

# Midwifery Report

Deliveries in BC  
2014/15



**Perinatal  
Services BC**

An agency of the Provincial  
Health Services Authority

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# Contents

	<b>Page</b>
<b>General Notes</b>	<b>v</b>
<b>Section 1: Maternal Health</b>	<b>1</b>
Deliveries by a Registered Midwife	2
Any Care Provided by a Registered Midwife	2
Parity	3
Maternal Age at Delivery	4
Antenatal Care Visits	5
Any Hypertensive Disorder in Pregnancy	6
Gestational Diabetes	6
Substance Use During Pregnancy	7
Maternal Screening Tests	8
<b>Section 2: Labour and Delivery</b>	<b>9</b>
Intended Place of Delivery	10
Intended vs. Actual Place of Delivery	10
Labour Augmentation	11
Labour Induction	11
Vaginal Delivery	12
Type of Vaginal Delivery	12
Perineal Trauma	12
Cesarean Delivery	13
Type of Cesarean Delivery	13
Robson Groups, British Columbia	14
Robson Groups, Interior Health Authority of Residence	15
Robson Groups, Fraser Health Authority of Residence	16
Robson Groups, Vancouver Coastal Health Authority of Residence	17
Robson Groups, Island Health Authority of Residence	18
Robson Groups, Northern Health Authority of Residence	19
Robson Subgroups, British Columbia	20
Previous Cesarean Delivery	21
Vaginal Birth After Cesarean (VBAC)	21
Water Birth	22
Anesthesia or Analgesia During Labour and Delivery	23
Length of Stay (Hours) for Post-Delivery Admissions	24
<b>Section 3: Newborn Health</b>	<b>25</b>
Births by a Registered Midwife	26

	<b>Page</b>
Any Care Provided by a Registered Midwife	26
Preterm Birth	27
Weight for Gestational Age	27
Type of Newborn Feeding	28
Breastfeeding Initiation	28
Neonatal Intensive Care Use (NICU) During Birth and Transfer Episode of Care	29
Length of Stay (Days) in NICU During Birth and Transfer Episode of Care	29
Low 5 Minute Apgar Score	30
<b>Definitions</b>	<b>31</b>
<b>Episodes Included in the Midwifery Report</b>	<b>36</b>
<b>Detailed Specifications for Selected Variables</b>	<b>38</b>
<b>Gestational Age Algorithm</b>	<b>45</b>

## **General Notes**

This report is based on delivery, postpartum transfer/readmission, newborn, and newborn transfer/readmission records submitted to Perinatal Services BC's British Columbia Perinatal Data Registry (BCPDR). The registry captures >99% of deliveries and births that occur in the province.

Records used to generate this report meet the following conditions:

- Mother delivery and baby newborn records must be linked. Unlinked mother delivery or newborn records are excluded (<0.2% of babies are not linked to a mother).
- Complete late terminations are excluded from all indicators; pregnancies involving selective fetal reduction are retained.
- Mother's delivery record has a discharge date between April 1, 2014 and March 31, 2015.
- Fiscal years begin on April 1 and end on March 31 of the following year. Fiscal year is based on the mother's discharge date from the delivery admission.
- Resident Health Authority was derived by linking the postal code on the mother's delivery record with the September 2014 version of BC Stats' Geocoding Self Service translation file.
- Counts between 1-4 cases are reported as <5. Statistics based on counts or numerators of 1-4 cases are not reported (NR).

### **Terms used in the Midwifery Report (see specifications on pages 36 and 37)**

#### **Delivery Admission**

- Record of care provided between admission to acute care and discharge from acute care for delivery of a baby. Woman can be discharged to home or to another hospital.  
OR
- Record of care provided by a registered midwife for deliveries at home.

#### **Maternal Admission**

- Any record of maternal care received by the BCPDR. Includes deliveries at home attended by a registered midwife, admissions to acute care for delivery, and postpartum readmissions or transfers within 42 days of delivery.

#### **Post-Delivery Admission**

- Any record of post-delivery maternal care received by the BCPDR. Includes acute care episodes that are transfers from another hospital and admissions from home, up to 42 days after delivery.

#### **Birth Admission**

- Record of care provided between baby's birth and discharge from acute care after birth. Baby can be discharged home or to another hospital.  
OR
- Record of care provided by a registered midwife for births at home.

#### **Baby Admission**

- Any record of baby care received by the BCPDR. Includes births at home attended by a registered midwife, admissions to acute care from birth, neonatal readmissions, or transfers before 28 days of age, and continuous episodes of care (never discharged to home) from birth up to one year of age.

### Post-Neonatal Admission

- Any record of post-birth baby care received by the BCPDR. Includes acute care episodes that are transfers from another hospital and admissions from home, up to 28 days after birth.

### **Common denominators used in the Midwifery Report**

#### Deliveries (Mothers)

Total number of deliveries.

- NOTE: Each pregnancy is considered as one delivery regardless of the number of babies, e.g. a twin pregnancy is one delivery.

#### Births (Babies)

Total number of births.

- NOTE: Each baby in a pregnancy is considered as one birth, e.g. a twin pregnancy includes two births.

#### Deliveries/births with Midwifery-Involved Care

Total number of deliveries with a registered midwife involved at any point in maternal or newborn care. A registered midwife may not have been the delivery provider.

#### Deliveries without Midwifery-Involved Care

Total number of deliveries without a registered midwife involved at any point in maternal or newborn care.

**PSBC Midwifery Report 2014/15**  
**Deliveries in British Columbia**

**Section 1: Maternal Health**

## Deliveries by a Registered Midwife by Health Authority of Residence

Deliveries in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Total	Per cent
Interior	931	15.1%
Fraser	1,809	10.7%
Vancouver Coastal	1,625	15.2%
Island	1,532	24.5%
Northern	216	6.4%
<b>BC</b>	<b>6,137</b>	<b>14.0%</b>

## Any Care Provided by a Registered Midwife by Health Authority of Residence

Deliveries in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Total	Per cent
Interior	1,335	21.7%
Fraser	2,778	16.4%
Vancouver Coastal	2,575	24.2%
Island	2,182	34.9%
Northern	300	8.9%
<b>BC</b>	<b>9,209</b>	<b>21.0%</b>

Definitions and specifications begin on Page 31 of this document.

Unknown, out of province, and out of country residents are included in the BC calculation. This method is applied for the entire report.



## Parity by Health Authority of Residence

Deliveries in British Columbia: April 1, 2014 - March 31, 2015

### Deliveries With Midwifery-Involved Care

Health Authority	Nulliparous	Parous
Interior	43.4%	56.6%
Fraser	44.0%	56.0%
Vancouver Coastal	60.1%	39.9%
Island	47.7%	52.3%
Northern	40.7%	59.3%
<b>BC</b>	<b>49.2%</b>	<b>50.8%</b>

### Deliveries Without Midwifery-Involved Care

Health Authority	Nulliparous	Parous
Interior	45.9%	54.1%
Fraser	43.4%	56.6%
Vancouver Coastal	51.9%	48.1%
Island	44.1%	55.9%
Northern	41.0%	59.0%
<b>BC</b>	<b>45.6%</b>	<b>54.4%</b>

[Click here for data on all deliveries in BC in Perinatal Health Report.](#)

Definitions and specifications begin on Page 31 of this document.

## Maternal Age at Delivery by Health Authority of Residence

Deliveries in British Columbia: April 1, 2014 - March 31, 2015

### Deliveries With Midwifery-Involved Care

Health Authority	<20 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40+ Years
Interior	2.0%	10.0%	30.4%	40.1%	15.5%	2.0%
Fraser	1.3%	8.0%	29.2%	42.2%	16.3%	3.1%
Vancouver Coastal	0.2%	1.9%	14.4%	46.4%	31.7%	5.4%
Island	2.0%	9.4%	26.7%	40.4%	18.3%	3.2%
Northern	NR	12.7%	36.7%	36.0%	11.0%	2.3%
<b>BC</b>	<b>1.2%</b>	<b>7.0%</b>	<b>24.9%</b>	<b>42.4%</b>	<b>20.8%</b>	<b>3.6%</b>

### Deliveries Without Midwifery-Involved Care

Health Authority	<20 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40+ Years
Interior	3.5%	16.3%	30.4%	33.2%	13.4%	3.1%
Fraser	1.5%	9.1%	27.1%	37.7%	19.9%	4.7%
Vancouver Coastal	0.8%	5.0%	20.2%	39.1%	27.2%	7.7%
Island	3.4%	13.8%	27.3%	34.5%	16.8%	4.3%
Northern	5.3%	23.8%	32.1%	26.6%	10.4%	1.9%
<b>BC</b>	<b>2.2%</b>	<b>11.0%</b>	<b>26.5%</b>	<b>36.0%</b>	<b>19.4%</b>	<b>4.9%</b>

[Click here for data on all deliveries in BC in Perinatal Health Report.](#)

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

## Antenatal Care Visits by Health Authority of Residence

Deliveries in British Columbia: April 1, 2014 - March 31, 2015

### Deliveries With Midwifery-Involved Care

Health Authority	<5 Visits	Missing Visits
Interior	4.3%	2.8%
Fraser	4.4%	8.9%
Vancouver Coastal	2.9%	12.0%
Island	4.3%	1.4%
Northern	7.0%	21.7%
<b>BC</b>	<b>4.1%</b>	<b>7.6%</b>

### Deliveries Without Midwifery-Involved Care

Health Authority	<5 Visits	Missing Visits
Interior	8.4%	5.0%
Fraser	8.1%	10.9%
Vancouver Coastal	6.9%	18.9%
Island	8.1%	2.4%
Northern	8.8%	13.1%
<b>BC</b>	<b>8.1%</b>	<b>11.3%</b>

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Definitions and specifications begin on Page 31 of this document.

## Any Hypertensive Disorder and Gestational Diabetes in Pregnancy by Health Authority of Residence

Deliveries in British Columbia: April 1, 2014 - March 31, 2015

### Deliveries With Midwifery-Involved Care

Health Authority	Any Hypertensive Disorder	Gestational Diabetes
Interior	4.2%	3.8%
Fraser	4.5%	9.0%
Vancouver Coastal	3.3%	6.1%
Island	4.1%	5.0%
Northern	3.3%	3.3%
<b>BC</b>	<b>4.0%</b>	<b>6.3%</b>

### Deliveries Without Midwifery-Involved Care

Health Authority	Any Hypertensive Disorder	Gestational Diabetes
Interior	7.2%	6.1%
Fraser	6.1%	15.8%
Vancouver Coastal	6.0%	12.8%
Island	7.1%	11.4%
Northern	4.8%	5.2%
<b>BC</b>	<b>6.2%</b>	<b>12.3%</b>

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Definitions and specifications begin on Page 31 of this document.

## Substance Use During Pregnancy by Health Authority of Residence

Deliveries in British Columbia: April 1, 2014 - March 31, 2015

### Deliveries With Midwifery-Involved Care

Health Authority	Cigarette Use	Alcohol as Risk	Binge Drinking	Other Drug Use
Interior	5.5%	0.7%	NR	4.4%
Fraser	4.9%	0.5%	NR	2.3%
Vancouver Coastal	0.8%	0.6%	NR	1.2%
Island	5.3%	0.8%	NR	3.2%
Northern	7.7%	4.3%	0.0%	3.3%
<b>BC</b>	<b>4.0%</b>	<b>0.7%</b>	<b>0.1%</b>	<b>2.5%</b>

### Deliveries Without Midwifery-Involved Care

Health Authority	Cigarette Use	Alcohol as Risk	Binge Drinking	Other Drug Use
Interior	13.6%	2.1%	0.6%	9.1%
Fraser	5.8%	0.5%	0.1%	3.8%
Vancouver Coastal	2.0%	0.4%	0.1%	1.9%
Island	12.1%	1.5%	0.5%	8.5%
Northern	15.7%	5.5%	1.5%	10.1%
<b>BC</b>	<b>7.6%</b>	<b>1.3%</b>	<b>0.4%</b>	<b>5.2%</b>

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Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

## Maternal Screening Tests by Health Authority of Residence

Deliveries in British Columbia: April 1, 2014 - March 31, 2015

### Deliveries With Midwifery-Involved Care

Health Authority	Hepatitis B Test Done	HIV Test Done	Group B Strep Test Done	Maternal Serum Screening Offered
Interior	95.1%	93.3%	92.5%	94.3%
Fraser	94.2%	92.7%	92.9%	96.2%
Vancouver Coastal	97.5%	96.9%	90.4%	96.9%
Island	96.9%	97.1%	94.3%	96.2%
Northern	91.3%	86.7%	88.0%	91.7%
<b>BC</b>	<b>95.8%</b>	<b>94.8%</b>	<b>92.3%</b>	<b>95.9%</b>

### Deliveries Without Midwifery-Involved Care

Health Authority	Hepatitis B Test Done	HIV Test Done	Group B Strep Test Done	Maternal Serum Screening Offered
Interior	93.8%	93.1%	89.6%	81.8%
Fraser	97.0%	96.0%	84.0%	87.7%
Vancouver Coastal	97.0%	96.3%	81.3%	89.5%
Island	95.2%	95.9%	88.5%	83.4%
Northern	94.8%	91.9%	81.5%	66.6%
<b>BC</b>	<b>96.1%</b>	<b>95.2%</b>	<b>84.3%</b>	<b>84.6%</b>

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Definitions and specifications begin on Page 31 of this document.

**PSBC Midwifery Report 2014/15**  
**Deliveries with Midwifery-Involved Care in British Columbia**  
**Section 2: Labour and Delivery**

## Intended Place of Delivery by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Home	Hospital
Interior	30.4%	67.1%
Fraser	13.8%	82.8%
Vancouver Coastal	19.0%	79.0%
Island	23.3%	76.1%
Northern	18.3%	80.7%
<b>BC</b>	<b>20.1%</b>	<b>77.8%</b>

## Intended vs. Actual Place of Delivery by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

		Actual Place of Delivery	
Health Authority	Intended Place of Delivery	Home	Hospital
Interior	Home	73.2%	26.8%
	Hospital	NR	99.7%
Fraser	Home	73.2%	26.8%
	Hospital	1.0%	98.9%
Vancouver Coastal	Home	75.7%	24.3%
	Hospital	1.4%	98.6%
Island	Home	72.9%	26.9%
	Hospital	0.6%	99.3%
Northern	Home	65.5%	34.5%
	Hospital	NR	99.2%
<b>BC</b>	<b>Home</b>	<b>73.6%</b>	<b>26.3%</b>
	<b>Hospital</b>	<b>0.9%</b>	<b>99.0%</b>

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

Unknown and other place of delivery are not shown for intended and actual place of delivery respectively.



## Labour Augmentation by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Per cent
Interior	32.7%
Fraser	38.3%
Vancouver Coastal	34.9%
Island	33.6%
Northern	24.0%
<b>BC</b>	<b>34.9%</b>

## Labour Induction by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Per cent
Interior	14.8%
Fraser	17.0%
Vancouver Coastal	14.0%
Island	16.9%
Northern	16.3%
<b>BC</b>	<b>15.8%</b>

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Definitions and specifications begin on Page 31 of this document.

## Vaginal Delivery by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Per cent
Interior	81.3%
Fraser	78.5%
Vancouver Coastal	80.1%
Island	79.8%
Northern	81.0%
<b>BC</b>	<b>79.7%</b>

## Type of Vaginal Delivery by Health Authority of Residence

Vaginal Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Spontaneous	Vacuum	Forceps	Forceps and Vacuum
Interior	94.7%	3.5%	1.7%	NR
Fraser	91.7%	4.7%	3.5%	NR
Vancouver Coastal	87.0%	6.0%	6.7%	0.3%
Island	93.1%	4.4%	2.2%	0.3%
Northern	95.5%	2.9%	NR	0.0%
<b>BC</b>	<b>91.3%</b>	<b>4.7%</b>	<b>3.7%</b>	<b>0.2%</b>

## Perineal Trauma by Health Authority of Residence

Vaginal Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Third or Fourth Degree Laceration	Cervical Tear	Episiotomy
Interior	3.5%	NR	5.1%
Fraser	3.7%	NR	6.2%
Vancouver Coastal	6.3%	NR	7.9%
Island	3.0%	0.3%	3.3%
Northern	3.7%	NR	4.1%
<b>BC</b>	<b>4.2%</b>	<b>0.2%</b>	<b>5.8%</b>

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Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

## Cesarean Delivery by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Per cent
Interior	18.7%
Fraser	21.5%
Vancouver Coastal	19.9%
Island	20.2%
Northern	19.0%
<b>BC</b>	<b>20.3%</b>

## Type of Cesarean Delivery by Health Authority of Residence

Cesarean Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Elective Primary	Elective Repeat	Emergency Primary	Emergency Repeat
Interior	6.0%	12.8%	65.6%	15.6%
Fraser	8.2%	11.2%	65.0%	15.6%
Vancouver Coastal	11.1%	9.0%	70.3%	9.6%
Island	10.2%	14.5%	61.0%	14.3%
Northern	8.8%	19.3%	66.7%	NR
<b>BC</b>	<b>9.2%</b>	<b>11.9%</b>	<b>65.6%</b>	<b>13.4%</b>

[Click here for data on all deliveries in BC in Perinatal Health Report.](#)

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

## Robson Groups, British Columbia

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Robson Groups	Number of Cesareans	Number of Deliveries	Relative Size	Cesarean Delivery Rate	Contribution to Cesarean Delivery Rate
1 - Nulliparous women with a single vertex pregnancy at 37+ weeks in spontaneous labour	571	3,133	34.0%	18.2%	30.6%
2 - Nulliparous women with a single vertex pregnancy at 37+ weeks with induced or no labour	366	867	9.4%	42.2%	19.6%
3 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks in spontaneous labour	43	3,147	34.2%	1.4%	2.3%
4 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks with induced or no labour	42	397	4.3%	10.6%	2.2%
5 - Parous women with a uterine scar with a single vertex pregnancy at 37+ weeks	387	746	8.1%	51.9%	20.7%
6 - Nulliparous women with a single breech pregnancy	191	205	2.2%	93.2%	10.2%
7 - Parous women with a single breech pregnancy, including women with a uterine scar	75	101	1.1%	74.3%	4.0%
8 - Women with a multifetal pregnancy, including women with a uterine scar	40	69	0.7%	58.0%	2.1%
9 - Women with a single pregnancy with a transverse or other abnormal presentation, including women with a uterine scar	24	37	0.4%	64.9%	1.3%
10 - Women with a single vertex pregnancy at <37 weeks, including women with a uterine scar	94	473	5.1%	19.9%	5.0%
99 - Unclassifiable	34	34	0.4%	100.0%	1.8%

[Click here for data on all deliveries in BC in Robson Table.](#)

Definitions and specifications begin on Page 31 of this document.

Women in Group 99 are missing information on presentation, gestational age, parity, and/or type of labour.

## Robson Groups, Interior Health Authority of Residence

Deliveries with Midwifery-Involved Care at Interior Health: April 1, 2014 - March 31, 2015

Robson Groups	Number of Cesareans	Number of Deliveries	Relative Size	Cesarean Delivery Rate	Contribution to Cesarean Delivery Rate
1 - Nulliparous women with a single vertex pregnancy at 37+ weeks in spontaneous labour	79	405	30.3%	19.5%	31.6%
2 - Nulliparous women with a single vertex pregnancy at 37+ weeks with induced or no labour	43	111	8.3%	38.7%	17.2%
3 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks in spontaneous labour	13	534	40.0%	2.4%	5.2%
4 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks with induced or no labour	8	59	4.4%	13.6%	3.2%
5 - Parous women with a uterine scar with a single vertex pregnancy at 37+ weeks	62	118	8.8%	52.5%	24.8%
6 - Nulliparous women with a single breech pregnancy	15	18	1.3%	83.3%	6.0%
7 - Parous women with a single breech pregnancy, including women with a uterine scar	7	9	0.7%	77.8%	2.8%
8 - Women with a multifetal pregnancy, including women with a uterine scar	<5	11	0.8%	NR	NR
9 - Women with a single pregnancy with a transverse or other abnormal presentation, including women with a uterine scar	5	7	0.5%	71.4%	2.0%
10 - Women with a single vertex pregnancy at <37 weeks, including women with a uterine scar	12	61	4.6%	19.7%	4.8%
99 - Unclassifiable	<5	<5	NR	NR	NR

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

Women in Group 99 are missing information on presentation, gestational age, parity, and/or type of labour.

## Robson Groups, Fraser Health Authority of Residence

Deliveries with Midwifery-Involved Care at Fraser Health: April 1, 2014 - March 31, 2015

Robson Groups	Number of Cesareans	Number of Deliveries	Relative Size	Cesarean Delivery Rate	Contribution to Cesarean Delivery Rate
1 - Nulliparous women with a single vertex pregnancy at 37+ weeks in spontaneous labour	180	824	29.7%	21.8%	30.2%
2 - Nulliparous women with a single vertex pregnancy at 37+ weeks with induced or no labour	126	262	9.4%	48.1%	21.1%
3 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks in spontaneous labour	13	1,025	36.9%	1.3%	2.2%
4 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks with induced or no labour	13	145	5.2%	9.0%	2.2%
5 - Parous women with a uterine scar with a single vertex pregnancy at 37+ weeks	129	248	8.9%	52.0%	21.6%
6 - Nulliparous women with a single breech pregnancy	49	51	1.8%	96.1%	8.2%
7 - Parous women with a single breech pregnancy, including women with a uterine scar	21	31	1.1%	67.7%	3.5%
8 - Women with a multifetal pregnancy, including women with a uterine scar	18	26	0.9%	69.2%	3.0%
9 - Women with a single pregnancy with a transverse or other abnormal presentation, including women with a uterine scar	6	10	0.4%	60.0%	1.0%
10 - Women with a single vertex pregnancy at <37 weeks, including women with a uterine scar	25	139	5.0%	18.0%	4.2%
99 - Unclassifiable	17	17	0.6%	100.0%	2.8%

Definitions and specifications begin on Page 31 of this document.

Women in Group 99 are missing information on presentation, gestational age, parity, and/or type of labour.

## Robson Groups, Vancouver Coastal Health Authority of Residence

Deliveries with Midwifery-Involved Care at Vancouver Coastal Health: April 1, 2014 - March 31, 2015

Robson Groups	Number of Cesareans	Number of Deliveries	Relative Size	Cesarean Delivery Rate	Contribution to Cesarean Delivery Rate
1 - Nulliparous women with a single vertex pregnancy at 37+ weeks in spontaneous labour	169	1,112	43.2%	15.2%	33.0%
2 - Nulliparous women with a single vertex pregnancy at 37+ weeks with induced or no labour	101	251	9.7%	40.2%	19.7%
3 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks in spontaneous labour	8	700	27.2%	1.1%	1.6%
4 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks with induced or no labour	14	75	2.9%	18.7%	2.7%
5 - Parous women with a uterine scar with a single vertex pregnancy at 37+ weeks	76	163	6.3%	46.6%	14.8%
6 - Nulliparous women with a single breech pregnancy	80	87	3.4%	92.0%	15.6%
7 - Parous women with a single breech pregnancy, including women with a uterine scar	21	27	1.0%	77.8%	4.1%
8 - Women with a multifetal pregnancy, including women with a uterine scar	<5	7	0.3%	NR	NR
9 - Women with a single pregnancy with a transverse or other abnormal presentation, including women with a uterine scar	5	12	0.5%	41.7%	1.0%
10 - Women with a single vertex pregnancy at <37 weeks, including women with a uterine scar	25	129	5.0%	19.4%	4.9%
99 - Unclassifiable	12	12	0.5%	100.0%	2.3%

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

Women in Group 99 are missing information on presentation, gestational age, parity, and/or type of labour.

## Robson Groups, Island Health Authority of Residence

Deliveries with Midwifery-Involved Care at Island Health: April 1, 2014 - March 31, 2015

Robson Groups	Number of Cesareans	Number of Deliveries	Relative Size	Cesarean Delivery Rate	Contribution to Cesarean Delivery Rate
1 - Nulliparous women with a single vertex pregnancy at 37+ weeks in spontaneous labour	123	694	31.8%	17.7%	27.9%
2 - Nulliparous women with a single vertex pregnancy at 37+ weeks with induced or no labour	86	217	9.9%	39.6%	19.5%
3 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks in spontaneous labour	6	752	34.5%	0.8%	1.4%
4 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks with induced or no labour	7	102	4.7%	6.9%	1.6%
5 - Parous women with a uterine scar with a single vertex pregnancy at 37+ weeks	106	189	8.7%	56.1%	24.0%
6 - Nulliparous women with a single breech pregnancy	42	43	2.0%	97.7%	9.5%
7 - Parous women with a single breech pregnancy, including women with a uterine scar	20	27	1.2%	74.1%	4.5%
8 - Women with a multifetal pregnancy, including women with a uterine scar	14	22	1.0%	63.6%	3.2%
9 - Women with a single pregnancy with a transverse or other abnormal presentation, including women with a uterine scar	6	6	0.3%	100.0%	1.4%
10 - Women with a single vertex pregnancy at <37 weeks, including women with a uterine scar	28	127	5.8%	22.0%	6.3%
99 - Unclassifiable	<5	<5	NR	NR	NR

Definitions and specifications begin on Page 31 of this document.

Women in Group 99 are missing information on presentation, gestational age, parity, and/or type of labour.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.



## Robson Groups, Northern Health Authority of Residence

Deliveries with Midwifery-Involved Care at Northern Health: April 1, 2014 - March 31, 2015

Robson Groups	Number of Cesareans	Number of Deliveries	Relative Size	Cesarean Delivery Rate	Contribution to Cesarean Delivery Rate
1 - Nulliparous women with a single vertex pregnancy at 37+ weeks in spontaneous labour	20	84	28.0%	23.8%	35.1%
2 - Nulliparous women with a single vertex pregnancy at 37+ weeks with induced or no labour	8	23	7.7%	34.8%	14.0%
3 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks in spontaneous labour	<5	124	41.3%	NR	NR
4 - Parous women, no uterine scar, with a single vertex pregnancy at 37+ weeks with induced or no labour	0	16	5.3%	0.0%	0.0%
5 - Parous women with a uterine scar with a single vertex pregnancy at 37+ weeks	11	23	7.7%	47.8%	19.3%
6 - Nulliparous women with a single breech pregnancy	<5	5	1.7%	NR	NR
7 - Parous women with a single breech pregnancy, including women with a uterine scar	6	7	2.3%	85.7%	10.5%
8 - Women with a multifetal pregnancy, including women with a uterine scar	<5	<5	NR	NR	NR
9 - Women with a single pregnancy with a transverse or other abnormal presentation, including women with a uterine scar	<5	<5	NR	NR	NR
10 - Women with a single vertex pregnancy at <37 weeks, including women with a uterine scar	<5	14	4.7%	NR	NR
99 - Unclassifiable	0	0	0.0%	0.0%	0.0%

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

Women in Group 99 are missing information on presentation, gestational age, parity, and/or type of labour.

## Robson Subgroups, British Columbia

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Robson Subgroups	Number of Cesareans	Number of Deliveries	Relative Size	Cesarean Delivery Rate	Contribution to Cesarean Delivery Rate
1 - Nulliparous women, single vertex pregnancy, at 37+ weeks, spontaneous labour	571	3,133	34.0%	18.2%	30.6%
2i - Nulliparous women, single vertex pregnancy, at 37+ weeks, induced labour	324	825	9.0%	39.3%	17.4%
2n - Nulliparous women, single vertex pregnancy, at 37+ weeks, no labour	42	42	0.5%	100.0%	2.2%
3 - Parous women, no uterine scar, single vertex pregnancy at 37+ weeks, spontaneous labour	43	3,147	34.2%	1.4%	2.3%
4i - Parous women, no uterine scar, single vertex pregnancy at 37+ weeks, induced labour	23	378	4.1%	6.1%	1.2%
4n - Parous women, no uterine scar, single vertex pregnancy at 37+ weeks, no labour	19	19	0.2%	100.0%	1.0%
5i - Parous women with a uterine scar, single vertex pregnancy at 37+ weeks, induced labour	28	59	0.6%	47.5%	1.5%
5n - Parous women with a uterine scar, single vertex pregnancy at 37+ weeks, no labour	209	209	2.3%	100.0%	11.2%
5s - Parous women with a uterine scar, single vertex pregnancy at 37+ weeks, spontaneous labour	150	478	5.2%	31.4%	8.0%
6 - Nulliparous women, single breech pregnancy	191	205	2.2%	93.2%	10.2%
7 - Parous women, single breech pregnancy, including women with a uterine scar	75	101	1.1%	74.3%	4.0%
8i - Women with a multifetal pregnancy, including women with a uterine scar, induced labour	12	29	0.3%	41.4%	0.6%
8n - Women with a multifetal pregnancy, including women with a uterine scar, no labour	22	22	0.2%	100.0%	1.2%
8s - Women with a multifetal pregnancy, including women with a uterine scar, spontaneous labour	6	18	0.2%	33.3%	0.3%
9 - Women with a single pregnancy with transverse or other abnormal presentation, including women with a uterine scar	24	37	0.4%	64.9%	1.3%
10i - Women with a single vertex pregnancy at <37 weeks, including women with a uterine scar, induced labour	26	137	1.5%	19.0%	1.4%
10n - Women with a single vertex pregnancy at <37 weeks, including women with a uterine scar, no labour	38	38	0.4%	100.0%	2.0%
10s - Women with a single vertex pregnancy at <37 weeks, including women with a uterine scar, spontaneous labour	30	298	3.2%	10.1%	1.6%
99 - Unclassifiable	34	34	0.4%	100.0%	1.8%

[Click here for data on all deliveries in BC in Robson Table.](#)

Definitions and specifications begin on Page 31 of this document.

Women in Group 99 are missing information on presentation, gestational age, parity, and/or type of labour.

## Previous Cesarean Delivery by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Total	Per cent
Interior	132	9.9%
Fraser	284	10.2%
Vancouver Coastal	188	7.3%
Island	219	10.0%
Northern	26	8.7%
<b>BC</b>	<b>856</b>	<b>9.3%</b>

## Vaginal Birth After Cesarean (VBAC) by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Crude VBAC Rate	VBAC Eligible Rate	VBAC Attempted Rate	VBAC Success Rate
Interior	46.2%	90.9%	74.2%	68.5%
Fraser	43.7%	85.2%	76.9%	66.7%
Vancouver Coastal	49.5%	91.5%	72.1%	75.0%
Island	42.0%	92.2%	65.8%	69.2%
Northern	46.2%	88.5%	56.5%	92.3%
<b>BC</b>	<b>44.9%</b>	<b>89.5%</b>	<b>71.4%</b>	<b>70.2%</b>

[Click here for data on all deliveries in BC in Perinatal Health Report.](#)

Definitions and specifications begin on Page 31 of this document.

## Water Birth by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Per cent
Interior	6.9%
Fraser	3.1%
Vancouver Coastal	5.4%
Island	3.2%
Northern	15.3%
<b>BC</b>	<b>4.7%</b>

## Water Birth Setting by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Home	Hospital
Interior	92.4%	7.6%
Fraser	96.6%	NR
Vancouver Coastal	81.3%	18.7%
Island	97.1%	NR
Northern	26.1%	73.9%
<b>BC</b>	<b>83.4%</b>	<b>16.6%</b>

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

Water birth is not a field in the BC Perinatal Data Registry

Other place of delivery are not shown for Water Birth Setting.

## Anesthesia or Analgesia During Labour and Delivery by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

### Deliveries at Home

Health Authority	Entonox	Local	Narcotic	Other	No Anesthetic
Interior	0.0%	15.4%	0.0%	2.7%	82.3%
Fraser	NR	16.8%	0.0%	NR	81.6%
Vancouver Coastal	0.0%	17.3%	NR	1.3%	81.5%
Island	0.0%	23.9%	0.0%	0.0%	76.1%
Northern	0.0%	13.5%	0.0%	0.0%	86.5%
<b>BC</b>	<b>NR</b>	<b>18.4%</b>	<b>NR</b>	<b>1.1%</b>	<b>80.4%</b>

### Deliveries in Hospitals

Health Authority	Entonox	Epidural	General	Local
Interior	24.0%	26.3%	3.6%	22.6%
Fraser	48.3%	29.0%	2.7%	19.8%
Vancouver Coastal	42.2%	41.9%	1.7%	16.2%
Island	37.2%	34.5%	2.4%	64.4%
Northern	29.4%	15.3%	2.3%	22.5%
<b>BC</b>	<b>40.1%</b>	<b>33.1%</b>	<b>2.5%</b>	<b>29.6%</b>

  

Health Authority	Spinal	Narcotic	Other	No Anesthetic
Interior	17.1%	21.2%	2.6%	25.2%
Fraser	14.7%	16.7%	3.2%	18.7%
Vancouver Coastal	15.2%	8.6%	7.8%	15.9%
Island	15.2%	20.0%	3.5%	13.7%
Northern	16.8%	5.7%	NR	33.2%
<b>BC</b>	<b>15.4%</b>	<b>15.4%</b>	<b>4.4%</b>	<b>18.1%</b>

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

Multiple agents may be used.

Unknown anaesthesia is not shown.

## Length of Stay (Hours) for Post-Delivery Admissions by Health Authority of Residence

Deliveries with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Median	First Quartile	Third Quartile
Interior	51.6	23.5	82.6
Fraser	33.2	18.8	61.8
Vancouver Coastal	33.4	7.7	73.8
Island	49.0	27.3	86.8
Northern	19.8	18.3	51.5
<b>BC</b>	<b>43.9</b>	<b>18.3</b>	<b>72.6</b>

Definitions and specifications begin on Page 31 of this document.

**PSBC Midwifery Report 2014/15**  
**Births in British Columbia**  
**Section 3: Newborn Health**

## Births by a Registered Midwife by Health Authority of Residence

Births in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Total	Per cent
Interior	934	15.0%
Fraser	1,811	10.5%
Vancouver Coastal	1,625	15.0%
Island	1,536	24.2%
Northern	216	6.3%
<b>BC</b>	<b>6,146</b>	<b>13.8%</b>

## Any Care Provided by a Registered Midwife by Health Authority of Residence

Births in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Total	Per cent
Interior	1,346	21.5%
Fraser	2,804	16.3%
Vancouver Coastal	2,582	23.8%
Island	2,204	34.7%
Northern	303	8.8%
<b>BC</b>	<b>9,278</b>	<b>20.8%</b>

Definitions and specifications begin on Page 31 of this document.



## Preterm Birth by Health Authority of Residence

Births with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Iatrogenic Preterm	Spontaneous Preterm	Total Preterm
Interior	2.2%	3.5%	5.7%
Fraser	2.8%	3.6%	6.4%
Vancouver Coastal	2.2%	3.5%	5.7%
Island	3.1%	4.7%	7.8%
Northern	4.0%	3.0%	6.9%
<b>BC</b>	<b>2.7%</b>	<b>3.8%</b>	<b>6.5%</b>

## Weight for Gestational Age by Health Authority of Residence

Births with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Small for Gestational Age	Large for Gestational Age
Interior	4.7%	12.3%
Fraser	4.7%	14.3%
Vancouver Coastal	6.1%	12.2%
Island	3.9%	16.4%
Northern	4.3%	20.1%
<b>BC</b>	<b>4.9%</b>	<b>14.1%</b>

[Click here for data on all births in BC in Perinatal Health Report.](#)

Definitions and specifications begin on Page 31 of this document.

Preterm births with unknown type of labour are not shown for Preterm Birth.

## Type of Newborn Feeding by Health Authority of Residence

Births with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Exclusive Breast Milk	Breast Milk and Formula	Formula	No Documentation
Interior	83.5%	8.8%	0.5%	6.6%
Fraser	81.4%	14.4%	0.9%	2.2%
Vancouver Coastal	86.9%	7.6%	NR	4.8%
Island	79.9%	14.4%	0.7%	3.8%
Northern	82.2%	9.9%	NR	5.6%
<b>BC</b>	<b>82.9%</b>	<b>11.5%</b>	<b>0.6%</b>	<b>4.1%</b>

## Breastfeeding Initiation by Health Authority of Residence

Births with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	<=1 Hour	>1 Hour and <=24 Hours	>24 Hours	Unknown
Interior	66.5%	21.5%	1.3%	9.4%
Fraser	57.9%	28.0%	1.1%	10.9%
Vancouver Coastal	64.4%	27.3%	1.1%	6.3%
Island	64.3%	18.5%	2.5%	12.9%
Northern	67.7%	20.5%	2.0%	7.6%
<b>BC</b>	<b>62.8%</b>	<b>24.4%</b>	<b>1.5%</b>	<b>9.8%</b>

[Click here for data on all births in BC in Perinatal Health Report.](#)

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

Baby died or was transferred immediately are not shown for type of newborn feeding

Baby was not breastfed, died, or was a stillbirth are not shown for breastfeeding initiation

## Neonatal Intensive Care (NICU) Use During Birth and Transfer Episode of Care by Health Authority of Residence

Births with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	NICU II	NICU III
Interior	4.5%	1.9%
Fraser	4.3%	0.9%
Vancouver Coastal	4.6%	1.3%
Island	5.3%	1.2%
Northern	3.3%	NR
<b>BC</b>	<b>4.6%</b>	<b>1.2%</b>

## Length of Stay (Days) in NICU During Birth and Transfer Episode of Care by Health Authority of Residence

Births with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	NICU II			NICU III		
	Median	First Quartile	Third Quartile	Median	First Quartile	Third Quartile
Interior	4.0	2.0	6.0	4.0	1.0	10.0
Fraser	2.5	1.0	6.0	3.0	1.0	8.0
Vancouver Coastal	2.0	1.0	5.0	5.0	3.0	10.0
Island	3.0	1.0	8.5	8.5	5.0	29.0
Northern	2.0	2.0	3.0	NR	NR	NR
<b>BC</b>	<b>3.0</b>	<b>1.0</b>	<b>6.0</b>	<b>5.0</b>	<b>2.0</b>	<b>13.0</b>

Definitions and specifications begin on Page 31 of this document.

NR: Statistics based on counts or numerators of 1 to 4 are not reported.

## Low 5 Minute Apgar Score by Health Authority of Residence

Births with Midwifery-Involved Care in British Columbia: April 1, 2014 - March 31, 2015

Health Authority	Per cent
Interior	2.9%
Fraser	2.4%
Vancouver Coastal	1.9%
Island	3.0%
Northern	2.3%
<b>BC</b>	<b>2.5%</b>

Definitions and specifications begin on Page 31 of this document.

# **Definitions**

## **Section 1: Maternal Health**

### **Deliveries by a Registered Midwife**

Indicates whether a registered midwife was the primary provider at the time a woman gave birth. In the case of multifetal pregnancies, the highest training level of any delivering provider is assigned to the delivery, e.g. if twin A was delivered by a registered midwife and twin B was delivered by an obstetrician, then the obstetrician is the delivery provider.

### **Any Care Provided by a Registered Midwife**

A registered midwife was involved at any point in maternal or newborn care. A registered midwife may not have been the delivery provider. This is equivalent to deliveries with midwifery-involved care.

### **Parity**

Indicates whether a woman delivered a previous pregnancy  $\geq 20$  weeks gestation or  $\geq 500g$ . For nulliparous women, this is the first pregnancy meeting these criteria. Parous women have had at least one previous pregnancy meeting these criteria.

### **Maternal Age at Delivery**

Maternal age, in completed years, at delivery.

### **Antenatal Care Visits**

- <5 Visits – Woman with none to five antenatal care visits documented in the PDR.
- Missing Visits – Woman with no information documented about the number of antenatal care visits.

### **Any Hypertensive Disorder in Pregnancy**

Indicates whether a woman had any hypertensive disorder diagnosed during pregnancy. Hypertensive disorders include pre-existing hypertension, gestational hypertension, pre-eclampsia, eclampsia, and HELLP syndrome.

### **Gestational Diabetes in Pregnancy**

Indicates whether a woman had gestational diabetes diagnosed during pregnancy.

- NOTE: British Columbia adopted the International Association of Diabetes and Pregnancy Study Group's [guidelines](#) for diagnosis of gestational diabetes in October 2010.

### **Substance Use During Pregnancy**

- Cigarette Use – Care provider documented that the woman reported smoking tobacco products during pregnancy. Includes women who stopped or reduced smoking during pregnancy.
- Alcohol as Risk – Care provider documented that the woman's use of alcohol was a risk in the pregnancy. Alcohol use prior to the woman knowing she was pregnant is not included.
- Binge Drinking – Care provider documented that the woman's consumed  $\geq 4$  alcoholic drinks at one time during pregnancy.

- Other Drug Use – Care provider documented that the woman reported use of drugs (heroin/opioids, cocaine, methadone, solvents, or marijuana) at any time during pregnancy, or care providers listed use of prescription, “other”, or unknown other drug as a risk to the pregnancy. Drug use prior to the woman knowing she was pregnant may be included.

### **Maternal Screening Tests**

- Hepatitis B Test Done – Woman was screened for the Hepatitis B virus, Hepatitis B surface antigen, or HBsAg during pregnancy.
- HIV Test Done – Woman was screened for the Human Immunodeficiency Virus (HIV) during pregnancy.
- Group B Strep Test Done – Woman was screened for Group B Streptococcus during pregnancy.
- Maternal Serum Screening Offered – Woman was offered blood test(s) to screen for fetal abnormalities (extra chromosomes or neural tube defects). Refers either to private testing or that offered by the [BC Prenatal Genetic Screening Program](#).

## **Section 2: Labour and Delivery**

### **Intended Place of Delivery**

Where the woman planned to deliver for deliveries with midwifery-involved care. Intended place of delivery includes hospital, home, and unknown.

### **Intended vs. Actual Place of Delivery**

Where the woman planned to deliver in comparison to where she actually delivered for deliveries with midwifery-involved care. Actual place of delivery includes hospital, home, and other.

### **Labour Augmentation**

Labour for the current delivery was augmented by a care provider.

### **Labour Induction**

Labour for the current delivery was induced by a care provider.

### **Vaginal Delivery**

Baby was delivered vaginally.

### **Type of Vaginal Delivery**

- Spontaneous – Baby was delivered vaginally without assistance of vacuum or forceps extractors.
- Vacuum – Baby was delivered vaginally with the assistance of a vacuum extractor.
- Forceps – Baby was delivered vaginally with the assistance of forceps.
- Forceps and Vacuum – Baby was delivered vaginally with the assistance of vacuum and forceps extractors.

The percentages are defined as the number of women with the above mentioned type of vaginal delivery over the total number of vaginal deliveries with midwifery-involved care.

### **Perineal Trauma**

- Third or Fourth Degree Laceration – Woman experienced a significant perineal tear during delivery.

- Cervical Tear – Woman experienced a cervical tear during delivery.
- Episiotomy – An episiotomy was performed during delivery.

### **Cesarean Delivery**

Baby was delivered by an incision in the woman's abdomen.

#### **Type of Cesarean Delivery**

- Elective Primary – Woman without a previous cesarean had a cesarean delivery with elective timing.
- Elective Repeat – Woman with a history of cesarean delivery had a cesarean delivery with elective timing.
- Emergency Primary – Woman without a previous cesarean needed a cesarean delivery with urgent or emergent timing.
- Emergency Repeat – Woman with a history of cesarean delivery needed a cesarean delivery with urgent or emergent timing.

The percentages are defined as the number of women with the above mentioned type of cesarean delivery over the total number of cesarean deliveries with midwifery-involved care.

### **Robson Groups**

Robson Ten Group Classification uses obstetric characteristics to classify women into relatively homogeneous groups to facilitate examination of cesarean delivery rate.

- Relative size – Proportion of the obstetric population included in each group
  - $\text{Number of deliveries in a group} / \text{Total number of deliveries}$
- Cesarean delivery rate – Proportion of women delivered by cesarean in each group
  - $\text{Number of cesarean deliveries in a group} / \text{Total number of deliveries}$
- Contribution to cesarean delivery rate – Proportion of cesarean deliveries occurred in each group
  - $\text{Number of cesarean deliveries in a group} / \text{Total number of cesarean deliveries}$

### **Robson Subgroups**

Robson Subgroup Classification expands Robson Ten Group Classification so that – for selected Groups – women with spontaneous, induced, and no labour are separated. Same calculation methods as Robson Groups.

### **Previous Cesarean Delivery**

The woman had a previous cesarean delivery.

### **Vaginal Birth after Cesarean (VBAC)**

- Crude VBAC – Woman with a previous cesarean delivery had a vaginal delivery in this pregnancy.
  - $\text{Total number vaginal deliveries} / \text{Women with a previous cesarean}$
- VBAC Eligible – Woman with a previous cesarean delivery is identified as eligible for VBAC, or whose eligibility was unknown or not documented, and had a singleton with vertex presentation in this pregnancy.
  - $\text{Women identified as eligible for VBAC} / \text{Women with a previous cesarean}$
- VBAC Attempted – Woman with a previous cesarean delivery is identified as having attempted VBAC, or whose eligibility was unknown or not documented and the current delivery was either augmented or induced.
  - $\text{Women who attempted a VBAC} / \text{Women considered eligible for VBAC}$

- VBAC Success – Woman with a previous cesarean delivery who were eligible for and attempted VBAC had a vaginal delivery.
  - Women with a vaginal delivery / Women who were eligible for and attempted VBAC

### **Water Birth**

Woman with delivery in bathtub.

### **Water Birth Setting**

The location where water birth took place.

- Home – The percentage of women who had water birth at home.
- Hospital – The percentage of women who had water birth in hospitals.

### **Anesthesia or Analgesia During Labour and Delivery**

- Entonox – Woman received entonox (nitrous oxide gas and oxygen) for pain management.
- Epidural – Woman received anesthesia in the epidural space of the spine for pain management.
- General – Woman received general anesthesia for pain management.
- Local – Woman received localized anesthesia for pain management.
- Spinal – Woman received anesthesia in the subarachnoid space of the spine for pain management.
- Narcotic – Woman received narcotic for pain management.
- Other – Woman received another type of anesthetic or analgesic not specified above, including pudendal.
- No Anesthetic – No analgesic or anesthetic were used for pain management.

The percentages are defined as the number of women received the above mentioned anesthesia or analgesia over the total number of deliveries with midwifery-involved care at home or in hospitals.

### **Length of Stay (Hours) for Post-Delivery Admissions**

Hours between when a woman was admitted an acute care facility and her discharge from the Post-Delivery Admission.

## **Section 3: Newborn Health**

### **Births by a Registered Midwife**

Indicates whether a registered midwife delivered the baby. Babies part of a multifetal pregnancy may have different delivery providers, e.g. if twin A was delivered by a registered midwife and twin B was delivered by an obstetrician, then only twin A is a birth by a registered midwife.

### **Any Care Provided by a Registered Midwife**

A registered midwife was involved at any point in maternal or newborn care. A registered midwife may not have been the delivery provider. This is equivalent to births with midwifery-involved care.

### **Preterm Birth**

Baby was delivered before 37 completed weeks of estimated gestation.

- Iatrogenic Preterm – Baby was delivered following induced labour or by cesarean delivery without labour, before 37 completed weeks of estimated gestation.



- Spontaneous Preterm – Baby was delivered following onset of spontaneous labour or by vaginal delivery without labour, before 37 completed weeks of estimated gestation.
- Unknown Preterm – Baby was delivered before 37 completed weeks of estimated gestation but the type of labour was unknown.

### **Weight for Gestational Age**

- Small for Gestational Age – Baby with birthweight below the 10<sup>th</sup> percentile for their sex and gestational age. Based on BC-specific growth curves available [here](#).
- Large for Gestational Age – Baby with birthweight above the 90<sup>th</sup> percentile for their sex and gestational age. Based on BC-specific growth curves available [here](#).

### **Type of Newborn Feeding**

The type of feeding given to the baby during the birth admission, including at time of discharge.

- Exclusive Breast Milk – Baby received only breast milk (via the breast, a bottle, or other feeding method).
- Breast Milk and Formula – Baby received both breast milk and breast milk substitute.
- Formula – Baby received only breast milk substitute.
- No Documentation – No documentation of feeding type.
- Not Applicable – Baby died or was transferred immediately.

### **Breastfeeding Initiation**

Time frame when breastfeeding first commenced/attempted following birth, regardless of whether the baby latched or not.

- <=1 Hour – Baby was breastfed within the first hour after birth.
- >1 Hour and <=24 Hours – Baby was breastfed after the first hour and within 24 hours of birth.
- >24 Hours – Baby was first breastfed more than 24 hours after birth.
- Unknown – Unknown when breastfeeding started.
- Not Applicable – Baby was not breastfed, died, or was a stillbirth.

### **Neonatal Intensive Care (NICU) Use During Birth and Transfer Episode of Care**

Indicates whether the baby needed NICU Level II or III care for at least one day during birth and transfer episode of care.

- NOTE: Effective April 1, 2010 discharges, NICU days are assigned based on baby's needs as defined by the PSBC Neonatal Daily Classification Tool [here](#).

### **Length of Stay (Days) in NICU During Birth and Transfer Episode of Care**

Total number of days the baby needed NICU Level II or III during birth and transfer episode of care. Length of stay is the difference between discharge and admission date. If admission and discharge are on the same date, length of stay is one day.

- NOTE: Effective April 1, 2010 discharges, NICU days are assigned based on baby's needs as defined by the PSBC Neonatal Daily Classification Tool [here](#).

### **Low 5 Minute Apgar Score**

Babies whose Apgar score is below 7 out of 10 at five minutes after birth.

## Episodes Included in the Midwifery Report

This report is based on delivery admissions meeting the following minimum criteria:

### Delivery Admission

<b>Include:</b>	
Delivery	MOTHER_ADMISSION.screen_source = "DL" AND April 1, 2014 ≤ discharge_date ≤ March 31, 2015
Linked maternal-newborn records	BABY_ADMISSION.screen_source = "NB" AND BABY_ADMISSION.mother_id is not null
<b>Exclude from all:</b>	
Complete termination of pregnancy	DIAGNOSES.diagnosis_cd begins with O04 (Mother) OR PROCEDURES_PERFORMED.procedure_code begins with 5CA88 or 5CA89 (Mother) and woman delivered a singleton pregnancy OR DIAGNOSES.diagnosis_cd begins with P96.4 (Baby) for <b>all</b> babies linked to mother

### Other Maternal Admissions

<b>Admission type</b>	<b>Criteria</b>
<u>Maternal Admission</u>	MOTHER_ADMISSION.screen_source = "DL" or "PP"  For any woman whose Delivery Admission meets the inclusion criteria above.
<u>Post-Delivery Admission</u>	MOTHER_ADMISSION.screen_source = "PP" AND most responsible diagnosis is not Z76.3  For any woman whose Delivery Admission meets the inclusion criteria above.

## Baby Admissions

<b>Admission type</b>	<b>Criteria</b>
<u>Birth Admission</u>	BABY_ADMISSION.screen_source = "NB"  For any baby linked to a woman whose Delivery Admission meets the inclusion criteria above.
<u>Newborn Admission</u>	BABY_ADMISSION.screen_source = "NB" or "XF"  For any baby linked to a mother whose Delivery Admission meets the inclusion criteria above.
<u>Post-Neonatal Admission</u>	BABY_ADMISSION.screen_source = "XF" AND most responsible diagnosis is not Z76.2, Z76.3, or Z76.4  For any baby linked to a mother whose Delivery Admission meets the inclusion criteria above.

## Detailed Specifications for Selected Variables

	PDR variables		CIHI Codes
<b>Fiscal year</b> 2014/15	screen_source = "DL" AND April 1, 2014 ≤ discharge_date ≤ March 31, 2015		
<b>Deliveries by a Registered Midwife</b>	delivered_by = 3 or 7 for all babies in a pregnancy		
<b>Births by a Registered Midwife</b>	delivered_by = 3 or 7 for a given baby		
<b>Any Care Provided by a Registered Midwife</b>	institution_id = 976 or 977 OR delivered_by = 3 or 7 OR midwife_case = "Y" OR actual_place_of_delivery = 1 or 2	OR	DOCTORS.doctor_service = 11004 OR PROCEDURES_PERFORMED.procedure_doctor_service = 11004 on the delivery or newborn record
<b>Parity</b>			
Nulliparous	(term = 0 AND premature = 0 AND prev_cesarian_deliv = 0 AND prev_vaginal_deliv = 0) OR (term = null AND premature = null AND prev_cesarian_deliv = null AND prev_vaginal_deliv = null AND living = 0) OR (any of term, premature, prev_cesarian_deliv, prev_vaginal_deliv = null AND gravida = 1)		
Parous	(term ≥ 1 OR premature ≥ 1 OR prev_cesarian_deliv ≥ 1 OR prev_vaginal_deliv ≥ 1) OR (term = null AND premature = null AND prev_cesarian_deliv = null AND prev_vaginal_deliv = null AND living ≥ 1)		
<b>Maternal Age</b>			
<20	(baby_delivered_date – date of birth/365.25) < 20 and ≠ null		
20-24	20 ≤ (baby_delivered_date – date of birth/365.25) < 25		
25-29	25 ≤ (baby_delivered_date – date of birth/365.25) < 29		
30-34	30 ≤ (baby_delivered_date – date of birth/365.25) < 34		

	PDR variables		CIHI Codes
35-39	$35 \leq (\text{baby\_delivered\_date} - \text{date of birth}/365.25) < 39$		
40+	$(\text{baby\_delivered\_date} - \text{date of birth}/365.25) \geq 40$		
<b>Antenatal Care Visits</b>			
<5 Visits	$0 \leq \text{num\_antenatal\_visits} < 5$		
Missing Visits	$\text{num\_antenatal\_visits} = \text{null}$		
<b>Any Hypertensive Disorder in Pregnancy</b>	$\text{pp\_hellp\_syndrome} = \text{"Y"}$	OR	$\text{diagnosis\_code}$ begins with O10, O11, O13, O14, O15, or O16
<b>Gestational Diabetes in Pregnancy</b>	$\text{risk\_code} = 13 \text{ or } 14$	OR	$\text{diagnosis\_code}$ begins with O248 or O249
<b>Substance Use During Pregnancy</b>			
Cigarette Use	$\text{smoker\_type\_cd} = \text{"C"}$		
Alcohol as Risk	$\text{r\_alc\_flg} = \text{"Y"}$		
Binge Drinking	$\text{binge\_drinking} = \text{"Y"}$		
Other Drug Use	$\text{risk\_code} = 29, 30, 31, 32, 33, 34, 35, \text{ or } 36$		
<b>Maternal Screening Tests</b>			
Hepatitis B Test Done	$\text{hbsag\_test} = \text{"Y"}$		
HIV Test Done	$\text{hiv\_test} = \text{"Y"}$		
Group B Strep Test Done	$\text{b\_strep} = \text{"Y"}$		
Maternal Serum Screening Offered	$\text{mat\_serum\_screen} = \text{"Y"}$		
<b>Augmentation of Labour</b>	$\text{labour\_aug\_flg} = \text{"Y"}$		
<b>Induction of Labour</b>	$\text{labour\_ind\_flg} = \text{"Y"}$		
<b>Mode of Delivery</b>			
Cesarean Delivery			$\text{procedure\_code}$ begins with 5MD60
Vaginal Delivery			$\text{procedure\_code}$ does not begin with 5MD60
<b>Mode of Delivery – Detailed (Hierarchical)</b>			
Emergency Primary	$\text{csection\_type} = 2$	AND	$\text{procedure\_code}$ begins with 5MD60
Emergency Repeat	$\text{csection\_type} = 4$	AND	$\text{procedure\_code}$ begins with 5MD60
Elective Primary	$\text{csection\_type} = 1$	AND	$\text{procedure\_code}$ begins with 5MD60
Elective Repeat	$\text{csection\_type} = 3$	AND	$\text{procedure\_code}$ begins with 5MD60
Forceps and Vacuum			$\text{procedure\_code}$ begins with 5MD55 OR $\text{procedure\_code}$ begins with 5MD54 AND one of the following codes is also on the abstract: 5MD53, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, or 5MD56PJ
Forceps			$\text{procedure\_code}$ begins with 5MD53, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, or 5MD56PJ
Vacuum			$\text{procedure\_code}$ begins with 5MD54

	PDR variables		CIHI Codes
Spontaneous			<a href="#">procedure_code</a> begins with 5MD50, 5MD51, 5MD52, 5MD56AA, 5MD56NL, 5MD56NP, 5MD56NU, 5MD56NM, 5MD56NQ, 5MD56NV, 5MD56GH, 5MD56PA, 5MD56PD, 5MD56PG, 5MD56PB, 5MD56PE, or 5MD56PH OR <a href="#">procedure_code</a> = null OR record has not been classified above
<b>Perineal Trauma</b>			
Third or Fourth Degree Laceration	<a href="#">laceration_flg</a> = "Y" AND <a href="#">laceration_degree</a> = 3 or 4	OR	<a href="#">diagnosis_code</a> begins with O702 or O703
Cervical Tear	<a href="#">cervical_tear_flg</a> = "Y"		<a href="#">diagnosis_code</a> begins with O713
Episiotomy	<a href="#">episiotomy_flg</a> = "Y"	OR	<a href="#">procedure_code</a> begins with 5MD50GH, 5MD53KS, 5MD53JE, 5MD53KL, 5MD53KN, 5MD53KJ, 5MD54KJ, 5MD54KL, 5MD54KN, 5MD54NF, 5MD55KN, 5MD55KL, 5MD55KJ, 5MD55KR, 5MD56GH, or 5MD56P
<b>Robson Groups</b>			
1	gestational age ≥ 37 AND parity = Nulliparous AND <a href="#">labour_spont_flg</a> = "Y" AND maximum( <a href="#">baby_sequence</a> ) = 1 AND <a href="#">baby_presentation_delivery</a> = 6		
2	gestational age ≥ 37 AND parity = Nulliparous AND ( <a href="#">labour_ind_flg</a> = "Y" OR <a href="#">labour_none_flg</a> = "Y") AND maximum( <a href="#">baby_sequence</a> ) = 1 AND <a href="#">baby_presentation_delivery</a> = 6		
3	gestational age ≥ 37 AND parity = Parous AND <a href="#">labour_spont_flg</a> = "Y" AND maximum( <a href="#">baby_sequence</a> ) = 1 AND <a href="#">baby_presentation_delivery</a> = 6 AND <a href="#">prev_cesarian_deliv</a> = 0		
4	gestational age ≥ 37 AND parity = Parous AND ( <a href="#">labour_ind_flg</a> = "Y" OR <a href="#">labour_none_flg</a> = "Y") AND maximum( <a href="#">baby_sequence</a> ) = 1 AND <a href="#">baby_presentation_delivery</a> = 6 AND <a href="#">prev_cesarian_deliv</a> = 0		
5	gestational age ≥ 37 AND parity = Parous AND maximum( <a href="#">baby_sequence</a> ) = 1 AND <a href="#">baby_presentation_delivery</a> = 6 AND <a href="#">prev_cesarian_deliv</a> ≥ 1		

	<b>PDR variables</b>		<b>CIHI Codes</b>
6	gestational age ≠ null AND parity = Nulliparous AND maximum( <a href="#">baby_sequence</a> ) = 1 AND <a href="#">baby_presentation_delivery</a> = 1, 2, 3, 4, or 5		
7	gestational age ≠ null AND parity = Parous AND maximum( <a href="#">baby_sequence</a> ) = 1 AND <a href="#">baby_presentation_delivery</a> = 1, 2, 3, 4, or 5		
8	gestational age ≠ null AND maximum( <a href="#">baby_sequence</a> ) = 1		
9	gestational age ≠ null AND maximum( <a href="#">baby_sequence</a> ) = 1 AND <a href="#">baby_presentation_delivery</a> = 7 or 8		
10	gestational age <37 and ≠ null AND maximum( <a href="#">baby_sequence</a> ) = 1 AND <a href="#">baby_presentation_delivery</a> = 6		
99	record has not been classified above		
<b>Robson Subgroups</b>			
01	Robson Groups = 1		
02i	Robson Groups = 2 AND <a href="#">labour_ind_flg</a> = "Y"		
02n	Robson Groups = 2 AND <a href="#">labour_none_flg</a> = "Y"		
03	Robson Groups = 3		
04i	Robson Groups = 4 AND <a href="#">labour_ind_flg</a> = "Y"		
04n	Robson Groups = 4 AND <a href="#">labour_none_flg</a> = "Y"		
05s	Robson Groups = 5 AND <a href="#">labour_spont_flg</a> = "Y"		
05i	Robson Groups = 5 AND <a href="#">labour_ind_flg</a> = "Y"		
05n	Robson Groups = 5 AND <a href="#">labour_none_flg</a> = "Y"		
06	Robson Groups = 6		
07	Robson Groups = 7		
08s	Robson Groups = 8 AND <a href="#">labour_spont_flg</a> = "Y"		
08i	Robson Groups = 8 AND <a href="#">labour_ind_flg</a> = "Y"		
08n	Robson Groups = 8 AND <a href="#">labour_none_flg</a> = "Y"		
09	Robson Groups = 9		
10s	Robson Groups = 10 AND <a href="#">labour_spont_flg</a> = "Y"		

	PDR variables		CIHI Codes
10i	Robson Groups = 10 AND labour_ind_flg = "Y"		
10n	Robson Groups = 10 AND labour_none_flg = "Y"		
99	Robson Groups = 99 prev_cesarian_deliv > 0		
<b>Previous Cesarean Delivery</b>			
<b>Vaginal Birth After Cesarean (VBAC)</b>			
VBAC Case	prev_cesarian_deliv ≥ 1	AND	procedure_code does not begin with 5MD60
VBAC Eligible	(vbac_eligible = "Y" AND prev_cesarian_deliv ≥ 1) OR (vbac_eligible = "U" or " " AND baby_presentation_delivery = 6 AND prev_cesarian_deliv ≥ 1 AND maximum(baby_sequence) = 1)		
VBAC Attempted	(vbac_attempted = "Y" AND prev_cesarian_deliv is ≥ 1) OR (vbac_attempted = "U", "A", or " " AND prev_cesarian_deliv ≥ 1 AND (labour_ind_flg = "Y" OR (labour_spont_flg = "Y" AND labour_aug_flg = "Y"))		
VBAC Success	woman VBAC Eligible and VBAC Attempted (above)	AND	procedure_code does not begin with 5MD60
<b>Water Birth</b>			procedure_code begins with 5MD52
<b>Anesthesia or Analgesia</b>			
Entonox	entonox_flg = "Y"		
Epidural	epidural_flg = "Y"		
General	general_flg = "Y"		
Local	local_flg = "Y"		
Spinal	spinal_flg = "Y"		
Narcotic	narcotic_flg = "Y"		
Other	puddental_flg = "Y" OR other_flg = "Y"		
No Anesthetic	none_flg = "Y"		
<b>Length of Stay (Hours) for Post-Delivery Admission</b>	screen_source = "PP" AND minutes between (discharge_date  discharge_hour – admission_date  admission_hour) / 60		



	PDR variables		CIHI Codes
<b>Preterm Birth</b>			
Iatrogenic Preterm	gestational age < 37 AND (labour_ind_flg = "Y" OR (labour_none_flg = "Y" AND csection_type = 1, 2, 3, or 4))		
Spontaneous Preterm	gestational age < 37 AND (labour_spont_flg = "Y" OR (labour_none_flg = "Y" AND (csection_type = 0	OR	procedure_code does not begin with 5MD60)))
Unknown Preterm	gestational age < 37 AND (labour_unk_flg = "Y" OR (labour_spont_flg ≠ "Y" AND labour_ind_flg ≠ "Y" AND labour_none_flg ≠ "Y"))		
<b>Weight for Gestational Age</b>			
Small for Gestational Age	baby with birthweight below the 10 <sup>th</sup> percentile for gestational age and sex based on gestational age, sex, multiple_birth_count, and admission_weight where screen_source = "NB" and sex = "M" or "F"		
Large for Gestational Age	baby with birthweight below the 90 <sup>th</sup> percentile for gestational age and sex based on gestational age, sex, multiple_birth_count, and admission_weight where screen_source = "NB" and sex = "M" or "F"		
<b>Newborn Feeding</b>			
Exclusive Breast Milk	newborn_feeding = "BR"		
Breast Milk and Formula	newborn_feeding = "BF"		
Formula	newborn_feeding = "FR"		
No Documentation	newborn_feeding = "UN"		
Not Applicable	newborn_feeding = "NA"		
<b>Breastfeeding Initiation</b>			
<= 1 Hour	breast_feeding_initiation = 1		
>1 Hour and <=24 Hours	breast_feeding_initiation = 2		
>24 Hours	breast_feeding_initiation = 3		
Unknown	breast_feeding_initiation = 4		
Not Applicable	breast_feeding_initiation = 5		

	<b>PDR variables</b>		<b>CIHI Codes</b>
<b>Neonatal Intensive Care (NICU) Use During Birth and Transfer Episode of Care</b>	<code>screen_source = "NB" or "XF"</code> AND ( <code>nicu_ii &gt; 0</code> OR <code>nicu_iii &gt; 0</code> )		
<b>Length of Stay (Days) in NICU During Birth and Transfer Episode of Care</b>	( <code>nicu_ii + nicu_iii</code> ) for <code>screen_source = "NB"</code> and "XF"		
<b>Low 5 Minute Apgar Score</b>	$0 \leq \text{apgar\_5\_minutes} < 7$		

## **Gestational Age Algorithm**

Gestational age at delivery is calculated using an algorithm consistent with that recommended by the Society of Obstetricians and Gynaecologists of Canada. The algorithm takes into account the last menstrual period (LMP), early ultrasound (EUS) before 20 weeks, newborn clinical exam, and chart documented estimate of gestational age. Accurate documentation of each of these on patient charts, including the estimated weeks and days gestation at early ultrasound, permits the most accurate calculation by PSBC.

Gestational age in completed weeks<sup>§</sup> based on LMP and EUS is calculated as follows:

1. If LMP\* is recorded and there is no EUS, use GA from LMP.
2. If LMP is recorded, there is no EUS<sup>^</sup>, but clinical exam of baby gives a GA at least 3 weeks different than LMP, use GA from newborn clinical exam.
3. If LMP is recorded and equal to GA – in weeks – from EUS at <14 weeks, use GA from LMP. If estimates are not equal, use GA from EUS.
4. If LMP is recorded and within 1 week of GA from EUS at 14-20 weeks, use GA from LMP. If difference is more than 1 week, use GA from EUS.
5. If LMP is not recorded but GA from EUS <20 weeks is recorded, use GA from EUS.
6. If LMP and EUS are not recorded, use GA from newborn clinical exam.
7. If LMP, EUS, and newborn clinical exam are not recorded, use GA from chart documentation.
8. If all are missing or out of range, GA is missing.

<sup>§</sup> Completed weeks of gestation is a term used in the estimated age of the fetus calculated from the first day of the LMP or US. A completed week increments at 7-day intervals. For instance 37 completed weeks includes the time span from 37 weeks and 0 days to 37 weeks and 6 days.

\* only LMP estimates of 15-45 weeks are considered. All others are treated as missing.

<sup>^</sup> only GA estimates of 17-43 weeks from EUS are considered. All others are treated as missing.