Low-Risk Caesarean Sections

Name
Low-Risk Caesarean Sections

Short/Other Names
Not applicable

Description
This indicator measures the rate of deliveries via Caesarean section (C-section) among singleton term cephalic pregnancies for low-risk nulliparous women in spontaneous labour.

For further details, please see the General Methodology Notes.

Interpretation
A lower rate for this indicator is desirable

HSP Framework Dimension
Health System Outputs: Appropriate and effective

Areas of Need
Getting Better

Geographic Coverage
All provinces/territories except Quebec

Reporting Level/Disaggregation
National, Province/Territory, Region, Facility

Indicator Results
Accessing Indicator Results on Your Health System: In Depth

Identification Information
Low-Risk Caesarean Sections

Indicating Information
Low-Risk Caesarean Sections

Description
This indicator measures the rate of deliveries via Caesarean section (C-section) among singleton term cephalic pregnancies for low-risk nulliparous women in spontaneous labour.

For further details, please see the General Methodology Notes.

Calculation: Description
Risk-adjusted rate = Observed cases ÷ Expected cases × Canadian average

Unit of Analysis: Single admission

Calculation: Geographic Assignment
Place of service

Calculation: Type of Measurement
Rate - per 100

Calculation: Adjustment Applied
The following covariates are used in risk adjustment:
Age: For details, please refer to the Model Specification document.

Calculation: Method of Adjustment
Logistic regression

Description:
Hospitalizations where a singleton term cephalic delivery was recorded among low-risk nulliparous women in spontaneous labour

Inclusions:
1. Admission to an acute care institution (Facility Type Code = 1)
2. Delivery code (ICD-10-CA: O10-O16, O21-O26, O28-O37, O40-O46, O48, O60-O75, O85-O92, O95 or O98-O99 with a sixth digit of 1 or 2 OR Z37 coded in any position)

Exclusions:
1. Newborn, stillbirth or cadaveric donor records (Admission Category Code = N, R or S)
2. Multiple gestations, multiple births, or stillbirth delivery (ICD-10-CA: O30.- or O31.- coded as type (1), (M), (W), (X) or (Y); Z37.1- to Z37.7- or Z37.90- coded as type (M) or (3))
3. Pre-term delivery (Gestational Age at Delivery <37 completed weeks)
4. Post-term delivery (Gestational Age at Delivery >41 completed weeks)
5. Breech presentation (ICD-10-CA: O32.101 or O64.101 coded as type (1), (M), (W), (X) or (Y))
6. Transverse/oblique lie (ICD-10-CA: O32.201 coded as type (1), (M), (W), (X) or (Y))
7. Multiparity or unknown parity (Number of Previous Term Deliveries + Number of Previous Pre-Term Deliveries >0 or invalid)

8. Induction of labour (includes artificial rupture of membranes, use of oxytocic agents or prostaglandins, and cervical ripening by balloon catheter or Laminaria) (CCI: 5.AC.30.^^, 5.AC.24.CK-BD, 5.AC.24.CK-W6)

9. Planned C-section (CCI: 5.MD.60.^^ with status attribute = PA or PC)

10. Pre-existing Maternal or Fetal Risks:

   - Diabetes (pre-existing/gestational) (ICD-10-CA: O24.501, O24.601, O24.701 or O24.801 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Hypertension (pre-existing/gestational) (ICD-10-CA: O10.001, O10.101, O10.201, O10.301, O10.401, O10.901, O13.001 or O16.001 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Pre-eclampsia and eclampsia (ICD-10-CA: O11.001, O14.101, O14.201, O14.901, O15.001 or O15.101 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Venous complications (includes deep/central venous thrombosis) (ICD-10-CA: O22.301, O22.501, O22.801 or O22.901 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Liver disorders (ICD-10-CA: O26.601 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Other specified pregnancy-related conditions (includes specified renal diseases) (ICD-10-CA: O26.801 coded as (1) or [(M), (W), (X) or (Y) but not (2)]
   - Complications of anaesthesia during pregnancy (ICD-10-CA: O29.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Abnormality of pelvic organs (includes uterine scar from previous surgery) (ICD-10-CA: O34.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Fetal abnormality and damage (ICD-10-CA: O35.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Other fetal problems (includes immunisation, alloimmunization, fetal asphyxia, intrauterine growth restriction, excessive fetal growth) (ICD-10-CA: O36.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Polyhydramnios (ICD-10-CA: O40.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Oligohydramnios and other amniotic fluid and membrane disorders (ICD-10-CA: O41.0-, O41.8- or O41.9- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Placental disorders (ICD-10-CA: O43.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Placenta previa (ICD-10-CA: O44.001 or O44.101 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Placental abruption (ICD-10-CA: O45.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Antepartum hemorrhage (ICD-10-CA: O46.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Rupture of uterus (ICD-10-CA: O71.0- or O71.1- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Obstetric embolism (ICD-10-CA: O88.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Herpes (ICD-10-CA: O98.501 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - HIV (ICD-10-CA: O98.701 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]
   - Other maternal diseases (includes morbid obesity, cancer, hematology disorders, cardiovascular disorders, musculoskeletal disorders, neurological disorders, cystic fibrosis, Crohn's disease, lupus, rheumatoid arthritis, specified renal diseases) (ICD-10-CA: O99.- with sixth digit of 1 coded as type (1) or [(M), (W), (X) or (Y) but not (2)]

11. Women with unknown age

12. Records with invalid discharge date
13. Termination of Pregnancy records (codes may be recorded in any position; procedures not coded as “out of hospital” or “abandoned after onset” [Intervention Status Attribute = A or OOH Indicator Flag = Y]):


OR

ICD-10-CA: O04.-

Numerator

Description:
Cases within the denominator where a C-section delivery was recorded

Inclusions:
1. Cases within the denominator with a C-section delivery that was not performed out of hospital (CCI: 5.MD.60.^ and OOH Indicator Flag does not equal Y)

Background, Interpretation and Benchmarks

In Canada, C-sections have increased 30% since 2000-2001; they accounted for 28% of all deliveries in 2015-2016, which is similar to the rate in other developed countries. C-sections are usually performed in order to avoid maternal or fetal injury or death in a complicated birth. However, compared with vaginal deliveries, C-sections are associated with increased risks of maternal morbidity and higher hospital costs. The Society of Obstetricians and Gynaecologists of Canada (SOGC) promotes normal childbirth, without technological interventions, when possible.

In order to assess appropriateness of care, this indicator focuses on a population of low-risk pregnancies for which a vaginal birth is expected. The SOGC recommends using the Modified Robson classification system to facilitate appropriate comparisons of C-section rates among homogeneous populations; this indicator is limited to Modified Robson Group 1 (nullipara, singleton, cephalic, ≥ 37 weeks, spontaneous labour). Additionally, post-term births and those with maternal and fetal health conditions and other complications of pregnancy are excluded. With the assistance of SOGC clinical experts, the exclusion criteria were largely aligned with those outlined in the Quality-Based Procedures Clinical Handbook for Low Risk Birth.

Variations in this indicator may reflect differences in clinical practice. This measure is intended to be used as a flag to identify areas for improvement and to help reduce C-section rates. Although the indicator is limited to a very low-risk population, efforts to decrease the rate of C-sections in this population may lead to an overall decrease in C-section rates.

Interpretation

A lower rate for this indicator is desirable

HSP Framework Dimension

Health System Outputs: Appropriate and effective

Areas of Need

Getting Better

Targets/Benchmarks

Not applicable

References


