

Facility-Level Maternal and Neonatal Indicators

Frequently Asked Questions (FAQ) for Health Care Providers

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GENERAL

1. What is Perinatal Services BC's role in publishing birth information?

Perinatal Services BC (PSBC) provides leadership, support, and coordination for the strategic planning of perinatal services in BC in collaboration with the Ministry of Health, health authorities, and other key stakeholders. PSBC is the central source for evidence-based perinatal information.

PSBC collects comprehensive perinatal information through the BC Perinatal Data Registry, a quality-controlled database containing clinical information on all births collected from acute care facilities and deliveries at home attended by registered health care providers. As the province's leader in perinatal information, PSBC publishes data related to maternity care on its [website](#).

2. What information does PSBC release publicly?

PSBC publishes hospital data for six maternal and neonatal indicators that were selected based on widespread relevance and validity of data from facilities and are measurable, clinically meaningful, and evidence-based. Indicator data is updated on the website annually in the spring.

Indicator	Short Title
1. Vaginal delivery rate for eligible nulliparous women aged 20 to 39 years with a singleton vertex pregnancy at term	Vaginal Delivery for Eligible First-Time Mothers
2. Early term repeat cesarean delivery without medical indication	Early Repeat Cesarean Delivery
3. Post-date induction before 41+0 weeks gestation for women under 40 years of age at time of delivery	Post-Date Inductions Done Early
4. Exclusive use of intermittent auscultation in labouring women without risk factors who delivered vaginally	Only Intermittent Auscultation in Low-Risk Deliveries
5. Healthy term singletons receiving exclusive breast milk from birth to discharge	Healthy Babies Fed Only Breast Milk
6. Attempted vaginal birth rate for eligible parous women under 40 years of age with a history of cesarean and a singleton vertex pregnancy at term	Attempted VBAC for Eligible Women

3. How did PSBC choose these indicators?

The indicators were selected based on data that are: 1) available only through the BC Perinatal Data Registry and 2) different from those reported by the Canadian Institute for Health Information (CIHI). The indicators also had to be measurable, clinically meaningful, evidence-based, and have the ability to be changed at the facility level.

4. Why does Perinatal Services BC release these facility-specific indicators?

As the leader in province-wide perinatal information, PSBC is an important source of accurate information for expectant mothers and their families and health care providers. With these indicators, we can offer more information on local health facilities and the maternity health care system in BC. This enables expectant mothers and their families to be better informed about the health services they receive and helps them prepare for their birth experience. Health care teams can use this information for quality improvement and safety initiatives to strive for the best in perinatal care.

NEW THIS YEAR

PSBC has made the following changes to the facility-level indicators for the 2017 release (data from April 1, 2011 to March 31, 2016):

- retired the indicator *Vaginal Delivery for First-Time Mothers* because the indicator had previously included women with medical contraindications to vaginal delivery or compelling clinical reasons for a caesarean delivery; the current indicator (*Vaginal Delivery for Eligible First-Time Mothers*) better aligns with the exercise of good clinical judgement;
- introduced the indicator *Attempted VBAC for Eligible Women* to align with the Ministry of Health's Women's Health Strategy and the provincial normalizing birth initiative to increase vaginal delivery rates;
- updated methodology to report stabilized rates rather than crude rates (see [Question 5](#));
- reported annual rates for all facilities providing planned obstetric services (see [Question 5](#));
- discontinued caution flag for rates with a denominator between 10 and 49;
- changed suppression rules: suppressed indicators about mode of delivery for facilities without surgical capacity; suppressed indicators with zero denominator cases for all facilities (see [Questions 10](#) and [11](#));
- identified target rates for all indicators (see [Question 6](#)); and
- changed the meaning of significance symbols to reflect difference from target rate rather than difference from BC rate (see [Question 8](#)).

DATA PRESENTATION

5. How are the indicators calculated?

Each indicator is calculated based on data from five fiscal years: 2011/12, 2012/13, 2013/14, 2014/15, and 2015/16 (i.e. April 1, 2011 to March 31, 2016). Complete details are found in the Technical Documentation.

Historically, PSBC released annual rates for larger facilities but pooled rates for facilities in the small peer group (i.e. three years of data combined into one summary rate). This enabled PSBC to share information for all sites providing obstetric services, even those with low volume, while respecting privacy requirements. Combining several years of data for smaller sites also removed some of the year-to-year variation that may be due to chance.

To overcome this challenge, PSBC has modified its methodology and will now publicly release stabilized rates instead of crude rates. Stabilization is a methodology that helps to smooth out the effects of chance variation due to small numbers of deliveries at some sites. It is achieved by using general linear mixed models (PSBC uses PROC GLIMMIX in SAS 9.4). Stabilized facility rates are, on the whole, closer to the BC crude rate than the facility crude rate. Stabilization will tend to have the biggest impact on sites with lower volumes. As a result of this shift in methodology, PSBC is able to release annual data (rates and 95% confidence intervals) for all sites providing planned obstetric services, not just those with at least 250 deliveries. Removal of random variation in this way is also more appropriate for comparison to target rates. More information is available in the Technical Documentation.

6. How were the targets identified?

PSBC has defined targets for 2020/21 as a 10% improvement on the BC rate in 2015/16 data year. The targets for 2020/21 are as follows:

Indicator	BC Crude Rate 2015/16	Target Rate 2020/21
1. Vaginal Delivery for Eligible First-Time Mothers	71.4%	78.5%
2. Early Repeat Cesarean Delivery	38.3%	34.4%
3. Post-Date Inductions Done Early	0.8%	0.7%
4. Only Intermittent Auscultation in Low-Risk Deliveries	74.3%	81.7%
5. Healthy Babies Fed Only Breast Milk	77.6%	85.4%
6. Attempted VBAC for Eligible Women	33.2%	36.5%

7. How did PSBC identify which sites are significantly different from the target rate?

In previous releases of the facility indicators, significance was defined relative to the crude BC rate: if a facility's 95% confidence interval did not include the BC rate, it was significantly different from the provincial average.

Beginning with the 2015/16 data release, significance is assessed relative to the target rate rather than the provincial rate. We calculated an 80% confidence limit around the target rate (1.28 standard deviations above and 1.28 standard deviations below). These confidence limits make a funnel shape—that is, the confidence limits are wider when there are fewer cases in the denominator (as occurs at smaller sites) and narrower when there are more cases in the denominator (as occurs at larger sites). Facilities whose stabilized rates fall within the funnel are considered to be not significantly different from the target rate (i.e. the facility stabilized rate is within 1.28 standard deviations of the target rate). Facilities whose stabilized rates are more than 1.28 standard deviations away from the target rate are considered to be significantly different from the target rate.

PSBC identifies the difference between a facility's stabilized rate and the target rate with the following formula:

$$\frac{p_{ij} - \hat{p}}{\sqrt{\frac{\hat{p}(1 - \hat{p})}{n_{ij}}}}$$

where p_{ij} is the stabilized rate for hospital i in year j , n_{ij} is the denominator for hospital i in year j for the indicator, and \hat{p} is the target rate for the indicator.

For example:

The target rate for an indicator is 85%. Hospital A has a stabilized rate of 75%, based on 500 patients. This facility's stabilized rate is 6.26 standard deviations below the target rate ($6.26 = (0.75 - 0.85) / \sqrt{(0.85 * 0.15) / 500}$) and thus is significantly below the target.

If Hospital B has the same stabilized rate but based on only 20 patients, then the facility's stabilized rate would be 1.25 standard deviations below the target rate ($1.25 = (0.75 - 0.85) / \sqrt{((0.85 * 0.15) / 20)}$), which is not significantly different from the target rate.

8. How are the data validated to ensure accuracy?

Indicators were generated using data received by PSBC through the BC Perinatal Data Registry as of March 31, 2017. After the data were compiled, each health authority received data for its facilities to ensure the data were accurate. Health authorities were asked to report any issues, errors, or corrections to PSBC.

9. How are the data presented?

The stabilized rate for each facility providing planned obstetric services in BC and for each of the six indicators is presented along with the confidence interval for the stabilized rate.

Stabilized rates for each facility are presented alongside the crude peer group rate (for information on peer groups, see [Question 12](#)) and the crude provincial rate for the same indicator. If the rate for a facility is significantly higher or lower than the target rate, this is indicated (see [Question 7](#)).

10. Which facilities will have their data released?

All sites that provided planned obstetrical services for the entire reporting period (April 1, 2011 to March 31, 2016) will have some data released (see [Question 13](#)). The use of stabilized rates has enabled PSBC to report annual rates for all sites and remove suppression/caution flags over small counts. If no deliveries at a given site met the inclusion criteria for an indicator in a particular year, these rates are noted as “§ Not reportable – no cases met inclusion criteria.”

11. If a facility does not have surgical capacity, how will vaginal and cesarean delivery rates be reported?

Beginning with the 2015/16 data release, indicators about mode of delivery are not reported for sites without surgical capacity. These rates are noted as “¶ Not applicable – site does not provide surgical services.” The facility contextual information (see [Question 15](#)) will indicate that the facility did not perform any cesarean deliveries in the most recent year.

12. How were the peer groups chosen?

PSBC grouped the 50 facilities providing planned obstetrical services for the entire reporting period (April 1, 2011 to March 31, 2016) into four groups (Small, Medium, Large, and Extra Large—see below) based on the average number of deliveries at each facility in the two most recent fiscal years (2014/15 and 2015/16):

- Small Peer Group = facilities with <250 deliveries per year
- Medium Peer Group = facilities with 250-999 deliveries per year
- Large Peer Group = facilities with 1,000-2,499 deliveries per year
- Extra Large Peer Group = facilities with 2,500+ deliveries per year

13. Why aren't all facilities included in the peer group list?

Only sites with planned obstetrical services for the entire reporting period (April 1, 2011 to March 31, 2016) were included in the peer group listing. Data from sites that do not offer planned obstetrical services, as well as deliveries at home attended by registered health care providers, are included in the BC (provincial) rates where applicable (see [Question 14](#)).

14. Are home birth data included?

Deliveries at home that are attended by registered health care providers are included in the provincial rate for all indicators except *Early Repeat Cesarean Delivery*, as this indicator only uses data from cesarean deliveries in hospital. Consistent with a 2014/15 change in abstracting definitions for the BC Perinatal Data Registry, deliveries at home that are admitted to a hospital within 24 hours are excluded from the admitting hospital's data.

15. Is there additional information about the facilities to assist with context?

Each facility has a facility profile of summary information and statistics for each fiscal year, including location (health authority, health service delivery area, city), assigned peer group, obstetrical services offered (epidural anesthesia, cesarean delivery), as well as the number of deliveries, broken down by different categories.