutic injection
<b>T81.4</b>	Infection following a procedure, not elsewhere classified
<b>T82.6</b>	Infection and inflammatory reaction due to cardiac valve prosthesis
<b>T82.7</b>	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts
<b>T83.5</b>	Infection and inflammatory reaction due to prosthetic device, implant and graft in urinary system
<b>T83.6</b>	Infection and inflammatory reaction due to prosthetic device, implant and graft in genital tract
<b>T84.5–</b>	Infection and inflammatory reaction due to internal joint prosthesis
<b>T84.6–</b>	Infection and inflammatory reaction due to internal fixation device (any site)
<b>T84.7</b>	Infection and inflammatory reaction due to other internal orthopedic prosthetic devices, implants and grafts
<b>T85.7</b>	Infection and inflammatory reaction due to other internal prosthetic devices, implants and grafts
<b>T88.0</b>	Infection following immunization
<b>U82.1</b>	Resistance to methicillin
<b>U83.0</b>	Resistance to vancomycin

## Category C: Patient Accidents

This category includes in-hospital injuries (e.g., fractures, dislocations, burns) that happen to a patient and are due to a patient accident, not directly related to medical or surgical procedures. Patient injuries that occur during a procedure are captured in Category D: Procedure-Associated Conditions.

## C19: Patient Trauma

### Concept

In-hospital injuries, such as fractures, dislocations, burns, etc., not related to medical or surgical procedures.

### Notes

This group does not include injuries associated with a surgical or medical procedure. Refer to D19: Patient Trauma for injuries, fractures, dislocations, burns, etc., that are related to medical or surgical procedures.

### Selection criteria

Codes	Conditions
M96.6 S00–T32 T71	Identified as diagnosis type (2) <b>not in a diagnosis cluster</b>

### Code descriptions

Codes	Code descriptions
M96.6	Fracture of bone following insertion of orthopedic implant, joint prosthesis, or bone plate
S00–S09	Injuries to the head
S10–S19	Injuries to the neck
S20–S29	Injuries to the thorax
S30–S39	Injuries to the abdomen, lower back, lumbar spine and pelvis
S40–S49	Injuries to the shoulder and upper arm
S50–S59	Injuries to the elbow and forearm
S60–S69	Injuries to the wrist and hand
S70–S79	Injuries to the hip and thigh
S80–S89	Injuries to the knee and lower leg
S90–S99	Injuries to the ankle and foot
T00–T07	Injuries involving multiple body regions
T08–T14	Injuries to unspecified parts of trunk, limb or body region
T15–T19	Effects of foreign body entering through natural orifice
T20–T32	Burns and corrosions
T71	Asphyxiation

## Category D: Procedure-Associated Conditions

This category includes conditions associated with medical or surgical procedures. These include misadventures to patients during surgical and medical procedures, events associated with medical devices used for diagnosis and treatment, and abnormal reactions to or complications of surgical or medical procedures.

### D01: Anemia — Hemorrhage

#### Concept

Hemorrhage or hemorrhagic anemia associated with a medical or surgical procedure.

#### Notes

This clinical group includes hemorrhage and anemia associated with a medical or surgical procedure.

Refer to A01: Anemia — Hemorrhage for hemorrhage and anemia as consequences of hemorrhage related to the delivery of health care or related to the administration of anticoagulants.

Refer to A02: Obstetric Hemorrhage and D02: Obstetric Hemorrhage for hemorrhage in obstetric patients.

#### Selection criteria

Codes	Conditions
<b>D62</b> <b>T81.0</b>	Identified as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

#### Code descriptions

Codes	Code descriptions
<b>D62</b>	Acute posthemorrhagic anemia
<b>T81.0</b>	Hemorrhage and hematoma complicating a procedure, not elsewhere classified

### D02: Obstetric Hemorrhage

#### Concept

Hemorrhage from the pelvic area, genital tract, perineum or surgical incision after an instrument-assisted delivery or Caesarean section delivery that requires blood transfusion.



## Notes

This group includes hemorrhage due to episiotomy.

Refer to A02: Obstetric Hemorrhage for hemorrhage following vaginal delivery without the assistance of instruments.

## Selection criteria

Codes	Conditions
<b>072.002</b> <b>072.102</b> <b>072.202</b> <b>090.202</b>	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y) <b>AND</b> intervention codes for instrument-assisted or Caesarean section delivery (5.MD.53.^, 5.MD.54.^, 5.MD.55.^, 5.MD.56.NN, 5.MD.56.PC, 5.MD.56.NR, 5.MD.56.PF, 5.MD.56.NW, 5.MD.56.PJ or 5.MD.60.^) <b>AND</b> documentation of blood transfusion (blood received indicator = 1)*

\* Coding of blood transfusion is optional in British Columbia.

## Code descriptions

Codes	Code descriptions
<b>072.002</b>	Postpartum third-stage hemorrhage; delivered with mention of postpartum complication
<b>072.102</b>	Other immediate postpartum hemorrhage; delivered with mention of postpartum complication
<b>072.202</b>	Delayed and secondary postpartum hemorrhage; delivered with mention of postpartum complication
<b>090.202</b>	Hematoma of obstetric wound delivered with mention of postpartum complication

## Additional codes: Inclusion

Codes	Code descriptions
<b>5.MD.53.^</b>	Forceps traction and rotation delivery
<b>5.MD.54.^</b>	Vacuum traction delivery
<b>5.MD.55.^</b>	Combination of vacuum and forceps delivery
<b>5.MD.56.NN</b>	Breech delivery without episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
<b>5.MD.56.PC</b>	Breech delivery with episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
<b>5.MD.56.NR</b>	Breech delivery without episiotomy, total breech extraction with forceps to aftercoming head
<b>5.MD.56.PF</b>	Breech delivery with episiotomy, total breech extraction with forceps to aftercoming head
<b>5.MD.56.NW</b>	Breech delivery without episiotomy, unspecified breech extraction with forceps to aftercoming head
<b>5.MD.56.PJ</b>	Breech delivery with episiotomy, unspecified breech extraction with forceps to aftercoming head
<b>5.MD.60.^</b>	Caesarean section delivery

## D03: Obstetric Trauma

### Concept

Lacerations of third degree or greater severity, or other obstetric injury to pelvic organs during an instrument-assisted vaginal delivery.

### Notes

Aligns with the existing CIHI indicator [Obstetric Trauma \(With Instrument\)](#).

### Selection criteria

Codes	Conditions
<b>O70.201</b> <b>O70.301</b> <b>O71.181</b> <b>O71.301</b> <b>O71.401</b> <b>O71.501</b> <b>O71.601</b>	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y) <b>AND</b> Z37.– (outcome of delivery) <b>AND</b> intervention codes for instrument-assisted delivery (5.MD.53.^^, 5.MD.54.^^, 5.MD.55.^^, 5.MD.56.NN, 5.MD.56.PC, 5.MD.56.NR, 5.MD.56.PF, 5.MD.56.NW or 5.MD.56.PJ) <b>on the same abstract</b>
<b>5.PC.80.JH</b> <b>5.PC.80.JJ</b> <b>5.PC.80.JR</b> <b>5.PC.80.JQ</b> <b>5.PC.80.JU</b> <b>5.PC.80.JL</b>	Identified as an intervention <b>AND</b> Z37.– (outcome of delivery) <b>AND</b> intervention codes for instrument-assisted delivery (5.MD.53.^^, 5.MD.54.^^, 5.MD.55.^^, 5.MD.56.NN, 5.MD.56.PC, 5.MD.56.NR, 5.MD.56.PF, 5.MD.56.NW or 5.MD.56.PJ) <b>on the same abstract</b>

### Excludes

Abstracts indicating a pregnancy with abortive outcome (O04.– **OR** 5.CA.20.^^, 5.CA.24.^^, 5.CA.88.^^, 5.CA.89.^^ or 5.CA.93.^^, not abandoned)

### Code descriptions

Codes	Code descriptions
<b>O70.201</b>	Perineal laceration during delivery, third degree perineal laceration during delivery; delivered with or without mention of antepartum condition
<b>O70.301</b>	Perineal laceration during delivery, fourth degree perineal laceration during delivery; delivered with or without mention of antepartum condition
<b>O71.181</b>	Other rupture of uterus during labour; delivered with or without mention of antepartum condition
<b>O71.301</b>	Obstetric laceration of cervix; delivered with or without mention of antepartum condition
<b>O71.401</b>	Obstetric high vaginal laceration alone; delivered with or without mention of antepartum condition
<b>O71.501</b>	Other obstetric injury to pelvic organs; delivered with or without mention of antepartum condition
<b>O71.601</b>	Obstetric damage to pelvic joints and ligaments; delivered with or without mention of antepartum condition

Codes	Code descriptions
5.PC.80.JH	Surgical repair, postpartum of obstetric laceration of corpus uteri (body of uterus)
5.PC.80.JJ	Surgical repair, postpartum of current obstetric laceration of cervix occurring at vaginal delivery
5.PC.80.JR	Surgical repair, postpartum of current obstetric laceration of bladder and urethra
5.PC.80.JQ	Surgical repair, postpartum of current obstetric laceration of rectum and sphincter ani
5.PC.80.JU	Surgical repair, postpartum of current obstetric high vaginal laceration
5.PC.80.JL	Surgical repair, postpartum of current obstetric laceration of broad ligament(s) of uterus

### Additional codes: Inclusion

Codes	Code descriptions
Z37.–	Outcome of delivery
5.MD.53.^	Forceps traction and rotation delivery
5.MD.54.^	Vacuum traction delivery
5.MD.55.^	Combination of vacuum and forceps delivery
5.MD.56.NN	Breech delivery without episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
5.MD.56.PC	Breech delivery with episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
5.MD.56.NR	Breech delivery without episiotomy, total breech extraction with forceps to aftercoming head
5.MD.56.PF	Breech delivery with episiotomy, total breech extraction with forceps to aftercoming head
5.MD.56.NW	Breech delivery without episiotomy, unspecified breech extraction with forceps to aftercoming head
5.MD.56.PJ	Breech delivery with episiotomy, unspecified breech extraction with forceps to aftercoming head

### Additional codes: Exclusions

Codes	Code descriptions
O04.–	Medical abortion
5.CA.20.^	Pharmacotherapy (in preparation for), termination of pregnancy
5.CA.24.^	Preparation by dilating cervix (for), termination of pregnancy
5.CA.88.^	Pharmacological termination of pregnancy
5.CA.89.^	Surgical termination of pregnancy
5.CA.93.^	Surgical removal of extrauterine pregnancy

## D04: Birth Trauma

### Concept

Injuries to the newborn during an instrument-assisted or Caesarean section delivery.

### Notes

Refer to A04: Birth Trauma for injuries during vaginal delivery without the assistance of instruments.

### Selection criteria

Codes	Conditions
<b>P10–P15</b>	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y) <b>AND</b> Entry Code N*  <b>AND</b> Newborns whose mother's abstract has intervention codes for instrument-assisted or Caesarean section delivery, <sup>†</sup> (5.MD.53.^, 5.MD.54.^, 5.MD.55.^, 5.MD.56.NN, 5.MD.56.PC, 5.MD.56.NR, 5.MD.56.PF, 5.MD.56.NW, 5MD.56.PJ or 5.MD.60.^) <sup>‡</sup>

\* Entry Code N indicates an infant was born alive in the reporting facility.

† Due to the unavailability of chart numbers for Prince Edward Island, birth trauma with and without the assistance of instruments cannot be differentiated; therefore, all birth trauma in P.E.I. is included in A04: Birth Trauma regardless of the use of instruments or method of delivery.

‡ Newborns whose mothers are discharged from acute care facilities in a different fiscal year cannot be linked to their mothers' records; therefore, as the linkage is done within a fiscal year, a few birth trauma cases that belong to D04 could be misclassified to A04. A fiscal year is defined based on a discharge date from April 1 of the current year to March 31 of the subsequent year.

### Excludes

Newborn abstracts with P10.–, P11.1 or P11.2 (brain damage due to birth injury) as diagnosis type (M) or (1) **AND** P07.– (preterm and low birth weight) as diagnosis type (M), (1) or (2)

#### OR

Newborn abstracts with P96.4 (termination of pregnancy affecting fetuses and newborns)

#### OR

Newborn abstracts with Q00–Q07 (congenital malformations of the central nervous system) as diagnosis type (M) or (1)

#### OR

Newborn abstracts with Q65–Q79 (congenital malformations and deformations of the musculoskeletal system) as diagnosis type (M) or (1)

## Code descriptions

Codes	Code descriptions
P10.–	Intracranial laceration and hemorrhage due to birth injury
P11.–	Other birth injuries to central nervous system
P12.–	Birth injury to scalp
P13.–	Birth injury to skeleton
P14.–	Birth injury to peripheral nervous system
P15.–	Other birth injuries

## Additional codes: Inclusion

Codes	Code descriptions
5.MD.53.^	Forceps traction and rotation delivery
5.MD.54.^	Vacuum traction delivery
5.MD.55.^	Combination of vacuum and forceps delivery
5.MD.56.NN	Breech delivery without episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
5.MD.56.PC	Breech delivery with episiotomy, partial breech extraction (assisted breech delivery) with forceps to aftercoming head
5.MD.56.NR	Breech delivery without episiotomy, total breech extraction with forceps to aftercoming head
5.MD.56.PF	Breech delivery with episiotomy, total breech extraction with forceps to aftercoming head
5.MD.56.NW	Breech delivery without episiotomy, unspecified breech extraction with forceps to aftercoming head
5.MD.56.PJ	Breech delivery with episiotomy, unspecified breech extraction with forceps to aftercoming head
5.MD.60.^	Caesarean section delivery

## Additional codes: Exclusions

Codes	Code descriptions
P07.–	Disorders related to short gestation and low birth weight, not elsewhere classified
P10.–	Intracranial laceration and hemorrhage due to birth injury
P11.1	Other specified brain damage due to birth injury
P11.2	Unspecified brain damage due to birth injury
P96.4	Termination of pregnancy, affecting fetus and newborn
Q00.–	Anencephaly and similar malformations
Q01.–	Encephalocele
Q02.–	Microcephaly
Q03.–	Congenital hydrocephalus
Q04.–	Other congenital malformations of brain
Q05.–	Spina bifida
Q06.–	Other congenital malformations of spinal cord

Codes	Code descriptions
Q07.–	Other congenital malformations of nervous system
Q65.–	Congenital deformities of hip
Q66.–	Congenital deformities of feet
Q67.–	Congenital musculoskeletal deformities of head, face, spine and chest
Q68.–	Other congenital musculoskeletal deformities
Q69.–	Polydactyly
Q70.–	Syndactyly
Q71.–	Reduction defects of upper limb
Q72.–	Reduction defects of lower limb
Q73.–	Reduction defects of unspecified limb
Q74.–	Other congenital malformations of limb(s)
Q75.–	Other congenital malformations of skull and face bones
Q76.–	Congenital malformations of spine and bony thorax
Q77.–	Osteochondrodysplasia with defects of growth of tubular bones and spine
Q78.–	Other osteochondrodysplasias
Q79.–	Congenital malformations of the musculoskeletal system, not elsewhere classified

## D19: Patient Trauma

### Concept

Injuries, fractures, dislocations, burns, etc., associated with a medical or surgical procedure identified during the hospital stay.

### Notes

Refer to C19: Patient Trauma for injuries, fractures, dislocations, burns, etc., that are not related to medical or surgical procedures.

This clinical group excludes trauma associated with device failure, laceration or puncture, pneumothorax and retained foreign body (refer to D20: Device Failure, D21: Laceration/Puncture, D22: Pneumothorax and D24: Retained Foreign Body).

## Selection criteria

Codes	Conditions
<b>S00–T19 T71</b>	Identified as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>  <b>OR</b>  Identified as diagnosis type (3) <b>AND</b> T80–T88 (complications of surgical and medical care) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>
<b>M96.6 T20–T32</b>	Identified as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>

\* For the descriptions of complications of surgical and medical care (T80–T88) or external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Code descriptions

Codes	Code descriptions
<b>M96.6</b>	Fracture of bone following insertion of orthopedic implant, joint prosthesis, or bone plate
<b>S00–S09</b>	Injuries to the head
<b>S10–S19</b>	Injuries to the neck
<b>S20–S29</b>	Injuries to the thorax
<b>S30–S39</b>	Injuries to the abdomen, lower back, lumbar spine and pelvis
<b>S40–S49</b>	Injuries to the shoulder and upper arm
<b>S50–S59</b>	Injuries to the elbow and forearm
<b>S60–S69</b>	Injuries to the wrist and hand
<b>S70–S79</b>	Injuries to the hip and thigh
<b>S80–S89</b>	Injuries to the knee and lower leg
<b>S90–S99</b>	Injuries to the ankle and foot
<b>T00–T07</b>	Injuries involving multiple body regions
<b>T08–T14</b>	Injuries to unspecified parts of trunk, limb or body region
<b>T15–T19</b>	Effects of foreign body entering through natural orifice
<b>T20–T32</b>	Burns and corrosions
<b>T71</b>	Asphyxiation

## D20: Device Failure

### Concept

Mechanical complications of devices, catheters, grafts, implants or prostheses associated with a medical or surgical procedure.

## Notes

This clinical group includes mechanical failure and complications of devices: breakdown, displacement, leakage, malposition, obstruction, perforation or protrusion of devices, catheters, grafts, implants or prostheses associated with a medical or surgical procedure.

This clinical group excludes pneumothorax as a result of device failure (refer to D22: Pneumothorax).

## Selection criteria

Codes	Conditions
T82.0–T82.5 T83.0–T83.4 T84.0–T84.4 T85.0–T85.6	Identified as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Code descriptions

Codes	Code descriptions
T82.0	Mechanical complication of heart valve prosthesis
T82.1	Mechanical complication of cardiac electronic device
T82.2	Mechanical complication of coronary artery bypass and valve grafts
T82.3	Mechanical complication of other vascular grafts
T82.4	Mechanical complication of vascular dialysis catheter
T82.5	Mechanical complication of other cardiac and vascular devices and implants
T83.0	Mechanical complication of urinary (indwelling) catheter
T83.1	Mechanical complication of other urinary devices and implants
T83.2	Mechanical complication of graft of urinary organ
T83.3	Mechanical complication of intrauterine contraceptive device
T83.4	Mechanical complication of other prosthetic devices, implants and grafts in genital tract
T84.0–	Mechanical complication of internal joint prosthesis
T84.1–	Mechanical complication of internal fixation device of bones of limb
T84.2–	Mechanical complication of internal fixation device of other bones
T84.3	Mechanical complication of other bone devices, implants and grafts
T84.4	Mechanical complication of other internal orthopedic devices, implants and grafts
T85.0	Mechanical complication of ventricular intracranial (communicating) shunt
T85.1	Mechanical complication of implanted electronic stimulator of nervous system
T85.2	Mechanical complication of intraocular lens
T85.3	Mechanical complication of other ocular prosthetic devices, implants and grafts



Codes	Code descriptions
<b>T85.4</b>	Mechanical complication of breast prosthesis and implant
<b>T85.5</b>	Mechanical complication of gastrointestinal prosthetic devices, implants and grafts
<b>T85.6</b>	Mechanical complication of other specified internal prosthetic devices, implants and grafts

## D21: Laceration/Puncture

### Concept

Unintentional or accidental cut, puncture or perforation during a medical or surgical procedure.

### Notes

This clinical group excludes pneumothorax (refer to D22: Pneumothorax).

### Selection criteria

Codes	Conditions
<b>T81.2</b>	Identified as diagnosis type (2)

### Code descriptions

Codes	Code descriptions
<b>T81.2</b>	Accidental puncture and laceration during a procedure, not elsewhere classified

## D22: Pneumothorax

### Concept

Pneumothorax associated with a medical or surgical procedure.

### Selection criteria

Codes	Conditions
<b>J95.80</b>	Identified as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>
<b>S27.0– S27.2–</b>	Identified as diagnosis type (3) <b>AND</b> T80–T88 (complications of surgical and medical care) as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>  <b>OR</b> Identified as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>

\* For the descriptions of complications of surgical and medical care (T80–T88) or external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Code descriptions

Codes	Code descriptions
J95.80	Post-procedural pneumothorax
S27.0–	Traumatic pneumothorax
S27.2–	Traumatic hemopneumothorax

## D23: Wound Disruption

### Concept

Disruption of a surgical wound during the same hospital stay or of an obstetric wound during the delivery episode of care.

### Selection criteria

Codes	Conditions
O90.002 O90.102	Identified as diagnosis type (M), (1), (2), (W), (X) or (Y)
T81.3	Identified as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Code descriptions

Codes	Code descriptions
O90.002	Disruption of Caesarean section wound, delivered with mention of postpartum complication
O90.102	Disruption of perineal obstetric wound, delivered with mention of postpartum complication
T81.3	Disruption of operation wound, not elsewhere classified

## D24: Retained Foreign Body

### Concept

Foreign object or substance unintentionally left in the body during a medical or surgical procedure.

### Selection criteria

Codes	Conditions
T81.5– T81.6	Identified as diagnosis type (2)

## Code descriptions

Codes	Code descriptions
<b>T81.5–</b>	Foreign body accidentally left in body cavity or operation wound following a procedure
<b>T81.6</b>	Acute reaction to foreign substance accidentally left during a procedure

## D25: Post-Procedural Shock

### Concept

Shock during or resulting from a procedure.

### Selection criteria

Codes	Conditions
<b>T81.1</b>	Identified as diagnosis type (2) <b>AND</b> Y60–Y84 (complications of medical or surgical care)* <b>in the same diagnosis cluster</b>

\* For the descriptions of external cause codes of complications of medical or surgical care (Y60–Y84), please see Appendix 2.

## Code descriptions

Codes	Code descriptions
<b>T81.1</b>	Shock during or resulting from a procedure, not elsewhere classified

## D26: Selected Serious Events

### Concept

Harm to patients resulting from failure of sterile precautions, failure in suture or ligature, wrong placement of endotracheal tube or performance of inappropriate operation.

### Notes

This clinical group includes serious, largely preventable patient safety events that should not occur.

Some of the serious events captured in this clinical group are also captured by other clinical groups based on the outcome of these events.

## Selection criteria

Codes	Conditions
Y62.0 Y62.1 Y62.2 Y62.3 Y62.4 Y62.5 Y62.6 Y64.– Y65.2 Y65.3 Y65.5	Identified as diagnosis type (9) <b>AND</b> at least 1 additional diagnosis coded as diagnosis type (2) <b>in the same diagnosis cluster</b>

## Code descriptions

Codes	Code descriptions
Y62.0	Failure of sterile precautions during surgical and medical care; during surgical operation
Y62.1	Failure of sterile precautions during surgical and medical care; during infusion or transfusion
Y62.2	Failure of sterile precautions during surgical and medical care; during kidney dialysis or other perfusion
Y62.3	Failure of sterile precautions during surgical and medical care; during injection or immunization
Y62.4	Failure of sterile precautions during surgical and medical care; during endoscopic examination
Y62.5	Failure of sterile precautions during surgical and medical care; during heart catheterization
Y62.6	Failure of sterile precautions during surgical and medical care; during aspiration, puncture and other catheterization
Y64.–	Contaminated medical or biological substances
Y65.2	Failure in suture or ligature during surgical operation
Y65.3	Endotracheal tube wrongly placed during anesthetic procedure
Y65.5	Performance of inappropriate operation

# Appendix 1: Definition of diagnosis type and diagnosis cluster

## Definitions

A **diagnosis type** is an alpha or numeric code signifying the impact the condition had on the patient's care, as evidenced in the physician documentation.

A **diagnosis cluster** is a group of 2 or more ICD-10-CA codes that relate to one another.

Assigning the same diagnosis cluster character (uppercase alpha A to Y) to each of the codes in the cluster links these codes together on the abstract.

Diagnosis clustering was made mandatory in 2009–2010 for ICD-10-CA codes used to describe external causes related to complications of medical and surgical care (Y40–Y84) and to resistance to antibiotics (U82 and U83) or other antimicrobial drugs (U84).

The following table describes the diagnosis types used throughout the Hospital Harm definitions:

Diagnosis types	Descriptions
<b>M</b>	The 1 diagnosis or condition that can be described as being most responsible for the patient's stay in hospital. If there is more than 1 such condition, the one held most responsible for the greatest portion of the length of stay or greatest use of resources is selected.
<b>1</b>	A condition that impacted care (i.e., a significant comorbidity) and was present prior to hospital admission.
<b>2</b>	A condition that impacted care (i.e., a significant comorbidity) and arose post-admission. If a post-admit comorbidity qualifies as the most responsible diagnosis (MRDx), it must be recorded as both the MRDx and as a diagnosis type (2).
<b>3</b>	A condition that did not impact care (i.e., not a significant comorbidity) or that is recorded to provide detail. A diagnosis type (3) in certain appropriate code combinations — for example, with another code as diagnosis type (2) in a cluster — can be used to determine a significant condition that arose post-admission.
<b>9</b>	A supplementary code (external cause code) used with another diagnosis code that indicates the nature of the condition. A diagnosis type (9) code is accompanied by codes indicating injuries, poisoning or other certain consequences of external causes.
<b>W, X, Y</b>	A condition that is associated with the first/second/third service transfer, respectively.

## Appendix 2: Code descriptions

Diagnosis codes	Descriptions
<b>Poisoning by drugs, medicaments and biological substances (T36–T50)</b>	
<b>T36.–</b>	Poisoning by systemic antibiotics
<b>T37.–</b>	Poisoning by other systemic anti-infectives and antiparasitics
<b>T38.–</b>	Poisoning by hormones and their synthetic substitutes and antagonists, not elsewhere classified
<b>T39.–</b>	Poisoning by non-opioid analgesics, antipyretics and antirheumatics
<b>T40.–</b>	Poisoning by narcotics and psychodysleptics (hallucinogens)
<b>T41.–</b>	Poisoning by anesthetics and therapeutic gases
<b>T42.–</b>	Poisoning by antiepileptic, sedative-hypnotic and antiparkinsonism drugs
<b>T43.–</b>	Poisoning by psychotropic drugs, not elsewhere classified
<b>T44.–</b>	Poisoning by drugs primarily affecting the autonomic nervous system
<b>T45.–</b>	Poisoning by primarily systemic and hematological agents, not elsewhere classified
<b>T46.–</b>	Poisoning by agents primarily affecting the cardiovascular system
<b>T47.–</b>	Poisoning by agents primarily affecting the gastrointestinal system
<b>T48.–</b>	Poisoning by agents primarily acting on smooth and skeletal muscles and the respiratory system
<b>T49.–</b>	Poisoning by topical agents primarily affecting skin and mucous membrane and by ophthalmological, otorhinolaryngological and dental drugs
<b>T50.–</b>	Poisoning by diuretics and other and unspecified drugs, medicaments and biological substances
<b>Complications of surgical and medical care (T80–T88)</b>	
<b>T80.–</b>	Complications following infusion, transfusion and therapeutic injection
<b>T81.–</b>	Complications of procedures, not elsewhere classified
<b>T82.–</b>	Complications of cardiac and vascular prosthetic devices, implants and grafts
<b>T83.–</b>	Complications of genitourinary prosthetic devices, implants and grafts
<b>T84.–</b>	Complications of internal orthopedic prosthetic devices, implants and grafts
<b>T85.–</b>	Complications of other internal prosthetic devices, implants and grafts
<b>T86.–</b>	Failure and rejection of transplanted organs and tissues
<b>T87.–</b>	Complications peculiar to reattachment and amputation
<b>T88.–</b>	Other complications of surgical and medical care, not elsewhere classified
<b>Resistance to antibiotics and other antimicrobial drugs (U82–U84)</b>	
<b>U82.–</b>	Resistance to betalactam antibiotics
<b>U83.–</b>	Resistance to other antibiotics
<b>U84.–</b>	Resistance to other antimicrobial drugs

Diagnosis codes	Descriptions
<b>Drugs, medicaments and biological substances causing adverse effects in therapeutic use (Y40–Y59)</b>	
<b>Y40.–</b>	Systemic antibiotics
<b>Y41.–</b>	Other systemic anti-infectives and antiparasitics
<b>Y42.–</b>	Hormones and their synthetic substitutes and antagonists, not elsewhere classified
<b>Y43.–</b>	Primarily systemic agents
<b>Y44.–</b>	Agents primarily affecting blood constituents
<b>Y45.–</b>	Analgesics, antipyretics and anti-inflammatory drugs
<b>Y46.–</b>	Antiepileptics and antiparkinsonism drugs
<b>Y47.–</b>	Sedatives, hypnotics and antianxiety drugs
<b>Y48.–</b>	Anesthetics and therapeutic gases
<b>Y49.–</b>	Psychotropic drugs, not elsewhere classified
<b>Y50.–</b>	Central nervous system stimulants, not elsewhere classified
<b>Y51.–</b>	Drugs primarily affecting the autonomic nervous system
<b>Y52.–</b>	Agents primarily affecting the cardiovascular system
<b>Y53.–</b>	Agents primarily affecting the gastrointestinal system
<b>Y54.–</b>	Agents primarily affecting water-balance and mineral uric acid metabolism
<b>Y55.–</b>	Agents primarily acting on smooth and skeletal muscles and the respiratory system
<b>Y56.–</b>	Topical agents primarily affecting skin and mucous membrane and ophthalmological, otorhinolaryngological and dental drugs
<b>Y57.–</b>	Other unspecified drugs and medicaments
<b>Y58.–</b>	Bacterial vaccines
<b>Y59.–</b>	Other and unspecified vaccines and biological substances
<b>Misadventures to patients during surgical and medical care (Y60–Y69)</b>	
<b>Y60.–</b>	Unintentional cut, puncture, perforation or hemorrhage during surgical and medical care
<b>Y61.–</b>	Foreign object accidentally left in body during surgical and medical care
<b>Y62.–</b>	Failure of sterile precautions during surgical and medical care
<b>Y63.–</b>	Failure in dosage during surgical and medical care (excludes accidental overdose of drug or wrong drug given in error)
<b>Y64.–</b>	Contaminated medical or biological substances
<b>Y65.–</b>	Other misadventures during surgical and medical care
<b>Y66</b>	Non-administration of surgical and medical care
<b>Y69</b>	Unspecified misadventure during surgical and medical care
<b>Medical devices associated with adverse incidents in diagnostic and therapeutic use (Y70–Y82)</b>	
<b>Y70.–</b>	Anesthesiology devices associated with adverse incidents
<b>Y71.–</b>	Cardiovascular devices associated with adverse incidents
<b>Y72.–</b>	Otorhinolaryngological devices associated with adverse incidents
<b>Y73.–</b>	Gastroenterology and urology devices associated with adverse incidents
<b>Y74.–</b>	General hospital and personal-use devices associated with adverse incidents

Diagnosis codes	Descriptions
<b>Y75.–</b>	Neurological devices associated with adverse incidents
<b>Y76.–</b>	Obstetric and gynecological devices associated with adverse incidents
<b>Y77.–</b>	Ophthalmic devices associated with adverse incidents
<b>Y78.–</b>	Radiological devices associated with adverse incidents
<b>Y79.–</b>	Orthopedic devices associated with adverse incidents
<b>Y80.–</b>	Physical medicine devices associated with adverse incidents
<b>Y81.–</b>	General- and plastic-surgery devices associated with adverse incidents
<b>Y82.–</b>	Other and unspecified medical devices associated with adverse incidents
<b>Surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication without mention of misadventure at the time of the procedure (Y83–Y84)</b>	
<b>Y83.–</b>	Surgical operation and other surgical procedures as the cause of abnormal reaction of the patient, or of later complication without mention of misadventure at the time of the procedure
<b>Y84.–</b>	Other medical procedures as the cause of abnormal reaction of the patient, or of later complication without mention of misadventure at the time of the procedure



## Appendix 3: List of ICD-10-CA infection codes

This list includes infections with unspecified bacterial microorganisms or codes with no specified microorganism (except for staphylococcal infections). This list is applicable to the definitions for MRSA and for VRE only.

Diagnosis codes	Descriptions
<b>A04.8</b>	Other specified bacterial intestinal infections
<b>A04.9</b>	Bacterial intestinal infection, unspecified
<b>A05.0</b>	Foodborne staphylococcal intoxication
<b>A05.88</b>	Other specified bacterial foodborne intoxications
<b>A05.9</b>	Bacterial foodborne intoxication, unspecified
<b>A09.–</b>	Other gastroenteritis and colitis of infectious and unspecified origin
<b>A41.2</b>	Sepsis due to unspecified <i>Staphylococcus</i>
<b>A41.9</b>	Sepsis, unspecified
<b>A48.3</b>	Toxic shock syndrome
<b>A49.0</b>	Staphylococcal infection, unspecified site
<b>A49.8</b>	Other bacterial infections of unspecified site
<b>A49.9</b>	Bacterial infection, unspecified
<b>D73.3</b>	Abscess of spleen
<b>E06.0</b>	Acute thyroiditis
<b>E06.1</b>	Subacute thyroiditis
<b>E06.9</b>	Thyroiditis, unspecified
<b>E10.51</b>	Type 1 diabetes mellitus with peripheral angiopathy with gangrene
<b>E10.71</b>	Type 1 diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
<b>E11.51</b>	Type 2 diabetes mellitus with peripheral angiopathy with gangrene
<b>E11.71</b>	Type 2 diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
<b>E13.51</b>	Other specified diabetes mellitus with peripheral angiopathy with gangrene
<b>E13.71</b>	Other specified diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
<b>E14.51</b>	Unspecified diabetes mellitus with peripheral angiopathy with gangrene
<b>E14.71</b>	Unspecified diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
<b>E32.1</b>	Abscess of thymus
<b>G00.3</b>	Staphylococcal meningitis
<b>G00.8</b>	Other bacterial meningitis
<b>G00.9</b>	Bacterial meningitis, unspecified
<b>G04.0</b>	Acute disseminated encephalitis

Diagnosis codes	Descriptions
G04.2	Bacterial meningoencephalitis and meningomyelitis, not elsewhere classified
G04.8	Other encephalitis, myelitis and encephalomyelitis
G04.9	Encephalitis, myelitis and encephalomyelitis, unspecified
G06.–	Intracranial and intraspinal abscess and granuloma
G07	Intracranial and intraspinal abscess and granuloma in diseases classified elsewhere
G08	Intracranial and intraspinal phlebitis and thrombophlebitis
G37.3	Acute transverse myelitis in demyelinating disease of central nervous system
H00.0	Hordeolum and other deep inflammation of eyelid
H00.1	Chalazion
H01.0	Blepharitis
H03.1	Involvement of eyelid in other infectious diseases classified elsewhere
H04.0	Dacryoadenitis
H04.3	Acute and unspecified inflammation of lacrimal passages
H05.0	Acute inflammation of orbit
H10.0	Mucopurulent conjunctivitis
H10.2	Other acute conjunctivitis
H10.3	Acute conjunctivitis, unspecified
H10.5	Blepharoconjunctivitis
H10.8	Other conjunctivitis
H10.9	Conjunctivitis, unspecified
H13.1	Conjunctivitis in infectious and parasitic diseases classified elsewhere
H13.2	Conjunctivitis in other diseases classified elsewhere
H15.0	Scleritis
H15.1	Episcleritis
H16.–	Keratitis
H19.0	Scleritis and episcleritis in diseases classified elsewhere
H19.2	Keratitis and keratoconjunctivitis in other infectious and parasitic diseases classified elsewhere
H20.0	Acute and subacute iridocyclitis
H20.8	Other iridocyclitis
H20.9	Iridocyclitis, unspecified
H22.0	Iridocyclitis in infectious and parasitic diseases classified elsewhere
H30.2	Posterior cyclitis
H32.0	Chorioretinal inflammation in infectious and parasitic diseases classified elsewhere
H44.0	Purulent endophthalmitis
H45.1	Endophthalmitis in diseases classified elsewhere
H48.1	Retrobulbar neuritis in diseases classified elsewhere

Diagnosis codes	Descriptions
H60.0	Abscess of external ear
H60.1	Cellulitis of external ear
H60.2	Malignant otitis externa
H60.3	Other infective otitis externa
H60.9	Otitis externa, unspecified
H62.0	Otitis externa in bacterial diseases classified elsewhere
H62.3	Otitis externa in other infectious and parasitic diseases classified elsewhere
H66.0	Acute suppurative otitis media
H66.4	Suppurative otitis media, unspecified
H66.9	Otitis media, unspecified
H67.0	Otitis media in bacterial diseases classified elsewhere
H68.0	Eustachian salpingitis
H70.0	Acute mastoiditis
H70.2	Petrositis
H70.8	Other mastoiditis and related conditions
H70.9	Mastoiditis, unspecified
H73.0	Acute myringitis
H75.0	Mastoiditis in infectious and parasitic diseases classified elsewhere
H81.2	Vestibular neuronitis
H83.0	Labyrinthitis
H94.0	Acoustic neuritis in infectious and parasitic diseases classified elsewhere
I30.1	Infective pericarditis
I30.9	Acute pericarditis, unspecified
I32.0	Pericarditis in bacterial diseases classified elsewhere
I32.1	Pericarditis in other infectious and parasitic diseases classified elsewhere
I33.0	Acute and subacute infective endocarditis
I33.9	Acute endocarditis, unspecified
I38	Endocarditis, valve unspecified
I39.8	Endocarditis, valve unspecified, in diseases classified elsewhere
I40.0	Infective myocarditis
I40.9	Acute myocarditis, unspecified
I51.4	Myocarditis, unspecified
I77.6	Arteritis, unspecified
I79.1	Aortitis in diseases classified elsewhere
I80.—	Phlebitis and thrombophlebitis
I88.0	Nonspecific mesenteric lymphadenitis
I88.8	Other nonspecific lymphadenitis

Diagnosis codes	Descriptions
I88.9	Nonspecific lymphadenitis, unspecified
I89.1	Lymphangitis
J01.–	Acute sinusitis
J02.8	Acute pharyngitis due to other specified organisms
J02.9	Acute pharyngitis, unspecified
J03.8	Acute tonsillitis due to other specified organisms
J03.9	Acute tonsillitis, unspecified
J04.–	Acute laryngitis and tracheitis
J05.–	Acute obstructive laryngitis [croup] and epiglottitis
J06.–	Acute upper respiratory infections of multiple and unspecified sites
J15.2	Pneumonia due to <i>Staphylococcus</i>
J15.8	Other bacterial pneumonia
J15.9	Bacterial pneumonia, unspecified
J16.8	Pneumonia due to other specified infectious organisms
J18.–	Pneumonia, organism unspecified
J20.88	Acute bronchitis due to other specified organisms
J20.9	Acute bronchitis, unspecified
J21.8	Acute bronchiolitis due to other specified organisms
J21.9	Acute bronchiolitis, unspecified
J22	Unspecified acute lower respiratory infection
J34.0	Abscess, furuncle and carbuncle of nose
J36	Peritonsillar abscess
J39.0	Retropharyngeal and parapharyngeal abscess
J39.1	Other abscess of pharynx
J40	Bronchitis, not specified as acute or chronic
J44.0	Chronic obstructive pulmonary disease with acute lower respiratory infection
J47	Bronchiectasis
J69.–	Pneumonitis due to solids and liquids
J85.–	Abscess of lung and mediastinum
J86.–	Pyothorax
J95.01	Infection of tracheostomy stoma
J95.88	Other post-procedural respiratory disorders
J98.5	Diseases of mediastinum, not elsewhere classified
K04.0	Pulpitis
K04.4	Acute apical periodontitis of pulpal origin
K04.6	Periapical abscess with sinus
K04.7	Periapical abscess without sinus

Diagnosis codes	Descriptions
K05.0	Acute gingivitis
K05.2	Acute periodontitis
K10.2	Inflammatory conditions of jaws
K11.2	Sialoadenitis
K11.3	Abscess of salivary gland
K12.2	Cellulitis and abscess of mouth
K14.0	Glossitis
K14.2	Median rhomboid glossitis
K20	Oesophagitis
K35.–	Acute appendicitis
K36	Other appendicitis
K37	Unspecified appendicitis
K57.0	Diverticular disease of small intestine with perforation and abscess
K57.2	Diverticular disease of large intestine with perforation and abscess
K57.4	Diverticular disease of both small and large intestine with perforation and abscess
K57.8	Diverticular disease of intestine, part unspecified, with perforation and abscess
K61.–	Abscess of anal and rectal regions
K62.8	Other specified diseases of anus and rectum
K63.0	Abscess of intestine
K65.–	Peritonitis
K75.0	Abscess of liver
K75.1	Phlebitis of portal vein
K75.3	Granulomatous hepatitis, not elsewhere classified
K77.0	Liver disorders in infectious and parasitic diseases classified elsewhere
K80.0–	Calculus of gallbladder with acute cholecystitis
K80.1–	Calculus of gallbladder with other cholecystitis
K80.3–	Calculus of bile duct with cholangitis
K80.4–	Calculus of bile duct with cholecystitis
K81.–	Cholecystitis
K81.9	Cholecystitis, unspecified
K82.2	Perforation of gallbladder
K83.0–	Cholangitis
K83.2	Perforation of bile duct
K85.8	Other acute pancreatitis
K85.9	Acute pancreatitis, unspecified
K91.41	Infection of colostomy stoma
K91.44	Infection of enterostomy stoma

Diagnosis codes	Descriptions
K91.61	Infection of gastrostomy stoma
L00	Staphylococcal scalded skin syndrome
L01.–	Impetigo
L02.–	Cutaneous abscess, furuncle and carbuncle
L03.–	Cellulitis
L04.–	Acute lymphadenitis
L05.0	Pilonidal cyst with abscess
L08.–	Other local infections of skin and subcutaneous tissue
L30.3	Infective dermatitis
L30.9	Dermatitis, unspecified
M00.0–	Staphylococcal arthritis and polyarthritis
M00.8–	Arthritis and polyarthritis due to other specified bacterial agents
M00.9–	Pyogenic arthritis, unspecified
M01.3–	Arthritis in other bacterial diseases classified elsewhere
M46.2–	Osteomyelitis of vertebra
M46.3–	Infection of intervertebral disc (pyogenic)
M46.4–	Discitis, unspecified
M46.5–	Other infective spondylopathies
M60.0–	Infective myositis
M60.9–	Myositis, unspecified
M65.0–	Abscess of tendon sheath
M65.1–	Other infective (teno)synovitis
M71.0–	Abscess of bursa
M71.1–	Other infective bursitis
M72.6–	Necrotizing fasciitis
M86.0–	Acute hematogenous osteomyelitis
M86.1–	Other acute osteomyelitis
M86.2–	Subacute osteomyelitis
M86.8–	Other osteomyelitis
M86.9–	Osteomyelitis, unspecified
M90.1	Periostitis in other infectious diseases classified elsewhere
M90.2	Osteopathy in other infectious diseases classified elsewhere
N08.0	Glomerular disorders in infectious and parasitic diseases classified elsewhere
N10	Acute tubulo-interstitial nephritis
N12	Tubulo-interstitial nephritis, not specified as acute or chronic
N13.6	Pyonephrosis
N15.1	Renal and perinephric abscess

Diagnosis codes	Descriptions
<b>N16.0</b>	Renal tubulo-interstitial disorders in infectious and parasitic diseases classified elsewhere
<b>N29.1</b>	Other disorders of kidney and ureter in infectious and parasitic diseases classified elsewhere
<b>N30.0</b>	Acute cystitis
<b>N30.8</b>	Other cystitis
<b>N30.9</b>	Cystitis, unspecified
<b>N33.8</b>	Bladder disorders in other diseases classified elsewhere
<b>N34.–</b>	Urethritis and urethral syndrome
<b>N37.0</b>	Urethritis in diseases classified elsewhere
<b>N39.0</b>	Urinary tract infection, site not specified
<b>N41.0</b>	Acute prostatitis
<b>N41.2</b>	Abscess of prostate
<b>N41.3</b>	Prostatocystitis
<b>N41.4</b>	Granulomatous prostatitis
<b>N41.8</b>	Other inflammatory diseases of prostate
<b>N41.9</b>	Inflammatory disease of prostate, unspecified
<b>N43.1</b>	Infected hydrocele
<b>N45.–</b>	Orchitis and epididymitis
<b>N48.1</b>	Balanoposthitis
<b>N48.2–</b>	Other inflammatory disorders of penis
<b>N49.–</b>	Inflammatory disorders of male genital organs, not elsewhere classified
<b>N61</b>	Inflammatory disorders of breast
<b>N70.0</b>	Acute salpingitis and oophoritis
<b>N70.9</b>	Salpingitis and oophoritis, unspecified
<b>N71.0</b>	Acute inflammatory disease of uterus
<b>N71.9</b>	Inflammatory disease of uterus, unspecified
<b>N72</b>	Inflammatory disease of cervix uteri
<b>N73.0</b>	Acute parametritis and pelvic cellulitis
<b>N73.2</b>	Unspecified parametritis and pelvic cellulitis
<b>N73.3</b>	Female acute pelvic peritonitis
<b>N73.5</b>	Female pelvic peritonitis, unspecified
<b>N73.6</b>	Female pelvic peritoneal adhesions
<b>N73.8</b>	Other specified female pelvic inflammatory diseases
<b>N73.9</b>	Female pelvic inflammatory disease, unspecified
<b>N74.8</b>	Female pelvic inflammatory disorders in other diseases classified elsewhere
<b>N75.1</b>	Abscess of Bartholin's gland
<b>N76.0</b>	Acute vaginitis
<b>N76.1</b>	Subacute and chronic vaginitis

Diagnosis codes	Descriptions
<b>N76.2</b>	Acute vulvitis
<b>N76.3</b>	Subacute and chronic vulvitis
<b>N76.4</b>	Abscess of vulva
<b>N76.88</b>	Other specified inflammation of vagina and vulva
<b>N77.0</b>	Ulceration of vulva in infectious and parasitic diseases classified elsewhere
<b>N77.1</b>	Vaginitis, vulvitis and vulvovaginitis in infectious and parasitic diseases classified elsewhere
<b>N98.0</b>	Infection associated with artificial insemination
<b>N99.51</b>	Infection of external stoma of urinary tract
<b>O03.0</b>	Spontaneous abortion, incomplete, complicated by genital tract and pelvic infection
<b>O03.5</b>	Spontaneous abortion, complete or unspecified, complicated by genital tract and pelvic infection
<b>O04.0</b>	Medical abortion, incomplete, complicated by genital tract and pelvic infection
<b>O04.5</b>	Medical abortion, complete or unspecified, complicated by genital tract and pelvic infection
<b>O05.0</b>	Other abortion, incomplete, complicated by genital tract and pelvic infection
<b>O05.5</b>	Other abortion, complete or unspecified, complicated by genital tract and pelvic infection
<b>O08.0–</b>	Genital tract and pelvic infection
<b>O08.2</b>	Complications following abortion and ectopic and molar pregnancy; embolism
<b>O08.8</b>	Complications following abortion and ectopic and molar pregnancy; other complications
<b>O22.9</b>	Venous complication in pregnancy, unspecified
<b>O23.–</b>	Infections of genitourinary tract in pregnancy
<b>O41.1–</b>	Infection of amniotic sac and membranes
<b>O75.3–</b>	Other infection during labour
<b>O85.–</b>	Puerperal sepsis
<b>O86.–</b>	Other puerperal infections
<b>O87.0</b>	Superficial thrombophlebitis in the puerperium
<b>O87.1</b>	Deep phlebothrombosis in the puerperium
<b>O87.9</b>	Venous complication in the puerperium, unspecified
<b>O88.3–</b>	Obstetric pyaemic and septic embolism
<b>O89.0</b>	Pulmonary complications of anesthesia during the puerperium
<b>O91.–</b>	Infections of breast associated with childbirth
<b>O98.8–</b>	Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium
<b>O99.5</b>	Diseases of the respiratory system complicating pregnancy, childbirth and the puerperium
<b>O99.8</b>	Other specified diseases and conditions complicating pregnancy, childbirth and the puerperium
<b>P00.2</b>	Fetus and newborn affected by maternal infectious and parasitic diseases
<b>P02.7</b>	Fetus and newborn affected by chorioamnionitis
<b>P23.2</b>	Congenital pneumonia due to <i>Staphylococcus</i>



Diagnosis codes	Descriptions
P23.6	Congenital pneumonia due to other bacterial agents
P23.8	Congenital pneumonia due to other organisms
P23.9	Congenital pneumonia, unspecified
P36.2	Sepsis of newborn due to <i>Staphylococcus aureus</i>
P36.8	Other bacterial sepsis of newborn
P36.9	Bacterial sepsis of newborn, unspecified
P37.8	Other specified congenital infectious and parasitic diseases
P37.9	Congenital infectious and parasitic disease, unspecified
P38	Omphalitis of newborn with or without mild hemorrhage
P39.–	Other infections specific to the perinatal period
P58.2	Neonatal jaundice due to infection
P77	Necrotizing enterocolitis of fetus and newborn
P78.1	Other neonatal peritonitis
R02	Gangrene, not elsewhere classified
R57.2	Septic shock
R57.8	Other shock
R65.0	Systemic inflammatory response syndrome of infectious origin without organ failure
R65.1	Systemic inflammatory response syndrome of infectious origin with acute organ failure
S01.01	Open wound of scalp, complicated
S01.11	Open wound of eyelid and periocular area, complicated
S01.21	Open wound of nose, complicated
S01.31	Open wound of ear, complicated
S01.41	Open wound of cheek and temporomandibular area, complicated
S01.51	Open wound of lip and oral cavity, complicated
S01.71	Multiple open wounds of head, complicated
S01.81	Open wounds of other parts of head, complicated
S01.91	Open wound of head, part unspecified, complicated
S11.01	Open wound involving larynx and trachea, complicated
S11.11	Open wound involving thyroid gland, complicated
S11.21	Open wound involving pharynx and cervical esophagus, complicated
S11.71	Multiple open wounds of neck, complicated
S11.81	Open wound of other parts of neck, complicated
S11.91	Open wound of neck, part unspecified, complicated
S21.01	Open wound of breast, complicated
S21.11	Open wound of front wall of thorax, complicated
S21.21	Open wound of back wall of thorax, complicated
S21.71	Multiple open wounds of thoracic wall, complicated

Diagnosis codes	Descriptions
<b>S21.81</b>	Open wound of other parts of thorax, complicated
<b>S21.91</b>	Open wound of thorax, part unspecified, complicated
<b>S31.001</b>	Open wound of lower back and pelvis, complicated
<b>S31.101</b>	Open wound of upper abdominal wall, complicated
<b>S31.111</b>	Open wound of epigastric region of abdominal wall, complicated
<b>S31.121</b>	Open wound of periumbilical region of abdominal wall, complicated
<b>S31.131</b>	Open wound of lower abdominal wall, complicated
<b>S31.191</b>	Open wound of unspecified site of abdominal wall, complicated
<b>S31.201</b>	Open wound of penis, complicated
<b>S31.301</b>	Open wound of scrotum and testes, complicated
<b>S31.401</b>	Open wound of vagina and vulva, complicated
<b>S31.501</b>	Open wound of other and unspecified external genital organs, complicated
<b>S31.701</b>	Multiple open wounds of abdomen, lower back and pelvis, complicated
<b>S31.801</b>	Open wound of other and unspecified parts of abdomen, complicated
<b>S41.01</b>	Open wound of shoulder, complicated
<b>S41.11</b>	Open wound of upper arm, complicated
<b>S41.71</b>	Multiple open wounds of shoulder and upper arm, complicated
<b>S41.81</b>	Open wound of other and unspecified parts of shoulder girdle, complicated
<b>S51.01</b>	Open wound of elbow, complicated
<b>S51.71</b>	Open wound of forearm, multiple, complicated
<b>S51.81</b>	Open wound of other parts of forearm, complicated
<b>S51.91</b>	Open wound of forearm, part unspecified, complicated
<b>S61.01</b>	Open wound of finger(s) without damage to nail, complicated
<b>S61.11</b>	Open wound of finger(s) with damage to nail, complicated
<b>S61.71</b>	Multiple open wounds of wrist and hand, complicated
<b>S61.81</b>	Open wound of other parts of wrist and hand, complicated
<b>S61.91</b>	Open wound of wrist and hand, part unspecified, complicated
<b>S71.01</b>	Open wound of hip, complicated
<b>S71.11</b>	Open wound of thigh, complicated
<b>S71.71</b>	Multiple open wounds of hip and thigh, complicated
<b>S71.81</b>	Open wound of other and unspecified parts of pelvic girdle, complicated
<b>S81.01</b>	Open wound of knee, complicated
<b>S81.71</b>	Multiple open wounds of lower leg, complicated
<b>S81.81</b>	Open wounds of other parts of lower leg, complicated
<b>S81.91</b>	Open wound of lower leg, part unspecified, complicated
<b>S91.01</b>	Open wound of ankle, complicated
<b>S91.11</b>	Open wound of toe(s) without damage to nail, complicated

Diagnosis codes	Descriptions
<b>S91.21</b>	Open wound of toe(s) with damage to nail, complicated
<b>S91.31</b>	Open wound of other parts of foot, complicated
<b>S91.71</b>	Multiple open wounds of ankle and foot, complicated
<b>T01.01</b>	Open wound involving head with neck, complicated
<b>T01.11</b>	Open wounds involving thorax with abdomen, lower back and pelvis, complicated
<b>T01.21</b>	Open wounds involving multiple regions of upper limb(s), complicated
<b>T01.31</b>	Open wounds of multiple regions of lower limb(s), complicated
<b>T01.61</b>	Open wounds involving multiple regions of upper limb(s) with lower limb(s), complicated
<b>T01.81</b>	Open wounds involving other combinations of body regions, complicated
<b>T01.91</b>	Multiple open wounds of unspecified site, complicated
<b>T79.3</b>	Post-traumatic wound infection, not elsewhere classified
<b>T80.2</b>	Infections following infusion, transfusion and therapeutic injection
<b>T81.4</b>	Infection following a procedure, not elsewhere classified
<b>T82.6</b>	Infection and inflammatory reaction due to cardiac valve prosthesis
<b>T82.7</b>	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts
<b>T83.5</b>	Infection and inflammatory reaction due to prosthetic device, implant and graft in urinary system
<b>T83.6</b>	Infection and inflammatory reaction due to prosthetic device, implant and graft in genital tract
<b>T84.5–</b>	Infection and inflammatory reaction due to internal joint prosthesis
<b>T84.6–</b>	Infection and inflammatory reaction due to internal fixation device [any site]
<b>T84.7</b>	Infection and inflammatory reaction due to other internal orthopedic prosthetic devices, implants and grafts
<b>T85.7</b>	Infection and inflammatory reaction due to other internal prosthetic devices, implants and grafts
<b>T87.001</b>	Complication of above elbow reattachment, infection
<b>T87.011</b>	Complication of below elbow reattachment, infection
<b>T87.021</b>	Complication of below wrist reattachment, infection
<b>T87.091</b>	Complication of upper extremity reattachment, level (of attachment) unspecified, infection
<b>T87.101</b>	Complications of above knee reattachment, infection
<b>T87.111</b>	Complication of below knee reattachment, infection
<b>T87.121</b>	Complication of below ankle reattachment, infection
<b>T87.191</b>	Complication of lower extremity reattachment, level (of attachment) unspecified, infection
<b>T87.201</b>	Infection of other reattached body part
<b>T87.4–</b>	Infection of amputation stump
<b>T88.0</b>	Infection following immunization

## Appendix 4: Text alternative for Hospital Harm Framework

The Hospital Harm Framework includes 4 broad categories of harm, which are further broken down into 31 clinical groups.

The first category is A: Health Care—/Medication-Associated Conditions, which includes the following clinical groups: A01 Anemia — Hemorrhage; A02 Obstetric Hemorrhage; A03 Obstetric Trauma; A04 Birth Trauma; A05 Delirium; A06 Venous Thromboembolism; A07 Altered Blood Glucose Level With Complications; A08 Pressure Ulcer; A09 Electrolyte and Fluid Imbalance; A10 Medication Incidents; and A11 Infusion, Transfusion and Injection Complications.

The second category is B: Health Care—Associated Infections, which includes the following clinical groups: B12 Urinary Tract Infections; B13 Post-Procedural Infections; B14 Gastroenteritis; B15 Pneumonia; B16 Aspiration Pneumonia; B17 Sepsis; and B18 Infections Due to *Clostridium difficile*, MRSA or VRE.

The third category is C: Patient Accidents, which includes the clinical group C19 Patient Trauma.

The fourth category is D: Procedure-Associated Conditions, which includes the following clinical groups: D01 Anemia — Hemorrhage; D02 Obstetric Hemorrhage; D03 Obstetric Trauma; D04 Birth Trauma; D19 Patient Trauma; D20 Device Failure; D21 Laceration/Puncture; D22 Pneumothorax; D23 Wound Disruption; D24 Retained Foreign Body; D25 Post-Procedural Shock; and D26 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.

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**CIHI Ottawa**

495 Richmond Road  
Suite 600  
Ottawa, Ont.  
K2A 4H6  
**613-241-7860**

**CIHI Toronto**

4110 Yonge Street  
Suite 300  
Toronto, Ont.  
M2P 2B7  
**416-481-2002**

**CIHI Victoria**

880 Douglas Street  
Suite 600  
Victoria, B.C.  
V8W 2B7  
**250-220-4100**

**CIHI Montréal**

1010 Sherbrooke Street West  
Suite 602  
Montréal, Que.  
H3A 2R7  
**514-842-2226**