### Low-Risk Caesarean Sections

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<th>Name</th>
<th>Low-Risk Caesarean Sections</th>
</tr>
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<tr>
<td>Short/Other Names</td>
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<tr>
<td>Description</td>
<td>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.</td>
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<td>Interpretation</td>
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**Identifying Information**

- **Name**: Low-Risk Caesarean Sections
- **Short/Other Names**: Not applicable

**Indicator Description and Calculation**

**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.

The indicator is expressed as the rate of C-sections per 100 deliveries, where a singleton term cephalic delivery was recorded among low-risk nulliparous women in spontaneous labour.

**Calculation**

Risk-adjusted rate = \( \frac{\text{Observed cases}}{\text{Expected cases}} \times \text{Canadian average} \)

**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 (S))
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, O14.001, 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 isoimmunisation, 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.

Health System Outputs: Appropriate and effective
Areas of Need
Getting Better
Targets / Benchmarks
Not applicable

References

Availability of Data Sources and Results

Data Sources
DAD

Type of Year:
Fiscal

First Available Year:
2015

Last Available Year:
2017

Geographic Coverage
All provinces/territories except Quebec

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

Result Updates
Update Frequency
Every year

Web Tool:
Your Health System: In Depth

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

Updates
Not applicable

Quality Statement
<table>
<thead>
<tr>
<th>Caveats and Limitations</th>
<th>Results are not calculated for Quebec, since parity information is not available for this province.</th>
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<tbody>
<tr>
<td>Trending Issues</td>
<td>Prior to 2015-2016, parity information was not available for all provinces and territories submitting to the Discharge Abstract Database</td>
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<tr>
<td>Comments</td>
<td>Not applicable</td>
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