QUALITY STANDARDS

Vaginal Birth After Caesarean

Technical Specifications

2024 UPDATE

Provincial Council for Maternal and Child Health

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Ontario Health

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How to Use the Technical Specifications

This document provides technical specifications to support the implementation of the *Vaginal Birth After Caesarean* quality standard. The primary goals are to improve access to safe vaginal birth after Caesarean (VBAC) delivery and promote informed shared decision-making. Most people who have a Caesarean birth can safely have a VBAC; however, Ontario's VBAC rates have decreased over time. Recognizing this, Ontario Health released the quality standard to identify opportunities that have a high potential for quality improvement.

This document is intended for use by those looking to implement the *Vaginal Birth After Caesarean* quality standard, including clinicians working in regional or local roles.

This document has dedicated sections to describe the following:

- Indicators that can be used to measure progress toward the overarching goals of the quality standard as a whole
- Statement-specific indicators that can be used to measure improvement for each quality statement within the quality standard

Indicators may be provincially or locally measurable:

- Provincially measurable indicators: how we can monitor the progress being made to improve care at the provincial level using provincial data sources
- Locally measurable indicators: what you can do to assess the quality of care that you provide locally

The following tools and resources are provided as suggestions to assist in the implementation of the *Vaginal Birth After Caesarean* quality standard:

- The *Getting Started Guide* outlines the process for using quality standards as a resource to deliver high-quality care; it contains evidence-based approaches, as well as useful tools and templates to implement change ideas at the practice level
- Our Spotlight Report highlights examples from the field to help you understand what successful quality standard implementation looks like
- The Better Outcomes Registry and Network (BORN) Information System houses data on every pregnancy, birth, and child in Ontario, and also includes a summary of information related to VBAC with an accompanying VBAC Quality Standard Report for hospitals to monitor their progress related to VBAC

Measurement to Support Improvement

This document accompanies Ontario Health's *Vaginal Birth After Caesarean* quality standard. The Vaginal Birth After Caesarean Quality Standard Advisory Committee identified 5 overarching indicators to monitor the progress being made to improve care for people in Ontario who have had a Caesarean birth and are planning their next birth. All overarching indicators are provincially measurable (well-defined or validated data sources are available).

The *Vaginal Birth After Caesarean* quality standard also includes statement-specific indicators that can be used to measure improvement for each quality statement in the quality standard.

Additional information on measuring indicators can be found in the *Quality Standards Measurement Guide*. The measurement guide also includes descriptions of data sources that can be used to support quality standard indicators that are measured consistently across health care teams, health care sectors, and the province.

Equity Considerations

Ontario Health is committed to promoting health equity and reducing disparities and encourages collecting data and measuring indicators using equity stratifications that are relevant and appropriate for your population, such as patient socioeconomic and demographic characteristics. These may include age, income, region or geography, education, language, race and ethnicity, gender, and sex. Please refer to Appendix 3, Values and Guiding Principles, in the quality standard for additional equity considerations.

Quality Standard Scope

This quality standard addresses care for people who have had a Caesarean birth and are planning their next birth. The primary goals of this quality standard are to improve access to safe vaginal birth after Caesarean delivery and promote informed shared decision-making. Achieving these objectives is also expected to increase Ontario's rate of planned vaginal births after Caesarean over time.

The scope of this quality standard extends from postpartum counselling after a Caesarean birth through antenatal and intrapartum care during the next pregnancy and birth. The guidance provided in this quality standard on pregnancy care focuses on people with a previous Caesarean birth who are pregnant with 1 baby that is head-down and at full term (> 37 weeks), who are receiving pregnancy care from any type of clinician. People with more than 1 previous Caesarean birth are included in the scope; however, research evidence is limited for this population. Careful individualized assessment and clinical judgment, as part of shared decision-making, are essential in this situation.

The quality standard includes 9 quality statements. They address areas identified by the VBAC Quality Standard Advisory Committee as having high potential for improving the quality of care in Ontario for people who have had a Caesarean birth and are planning their next birth.

Cohort Identification

For measurement at the provincial level, people who have had a Caesarean birth and are planning their next birth can be identified using administrative data. For local measurement, they can be identified using local data sources (such as electronic medical records or clinical patient records).

Cohort Identification Using Administrative Data

To identify people who have had a Caesarean and are eligible for a VBAC for the provincially measurable indicators in this quality standard, information from Better Outcomes Registry and Network (BORN) Ontario can be used. The BORN Information System includes data on pregnancy, childbirth, and neonatal outcomes. Additional information from the Discharge Abstract Database (DAD) from the Canadian Institute for Health Information (CIHI) can be used in conjunction with BORN data to supplement calculations for 2 of the indicators. Please refer to the measurement guide for more information on these databases.

The focus of this quality standard is on the cohort of multiparous pregnant people eligible for VBAC – people with 1 previous Caesarean birth and a subsequent live birth and meeting the inclusion/exclusion criteria for a VBAC. This cohort can be identified through the BORN Information System based on the following:

INCLUSIONS

- Pregnant people in Robson group 5, indicating the following[1]:
  - Multiparous
  - Have 1 previous Caesarean section
  - Singleton gestation with cephalic presentation
  - Gestational age greater than or equal to 37 weeks
- Births occurring in any setting (home, hospital, or birth centre)

EXCLUSIONS

- Previous classical or inverted “T” uterine scar
- Previous hysterotomy or myomectomy entering the uterine cavity
- Previous uterine rupture
- Placental disorders, including placenta accreta, placenta increta, placenta percreta, and placenta previa
- Pregnant individuals with “fetal anomaly,” “malposition/malpresentation” or “other obstetrical complication” as an indication for Caesarean section

Note: The cohort for overarching indicators for this quality standard is aligned to that considered to be within the scope of the quality standard – people with 1 previous Caesarean birth and a subsequent live birth. The methodology for the VBAC indicators defined within the BORN Information

System is in transition and may shift to capture people with 1 previous Caesarean birth and a subsequent live *or stillborn* birth.

SOURCES

1. WHO Human Reproduction Programme. WHO statement on Caesarean section rates [Internet]. Geneva: World Health Organization; 2015 [cited 2024 Jul]. Available from: https://iris.who.int/bitstream/handle/10665/161442/WHO_RHR_15.02_eng.pdf?sequence=1

Overarching Indicators That Can Be Measured Using Provincial Data

Indicator 1: Percentage of eligible pregnant people who plan a vaginal birth after Caesarean

DESCRIPTION

Indicator name: Percentage of eligible pregnant people who plan a vaginal birth after Caesarean

Directionality: Higher is better

Measurability: Measurable at the provincial level

Dimensions of quality: Effective, patient-centred

Quality statement alignment:

- Quality statements 1 to 5

CALCULATION

Denominator

Number of pregnant people eligible for VBAC (see the Cohort Identification section)

Numerator

Number of pregnant people who planned a vaginal delivery

Method

Numerator ÷ Denominator × 100

Data Source

Better Outcomes Research Network (BORN)

LIMITATIONS

There may be a lag before data from the BORN Information System become available, and data may be incomplete for recent time periods.

COMMENTS

BORN Ontario also tracks the percentage of people who attempted VBAC, because not all individuals who plan a VBAC will attempt a VBAC.

Indicator 2: Percentage of eligible pregnant people who have a successful vaginal birth after Caesarean

DESCRIPTION

Indicator name: Percentage of eligible pregnant people who have a successful vaginal birth after Caesarean

Directionality: Higher is better

Measurability: Measurable at the provincial level

Dimension of quality: Effective

Quality statement alignment:

- All quality statements

CALCULATION

Denominator

Number of pregnant people eligible for VBAC (see the Cohort Identification section)

Numerator

Number of pregnant people who successfully delivered vaginally (live birth)

Inclusions

Pregnant people who were eligible for VBAC and had a vaginal birth

Method

Numerator ÷ Denominator × 100

Data Source

BORN

LIMITATIONS

There may be a lag before data from the BORN Information System become available, and data may be incomplete for recent time periods.

COMMENTS

BORN Ontario also tracks the percentage of people who had a successful VBAC out of those who attempted VBAC.

Indicator 3: Percentage of eligible pregnant people who plan an elective repeat Caesarean section

DESCRIPTION

Indicator name: Percentage of eligible pregnant people who plan an elective repeat Caesarean section

Directionality: Lower is better

Measurability: Measurable at the provincial level

Dimensions of quality: Effective, patient-centred

Quality statement alignment:

- Quality statements 1 to 5

CALCULATION

Denominator

Number of pregnant people eligible for VBAC (see the Cohort Identification section)

Numerator

Number of pregnant people who planned an elective repeat Caesarean section

Method

Numerator ÷ Denominator × 100

Data Source

BORN

LIMITATIONS

There may be a lag before data from the BORN Information System become available, and data may be incomplete for recent time periods.

Indicator 4: Rate of uterine rupture per 1,000 planned vaginal births after Caesarean

DESCRIPTION

Indicator name: Rate of uterine rupture per 1,000 planned VBACs

Directionality: Lower is better

Measurability: Measurable at the provincial level

Dimension of quality: Safe

Quality statement alignment:

- Quality statement 9

CALCULATION

Denominator

Number of pregnant people who planned vaginal delivery (includes pregnant people who were eligible for VBAC, at some point in their pregnancy planned to have a VBAC, and ended up having either a vaginal birth or an unplanned Caesarean section)

Numerator

Number of pregnant people who planned VBAC and who had a uterine rupture

Inclusions

Number of pregnant people who planned VBAC and met the following conditions:

- Labour and birth complication = uterine rupture
- All indicators for Caesarean section = maternal/uterine rupture

Note that uterine dehiscence is excluded based on BORN’s definition of uterine rupture.

Method

Numerator ÷ Denominator × 1,000

Data Source

BORN

LIMITATIONS

There may be a lag before data from the BORN Information System become available, and data may be incomplete for recent time periods.

COMMENTS

Measuring rates of uterine rupture is an important balancing measure to track, given that it is a rare but serious risk, in relation to VBAC.

Uterine rupture can vary in severity, and reported rates of uterine rupture and associated morbidity are strongly influenced by the definition of uterine rupture (such as whether a partial separation of the Caesarean scar, known as *dehiscence*, is included and how it is defined).[1] BORN does not include uterine dehiscence in its definition of uterine rupture for indicators.

This indicator is calculated based on "planned" VBACs to reflect the effects of a person's intention for VBAC, although the indicator can also be calculated based on "attempted" VBACs.

SOURCES

1. Association of Ontario Midwives, Gure F, MacDonald T, Minichiello A. Clinical practice guideline no. 14: management of vaginal birth after previous low-segment Caesarean section [Internet]. Toronto (ON): The Organization; 2021 [cited 2024 Apr]. Available from: https://www.ontariomidwives.ca/sites/default/files/2021-06/CPG-Vaginal-birth-after-caesaean-section-2021-PUB.pdf

Indicator 5: Percentage of neonates who remained in neonatal intensive care for more than 4 hours among infants born to people who planned vaginal birth after Caesarean and among infants born to people who planned elective repeat Caesarean section

DESCRIPTION

Indicator name: Percentage of neonates who remained in neonatal intensive care for more than 4 hours:

- 5a: Among infants born to people who planned VBAC
- 5b: Among infants born to people who planned elective repeat Caesarean section

Directionality: Lower is better (for both 5a and 5b)

Measurability: Measurable at the provincial level

Dimension of quality: Safe

Quality statement alignment:

- All quality statements

CALCULATION

Denominator

- 5a: Number of pregnant people classified as being in Robson group 5 who planned vaginal delivery, regardless of ultimate mode of birth (includes pregnant people who were eligible for VBAC and had vaginal birth or unplanned Caesarean section)
- 5b: Number of pregnant people classified as being in Robson group 5 who planned elective repeat Caesarean section, regardless of ultimate mode of birth (includes pregnant people who were eligible for VBAC and had Caesarean section or who planned Caesarean section)

Numerator

- 5a: Number of neonates whose first neonatal intensive care unit (NICU) length of stay was more than 4 hours, born to people who planned VBAC included in the denominator
- 5b: Number of neonates whose first NICU length of stay was more than 4 hours, born to people who planned elective repeat Caesarean section included in the denominator

Method

Numerator ÷ Denominator × 100

Data Source

BORN, supplemented with data from the Discharge Abstract Database (DAD) for the timeframe (number of hours) in the NICU

LIMITATIONS

There may be a lag before data from the BORN Information System become available, and data may be incomplete for recent time periods. An additional lag may be present when linking the BORN Information System data with those from CIHI databases, such as DAD, for recent time periods.

COMMENTS

The *neonatal period* is defined as day 0 to day 27 after being born.

The aim would be to see a decrease over time in neonates requiring stays more than 4 hours in the NICU, irrespective of VBAC or elective Caesarean birth took place. Monitoring the difference in NICU use can be a proxy to understand neonatal morbidity, and the comparison between these 2 groups can help inform future risk/benefit analyses.

Indicator 6: Rate of neonatal morbidity and mortality among infants born to people who planned vaginal birth after Caesarean and among infants born to people who planned elective repeat Caesarean section

DESCRIPTION

Indicator name: Rate of neonatal morbidity and mortality:

- 6a: Among infants born to people who planned VBAC
- 6b: Among infants born to people who planned an elective repeat Caesarean section

Directionality: Lower is better (for both 6a and 6b)

Measurability: Measurable at the provincial level

Dimension of quality: Safe

Quality statement alignment:

- All quality statements

CALCULATION

Denominator

- 6a: Number of neonates born to people classified as being in Robson group 5 who planned vaginal delivery, regardless of ultimate mode of birth (includes neonates born to people eligible for VBAC who had vaginal birth or unplanned Caesarean section)
- 6b: Number of neonates born to people who planned elective repeat Caesarean section, regardless of ultimate mode of birth (includes neonates born to people eligible for VBAC who had Caesarean section or who planned Caesarean section)

Numerator

- 6a: Number of neonates who died, had respiratory problems, or had seizures born to people who planned VBAC included in the denominator
- 6b: Number of neonates who died, had respiratory problems, or had seizures born to people who planned elective repeat Caesarean section included in the denominator

Inclusions

- Neonates who met any of the following conditions:
  - Neonatal death
  - Seizure

- Newborn resuscitation (first 30 minutes after being born only) including the following interventions:
  - Free flow oxygen (FFO_2)
  - Continuous positive airway pressure (CPAP) + air
  - CPAP + oxygen (O_2)
  - Positive pressure ventilation (PPV) + air
  - PPV + O_2
  - Laryngeal mask airway (LMA)
  - Intubation for tracheal suction
  - Intubation for PPV
  - Chest compression
  - Epinephrine
  - Volume expander
  - CPAP
  - PPV
  - Unknown resuscitation
- Any mechanical ventilation

Exclusions

- Neonates with congenital anomalies

Method

Numerator ÷ Denominator × 100

Data Sources

BORN, supplemented with data from the Discharge Abstract Database (DAD) for additional details on neonatal morbidity and mortality.

LIMITATIONS

There may be a lag before data from the BORN Information System become available, and data may be incomplete for recent time periods.

COMMENTS

The *neonatal period* is defined as day 0 to day 27 after being born.

Statement-Specific Indicators

The *Vaginal Birth After Caesarean* quality standard includes statement-specific indicators that are provided as examples; you may wish to create your own quality improvement indicators based on the needs of your population. We recommend that you identify areas to focus on in the quality standard and then use 1 or more of the associated indicators to guide and evaluate your quality improvement efforts.

Quality Statement 1: Access to Vaginal Birth After Caesarean

Local availability of facilities that have policies supportive of VBAC

- Description: availability of facilities (e.g. hospitals, midwifery clinics, physician offices, and other prenatal care settings) that have policies that are supportive of VBAC in the region or other setting of interest
- Data source: local data collection

Quality Statement 2: Discussion After Caesarean Birth

Percentage of people who have had a Caesarean birth and who have a discussion with their physician or midwife about the reasons for their Caesarean birth and their options for future births at discharge

- Denominator: number of people who have had a Caesarean birth
- Numerator: number of people in the denominator who have a discussion with their physician or midwife about the reasons for their Caesarean birth and their options for future births at discharge
- Data source: local data collection

Percentage of people who have had a Caesarean birth and who have a discussion with their physician or midwife about the reasons for their Caesarean birth and their options for future births at the 6-week postnatal visit

- Denominator: number of people who have had a Caesarean birth
- Numerator: number of people in the denominator who have a discussion with their physician or midwife about the reasons for their Caesarean birth and their options for future births at the 6-week postnatal visit
- Data source: local data collection

Percentage of people who have had a Caesarean birth and who receive written information after a discussion with their physician or midwife about the reasons for their Caesarean birth and their options for future births at discharge and at the 6-week postnatal visit

- Denominator: number of people who have had a Caesarean birth and who have a discussion with their physician or midwife about the reasons for their Caesarean birth and their options for future births at discharge and at the 6-week postnatal visit
- Numerator: number of people in the denominator who receive written information about the reasons for their Caesarean birth and their options for future births at discharge and at the 6-week postnatal visit
- Data source: local data collection

Quality Statement 3: Shared Decision-Making

Percentage of pregnant people who have had a previous Caesarean birth and who have a documented discussion with their physician or midwife about their values and preferences, the benefits and potential harms of planned VBAC, and the benefits and potential harms of elective repeat Caesarean section

- Denominator: number of pregnant people who have had a previous Caesarean birth
- Numerator: number of people in the denominator who have a documented discussion with their physician or midwife about their values and preferences, the benefits and potential harms of planned VBAC, and the benefits and potential harms of elective repeat Caesarean section
- Data source: local data collection

Percentage of pregnant people who have had a previous Caesarean birth and whose planned mode of birth is documented in their clinical chart

- Denominator: number of pregnant people who have had a previous Caesarean birth
- Numerator: number of people in the denominator whose planned mode of birth is documented in their clinical chart
- Data source: Better Outcomes Registry and Network or local data collection

Quality Statement 4: Previous Vaginal Birth

Percentage of pregnant people who have had a previous Caesarean birth and a previous vaginal birth, and who are planning a VBAC for their current pregnancy

- Denominator: number of pregnant people who have had a previous Caesarean birth and a previous vaginal birth
- Numerator: number of people in the denominator who are planning a VBAC for their current pregnancy
- Data source: Better Outcomes Registry and Network

Quality Statement 5: Operative Reports and Incision Type

Percentage of pregnant people who have had a previous Caesarean birth whose physician or midwife makes a documented attempt to obtain the operative report from the previous Caesarean birth

- Denominator: number of pregnant people who have had a previous Caesarean birth
- Numerator: number of people in the denominator whose physician or midwife makes a documented attempt to obtain the operative report from the previous Caesarean birth
- Data source: local data collection

Percentage of pregnant people who have had a previous Caesarean birth with an unknown type of uterine incision and have a documented individualized assessment to determine whether VBAC is feasible

- Denominator: number of pregnant people who have had a previous Caesarean birth with an unknown type of uterine incision
- Numerator: number of people in the denominator who have a documented individualized assessment to determine whether VBAC is feasible
- Data source: local data collection

Quality Statement 6: Timely Access to Caesarean Birth

Percentage of pregnant people planning a VBAC who have a documented discussion about the resources available and not available at their planned place of birth, including obstetric, nursing, anesthesiology, neonatal care, and the ability to provide timely access to Caesarean birth

- Denominator: number of pregnant people planning a VBAC
- Numerator: number of people in the denominator who have a documented discussion about the resources available and not available at their planned place of birth, including obstetric, nursing, anesthesiology, neonatal care, and the ability to provide timely access to Caesarean birth
- Data source: local data collection

Quality Statement 7: Unplanned Labour

Percentage of pregnant people planning an elective repeat Caesarean section who have a documented discussion that includes shared decision-making with their physician or midwife during antenatal care about the feasibility of VBAC in the event of unplanned labour

- Denominator: number of pregnant people planning an elective repeat Caesarean section
- Numerator: number of people in the denominator who have a documented discussion that includes shared decision-making with their physician or midwife during antenatal care about the feasibility of VBAC in the event of unplanned labour
- Data source: local data collection

Percentage of pregnant people planning an elective repeat Caesarean section who experience unplanned labour and have a documented discussion that includes shared decision-making with their physician or midwife about the feasibility of VBAC

- Denominator: number of pregnant people planning an elective repeat Caesarean section who experience unplanned labour
- Numerator: number of people in the denominator who have a documented discussion that includes shared decision-making with their physician or midwife about the feasibility of VBAC
- Data source: local data collection

Quality Statement 8: Induction and Augmentation of Labour

Percentage of pregnant people who attempt a vaginal birth after Caesarean and present with documented clinical indications for labour induction who receive labour induction

- Denominator: number of pregnant people who attempt a vaginal birth after Caesarean and present with documented clinical indications for labour induction
- Numerator: number of people in the denominator who receive labour induction
- Data source: local data collection

Percentage of pregnant people who attempt a vaginal birth after Caesarean and present with documented clinical indications for labour augmentation who receive labour augmentation

- Denominator: number of pregnant people who attempt a vaginal birth after Caesarean and present with documented clinical indications for labour augmentation
- Numerator: number of people in the denominator who receive labour augmentation
- Data source: local data collection

Quality Statement 9: Signs and Symptoms of Uterine Rupture

Percentage of pregnant people who attempt a vaginal birth after Caesarean who are monitored closely for signs and symptoms of uterine rupture through continuous electronic fetal monitoring

- Denominator: number of pregnant people who attempt a vaginal birth after Caesarean
- Numerator: number of people in the denominator who are monitored closely for signs and symptoms of uterine rupture through continuous electronic fetal monitoring
- Data source: local data collection

Rate of uterine rupture in pregnant people who plan a vaginal birth after Caesarean

- Denominator: number of pregnant people who plan a vaginal birth after Caesarean
- Numerator: number of people in the denominator who have a uterine rupture
- Data source: Better Outcomes Registry and Network
- Notes: More details for this statement specific indicator can be found in the overarching indicator 4: rate of uterine rupture per 1,000 planned vaginal births after Caesarean

Looking for More Information?

Visit hqontario.ca or contact us at QualityStandards@OntarioHealth.ca if you have any questions or feedback about this quality standard.

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