

# Perinatal Health Report 2009/10 to 2013/14



**Residents of Interior Health** 

#### **Publication Information**

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#### **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 except the Crude Stillbirth Rate; pregnancies involving selective fetal reduction are retained.
- Mother's delivery record has a discharge date between April 1, 2009 and March 31, 2014.
- 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.
- Rates with numerators of 1-4 cases are not reported (NR).

### Terms used in the Perinatal Health Report (see specifications on pages 95 and 96) 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.

#### Delivery Episode of Care

Total time woman spent in one or more hospitals, beginning from admission to hospital
for delivery of a baby. Includes the Delivery Admission and all acute care episodes
captured in the BCPDR where the woman was discharged from one hospital and
admitted directly to a different hospital.

#### 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.

#### Birth Episode of Care

 Total time baby spent in hospital between birth and discharge home. Includes the Birth Admission and all acute care episodes captured in the BCPDR where baby was discharged from one hospital and admitted directly to a different hospital.

#### **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

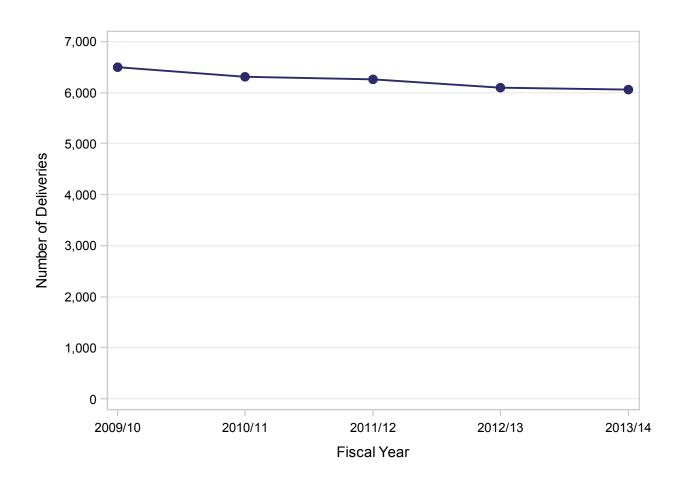
Any record of post-birth baby care received by the BCPDR. Includes acute care
episodes that are transfers from another hospital and admissions from home, up to 28
days after birth.

### Perinatal Health Report 2009/10 to 2013/14 Residents of Interior Health

**Section 1: Maternal Health** 

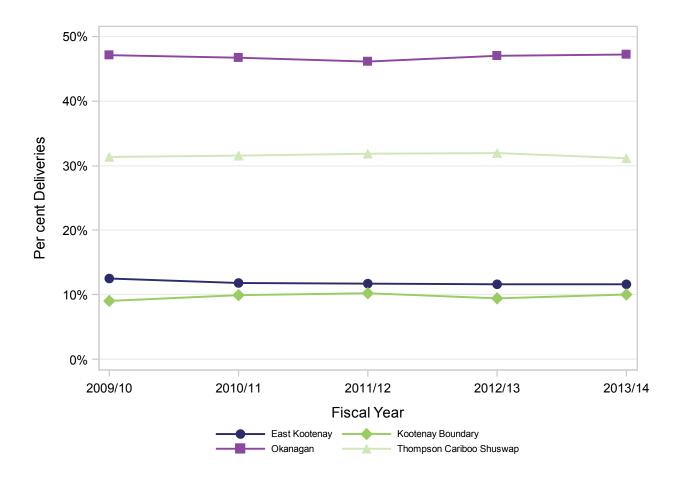
### **Total Deliveries**

Residents of Interior Health: April 1, 2009 - March 31, 2014



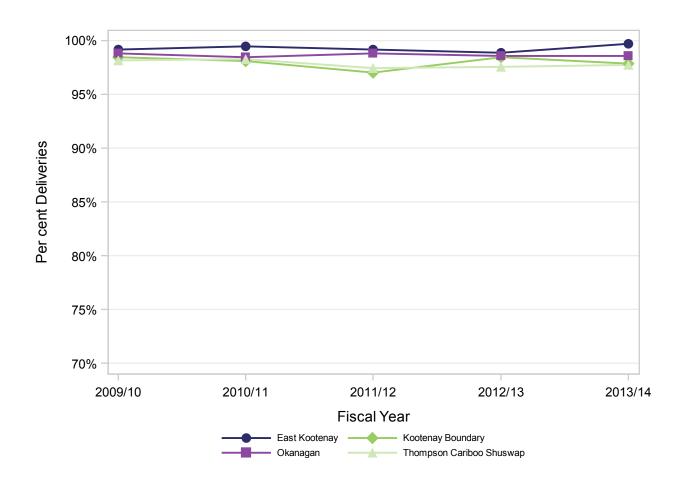
	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Interior Health	6,495	6,306	6,257	6,091	6,060		

## Deliveries by Resident Health Service Delivery Area Residents of Interior Health: April 1, 2009 - March 31, 2014



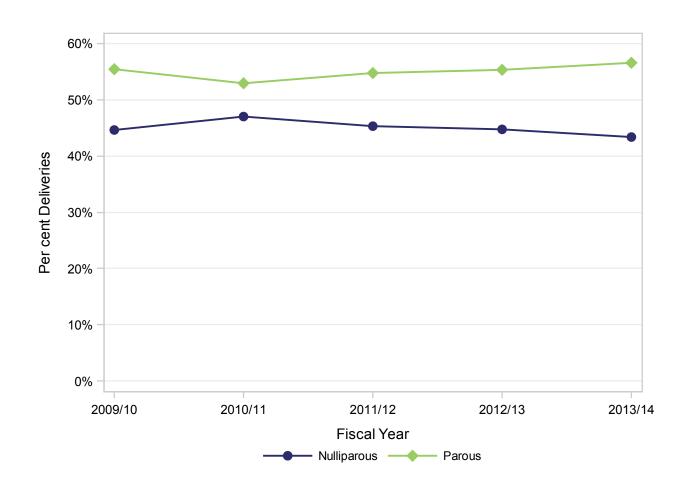
	Fiscal Year									
	200	2009/10		2010/11 2011/12		1/12	2012/13		2013/14	
Health Service Delivery Area	Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent
East Kootenay	813	12.5%	745	11.8%	731	11.7%	706	11.6%	705	11.6%
Kootenay Boundary	586	9.0%	627	9.9%	643	10.3%	578	9.5%	608	10.0%
Okanagan	3,058	47.1%	2,944	46.7%	2,888	46.2%	2,863	47.0%	2,860	47.2%
Thompson Cariboo Shuswap	2,038	31.4%	1,990	31.6%	1,995	31.9%	1,944	31.9%	1,887	31.1%

## **Deliveries Within Home Health Authority** Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year							
Health Service Delivery Area	2009/10	2010/11	2011/12	2012/13	2013/14			
East Kootenay	99.1%	99.5%	99.2%	98.9%	99.7%			
Kootenay Boundary	98.5%	98.1%	97.0%	98.4%	97.9%			
Okanagan	98.8%	98.4%	98.8%	98.6%	98.6%			
Thompson Cariboo Shuswap	98.1%	98.3%	97.4%	97.5%	97.7%			

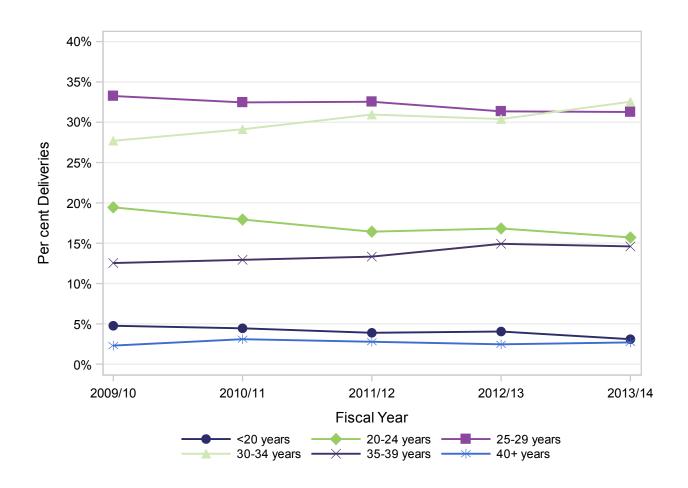
**Deliveries by Parity**Residents of Interior Health: April 1, 2009 - March 31, 2014



### **Average and Median Maternal Age at Delivery** by Parity

	Fiscal Year									
	2009/10		2010	/11	2011	/12	2012	/13	2013	3/14
Parity	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
All	29.0	29.0	29.3	29.2	29.6	29.5	29.6	29.7	29.8	29.9
Nulliparous	27.1	27.0	27.6	27.5	27.9	27.9	28.0	28.0	28.2	28.4
Parous	30.5	30.3	30.8	30.7	30.9	30.9	30.9	30.8	31.0	31

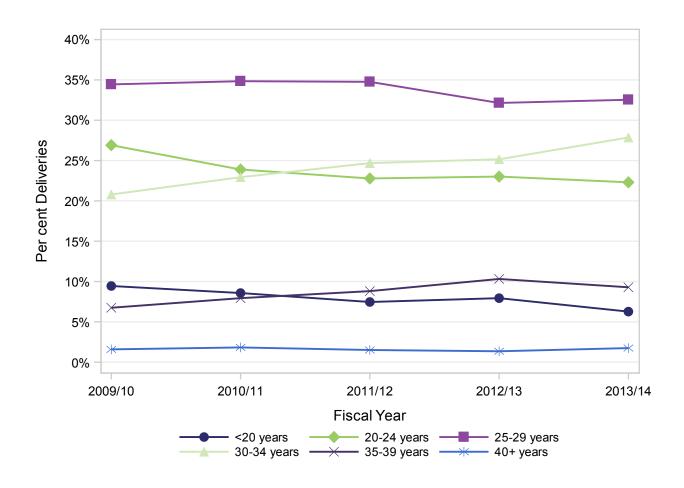
Maternal Age at Delivery
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Maternal Age	2009/10	2010/11	2011/12	2012/13	2013/14		
<20 years	4.8%	4.5%	3.9%	4.0%	3.1%		
20-24 years	19.5%	17.9%	16.5%	16.8%	15.7%		
25-29 years	33.2%	32.5%	32.5%	31.3%	31.3%		
30-34 years	27.7%	29.1%	31.0%	30.4%	32.5%		
35-39 years	12.5%	12.9%	13.4%	14.9%	14.6%		
40+ years	2.3%	3.1%	2.8%	2.5%	2.7%		

## Maternal Age at Delivery Nulliparous Women

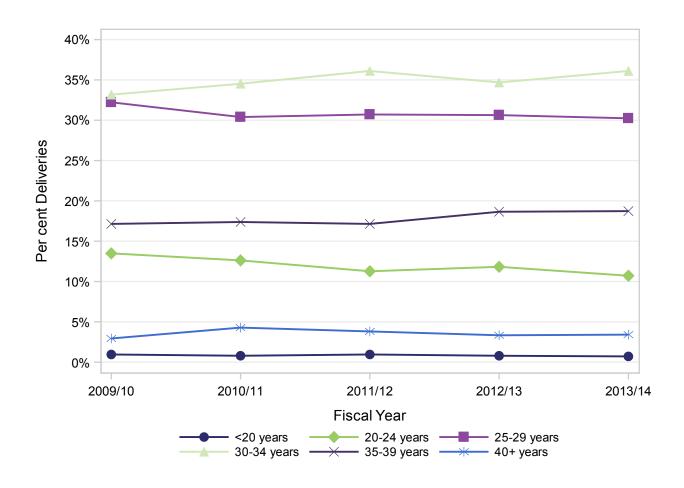
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Maternal Age	2009/10	2010/11	2011/12	2012/13	2013/14		
<20 years	9.5%	8.6%	7.5%	8.0%	6.3%		
20-24 years	26.9%	23.9%	22.8%	23.0%	22.3%		
25-29 years	34.5%	34.8%	34.7%	32.1%	32.6%		
30-34 years	20.8%	22.9%	24.7%	25.2%	27.8%		
35-39 years	6.7%	8.0%	8.8%	10.3%	9.3%		
40+ years	1.6%	1.8%	1.5%	1.4%	1.8%		

## Maternal Age at Delivery Parous Women

Residents of Interior Health: April 1, 2009 - March 31, 2014

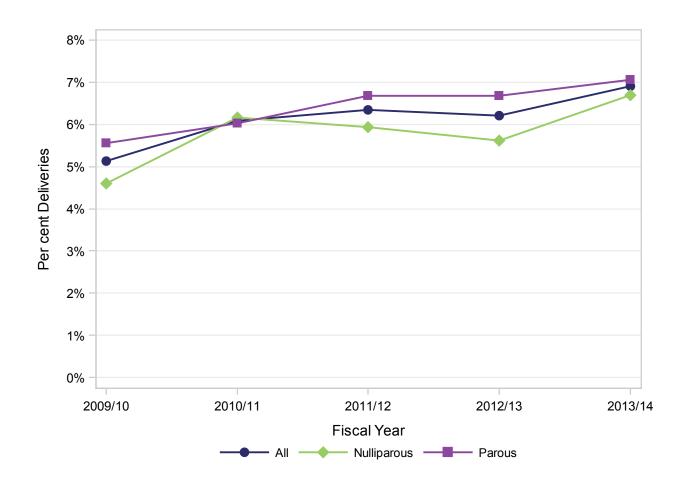


	Fiscal Year						
Maternal Age	2009/10	2010/11	2011/12	2012/13	2013/14		
<20 years	1.0%	0.8%	1.0%	0.8%	0.7%		
20-24 years	13.5%	12.6%	11.2%	11.8%	10.7%		
25-29 years	32.2%	30.4%	30.7%	30.7%	30.3%		
30-34 years	33.2%	34.6%	36.1%	34.7%	36.1%		
35-39 years	17.2%	17.4%	17.1%	18.6%	18.7%		
40+ years	2.9%	4.3%	3.8%	3.4%	3.4%		

#### **Antenatal Care Visits**

Residents of Interior Health: April 1, 2009 - March 31, 2014

### Deliveries with <5 Antenatal Care Visits by Parity

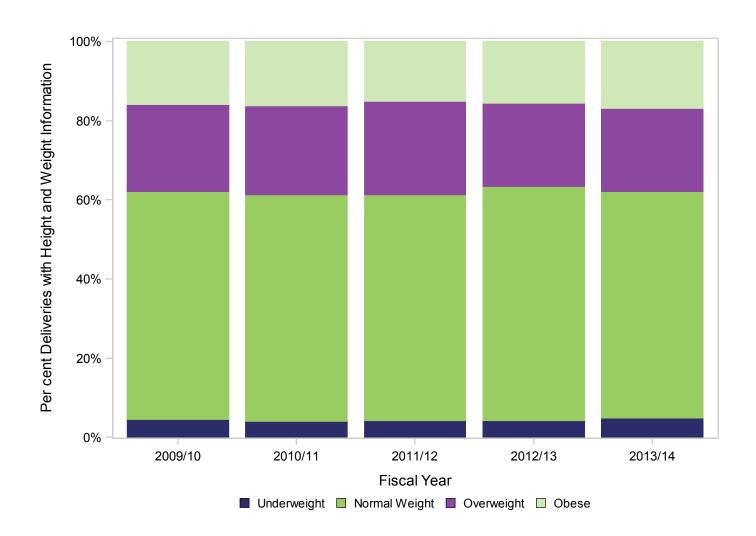


#### Deliveries with <5 Antenatal Care Visits or Missing Number of Visits

	Fiscal Year							
	2009/10	2010/11	2011/12	2012/13	2013/14			
<5 Visits	5.1%	6.1%	6.3%	6.2%	6.9%			
Missing Visits	5.3%	5.9%	5.3%	5.9%	3.1%			

### Pre-Pregnancy Body Mass Index (BMI) Residents of Interior Health: April 1, 2009 - March 31, 2014

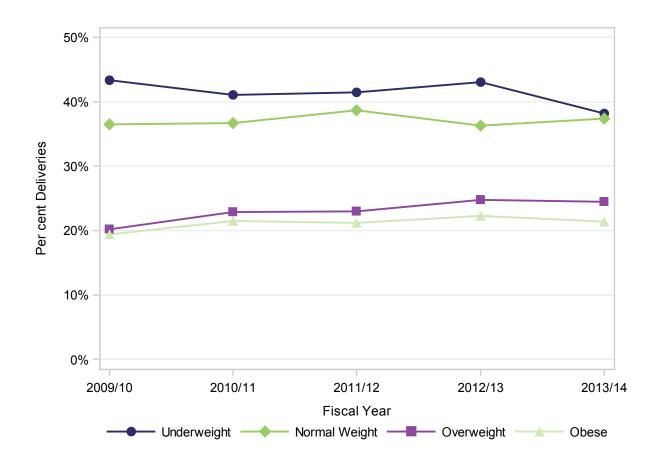
#### Distribution of Pre-Pregnancy BMI Among Deliveries With Complete Height and Weight



Distribution of Pre-Pregnancy BMI Among ALL Deliveries

	Fiscal Year						
BMI Category	2009/10	2010/11	2011/12	2012/13	2013/14		
Underweight	2.8%	2.8%	3.0%	3.2%	3.7%		
Normal Weight	36.2%	39.4%	40.4%	44.3%	44.0%		
Overweight	13.8%	15.5%	16.6%	15.8%	16.1%		
Obese	9.9%	11.1%	10.7%	11.6%	12.9%		
BMI Missing	37.3%	31.1%	29.3%	25.2%	23.3%		

### **Appropriate\* Weight Gain During Pregnancy** by Pre-Pregnancy Body Mass Index (BMI) Residents of Interior Health: April 1, 2009 - March 31, 2014

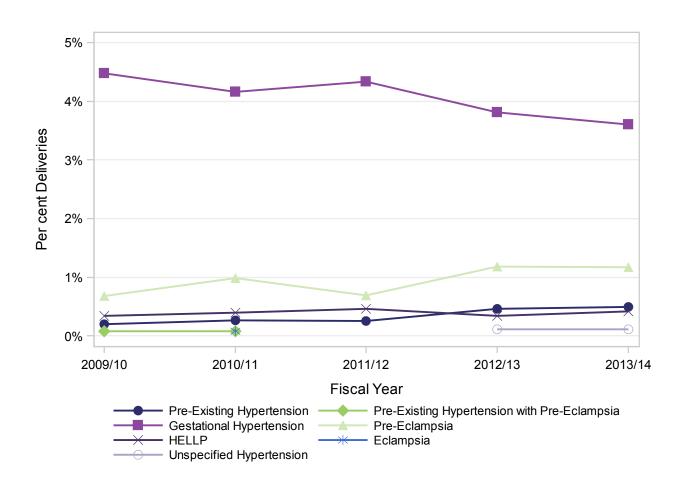


	Fiscal Year						
BMI Category	2009/10	2010/11	2011/12	2012/13	2013/14		
Underweight	43.3%	41.1%	41.4%	43.0%	38.1%		
Normal Weight	36.5%	36.7%	38.7%	36.3%	37.4%		
Overweight	20.2%	22.8%	23.0%	24.7%	24.5%		
Obese	19.4%	21.5%	21.2%	22.3%	21.4%		

Data are limited to women with complete height and weight information (approximately 60% of deliveries). Definitions and specifications begin on Page 84 of this document.

<sup>\*</sup> As defined by the Institute of Medicine.

### Hypertensive Disorders of Pregnancy Residents of Interior Health: April 1, 2009 - March 31, 2014

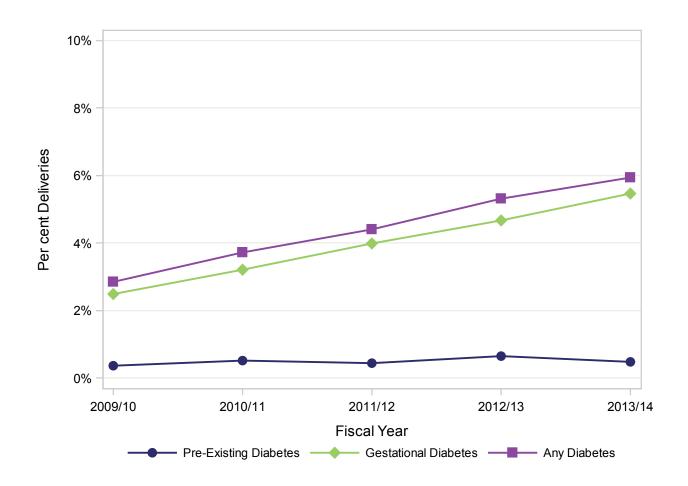


	Fiscal Year					
Type of Hypertension	2009/10	2010/11	2011/12	2012/13	2013/14	
No Hypertension	94.1%	94.0%	94.2%	94.0%	94.2%	
Pre-Existing Hypertension	0.2%	0.3%	0.3%	0.5%	0.5%	
Pre-Existing Hypertension with Pre-Eclampsia	0.1%	0.1%	NR	NR	NR	
Gestational Hypertension	4.5%	4.2%	4.3%	3.8%	3.6%	
Pre-Eclampsia	0.7%	1.0%	0.7%	1.2%	1.2%	
HELLP	0.3%	0.4%	0.5%	0.3%	0.4%	
Eclampsia	NR	0.1%	NR	NR	NR	
Unspecified Hypertension	NR	NR	NR	0.1%	0.1%	

Diagnosis codes for hypertensive disorders of pregnancy, notably gestational hypertension and pre-eclampsia, changed effective April 1, 2012 discharges. This has caused a break in the trend for these two diagnoses.

NR: Rates and per cents based on numerators of 1 to 4 are not reported.

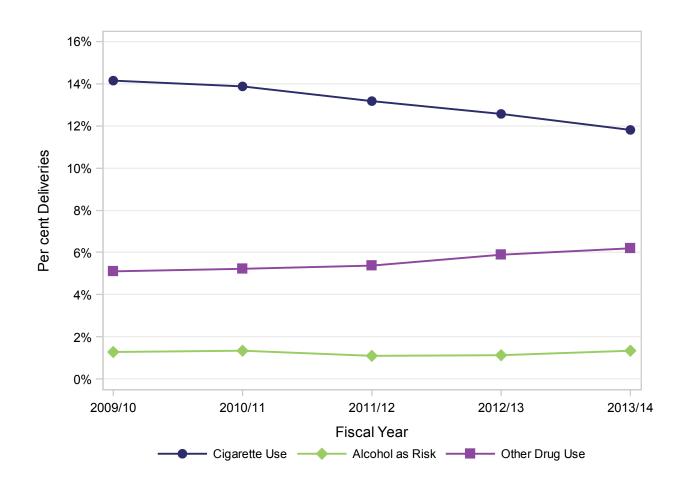
### **Diabetes Mellitus in Pregnancy**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Type of Diabetes	2009/10	2010/11	2011/12	2012/13	2013/14		
Pre-Existing Diabetes	0.4%	0.5%	0.4%	0.7%	0.5%		
Gestational Diabetes	2.5%	3.2%	4.0%	4.7%	5.5%		
Any Diabetes	2.8%	3.7%	4.4%	5.3%	5.9%		

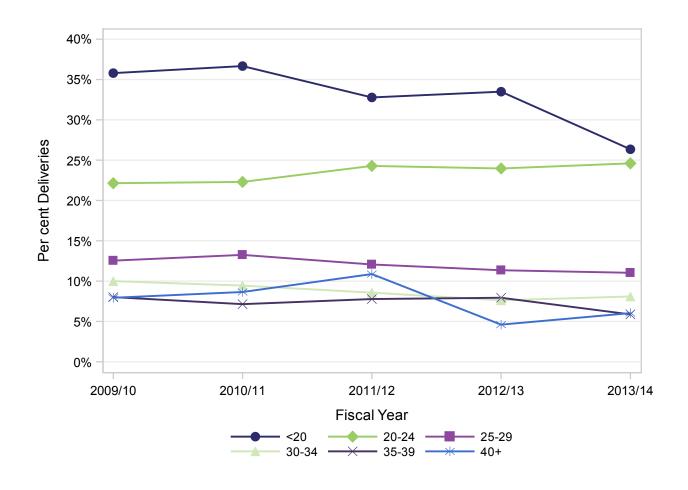
British Columbia adopted new diagnostic criteria for gestational diabetes in October 2010. This may cause a break in the trend for this diagnosis. Definitions and specifications begin on Page 84 of this document.

## Substance Use During Pregnancy Residents of Interior Health: April 1, 2009 - March 31, 2014



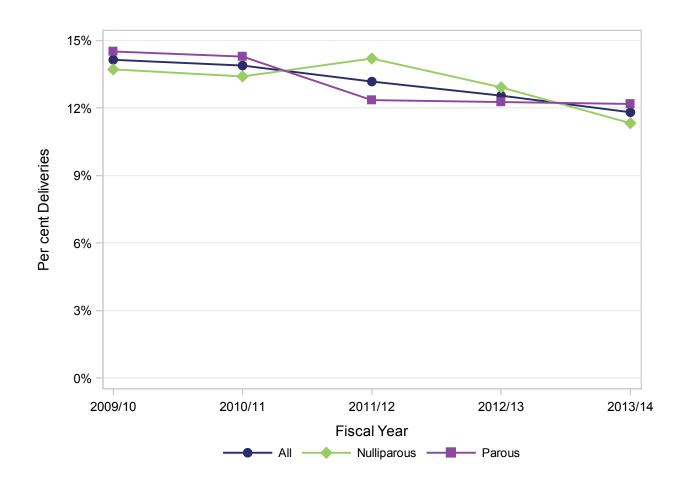
	Fiscal Year						
Substance	2009/10	2010/11	2011/12	2012/13	2013/14		
Cigarette Use	14.2%	13.9%	13.2%	12.6%	11.8%		
Alcohol as Risk	1.3%	1.3%	1.1%	1.1%	1.3%		
Other Drug Use	5.1%	5.2%	5.4%	5.9%	6.2%		

### **Cigarette Use at Any Time During Pregnancy by Maternal Age**Residents of Interior Health: April 1, 2009 - March 31, 2014



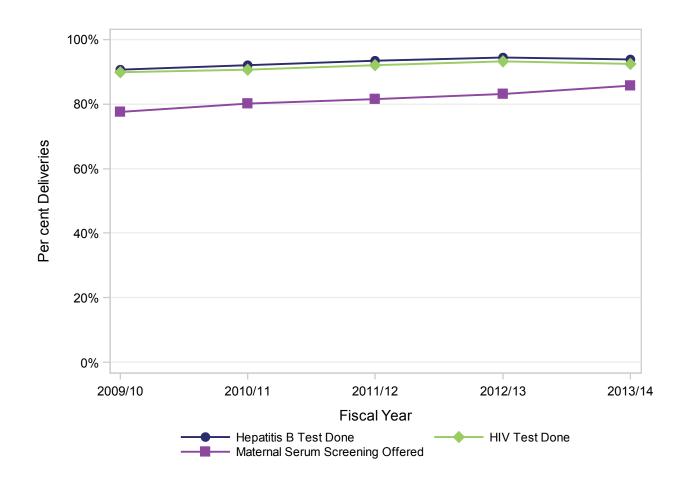
	Fiscal Year					
Maternal Age	2009/10	2010/11	2011/12	2012/13	2013/14	
<20 years	35.8%	36.7%	32.8%	33.5%	26.3%	
20-24 years	22.1%	22.3%	24.3%	24.0%	24.6%	
25-29 years	12.6%	13.2%	12.0%	11.3%	11.0%	
30-34 years	10.0%	9.5%	8.6%	7.7%	8.1%	
35-39 years	8.0%	7.1%	7.8%	7.9%	5.9%	
40+ years	7.9%	8.6%	10.9%	4.6%	6.1%	

### Cigarette Use at Any Time During Pregnancy **by Parity**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Parity	2009/10	2010/11	2011/12	2012/13	2013/14		
All	14.2%	13.9%	13.2%	12.6%	11.8%		
Nulliparous	13.7%	13.4%	14.2%	12.9%	11.3%		
Parous	14.5%	14.3%	12.4%	12.3%	12.2%		

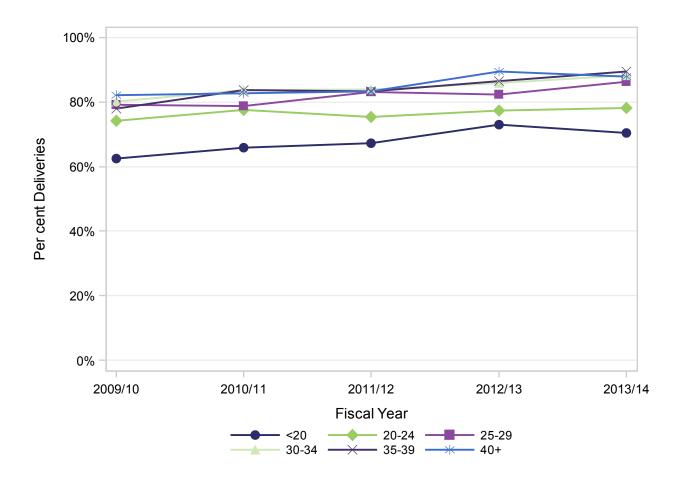
Maternal Screening Tests
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Type of Screening	2009/10	2010/11	2011/12	2012/13	2013/14		
Hepatitis B Test Done	90.8%	92.0%	93.4%	94.4%	93.8%		
HIV Test Done	89.8%	90.7%	92.1%	93.2%	92.4%		
Maternal Serum Screening Offered	77.6%	80.2%	81.5%	83.1%	85.7%		

Maternal serum screening refers to either private testing or testing offered through the BC Prenatal Genetic Screening Program. Click here for information on the BC Prenatal Genetic Screening Program.

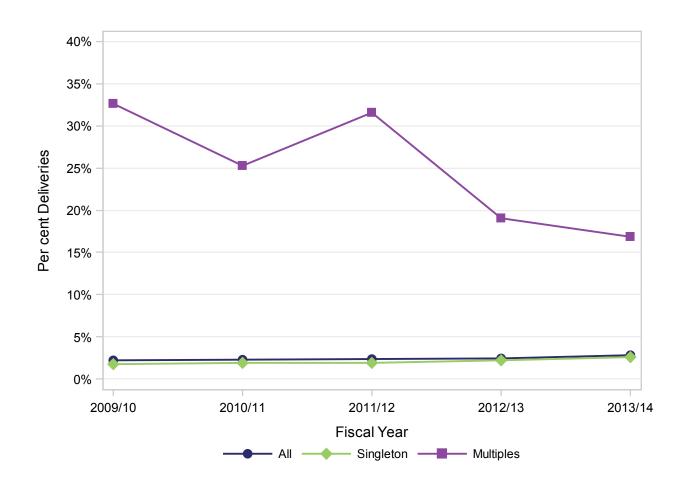
### Offer of Maternal Serum Screening **by Maternal Age**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year					
Maternal Age	2009/10	2010/11	2011/12	2012/13	2013/14	
<20 years	62.6%	65.8%	67.2%	73.1%	70.5%	
20-24 years	74.2%	77.6%	75.3%	77.5%	78.1%	
25-29 years	79.1%	78.8%	83.0%	82.4%	86.3%	
30-34 years	80.2%	83.7%	84.0%	85.9%	88.3%	
35-39 years	78.0%	83.8%	83.4%	86.6%	89.5%	
40+ years	82.1%	82.7%	83.3%	89.4%	87.9%	

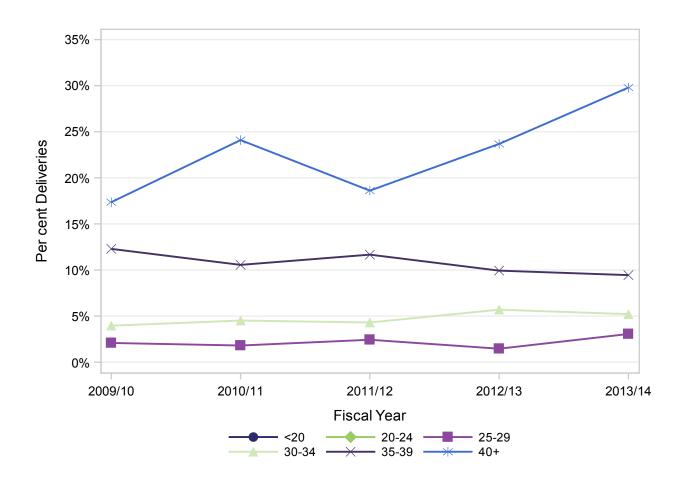
Maternal serum screening refers to either private testing or testing offered through the BC Prenatal Genetic Screening Program. Click here for information on the BC Prenatal Genetic Screening Program.

# Use of Artificial Reproductive Technology by Plurality Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Plurality	2009/10	2010/11	2011/12	2012/13	2013/14		
All	2.2%	2.3%	2.4%	2.4%	2.8%		
Singleton	1.8%	1.9%	1.9%	2.2%	2.6%		
Multiples	32.7%	25.3%	31.6%	19.0%	16.8%		

### **Use of Artificial Reproductive Technology** Nulliparous Women by Age Residents of Interior Health: April 1, 2009 - March 31, 2014



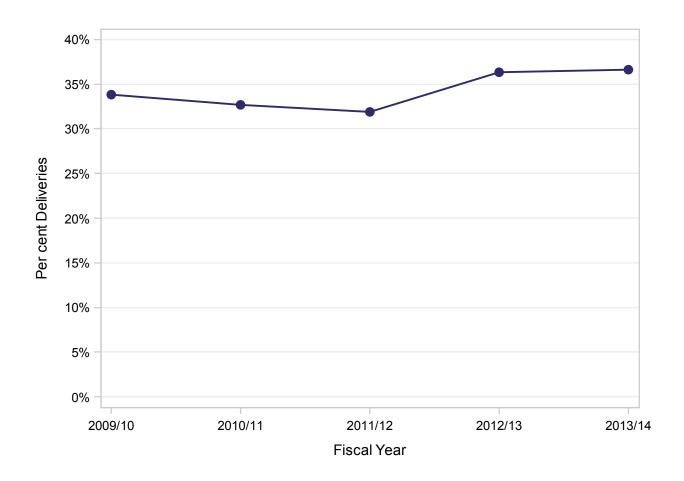
	Fiscal Year					
Plurality	2009/10	2010/11	2011/12	2012/13	2013/14	
<20 years	NR	NR	NR	NR	NR	
20-24 years	NR	NR	NR	NR	NR	
25-29 years	2.1%	1.8%	2.4%	1.5%	3.0%	
30-34 years	4.0%	4.6%	4.3%	5.7%	5.2%	
35-39 years	12.3%	10.6%	11.6%	10.0%	9.4%	
40+ years	17.4%	24.1%	18.6%	23.7%	29.8%	

NR: Rates and per cents based on numerators of 1 to 4 are not reported. Definitions and specifications begin on Page 84 of this document.

### Perinatal Health Report 2009/10 to 2013/14 Residents of Interior Health

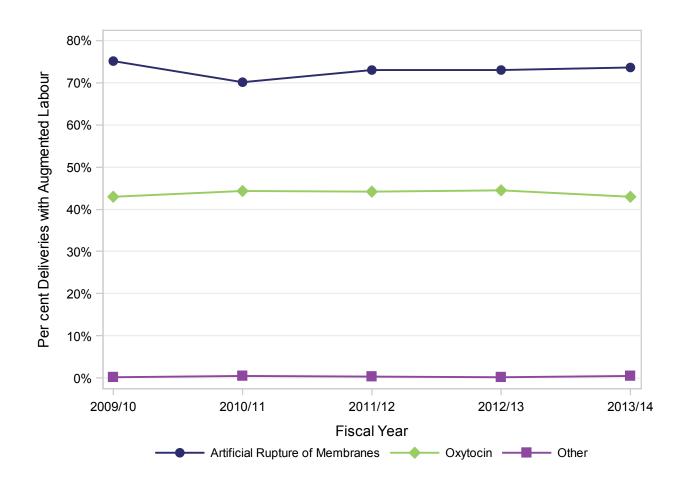
**Section 2: Labour and Delivery** 

**Labour Augmentation**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Labour Augmentation	33.8%	32.7%	31.9%	36.4%	36.6%		

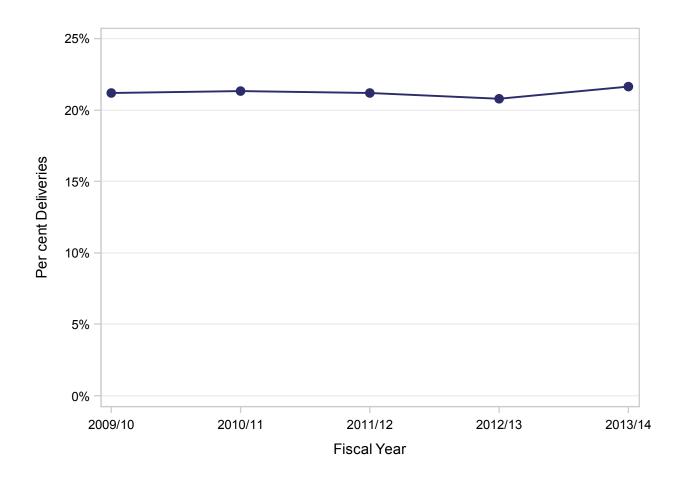
## Method of Labour Augmentation Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Method of Labour Augmentation	2009/10	2010/11	2011/12	2012/13	2013/14		
Artificial Rupture of Membranes	75.1%	70.1%	72.9%	73.0%	73.7%		
Oxytocin	42.9%	44.4%	44.1%	44.4%	42.9%		
Other	0.2%	0.5%	0.4%	0.2%	0.5%		

#### **Labour Induction**

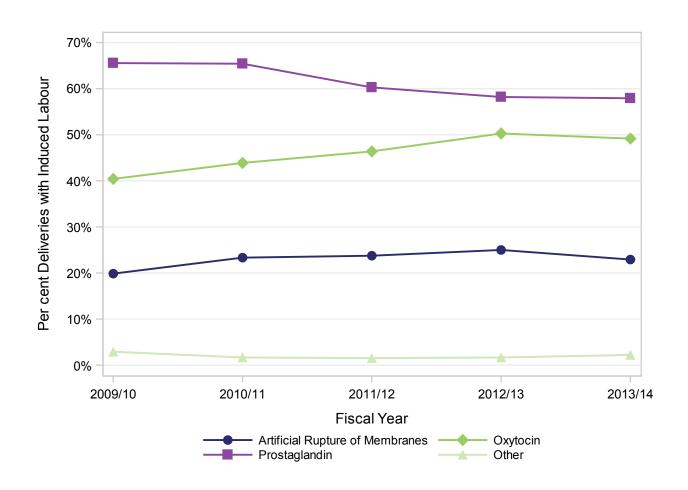
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Labour Induction	21.2%	21.3%	21.2%	20.8%	21.6%		

#### **Method of Labour Induction**

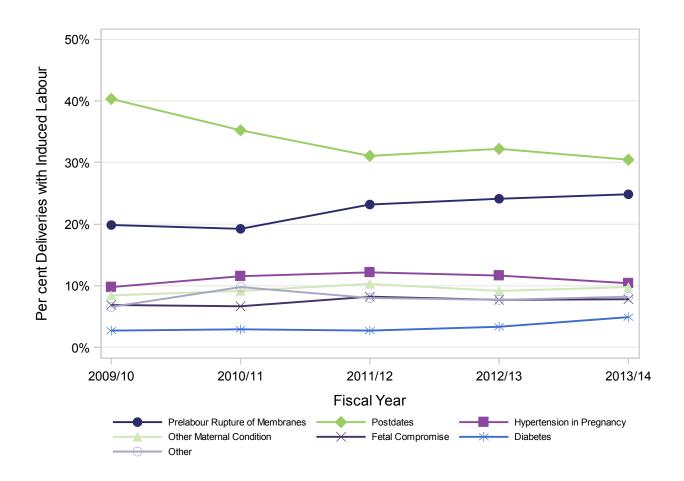
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year					
Method of Labour Induction	2009/10	2010/11	2011/12	2012/13	2013/14	
Artificial Rupture of Membranes	19.9%	23.3%	23.8%	25.0%	23.0%	
Oxytocin	40.4%	43.9%	46.3%	50.2%	49.1%	
Prostaglandin	65.5%	65.4%	60.2%	58.2%	57.9%	
Other	3.0%	1.7%	1.6%	1.7%	2.2%	

Multiple methods may be used.

## **Primary Indication for Labour Induction** Residents of Interior Health: April 1, 2009 - March 31, 2014

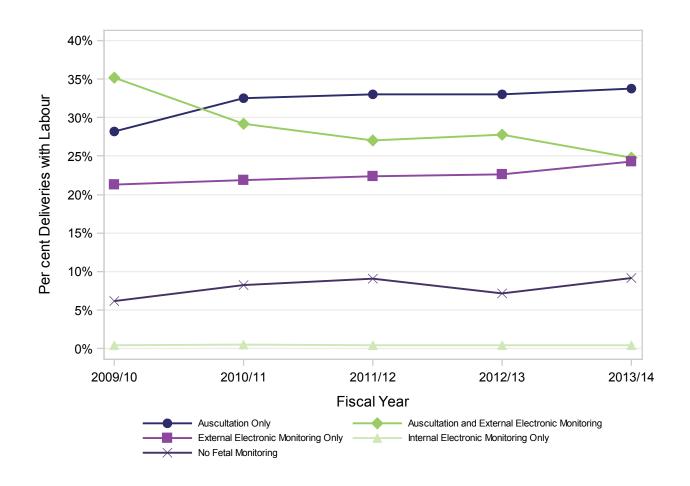


	Fiscal Year							
Primary Indication for Labour Induction	2009/10	2010/11	2011/12	2012/13	2013/14			
Prelabour Rupture of Membranes	19.8%	19.3%	23.2%	24.2%	24.9%			
Post Dates	40.3%	35.3%	31.1%	32.2%	30.5%			
Hypertension in Pregnancy	9.8%	11.5%	12.2%	11.7%	10.4%			
Other Maternal Condition	8.4%	9.2%	10.3%	9.2%	9.8%			
Fetal Compromise	6.9%	6.7%	8.2%	7.7%	7.8%			
Diabetes	2.7%	2.9%	2.7%	3.4%	5.0%			
Fetal Demise	1.0%	1.3%	1.0%	1.2%	0.9%			
Logistics	2.3%	2.1%	2.0%	0.9%	1.4%			
Antepartum Hemorrhage	NR	NR	NR	NR	NR			
Chorioamnionitis	NR	NR	NR	NR	NR			
Other	6.6%	9.7%	8.0%	7.7%	8.2%			
Unknown	1.8%	1.7%	1.1%	1.6%	0.8%			

Selected indications are included in the figure; all indications are included in the table.

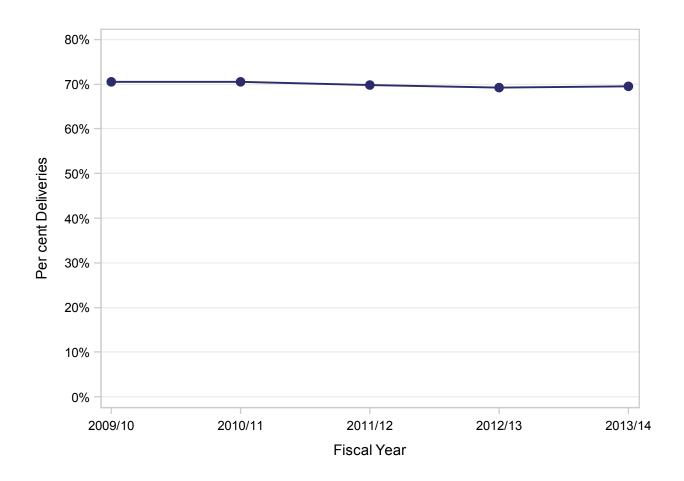
NR: Rates and per cents based on numerators of 1 to 4 are not reported.

## Method of Fetal Surveillance During Labour Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year					
Method of Fetal Surveillance During Labour	2009/10	2010/11	2011/12	2012/13	2013/14	
Auscultation Only	28.2%	32.5%	33.0%	33.0%	33.8%	
Auscultation and External Electronic Monitoring	35.1%	29.2%	27.0%	27.8%	24.8%	
External Electronic Monitoring Only	21.3%	21.9%	22.4%	22.6%	24.3%	
Internal Electronic Monitoring Only	0.4%	0.5%	0.4%	0.4%	0.4%	
No Fetal Monitoring	6.2%	8.3%	9.1%	7.1%	9.2%	

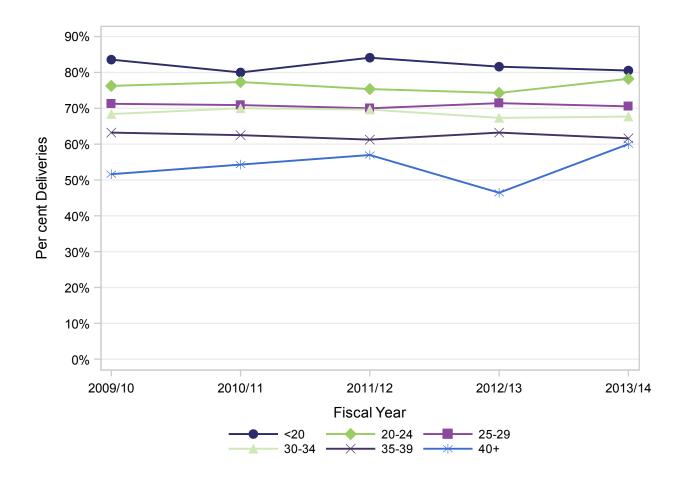
Vaginal Delivery
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Vaginal Delivery	70.6%	70.6%	69.8%	69.3%	69.5%		

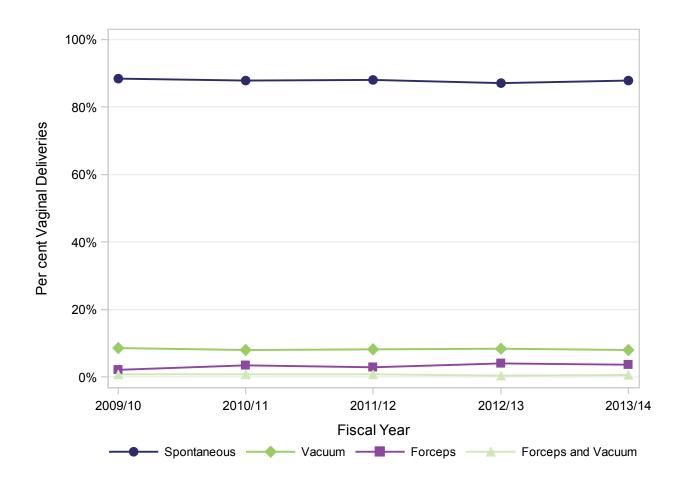
## **Vaginal Delivery**

**by Maternal Age**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year					
Maternal Age	2009/10	2010/11	2011/12	2012/13	2013/14	
<20 years	83.5%	80.1%	84.0%	81.6%	80.5%	
20-24 years	76.3%	77.3%	75.3%	74.3%	78.2%	
25-29 years	71.3%	70.8%	70.0%	71.4%	70.5%	
30-34 years	68.4%	70.0%	69.6%	67.4%	67.7%	
35-39 years	63.2%	62.6%	61.2%	63.3%	61.6%	
40+ years	51.7%	54.3%	56.9%	46.4%	60.0%	

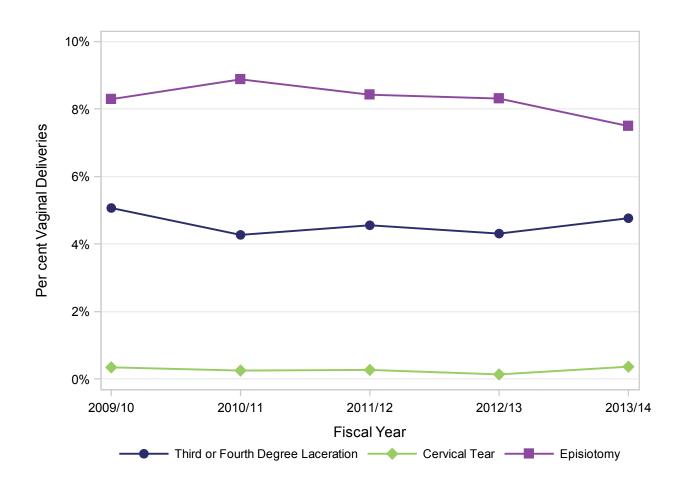
Type of Vaginal Delivery
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Type of Vaginal Delivery	2009/10	2010/11	2011/12	2012/13	2013/14		
Spontaneous	88.5%	87.9%	88.0%	87.2%	87.8%		
Vacuum	8.6%	7.9%	8.3%	8.3%	8.0%		
Forceps	2.2%	3.4%	3.0%	4.0%	3.6%		
Forceps and Vacuum	0.8%	0.8%	0.8%	0.5%	0.6%		

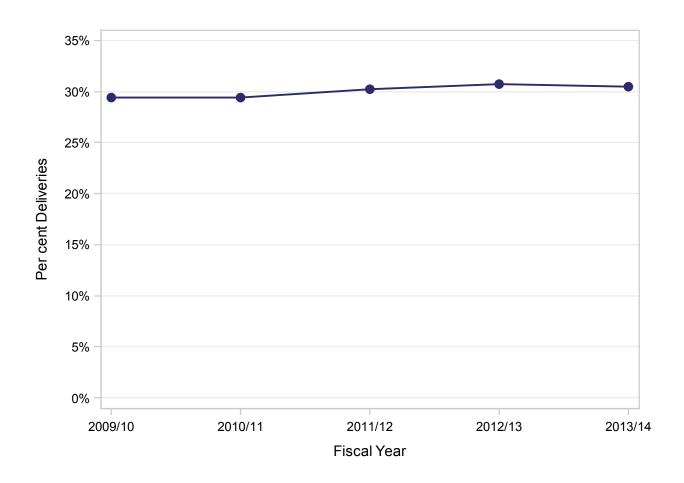
### **Perineal Trauma**

Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year					
Perineal Trauma	2009/10	2010/11	2011/12	2012/13	2013/14	
Third or Fourth Degree Laceration	5.1%	4.3%	4.6%	4.3%	4.8%	
Cervical Tear	0.3%	0.2%	0.3%	0.1%	0.4%	
Episiotomy	8.3%	8.9%	8.4%	8.3%	7.5%	

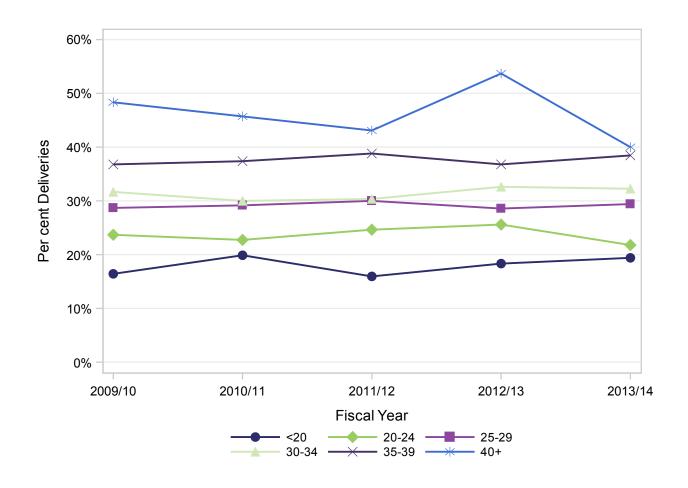
Cesarean Delivery
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year							
	2009/10	2010/11	2011/12	2012/13	2013/14			
Cesarean Delivery	29.4%	29.4%	30.2%	30.7%	30.5%			

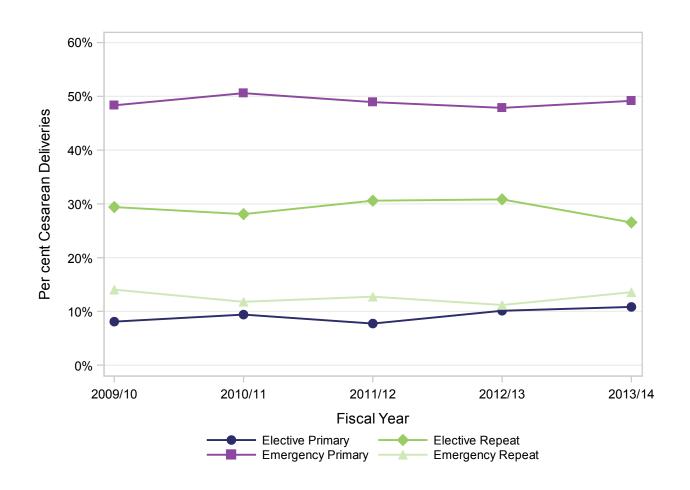
# **Cesarean Delivery**

by Maternal Age
Residents of Interior Health: April 1, 2009 - March 31, 2014



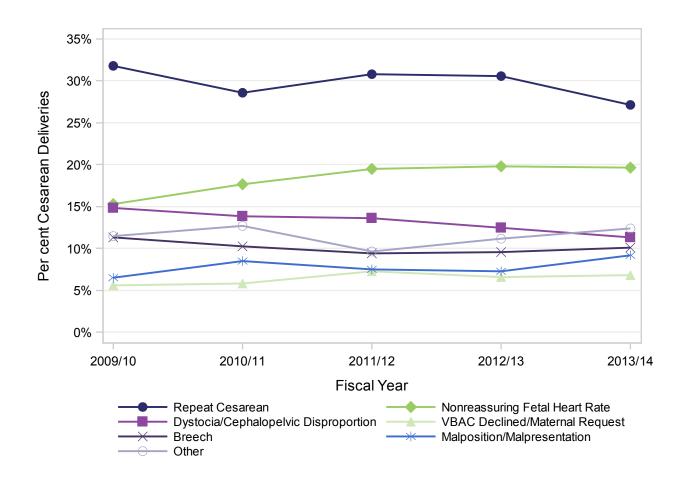
	Fiscal Year					
Maternal Age	2009/10	2010/11	2011/12	2012/13	2013/14	
<20 years	16.5%	19.9%	16.0%	18.4%	19.5%	
20-24 years	23.7%	22.7%	24.7%	25.7%	21.8%	
25-29 years	28.7%	29.2%	30.0%	28.6%	29.5%	
30-34 years	31.6%	30.0%	30.4%	32.6%	32.3%	
35-39 years	36.8%	37.4%	38.8%	36.7%	38.4%	
40+ years	48.3%	45.7%	43.1%	53.6%	40.0%	

Type of Cesarean Delivery
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year					
Type of Cesarean Delivery	2009/10	2010/11	2011/12	2012/13	2013/14	
Elective Primary	8.2%	9.5%	7.8%	10.1%	10.8%	
Elective Repeat	29.5%	28.1%	30.6%	30.8%	26.5%	
Emergency Primary	48.4%	50.5%	48.9%	47.9%	49.1%	
Emergency Repeat	14.0%	11.9%	12.7%	11.2%	13.6%	

## Primary Indication for Cesarean Delivery Residents of Interior Health: April 1, 2009 - March 31, 2014



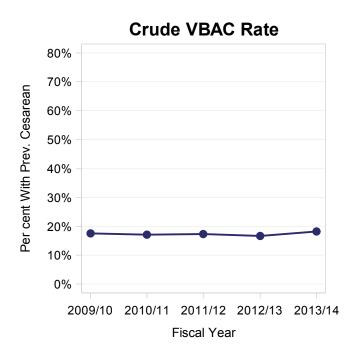
	Fiscal Year					
Primary Indication for Cesarean Delivery	2009/10	2010/11	2011/12	2012/13	2013/14	
Repeat Cesarean	31.8%	28.6%	30.8%	30.6%	27.1%	
Nonreassuring Fetal Heart Rate	15.3%	17.7%	19.5%	19.8%	19.6%	
Dystocia/Cephalopelvic Disproportion	14.9%	13.8%	13.6%	12.5%	11.3%	
VBAC Declined/Maternal Request	5.6%	5.8%	7.2%	6.6%	6.8%	
Breech	11.4%	10.2%	9.4%	9.6%	10.1%	
Malposition/Malpresentation	6.5%	8.5%	7.5%	7.3%	9.2%	
Placenta Previa	1.3%	1.0%	1.1%	0.9%	1.5%	
Abruptio Placenta	1.2%	1.4%	0.8%	1.5%	1.5%	
Active Herpes	0.6%	NR	0.4%	NR	0.4%	
Other	11.5%	12.7%	9.6%	11.2%	12.4%	
Unknown	NR	NR	NR	NR	NR	

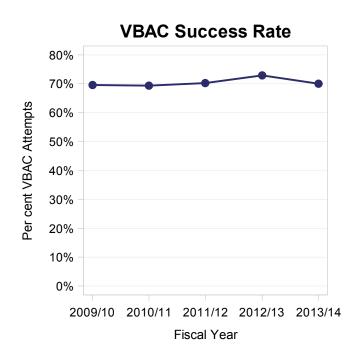
Selected indications are included in the figure; all indications are included in the table.

NR: Rates and per cents based on numerators of 1 to 4 are not reported.

### Vaginal Birth After Cesarean (VBAC)

Residents of Interior Health: April 1, 2009 - March 31, 2014





### Vaginal Birth After Cesarean (VBAC)

	Fiscal Year							
	2009/10	2010/11	2011/12	2012/13	2013/14			
Crude VBAC Rate	17.5%	17.1%	17.3%	16.6%	18.3%			
VBAC Eligible Rate	66.5%	66.3%	83.5%	83.1%	79.4%			
VBAC Attempted Rate	37.8%	36.8%	29.1%	27.3%	32.9%			
VBAC Success Rate	69.6%	69.3%	70.1%	72.9%	69.9%			

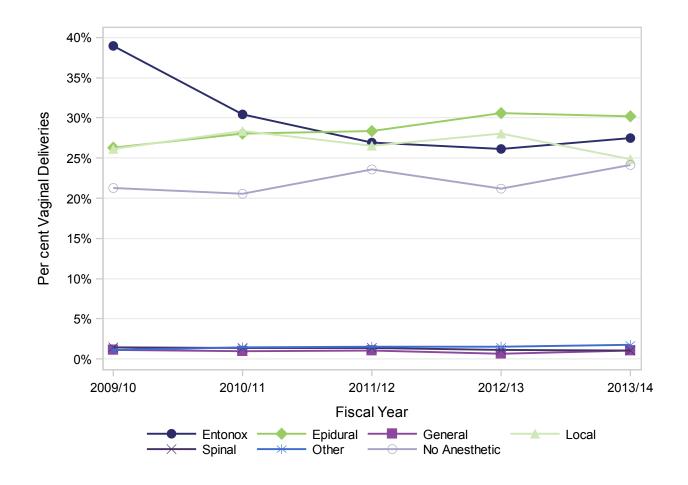
**Crude VBAC Rate:** Total number vaginal deliveries / Women with a previous cesarean

VBAC Eligible Rate: Women considered eligible for VBAC / Women with a previous cesarean

VBAC Attempted Rate: Women who attempted a VBAC / Women considered eligible for VBAC

VBAC Success Rate: Women with a vaginal delivery / Women who were eligible for and attempted VBAC

## **Anesthesia or Analgesia During Labour and Delivery** Vaginal Deliveries Residents of Interior Health: April 1, 2009 - March 31, 2014

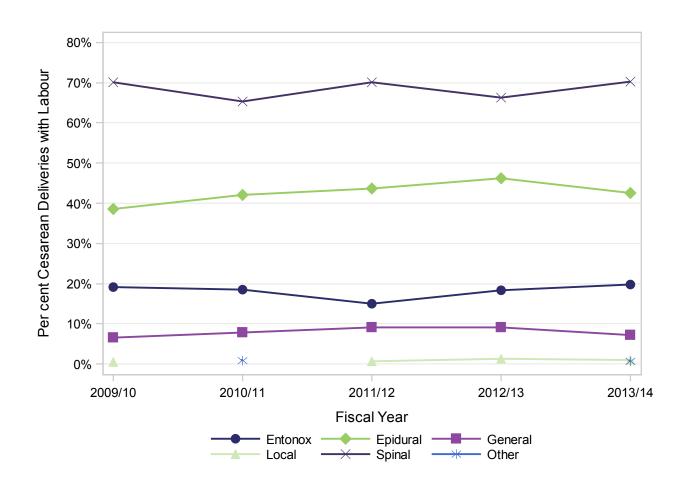


	Fiscal Year					
Anesthesia or Analgesia	2009/10	2010/11	2011/12	2012/13	2013/14	
Entonox	38.9%	30.4%	27.0%	26.1%	27.5%	
Epidural	26.3%	28.0%	28.4%	30.6%	30.2%	
General	1.2%	1.0%	1.1%	0.7%	1.1%	
Local	26.1%	28.4%	26.5%	28.1%	24.9%	
Spinal	1.5%	1.4%	1.4%	1.2%	1.0%	
Other	1.1%	1.4%	1.5%	1.5%	1.8%	
No Anesthetic	21.3%	20.6%	23.6%	21.2%	24.2%	

Multiple agents may be used.

## Anesthesia or Analgesia During Labour and Delivery Cesarean Deliveries with Labour

Residents of Interior Health: April 1, 2009 - March 31, 2014

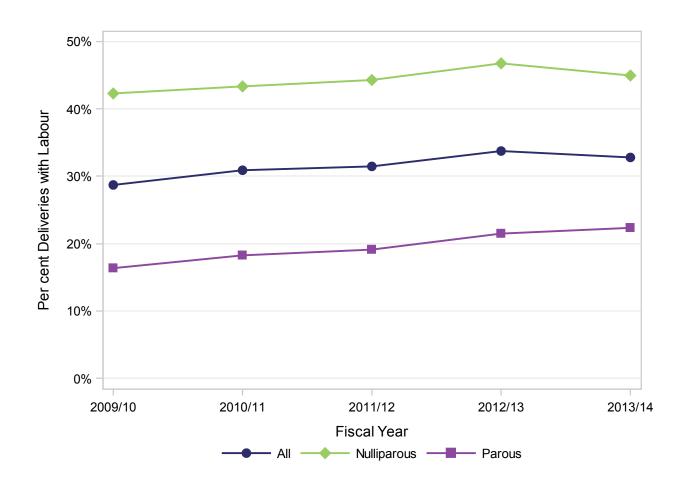


	Fiscal Year				
Anesthesia or Analgesia	2009/10	2010/11	2011/12	2012/13	2013/14
Entonox	19.2%	18.5%	15.0%	18.4%	19.7%
Epidural	38.5%	42.1%	43.6%	46.2%	42.6%
General	6.6%	7.9%	9.1%	9.2%	7.2%
Local	0.5%	NR	0.6%	1.2%	0.9%
Spinal	70.0%	65.3%	70.1%	66.3%	70.3%
Other	NR	0.8%	NR	NR	0.7%

Multiple agents may be used.

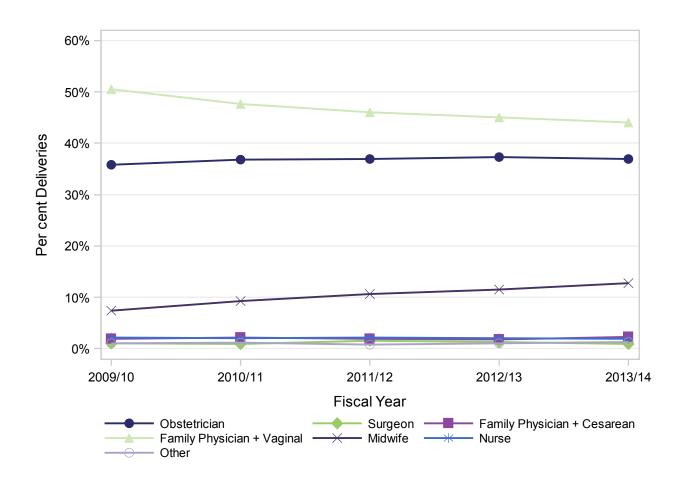
NR: Rates and per cents based on numerators of 1 to 4 are not reported. Definitions and specifications begin on Page 84 of this document.

## **Epidural Anesthesia or Analgesia During Labour and Delivery by Parity**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Parity	2009/10	2010/11	2011/12	2012/13	2013/14		
All	28.7%	30.9%	31.5%	33.7%	32.7%		
Nulliparous	42.3%	43.3%	44.3%	46.8%	44.9%		
Parous	16.3%	18.3%	19.1%	21.4%	22.3%		

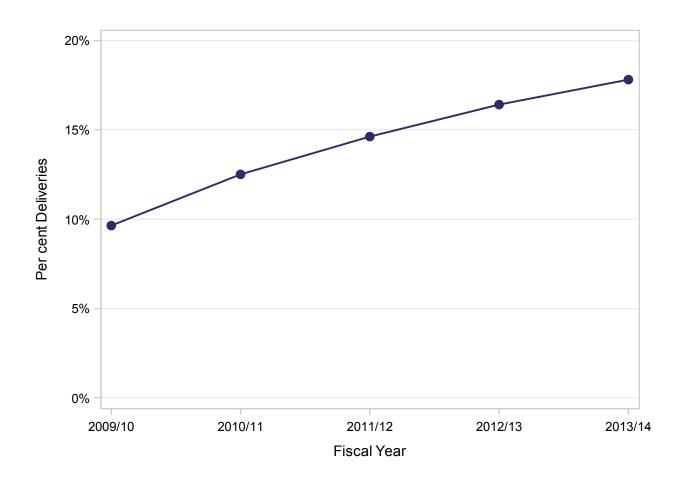
**Delivery Provider**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year					
Delivery Provider	2009/10	2010/11	2011/12	2012/13	2013/14	
Obstetrician	35.9%	36.8%	36.9%	37.3%	36.9%	
Surgeon	1.0%	1.0%	1.6%	1.3%	0.9%	
Family Physician + Cesarean	1.9%	2.2%	1.9%	1.8%	2.3%	
Family Physician + Vaginal	50.6%	47.6%	46.1%	45.0%	44.0%	
Midwife	7.4%	9.3%	10.6%	11.5%	12.7%	
Nurse	2.1%	2.0%	2.1%	2.0%	1.9%	
Other	1.1%	1.2%	0.8%	1.1%	1.2%	

Describes the training of the provider who delivered the baby. This may not be the same type of health care professional who provided antenatal care.

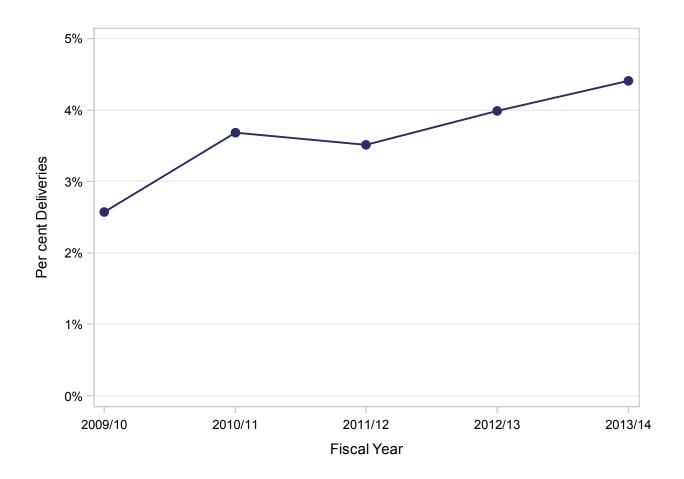
## Any Care Provided by a Registered Midwife Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Any Care by a Registered Midwife	9.7%	12.5%	14.6%	16.4%	17.8%		

Indicates if a registered midwife was involved at any point in maternal or newborn care. May not be the provider who performs the delivery. Definitions and specifications begin on Page 84 of this document.

## Deliveries at Home Attended by a Registered Midwife Residents of Interior Health: April 1, 2009 - March 31, 2014

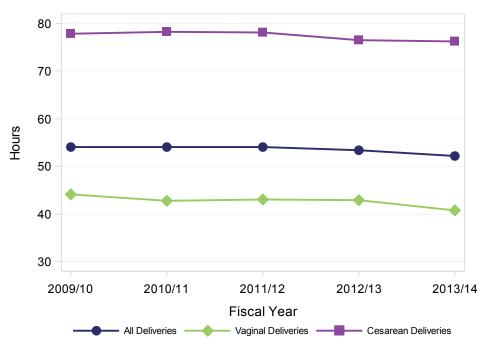


	Fiscal Year							
	2009/10	2010/11	2011/12	2012/13	2013/14			
Deliveries at Home	2.6%	3.7%	3.5%	4.0%	4.4%			

Includes deliveries at home where the woman was admitted to acute care within 24 hours. Definitions and specifications begin on Page 84 of this document.

## Length of Stay for the Delivery Episode of Care by Mode of Delivery Residents of Interior Health: April 1, 2009 - March 31, 2014

Median Total Length of Stay (Hours)

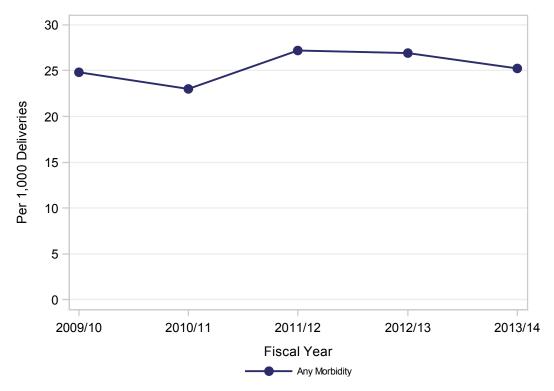


Median Antepartum, Postpartum, and Total Length of Stay for the Delivery Episode of Care

	Antepartum LOS (Hours)			Postpartum LOS (Hours)			Total LOS (Hours)								
	Fiscal Year			Fiscal Year			Fiscal Year								
Mode of Delivery	09/10	10/11	11/12	12/13	13/14	09/10	10/11	11/12	12/13	13/14	09/10	10/11	11/12	12/13	13/14
All Deliveries	5.1	5.3	5.0	5.2	5.2	46.7	46.4	47.5	46.1	44.2	54.0	54.0	54.1	53.4	52.2
Vaginal Deliveries	5.1	5.4	5.1	5.2	5.1	37.2	36.3	36.8	36.1	34.3	44.2	42.8	43.1	42.9	40.7
Cesarean Deliveries	4.8	4.9	4.3	5.2	5.7	70.9	71.1	70.4	67.0	66.1	77.8	78.3	78.1	76.6	76.2

Deliveries outside acute care facilities are excluded.

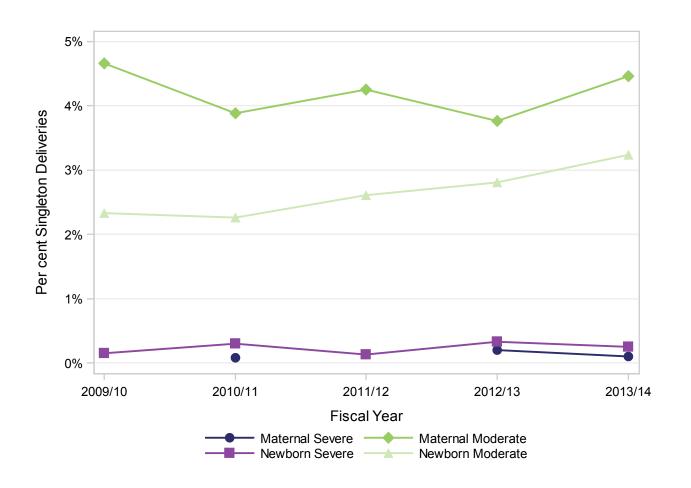
Maternal Morbidity
Residents of Interior Health: April 1, 2009 - March 31, 2014



### **Specific Maternal Morbidities**

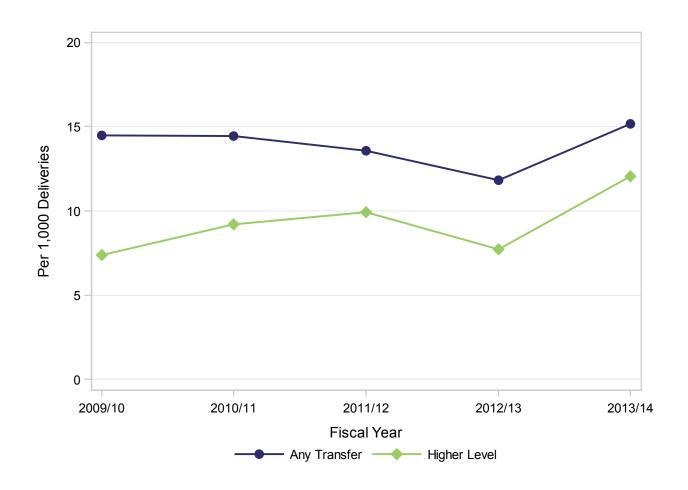
			Fiscal Year		
	2009/10	2010/11	2011/12	2012/13	2013/14
Type of Morbidity	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000
Liver Complications	4.0	3.0	4.2	3.9	4.5
Postpartum Hemorrhage with Transfusion	5.7	4.3	5.6	4.9	5.0
Urinary Tract Infection	3.2	4.6	5.1	3.6	2.8
Sepsis	5.2	5.2	5.4	6.2	6.8
Wound Infection	5.7	4.1	6.1	6.2	4.5
HELLP	3.4	4.0	4.6	3.4	4.1
Anesthetic Complications	2.0	1.1	1.6	1.8	2.5
Antepartum Hemorrhage with Transfusion	1.2	NR	0.8	NR	1.2
Eclampsia	NR	0.8	NR	NR	NR
Shock	0.0	NR	NR	0.0	0.0
Pulmonary Embolism	NR	NR	NR	NR	NR
Postpartum Hemorrhage with Hysterectomy	1.2	NR	NR	0.0	NR
Stroke	0.0	NR	NR	0.8	0.0

## Adverse Outcome of Labour or Delivery Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year							
	2009/10	2010/11	2011/12	2012/13	2013/14			
Any Adverse Outcome	7.1%	6.4%	6.8%	6.9%	7.7%			
Maternal Severe Adverse Outcome	NR	0.1%	NR	0.2%	0.1%			
Maternal Moderate Adverse Outcome	4.7%	3.9%	4.3%	3.8%	4.5%			
Neonatal Severe Adverse Outcome	0.2%	0.3%	0.1%	0.3%	0.3%			
Neonatal Moderate Adverse Outcome	2.3%	2.3%	2.6%	2.8%	3.2%			

## Maternal Hospital Transfers Residents of Interior Health: April 1, 2009 - March 31, 2014

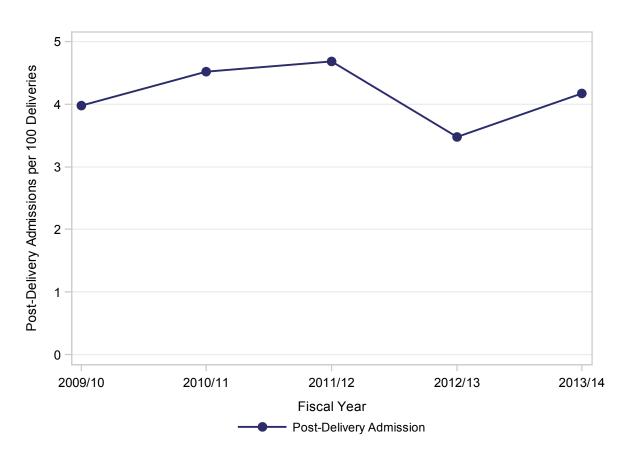


	Fiscal Year							
	2009/10	2013/14						
Type of Transfer	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000			
Any Transfer	14.5	14.4	13.6	11.8	15.2			
Higher Level	7.4	9.2	9.9	7.7	12.0			

Women may be transferred to another hospital for either maternal or neonatal indications.

Includes transfers from an inpatient Delivery Admission directly to another acute care facility. Women who delivered at home and were subsequently admitted to acute care are not included.

**Post-Delivery Admissions**Residents of Interior Health: April 1, 2009 - March 31, 2014



**Leading Diagnoses Associated with Post-Delivery Admissions** Per cent Post-Delivery Admissions

	Fiscal Year						
Most Responsible Diagnosis	2009/10	2010/11	2011/12	2012/13	2013/14		
Routine Postpartum Care	26.4%	25.3%	16.4%	16.0%	20.2%		
Postpartum Infection	13.2%	14.7%	15.0%	16.0%	16.2%		
Postpartum Hemorrhage	18.6%	17.5%	9.2%	16.0%	10.3%		
Other Wound Issues	4.7%	3.9%	4.8%	9.0%	7.5%		
Hypertension or Eclampsia	NR	1.8%	4.8%	4.7%	6.3%		
Other Diseases Complicating Pregnancy	4.3%	7.4%	7.2%	4.7%	5.5%		
Complications of Anesthesia	NR	NR	NR	NR	2.4%		
Retained Placenta Without Hemorrhage	NR	NR	2.4%	3.3%	2.0%		
Care of Breasts	0.0%	NR	2.7%	NR	NR		
Pregnancy-Associated Mental Health	NR	NR	NR	NR	NR		

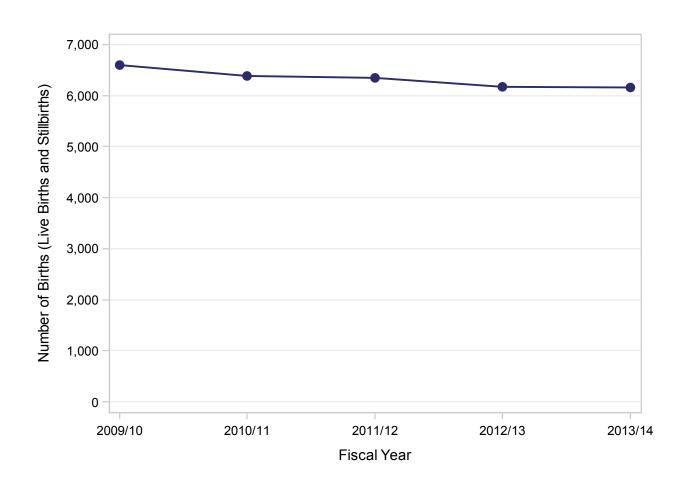
Post-Delivery Admissions include inter-hospital transfers and readmissions from home.

NR: Rates and per cents based on numerators of 1 to 4 are not reported.

### Perinatal Health Report 2009/10 to 2013/14 Residents of Interior Health

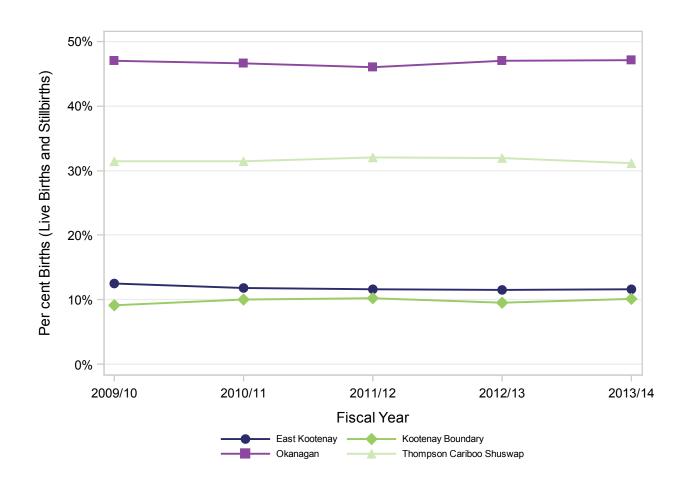
**Section 3: Newborn Health** 

**Total Births**Residents of Interior Health: April 1, 2009 - March 31, 2014



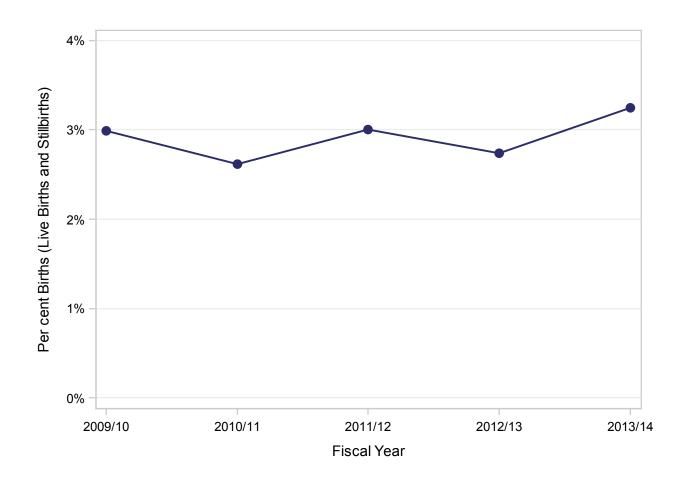
	Fiscal Year								
	2009/10	2010/11	2011/12	2012/13	2013/14				
Interior Health	6,594	6,390	6,353	6,176	6,159				

## Total Births by Resident Health Service Delivery Area Residents of Interior Health: April 1, 2009 - March 31, 2014



					Fisca	ıl Year				
	200	9/10	201	2010/11		2011/12		2/13	2013/14	
Health Service Delivery Area	Count	Per cent	Count	Per cent						
East Kootenay	822	12.5%	758	11.9%	740	11.6%	712	11.5%	718	11.7%
Kootenay Boundary	600	9.1%	642	10.0%	651	10.2%	587	9.5%	622	10.1%
Okanagan	3,098	47.0%	2,978	46.6%	2,927	46.1%	2,901	47.0%	2,903	47.1%
Thompson Cariboo Shuswap	2,074	31.5%	2,012	31.5%	2,035	32.0%	1,976	32.0%	1,916	31.1%

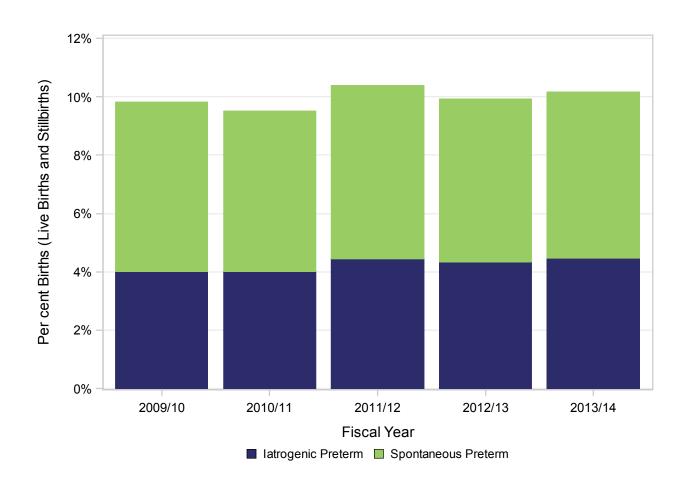
## **Births Part of a Multiple Gestation** Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year								
	2009/10	2010/11	2011/12	2012/13	2013/14				
Multiple Gestation	3.0%	2.6%	3.0%	2.7%	3.2%				

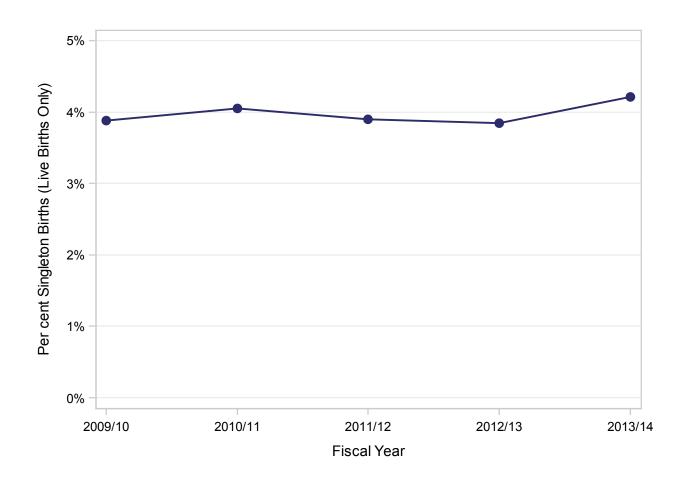
### **Preterm Birth**

Residents of Interior Health: April 1, 2009 - March 31, 2014



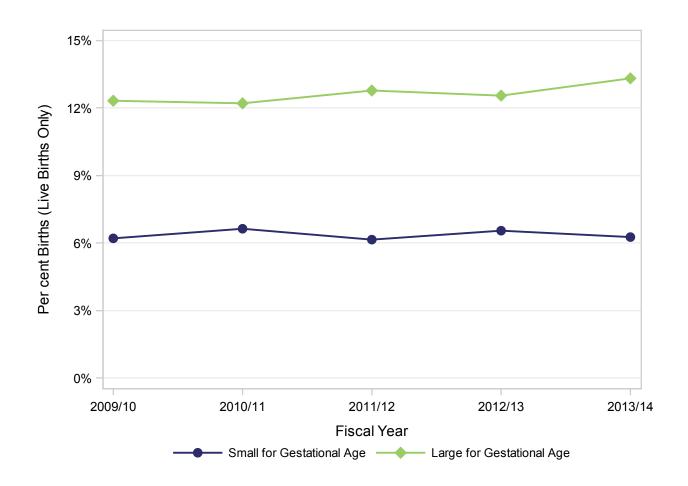
		Fiscal Year									
	2009/10	2010/11	2011/12	2012/13	2013/14						
latrogenic Preterm	4.0%	4.0%	4.5%	4.3%	4.5%						
Spontaneous Preterm	5.8%	5.5%	5.9%	5.6%	5.7%						
Total Preterm	9.9%	9.5%	10.4%	9.9%	10.2%						

## **Low Birthweight Singletons**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year								
	2009/10	2010/11	2011/12	2012/13	2013/14				
Low Birthweight	3.9%	4.0%	3.9%	3.8%	4.2%				

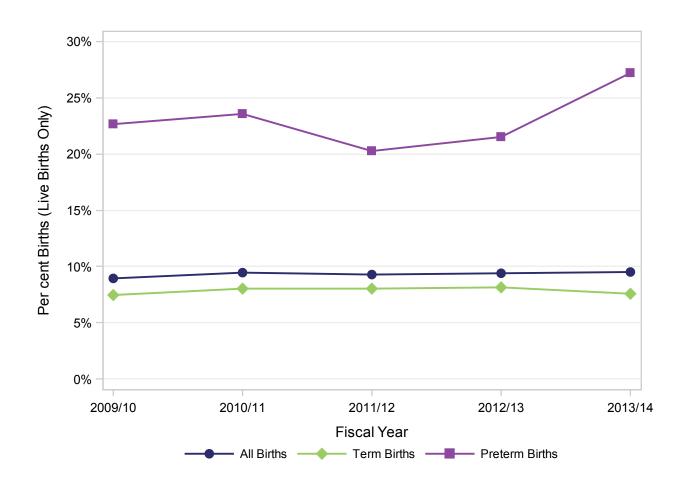
Weight for Gestational Age Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year									
	2009/10	2010/11	2011/12	2012/13	2013/14					
Small for Gestational Age	6.2%	6.6%	6.1%	6.5%	6.3%					
Large for Gestational Age	12.3%	12.2%	12.8%	12.6%	13.3%					

# Newborn Resuscitation by Gestational Age

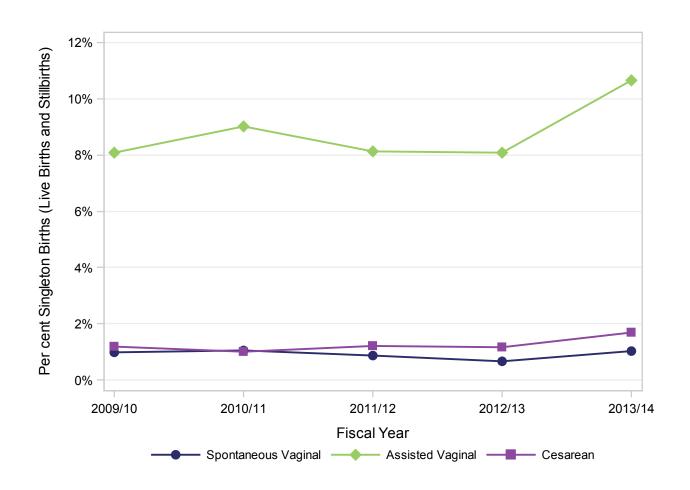
**by Gestational Age**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Gestational Age	2009/10	2010/11	2011/12	2012/13	2013/14		
All Births	8.9%	9.4%	9.3%	9.3%	9.5%		
Term Births	7.5%	8.0%	8.0%	8.1%	7.6%		
Preterm Births	22.7%	23.4%	20.1%	21.1%	27.5%		

# **Birth Injury**

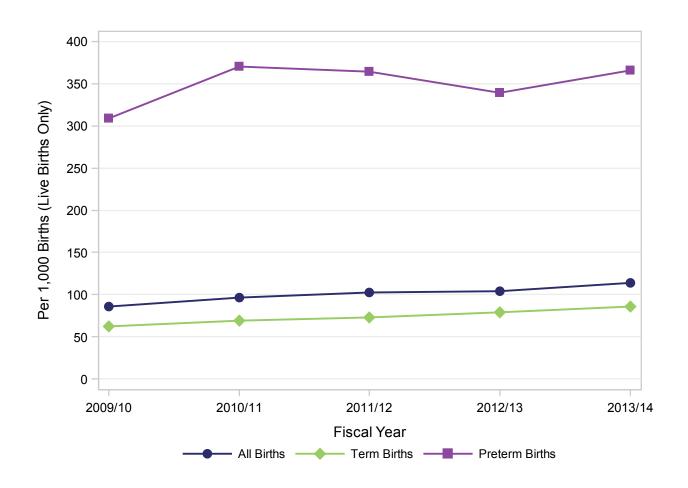
by Mode of Delivery
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
Mode of Delivery	2009/10	2010/11	2011/12	2012/13	2013/14		
Spontaneous Vaginal	1.0%	1.1%	0.9%	0.7%	1.0%		
Assisted Vaginal	8.1%	9.0%	8.1%	8.1%	10.7%		
Cesarean	1.2%	1.0%	1.2%	1.2%	1.7%		

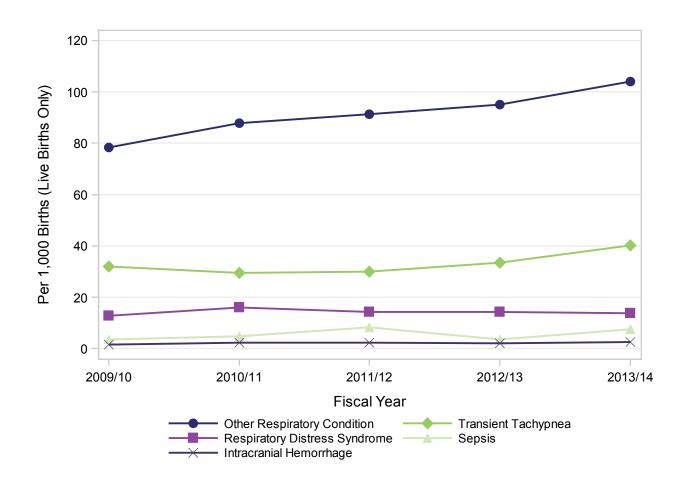
# **Neonatal Morbidity**

by Gestational Age Residents of Interior Health: April 1, 2009 - March 31, 2014



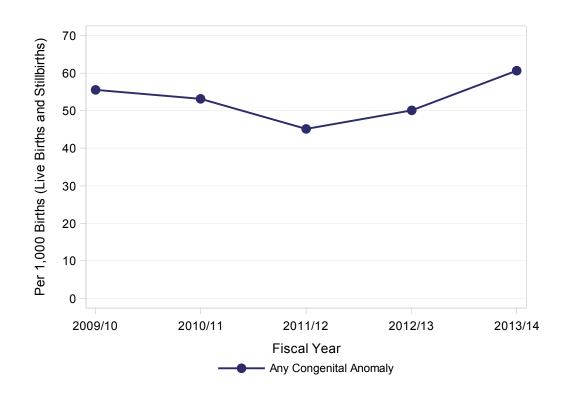
	Fiscal Year						
	2009/10 2010/11		2011/12	2012/13	2013/14		
Gestational Age	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000		
All Births	86.1	96.6	102.5	103.8	113.6		
Term Births	62.4	68.8	72.9	78.9	85.7		
Preterm Births	309.0	370.3	364.5	339.0	365.6		

Type of Neonatal Morbidity
Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Type of Morbidity	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000		
Other Respiratory Condition	78.4	87.9	91.2	95.1	104.1		
Transient Tachypnea	31.9	29.6	29.9	33.4	40.1		
Respiratory Distress Syndrome	12.8	16.0	14.2	14.2	13.7		
Sepsis	3.5	4.9	8.2	3.6	7.5		
Intracranial Hemorrhage	1.7	2.2	2.4	2.1	2.6		

Congenital Anomalies
Residents of Interior Health: April 1, 2009 - March 31, 2014

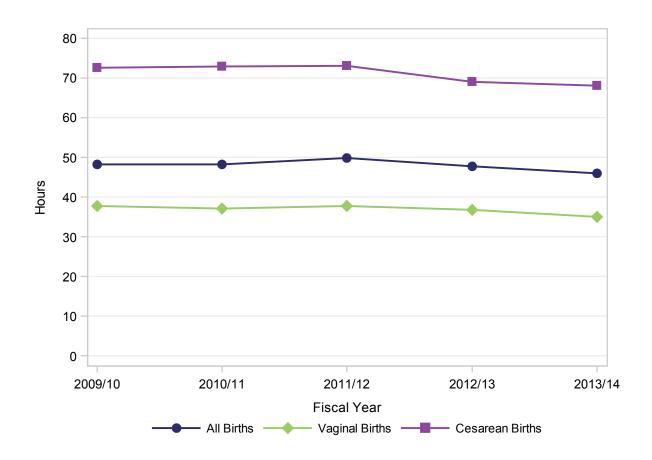


**Specific Congenital Anomalies** Per 1,000 Live Births and Stillbirths

	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Type of Congenital Anomaly	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000		
Chromosomal	1.5	2.3	3.0	2.1	2.8		
Circulatory System	11.5	11.7	10.2	11.3	16.2		
Cleft Lip or Palate	1.7	2.2	2.0	2.4	2.8		
Digestive System	10.3	11.7	8.7	11.0	12.3		
Eye, Ear, Face, or Neck	1.1	3.0	2.4	1.3	3.9		
Genital Organs	7.3	6.9	6.0	7.0	6.5		
Musculoskeletal System	13.3	11.7	11.2	12.8	13.2		
Nervous System	1.4	2.0	1.7	1.3	1.3		
Respiratory System	1.2	1.3	1.6	NR	2.4		
Urinary System	6.1	4.4	3.3	3.9	4.7		
Other Specific Anomaly	5.3	4.7	4.7	5.2	6.7		

NR: Rates and per cents based on numerators of 1 to 4 are not reported. Definitions and specifications begin on Page 84 of this document.

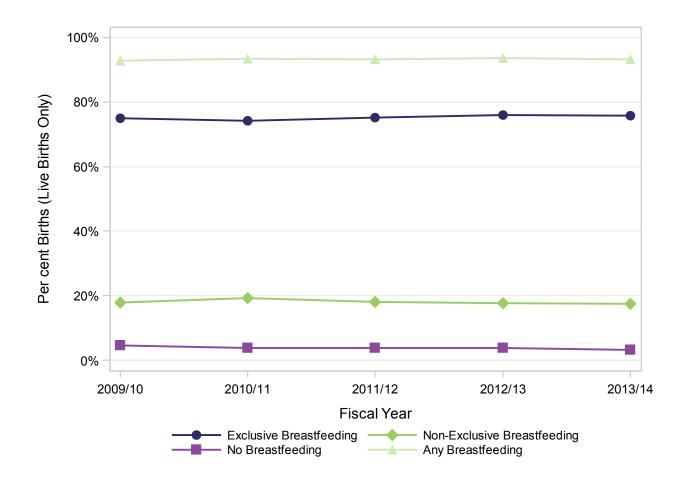
## Median Length of Stay (Hours) for the Birth Episode of Care Live Births by Mode of Delivery Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
All Births	48.2	48.2	49.8	47.8	45.9		
Vaginal Births	37.8	37.1	37.8	36.8	35.0		
Cesarean Births	72.6	72.9	73.1	69.0	68.1		

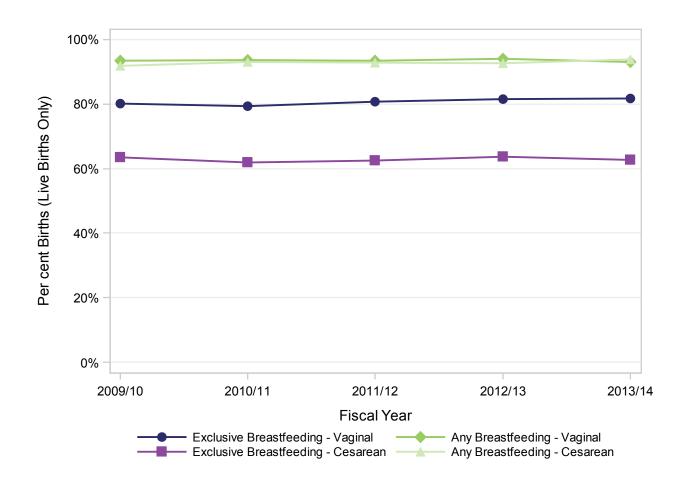
Delivery method is based on maternal information. Multifetal pregnancies where any newborn was born by cesarean are included in the Cesarean births category.

## Breastfeeding During the Birth Admission Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Exclusive Breastfeeding	75.1%	74.1%	75.2%	76.0%	75.8%		
Non-Exclusive Breastfeeding	17.9%	19.3%	18.1%	17.6%	17.6%		
No Breastfeeding	4.7%	3.7%	3.8%	3.8%	3.3%		
Any Breastfeeding	92.9%	93.4%	93.3%	93.6%	93.3%		

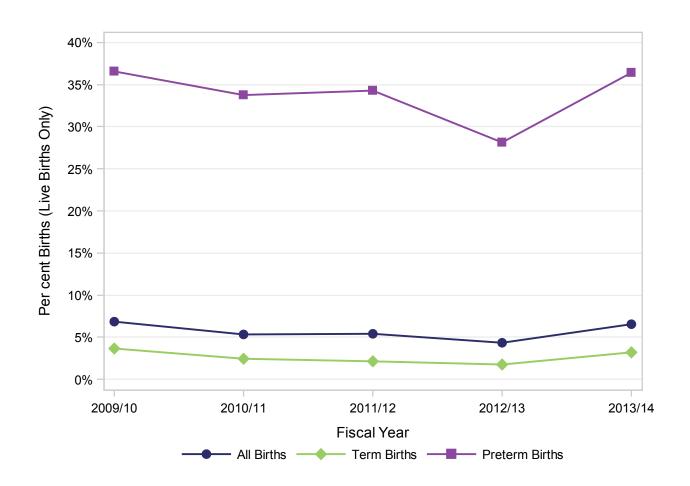
## **Breastfeeding During the Birth Admission by Mode of Delivery**Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Exclusive Breastfeeding - Vaginal	80.1%	79.4%	80.8%	81.5%	81.7%		
Any Breastfeeding - Vaginal	93.4%	93.6%	93.5%	94.0%	93.0%		
Exclusive Breastfeeding - Cesarean	63.4%	62.0%	62.5%	63.7%	62.7%		
Any Breastfeeding - Cesarean	91.8%	92.9%	92.8%	92.7%	93.9%		

## Neonatal Intensive Care Use During Birth Episode of Care by Gestational Age

Residents of Interior Health: April 1, 2009 - March 31, 2014



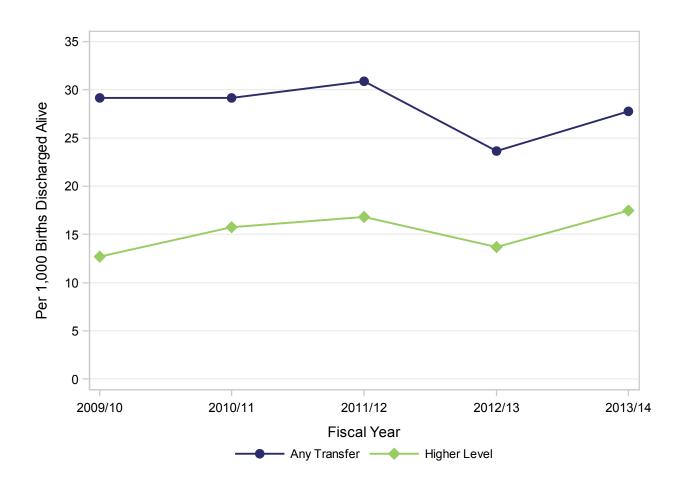
## Median Length of Stay (Days) in Neonatal Intensive Care During Birth Episode of Care by Gestational Age

	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
All Births	13.0	14.0	12.0	12.0	17.0		
Term Births	6.0	7.5	3.0	6.0	7.0		
Preterm Births	17.0	25.0	21.0	23.0	27.5		

Between April 1, 2008 and March 31, 2010 discharges, NICU days were assigned when the baby received Level II or III care per the DAD abstraction manual. Effective April 1, 2010 discharges, NICU days are assigned based on baby's needs as defined by PSBC Neonatal Daily Classification Tool.

Click here to access resources on the Neonatal Daily Classification Tool.

## Transfer to Another Hospital from the Birth Admission Residents of Interior Health: April 1, 2009 - March 31, 2014

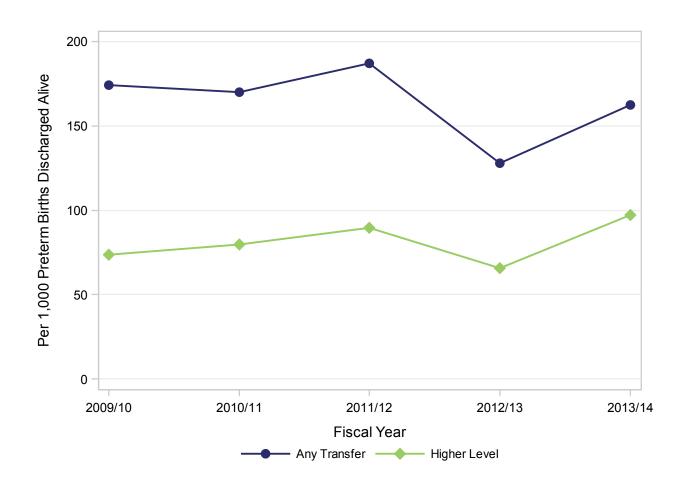


	Fiscal Year						
	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000		
Any Transfer	29.1	29.1	30.9	23.6	27.8		
Higher Level	12.7	15.8	16.8	13.7	17.5		

Neonates may be transferred to another hospital for either maternal or neonatal indications. Definitions and specifications begin on Page 84 of this document.

# Transfer to Another Hospital from the Birth Admission Preterm Births

Residents of Interior Health: April 1, 2009 - March 31, 2014

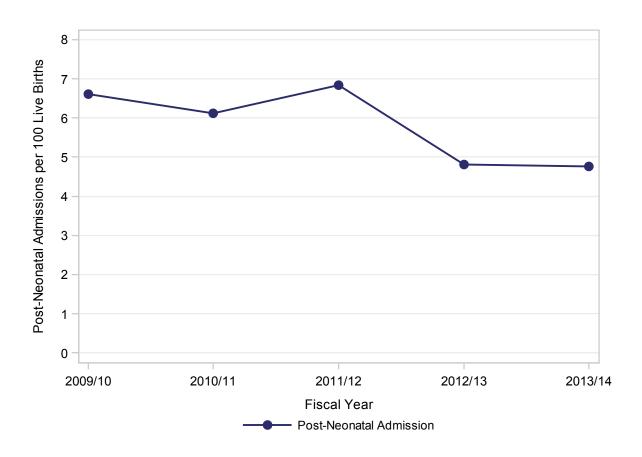


	Fiscal Year						
	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000		
Any Transfer	174.1	169.8	187.1	127.8	162.5		
Higher Level	73.5	79.7	89.6	65.6	97.2		

Neonates may be transferred to another hospital for either maternal or neonatal indications. Definitions and specifications begin on Page 84 of this document.

## **Post-Neonatal Admissions**

Residents of Interior Health: April 1, 2009 - March 31, 2014



Leading Diagnoses Associated with Post-Neonatal Admissions
Per cent Post-Neonatal Admissions

			Fiscal Year		
Most Responsible Diagnosis	2009/10	2010/11	2011/12	2012/13	2013/14
Low Birth Weight or Preterm Birth	23.7%	22.4%	21.2%	23.6%	28.8%
Jaundice	46.5%	39.3%	39.0%	30.4%	26.7%
Congenital Anomalies	8.3%	10.8%	7.6%	9.5%	13.7%
Feeding Problems	7.6%	7.2%	8.8%	9.8%	8.6%
Respiratory Distress	2.5%	7.2%	8.3%	10.1%	7.2%
Other Infections	3.7%	4.1%	5.1%	5.7%	5.5%
Respiratory Infections	4.1%	4.4%	4.8%	7.4%	4.8%
Apnea	1.8%	1.3%	2.8%	NR	2.1%
Isoimmunization	1.2%	1.8%	1.4%	2.0%	2.1%
Urinary Tract Infections	NR	1.5%	NR	NR	NR

Post-Neonatal Admissions include inter-hospital transfers and readmissions from home.

NR: Rates and per cents based on numerators of 1 to 4 are not reported.

## **In-Hospital Perinatal Mortality**

Residents of Interior Health: April 1, 2009 - March 31, 2014

	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
In-Hospital Perinatal Mortality	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000		
Crude Stillbirth Rate = Total Stillbirths / (Live Births + Stillbirths)	8.5	10.9	9.1	10.6	8.4		
Stillbirth Rate = Stillbirths >=500g / (Live Births + Stillbirths >=500g)	2.4	3.1	3.3	3.7	2.1		
Early Neonatal Mortality Rate = Early Neonatal Deaths / Live Births	0.9	1.7	1.4	2.0	2.4		
Perinatal Mortality Rate = Perinatal Deaths / (Live Births + Stillbirths >=500g)	3.3	4.9	4.7	5.7	4.6		
Late Neonatal Mortality Rate = Late Neonatal Deaths / Live Births	NR	NR	NR	NR	0.0		
Total Neonatal Mortality Rate = Total Neonatal Deaths / Live Births	1.2	2.0	1.6	2.1	2.4		
Post-Neonatal Mortality Rate = Post-Neonatal Deaths / Live Births	NR	NR	NR	NR	NR		
Infant Mortality Rate = Infant Deaths / Live Births	1.4	2.4	1.9	2.6	2.6		

#### **DEFINITIONS:**

**Crude Stillbirths:** Infant born deceased at any birthweight. Includes late pregnancy terminations. **Stillbirths >=500g:** Infant born deceased weighing >=500g. Excludes late pregnancy terminations.

Early Neonatal Deaths: Infant born alive died in hospital between 0 and 6 days after birth.

**Perinatal Deaths:** Stillbirths >=500g + early neonatal deaths.

Late Neonatal Deaths: Infant born alive died in hospital between 7 and 27 days after birth.

**Total Neonatal Deaths:** Early neonatal deaths + late neonatal deaths.

Post-Neonatal Deaths: Infant born alive died in hospital between 28 and 364 days after birth.

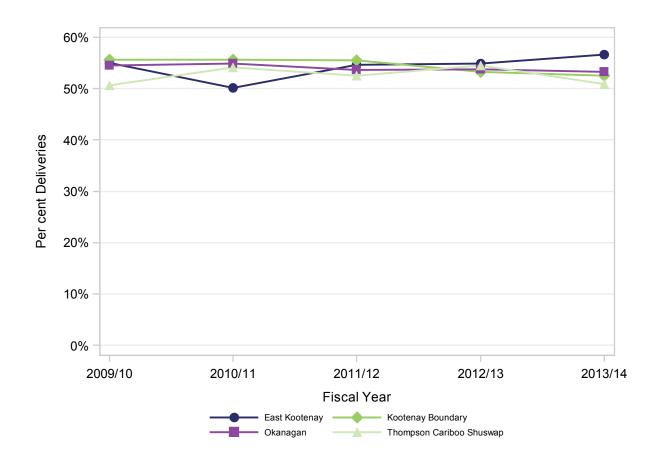
Infant Deaths: Total neonatal death + post-neonatal deaths.

Section 3: Newborn Health.

## Perinatal Health Report 2009/10 to 2013/14 Residents of Interior Health

**Section 4: 'Normal Labour'** 

## **Deliveries with 'Normal Labour' by Resident Health Service Delivery Area** Residents of Interior Health: April 1, 2009 - March 31, 2014



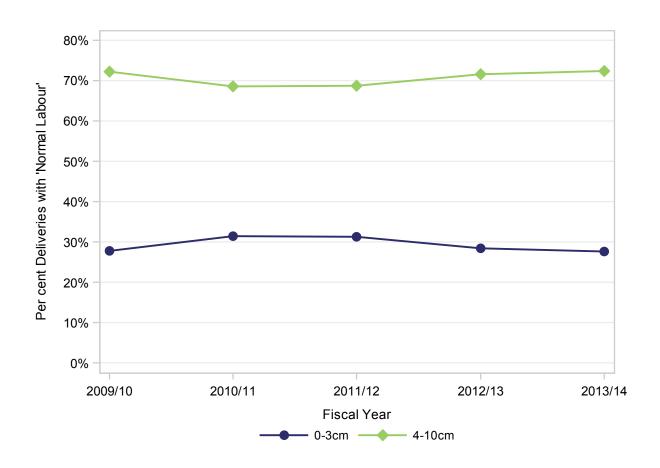
	Fiscal Year								
Health Service Delivery Area	2009/10	2010/11	2011/12	2012/13	2013/14				
East Kootenay	55.0%	50.2%	54.6%	54.8%	56.6%				
Kootenay Boundary	55.6%	55.7%	55.5%	53.3%	52.5%				
Okanagan	54.5%	54.9%	53.6%	53.7%	53.3%				
Thompson Cariboo Shuswap	50.6%	54.1%	52.5%	54.5%	50.9%				

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

## **Cervical Dilation at Admission**

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year									
Cervical Dilation at Admission	2009/10	2010/11	2011/12	2012/13	2013/14					
0-3cm	27.9%	31.4%	31.3%	28.5%	27.6%					
4-10cm	72.1%	68.6%	68.7%	71.5%	72.4%					
Missing	17.7%	16.7%	17.2%	21.3%	24.6%					

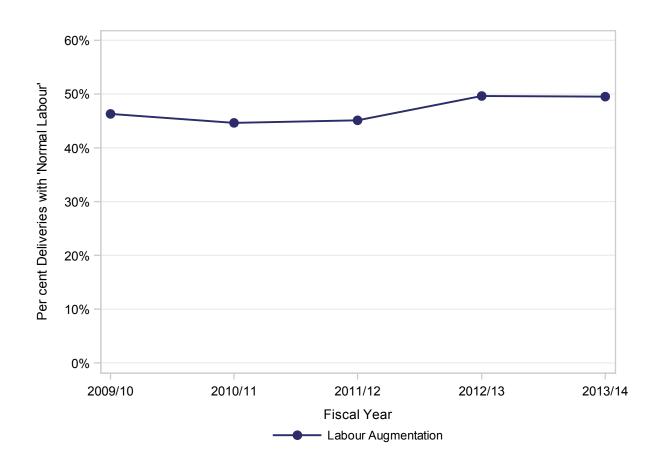
Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

The proportion of women dilated 0-3 or 4-10cm is based on women with non-missing dilation at admission. Definitions and specifications begin on Page 84 of this document.

## **Labour Augmentation**

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



# Labour Augmentation by Mode of Delivery Deliveries with 'Normal Labour'

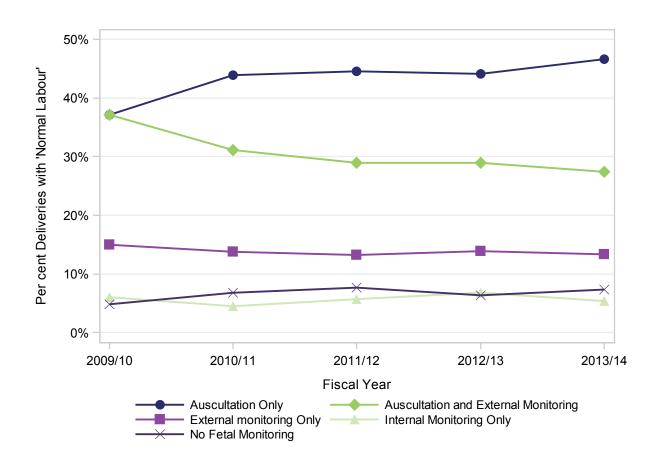
	Fiscal Year									
Mode of Delivery	2009/10	2010/11	2011/12	2012/13	2013/14					
Spontaneous Vaginal	43.3%	40.5%	40.4%	44.6%	44.6%					
Assisted Vaginal	57.7%	59.1%	63.4%	68.4%	66.6%					
Cesarean	59.2%	63.5%	62.2%	67.5%	68.8%					

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

## **Method of Fetal Surveillance During Labour**

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



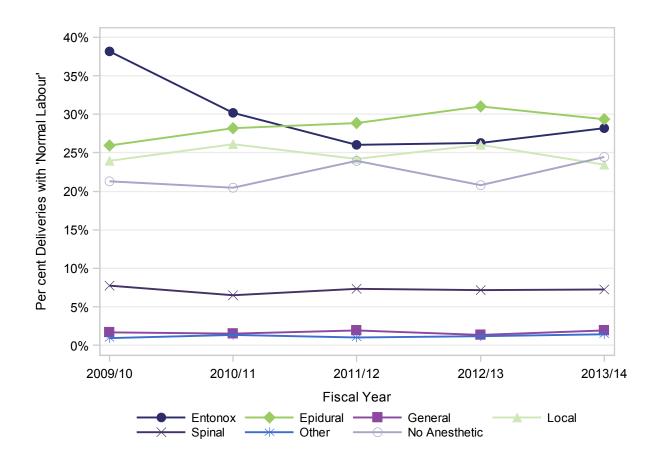
	Fiscal Year									
Method of Fetal Surveillance	2009/10	2010/11	2011/12	2012/13	2013/14					
Auscultation Only	37.1%	43.9%	44.5%	44.1%	46.7%					
Auscultation and External Monitoring	37.1%	31.1%	28.9%	28.9%	27.4%					
External Monitoring Only	14.9%	13.8%	13.2%	13.9%	13.3%					
Internal Monitoring Only	6.0%	4.5%	5.7%	6.7%	5.3%					
No Fetal Monitoring	4.8%	6.8%	7.7%	6.3%	7.3%					

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

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

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year								
Anesthesia or Analgesia	2009/10	2010/11	2011/12	2012/13	2013/14				
Entonox	38.2%	30.2%	26.0%	26.3%	28.2%				
Epidural	26.0%	28.2%	28.8%	31.0%	29.4%				
General	1.7%	1.5%	2.0%	1.3%	1.9%				
Local	24.0%	26.1%	24.2%	26.0%	23.5%				
Spinal	7.7%	6.5%	7.4%	7.2%	7.2%				
Other	0.9%	1.3%	1.0%	1.2%	1.4%				
No Anesthetic	21.3%	20.4%	24.0%	20.8%	24.5%				

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

Multiple agents may be used.

## Median Length of Labour Stages (Hours) by Mode of Delivery

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014

		Second Stage (Hours)								
Mode of Delivery	09/10	10/11	11/12	12/13	13/14	09/10	10/11	11/12	12/13	13/14
Spontaneous Vaginal	4.9	5.0	4.7	4.8	4.4	0.4	0.4	0.4	0.4	0.4
Assisted Vaginal	7.1	8.2	7.3	7.8	7.3	1.8	2.0	1.8	1.9	1.6
Cesarean	9.6	10.0	9.1	9.7	9.5	3.3	3.3	3.4	3.4	3.6

## Median Length of Stay (Hours) in Acute Care for Delivery Episode of Care by Mode of Delivery

Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014

	Antepartum LOS (Hours)			Po	Postpartum LOS (Hours)			Total LOS (Hours)							
Mode of Delivery	09/10	10/11	11/12	12/13	13/14	09/10	10/11	11/12	12/13	13/14	09/10	10/11	11/12	12/13	13/14
Spontaneous Vaginal	3.6	3.9	3.6	3.6	3.5	34.2	33.2	33.6	32.7	31.8	38.6	37.6	37.9	37.6	36.0
Assisted Vaginal	8.4	8.3	7.8	8.5	8.0	44.2	45.3	48.0	45.1	43.3	55.6	55.3	57.9	55.8	51.4
Cesarean	10.7	11.2	11.0	10.9	11.0	70.9	71.2	74.9	68.1	67.1	82.8	82.6	86.6	80.3	79.5

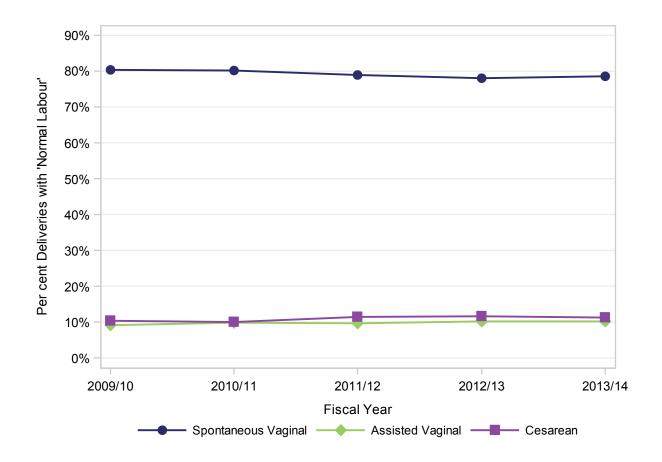
Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

Deliveries outside acute care facilities are excluded.

## **Mode of Delivery**

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



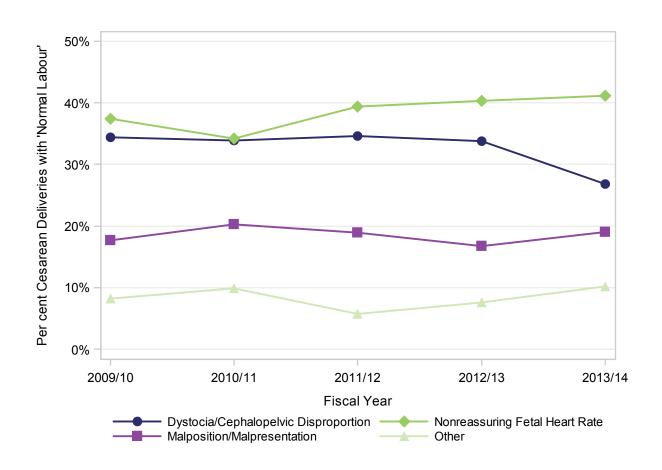
	Fiscal Year								
Mode of Delivery	2009/10	2010/11	2011/12	2012/13	2013/14				
Spontaneous Vaginal	80.4%	80.1%	78.9%	78.1%	78.5%				
Assisted Vaginal	9.2%	9.8%	9.7%	10.3%	10.2%				
Cesarean	10.5%	10.1%	11.4%	11.6%	11.3%				

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

## **Primary Indication for Cesarean Delivery**

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year							
Primary Indication for Cesarean Delivery	2009/10	2010/11	2011/12	2012/13	2013/14			
Dystocia/Cephalopelvic Disproportion	34.4%	33.9%	34.6%	33.8%	26.8%			
Nonreassuring Fetal Heart Rate	37.5%	34.2%	39.4%	40.3%	41.2%			
Malposition/Malpresentation	17.6%	20.3%	18.9%	16.8%	19.1%			
Maternal Request	NR	NR	NR	NR	NR			
Abruptio Placenta	NR	NR	NR	NR	1.4%			
Placenta Previa	NR	NR	NR	NR	NR			
Active Herpes	1.4%	NR	NR	NR	NR			
Other	8.3%	9.9%	5.8%	7.6%	10.2%			

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

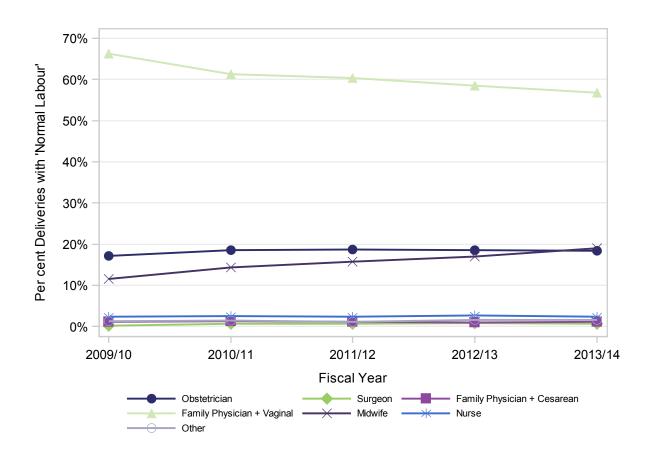
Selected indications are included in the figure; all indications are included in the table.

NR: Rates and per cents based on numerators of 1 to 4 are not reported.

## **Delivery Provider**

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year							
Delivery Provider	2009/10	2010/11	2011/12	2012/13	2013/14			
Obstetrician	17.2%	18.5%	18.6%	18.6%	18.5%			
Surgeon	0.2%	0.6%	0.6%	0.8%	0.7%			
Family Physician + Cesarean	1.1%	1.3%	1.1%	1.0%	1.1%			
Family Physician + Vaginal	66.3%	61.3%	60.4%	58.5%	56.8%			
Midwife	11.5%	14.3%	15.7%	17.0%	18.9%			
Nurse	2.4%	2.5%	2.4%	2.6%	2.4%			
Other	1.3%	1.4%	1.2%	1.5%	1.6%			

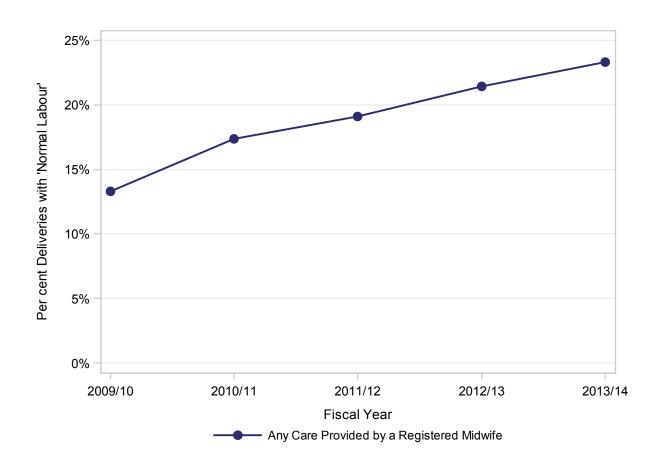
Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

Describes the training level of the provider who delivered the baby. This may not be the same type of health care professional who provided antenatal care

## Any Care Provided by a Registered Midwife

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



## Any Care Provided by a Registered Midwife by Mode of Delivery Deliveries with 'Normal Labour'

		Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14			
Spontaneous Vaginal	15.0%	19.4%	21.0%	23.4%	25.2%			
Assisted Vaginal	5.0%	8.1%	10.8%	13.9%	14.1%			
Cesarean	7.2%	10.1%	12.9%	15.2%	18.2%			

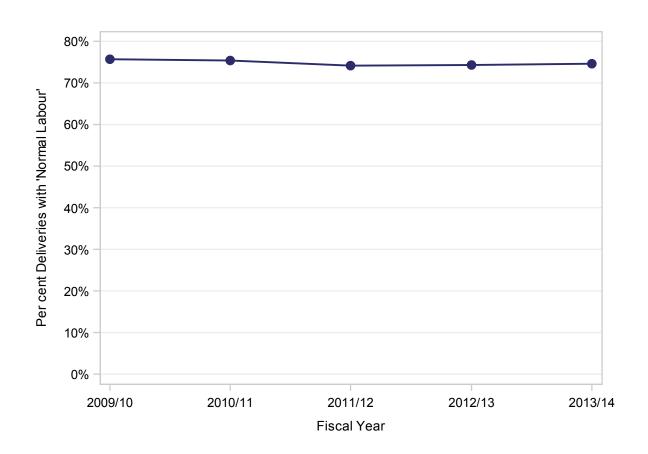
Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

Indicates if a registered midwife was involved at any point during prenatal care or the delivery episode. May not be the provider who performs the delivery.

## **Deliveries with 'Normal Childbirth'**

## Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
'Normal Childbirth'	75.6%	75.4%	74.2%	74.3%	74.6%		

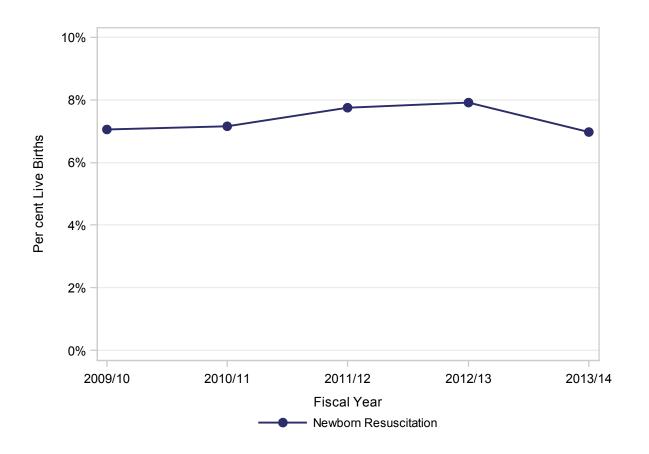
Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

'Normal Childbirth' excludes the following: spinal anaesthesia, general anaesthesia, vacuum-assisted delivery, forceps-assited delivery, cesarean delivery, or episiotomy.

#### **Newborn Resuscitation**

### Babies Born from Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



## Newborn Resuscitation by Mode of Delivery Babies Born from Deliveries with 'Normal Labour'

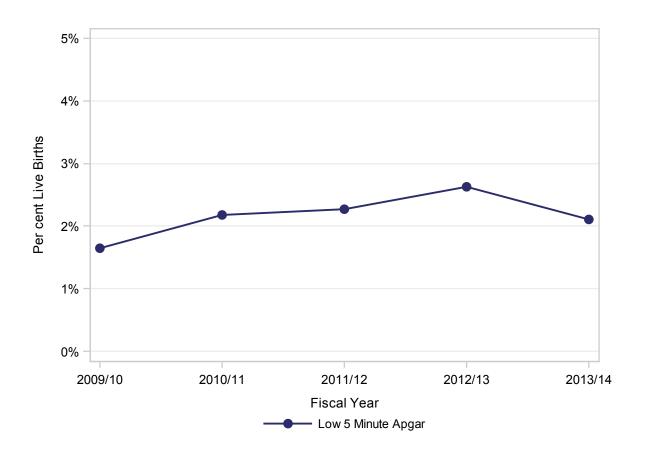
**Fiscal Year Mode of Delivery** 2009/10 2010/11 2011/12 2012/13 2013/14 Spontaneous Vaginal 5.7% 5.5% 6.3% 5.6% 5.5% 11.9% 12.2% 12.3% 14.7% 12.3% **Assisted Vaginal** 12.9% 15.2% 13.9% 17.1% 12.2% Cesarean

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

## **Low 5 Minute Apgar Score**

## Babies Born from Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



# Low 5 Minute Apgar Score by Mode of Delivery Babies Born from Deliveries with 'Normal Labour'

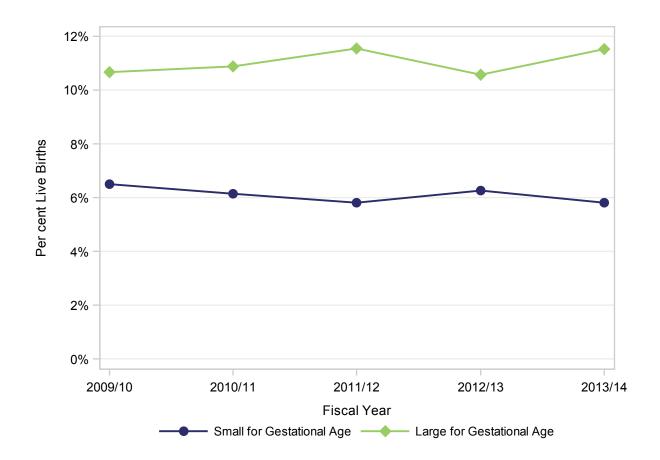
		Fiscal Year						
Mode of Delivery	2009/10	2010/11	2011/12	2012/13	2013/14			
Spontaneous Vaginal	1.3%	1.7%	1.9%	1.8%	1.4%			
Assisted Vaginal	2.5%	4.8%	4.0%	4.7%	4.9%			
Cesarean	3.6%	3.8%	3.4%	6.3%	4.4%			

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

## Weight for Gestational Age

## Babies Born from Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



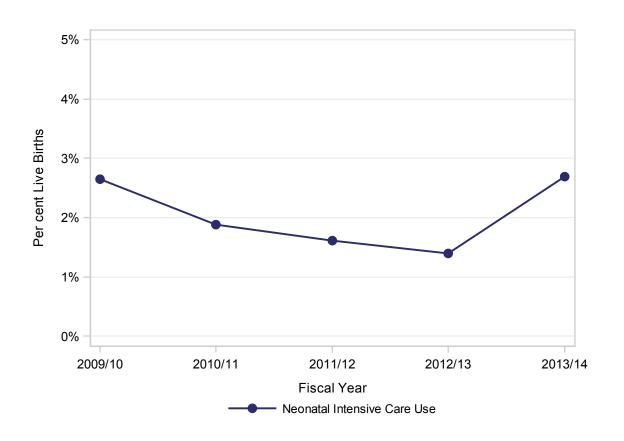
	Fiscal Year						
	2009/10	2010/11	2011/12	2012/13	2013/14		
Small for Gestational Age	6.5%	6.2%	5.8%	6.3%	5.8%		
Large for Gestational Age	10.7%	10.9%	11.5%	10.6%	11.5%		

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

## **Neonatal Intensive Care Use During Birth Episode of Care**

Babies Born from Deliveries with 'Normal Labour'

Residents of Interior Health: April 1, 2009 - March 31, 2014



# Neonatal Intensive Care Use During Birth Episode by Mode of Delivery Babies Born from Deliveries with 'Normal Labour'

	Fiscal Year					
Mode of Delivery	2009/10	2010/11	2011/12	2012/13	2013/14	
Spontaneous Vaginal	1.8%	1.0%	1.1%	0.8%	1.9%	
Assisted Vaginal	4.4%	3.9%	3.1%	2.7%	5.2%	
Cesarean	7.7%	6.7%	3.9%	4.5%	6.1%	

Deliveries with 'Normal Labour' are those where the woman has no history of cesarean delivery and delivers a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

Between April 1, 2008 and March 31, 2010 discharges, NICU days were assigned when the baby received Level II or III care per the DAD abstraction manual. Effective April 1, 2010 discharges, NICU days are assigned based on baby's needs as defined by PSBC Neonatal Daily Classification Tool.

Click here to access resources on the Neonatal Daily Classification Tool.

## **Definitions**

### **Section 1: Maternal Health**

#### **Delivery Within Home Health Authority**

- Woman delivered in the Health Authority in which she lives.
  - Deliveries at home with a registered midwife are always considered within the home Health Authority.
  - Residents of Vancouver Coastal who deliver at BC Women's Hospital & Health Centre deliver within their home Health Authority.

#### **Deliveries to Residents of Other Health Authorities**

- Deliveries to women who reside in a different Health Authority.
  - Deliveries at home with a registered midwife are always considered within the home Health Authority.
  - For deliveries in the Provincial Health Services Authority, this represents women who are not residents of Vancouver Coastal.

#### **Parity**

 Indicates whether a woman delivered a previous pregnancy ≥20 weeks gestation or ≥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**

- Low Antenatal Care Women with fewer than five antenatal care visits documented in the PDR.
- Missing Women with no information documented about the number of antenatal care visits.

#### **Pre-Pregnancy Body Mass Index (BMI)**

Calculated only where pre-pregnancy weight and height are complete.

- Pre-pregnancy weight (kg)/(height (in cm))<sup>2</sup>
- <u>Underweight</u> BMI <18.5.
- Normal Weight BMI between 18.5 and 24.9.
- Overweight BMI between 25.0 and 29.9.
- Obese BMI ≥ 30.0.
- BMI Missing pre-pregnancy weight and/or height are not documented.

#### **Appropriate Weight Gain During Pregnancy**

Calculated only where pre-pregnancy weight, admission weight, and height are complete.

 Categorizes weight gain during pregnancy into low, appropriate, or high according to quidelines published by the Institute of Medicine.

#### **Hypertensive Disorders of Pregnancy**

Reflects only the most severe form of hypertension according to the hierarchy below. Women may have more than one type of hypertension diagnosed.

- 1. <u>Eclampsia</u> mother had eclampsia diagnosed during pregnancy. Mother may have had pre-existing or gestational hypertension.
- 2. <u>HELLP</u> mother had HELLP syndrome (<u>H</u>emolysis, <u>E</u>levated <u>L</u>iver enzymes, and <u>L</u>ow <u>P</u>latelet count) diagnosed during pregnancy.
- 3. <u>Pre-Existing Hypertension with Pre-Eclampsia</u> mother had a documented hypertensive disorder before pregnancy and also had pre-eclampsia diagnosed in pregnancy.
- 4. <u>Pre-Eclampsia</u> mother had pre-eclampsia diagnosed during pregnancy. Mother may also have had gestational hypertension.
- 5. <u>Pre-Existing Hypertension</u> mother had a documented hypertensive disorder before pregnancy. Mother may also have had gestational hypertension.
- 6. <u>Gestational Hypertension</u> mother had hypertension diagnosed during pregnancy.
- 7. Unspecified Hypertension mother had hypertension diagnosed during pregnancy, but the specific type is not recorded.
- 8. No Hypertension no hypertensive conditions were documented by a care provider.
  - NOTE: diagnosis codes for gestational hypertension and pre-eclampsia changed significantly effective April 1, 2012 discharges.

#### **Diabetes Mellitus in Pregnancy**

- <u>Pre-Existing Diabetes</u> mother had a diagnosis of diabetes mellitus type 1 or 2 documented by care provider before pregnancy.
- <u>Gestational Diabetes</u> mother had gestational diabetes documented by care provider during pregnancy.
  - NOTE: British Columbia adopted the International Association of Diabetes and Pregnancy Study Group's <u>guidelines</u> for diagnosis of gestational diabetes in October 2010.

#### **Substance Use During Pregnancy**

- <u>Cigarette Use</u> care provider documented mother reports smoking cigarettes at any time during the pregnancy. Includes women who stopped or reduced smoking during pregnancy.
- <u>Alcohol as Risk</u> care provider documents alcohol as a risk in the pregnancy. Alcohol use prior to the woman knowing she was pregnant is not included.
- Other Drug Use care provider documented that mother reports use of drugs (prescription, opiates, cannabinoids, stimulants, solvents, etc.) at any time during the pregnancy. Drug use prior to the woman knowing she was pregnant may be included.

#### **Maternal Screening Tests**

- Hepatitis B Test Done mother was screened for the Hepatitis B virus during pregnancy.
- <u>HIV Test Done</u> mother was screened for the Human Immunodeficiency Virus (HIV) during pregnancy.
- <u>Maternal Serum Screening Offered</u> mother 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 <u>BC Prenatal Genetic Screening Program</u>.

#### **Use of Artificial Reproductive Technology**

 Use of in vitro fertilization or other artificial reproductive technology (e.g. ovulation induction, intracytoplasmic sperm injection (ICSI), embryo transfer) to conceive the current pregnancy.

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

#### **Labour Augmentation**

Labour for the current delivery was augmented by a care provider. Any of the following methods may be used:

- Artificial Rupture of Membranes
- Oxytocin woman received oxytocin, pitocin, or syntocinon to augment labour.
- Other a method not specified above was used to augment labour.

#### **Labour Induction**

Labour for the current delivery was induced by a care provider. Any of the following methods may be used:

- Artificial Rupture of Membranes
- Oxytocin woman received oxytocin, pitocin, or syntocinon to initiate labour.
- Prostaglandin woman received a prostaglandin to initiate labour.
- Other a method not specified above was used to initiate labour.

#### **Primary Indication for Labour Induction**

Primary reason noted in the maternal chart for labour induction. In the case of multiples, the reason noted for the first baby is assigned to the entire delivery.

- <u>Prelabour Rupture of Membranes</u> rupture of membranes before the onset of uterine contractions at term.
- <u>Post Dates</u> the pregnancy has continued past the due date (41 completed weeks gestation).
- <u>Hypertension in Pregnancy</u> woman had high blood pressure, including pre-existing or gestational hypertension.
- Other Maternal Condition woman had a condition other than those specified above.
- Fetal Compromise medical concern about the health of the fetus.
- Diabetes woman had diabetes of any type (gestational, type 1, or type 2).
- Fetal Demise
- Logistics inability for woman to access supportive health care in reasonable time.
- Antepartum Hemorrhage woman had bleeding after 20 weeks' gestation but before labour.
- Chorioamnionitis woman had a cervicovaginal infection.
- Other other reason not captured above.
- Unknown reason for induction is unclear, unknown, or not documented.

#### **Fetal Surveillance During Labour**

- Auscultation Only fetal surveillance was conducted only using intermittent auscultation.
- <u>Auscultation and External Electronic Monitoring</u> fetal surveillance was conducted using intermittent auscultation and external electronic fetal monitoring.
- External Electronic Monitoring Only fetal surveillance was conducted only using external electronic fetal monitoring.
- <u>Internal Electronic Monitoring Only</u> fetal surveillance was conducted only using internal electronic fetal monitoring.
- No Fetal Monitoring no fetal monitoring was conducted during labour.

#### **Mode of Delivery**

- Vaginal
  - Spontaneous the baby was delivered vaginally without assistance of vacuum or forceps extractors.
  - Assisted Vaginal the newborn was delivered vaginally with the assistance of vacuum and/or forceps extraction.
    - <u>Vacuum</u> the baby was delivered vaginally with the assistance of a vacuum extractor.
    - <u>Forceps</u> the baby was delivered vaginally with the assistance of forceps.
    - <u>Forceps and Vacuum</u> the baby was delivered vaginally with the assistance of vacuum and forceps extractors.
- <u>Cesarean</u> the baby was delivered by an incision in the mother's abdomen.
  - <u>Elective Primary</u> woman without a previous cesarean had a cesarean delivery with elective timing.
  - <u>Elective Repeat</u> 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.
  - <u>Emergency Repeat</u> woman with a history of cesarean delivery needed a cesarean delivery with urgent or emergent timing.

#### **Perineal Trauma**

- <u>Third or Fourth Degree Laceration</u> the woman experienced a significant perineal tear during delivery.
- Cervical Tear the woman experienced a cervical tear during delivery.
- Episiotomy an episiotomy was performed during delivery.

#### **Primary Indication for Cesarean Delivery**

Primary reason noted in the maternal chart for cesarean delivery. For multifetal pregnancies, this reflects the reason the first baby was delivered by cesarean. This may not be the first baby delivered (e.g. if the first baby was delivered vaginally and the second baby by cesarean).

- Repeat Cesarean woman with a history of cesarean is not a VBAC candidate and has a medical indication for repeat cesarean delivery.
- <u>Nonreassuring Fetal Heart Rate</u> increased or decreased fetal heart rate (tachycardia or bradycardia), especially during and after uterine contractions.
- <u>Dystocia/Cephalopelvic Disproportion</u> abnormal of difficult labour. Includes failure to progress, incoordinate uterine activity, and cephalopelvic disproportion (large baby for maternal pelvis).
- <u>VBAC Declined/Maternal Request</u> woman was eligible for a vaginal birth after previous cesarean (VBAC) but declines, OR woman with or without a previous cesarean requests a cesarean delivery.
- <u>Breech</u> the fetus' buttocks were the presenting part.
- <u>Malposition/Malpresentation</u> the orientation of the fetal head and or body to the maternal pelvis is not favourable for a vaginal delivery (e.g. occipitoposterior position or transverse lie). Excludes breech presentation.
- <u>Placenta Previa</u> the placenta is low in the uterus, partially or completely covering the cervix.
- Abruptio Placenta premature separation of the placenta from the uterus.

- <u>Active Herpes</u> mother had an active herpes outbreak that could be transmitted to the infant during vaginal delivery.
- Other other reason not captured.
- <u>Unknown</u> reason for cesarean is unclear, unknown, or not documented.

#### **Vaginal Birth after Cesarean**

- <u>VBAC Eligible</u> woman was either noted by a care provider as being eligible for VBAC in this pregnancy, OR whose eligibility was unknown and had a singleton pregnancy with the head as the presenting part.
- <u>VBAC Attempted</u> women was were either noted by a care provider as having attempted a VBAC, OR whose attempt at VBAC was unknown but whose labour was either augmented or induced.
- <u>VBAC Success</u> women who were eligible for and attempted a VBAC and delivered vaginally.

#### **Anesthetic/Analgesic Use During Labour and Delivery**

- Entonox the mother received entonox (nitrous oxide gas) for pain management.
- <u>Epidural</u> the mother received anesthesia in the epidural space of the spine for pain management.
- General the mother received general anesthesia for pain management.
- Local the mother received localized anesthetic agents for pain management.
- <u>Spinal</u> the mother received anesthesia in the subarachnoid space of the spine for pain management.
- Other mother received another type of anesthetic or analgesic agent including pudendal anesthesia not specified above.
- No Anesthetic no analgesic or anesthetic agents were used for pain management.

#### **Health Care Providers**

- <u>Delivery Provider</u> describes the training level of the individual who delivered the baby. May not be the same type of care provider as a woman used for her antenatal care. In the case of multifetal pregnancies, the highest training level of any delivering provider is assigned to the delivery.
  - o Family Physician + Vaginal a family physician performed a vaginal delivery.
  - <u>Family Physician + Cesarean</u> a family physician performed a cesarean delivery.
- 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.

#### **Deliveries at Home**

Woman delivered at home under the care of a registered midwife

#### **Length of Stay for Delivery Episode of Care**

- <u>Antepartum Length of Stay</u> hours between when a woman is admitted to an acute care facility and when she delivers a baby.
- <u>Postpartum Length of Stay</u> hours between when a woman delivers a baby in an acute care facility and her discharge from the Delivery Episode of Care.
- <u>Total Length of Stay</u> hours between when a woman is admitted to an acute care facility for delivery and her discharge from the Delivery Episode of Care.

#### **Maternal Morbidity**

Morbidity may be documented during any Maternal Admission.

- <u>Liver Complications</u> mother had confirmed or suspected cholestatis, acute fatty liver, or liver hematoma.
- <u>Postpartum Hemorrhage with Transfusion</u> mother had a postpartum bleed and received blood products via transfusion.
- Urinary Tract Infection
- Sepsis mother had confirmed or suspected sepsis, including puerperal sepsis.
- <u>Wound Infection</u> mother had confirmed or suspected infection or disruption of an obstetric or surgical wound.
- <u>HELLP</u> mother had confirmed or suspected HELLP syndrome (Hemolysis, Elevated Liver enzymes, and Low Platelet count).
- Anesthetic Complications mother had a confirmed or suspected complication related to the anesthetic administered during the delivery episode. Spinal or epidural headache and unspecified complications are excluded.
- Antepartum Hemorrhage with Transfusion mother had an antepartum (≥20 weeks' gestation) or intrapartum bleed and received blood products via transfusion during the delivery episode.
- Eclampsia mother had confirmed or suspected eclampsia.
- Shock mother had confirmed or suspected obstetric shock.
- Pulmonary Embolism mother had a confirmed or suspected blood clot in the lungs.
- <u>Postpartum Hemorrhage with Hysterectomy</u> mother had a postpartum bleed and underwent a complete or subtotal (partial) hysterectomy.
- <u>Stroke</u> mother had a confirmed or suspected stroke.

#### **Adverse Outcome of Labour or Delivery**

Maternal adverse events are included during the Delivery Admission. Among singleton deliveries.

- <u>Maternal Severe Adverse Event</u> woman experienced uterine rupture during labour, assisted ventilation or resuscitation, or in-hospital death.
- <u>Maternal Moderate Adverse Event</u> woman experienced third or fourth degree perineal tear; blood transfusion; or unanticipated operative procedure
- Newborn Severe Adverse Event singleton baby was stillborn or died in-hospital
- Newborn Moderate Adverse Event
  - o Singleton baby ≥2,000 grams at birth experienced birth trauma, OR
  - Singleton baby at term ≥2,500 grams at birth without a congenital anomaly or hydrops was born at a facility without a NICU and transferred to a facility with a NICU within 24 hours, admitted to NICU ≥ 2 days, or had an Apgar at 5 minutes <7.</li>

#### **Maternal Transfer to Another Hospital**

- Women may be transferred to another hospital for either maternal or neonatal indicatons.
- Any Transfer woman was transferred from the Delivery Admission to a different acute care facility.
- <u>Higher Level</u> woman was transferred directly from the acute care facility at which she delivered to a facility that is capable of providing a higher intensity of care.
  - Third tier facilities BC Women's Hospital & Health Centre, St. Paul's Hospital Royal Columbian Hospital, and Victoria General Hospital.

 Second tier facilities – Surrey Memorial Hospital (effective April 1, 2013 discharges), Kelowna General Hospital, Nanaimo Regional General Hospital, Royal Inland Hospital, and University Hospital of Northern British Columbia.

#### **Post-Delivery Admissions**

- Total number of eligible inter-hospital transfers or readmissions among women who delivered a baby. A woman can have more than one Post-Delivery Admission. Ratio of Post-Delivery Admissions per 100 deliveries.
  - Admissions with a most responsible diagnosis of Z76.3 (Healthy person accompanying sick person) are excluded.
- <u>Diagnosis associated with Post-Delivery Admission</u> the diagnosis that accounted for the majority of time the woman stayed in hospital. May not be the reason for admission. Per 100 Post-Delivery Admissions.
  - The following account for 87 per cent of diagnoses associated with Post-Delivery Admissions for 2009/10 to 2013/14, inclusive:
    - Routine Postpartum Care —care and examination immediately after delivery or routine postpartum follow-up.
    - <u>Postpartum Infection</u> includes sepsis, obstetric wound infection, urinary tract infection, or post-procedural infection.
    - Postpartum Hemorrhage
    - Other Diseases Complicating Pregnancy Diseases of organ systems that complicate or are aggravated by pregnancy.
    - Other Wound Issues includes care of perineal or vaginal tears, uterine rupture or dehiscence, disruption or hematoma of surgical wound, or cardiac surgical complications.
    - Hypertension or Eclampsia includes essential hypertension, gestational hypertension, pre-eclampsia, eclampsia, or HELLP.
    - Retained Placenta Without Hemorrhage
    - <u>Care of Breasts</u> includes breast infection, lactation problems, or supervision of lactation mother.
    - <u>Complications of Anesthesia</u> reactions to or complications of anesthesia.
    - <u>Pregnancy-Associated Mental Health</u> includes postpartum depression and puerperal psychosis.

## **Section 3: Newborn Health**

#### **Birth Type**

Defined in accordance with BC Vital Stats.

- <u>Live Birth</u> baby displayed signs of life (breating, heart beat, pulsation of umbilical cord, or movement of voluntary muscle) at birth.
- <u>Stillbirth</u> baby born at ≥20 weeks' estimated gestation or ≥500 grams birthweight does not display any of the above signs. Fetal death may have occurred <20 weeks' gestation.

#### **Multiple Gestation**

There was more than one fetus in the pregnancy (twin, triplet, or quadruplet).

#### **Gestational Age**

- Term baby was delivered at or after 37 completed weeks' estimated gestation.
- Preterm baby was delivered before 37 completed weeks' estimated gestation.
  - o <u>latrogenic Preterm</u> baby was delivered following induced labour or by cesarean delivery without labour, before 37 completed weeks' estimated gestation.
  - Spontaneous Preterm baby was delivered following onset of spontaneous labour before 37 completed weeks' estimated gestation.

#### **Weight for Gestational Age**

- <u>Small for Gestational Age</u> babies born weighing less than the 10<sup>th</sup> percentile of weight for their sex and gestational age. Based on BC-specific growth curves available <u>here</u>.
- <u>Large for Gestational Age</u> babies born weighing more than the 90<sup>th</sup> percentile of weight for their sex and gestational age. Based on BC-specific growth curves available <u>here</u>.

#### **Low Birthweight Singletons**

 Singleton babies born weighing less than 2,500 grams. Includes both preterm and term babies.

#### **Newborn Resuscitation**

- Baby received resuscitation by intermittent positive pressure, chest compressions, or drugs. Captures interventions up to 60 minutes of age or until admission to neonatal intensive care, whichever came first.
  - o NOTE: Drugs may be given for either resuscitation or stabilization.

#### **Birth Injury**

• Baby sustained a confirmed or suspected injury to the skeleton, organs, or nerves during birth.

#### **Neonatal Morbidity**

Morbidity may be documented during any Baby Admission.

- Other Respiratory Condition baby had a confirmed or suspected respiratory condition (other than respiratory distress syndrome or transient tachypnea).
- <u>Transient Tachypnea</u> baby had confirmed or suspected transient tachypnea.
- <u>Respiratory Distress Syndrome</u> baby had confirmed or suspected respiratory distress syndrome.
- Sepsis baby had confirmed or suspected sepsis.
- Intracranial Hemorrhage baby had a confirmed or suspected brain bleed.

#### **Congenital Anomalies**

Anomaly may be diagnosed during any Baby Admission.

- Baby has a confirmed or suspected congenital anomaly noted by a care provider.
  - <u>Chromosomal</u> includes Trisomy 13, 18, and 21; sex chromosome abnormalities (i.e. Turner's syndrome, Kleinfelter's syndrome); and other monosomies, deletions, and chromosomal reattangements.
  - <u>Circulatory System</u> includes malformations of the heart chambers, septa, valves, veins and arteries.
  - o Cleft Lip or Palate
  - <u>Digestive System</u> includes malformation of the tongue, mouth, pharynx, esophagus, stomach, intestines, liver, gallbladder, bild ducts, and pancreas.

- Eye, Ear, Face, or Neck includes malformations of the eye and its structures, tear ducts, internal and external ear, neck, and lips.
- Genital Organs includes malformations of male or female genitals, and indeterminate sex or hermaphroditism.
- Musculoskeletal System includes malformations of hip, feet, fingers, limbs, skull, spine, diaphragmatic hernia, and other malformations of the abdominal wall (including gastroschisis).
- Nervous System includes anencephaly, microcephaly, hydrocephalus, spina bifida, and other malformations of the brain and spinal cord.
- Respiratory System includes malformation of the nose, larynx, trachea, bronchus, and lung.
- Urinary System includes malformation of the kidneys, bladder, and ureter.
- Other Specific Anomaly includes disorders of the skin, breast, hair, nails, syndromes affecting multiple systems, malformations due to outside causes (including alcohol and drugs), and all malformations not otherwise classified.
- Trisomy 18 (Edwards' syndrome)
- o Trisomy 21 (Down Syndrome)
- Open Neural Tube Defect includes anencephaly and spina bifida

#### **Length of Stay for the Birth Episode of Care**

 Hours between a baby's birth at an acute care facility and his/her discharge from the Birth Episode of Care.

#### **Breastfeeding**

Reflects feeding during the Birth Admission only, including at time of discharge.

- <u>Exclusive Breastfeeding</u> baby received only breast milk (via the breast, a bottle, or other feeding method).
- No Breastfeeding baby received only breast milk substitute.
- Non-Exclusive Breastfeeding baby received both breast milk and breast milk substitute.
- Any Breastfeeding baby received breast milk (via the breast, a bottle, or other feeding method) at any time during the Birth Admission. Baby may also have received breast milk substitute.

#### **Neonatal Intensive Care Use During Birth Episode of Care**

- Baby spent at least one day in Neonatal Intensive Care (NICU) during the Birth Episode of Care.
  - Length of stay in days is calculated as discharge date admission date. If admission and discharge are on the same date, length of stay is one day.
  - Between April 1, 2008 and March 31, 2010 discharges, NICU days were assigned when the baby received Level II or III care per the Discharge Abstract Database manual.
  - Effective April 1, 2010 discharges, NICU days are assigned based on baby's needs as defined by the PSBC Neonatal Daily Classification Tool.
  - Click here to access resources on the PSBC Neonatal Daily Classification Tool.

#### **Transfer to Another Hospital**

- Babies may be transferred to another hospital for either maternal or neonatal indicatons.
- Any Transfer baby was transferred from the Birth Admission to a different acute care facility.

- <u>Higher Level</u> baby was transferred directly from the facility of birth to a facility that is capable of providing a higher intensity of care. Baby was transferred from any site without a neonatal intensive care unit (NICU) to one with a NICU, or from a site with a Level II NICU to a site with a Level III NICU.
  - <u>Facilities with a Level III NICU</u> BC Women's Hospital & Health Centre, Royal Columbian Hospital, Surrey Memorial Hospital, and Victoria General Hospital.
  - <u>Facilities with a Level II NICU</u> Abbotsford Regional Hospital & Cancer Centre, Burnaby Hospital, Kelowna General Hospital, Lions Gate Hospital, Nanaimo Regional General Hospital, Richmond Hospital, Royal Inland Hospital, St. Paul's Hospital, and University Hospital of Northern British Columbia.
- <u>Same or Lower Level</u> baby was transferred directly from the facility of birth to a facility that provides a similar or lower intensity of care.

#### **Post-Neonatal Admissions**

- <u>Post-Neonatal Admission</u> total number of baby transfer or readmission episodes. A
  baby can have more than one Post-Neonatal Admission. Ratio of Post-Neonatal
  Admissions per 100 live births.
  - Admissions with a most responsible diagnosis of Health supervision and care of other healthy infant and child, Healthy person accompanying sick person, or Other boarder in health-care facility (Z76.2, Z76.4, or Z76.4) are excluded.
- <u>Diagnosis Associated with Post-Neonatal Admission</u> the diagnosis that accounted for the majority of time the baby stayed in hospital. May not be the reason for admission. Per 100 Post-Neonatal Admissions.
  - The following account for 81 per cent of diagnoses associated with Post-Neonatal Admissions for 2009/10 to 2013/14, inclusive:
    - Jaundice
    - Low Birth Weight or Preterm Birth
    - <u>Congenital Anomalies</u> includes all congenital malformations, deformations, and chromosomal abnormalities.
    - <u>Feeding Problems</u> includes reflux, feeding difficulties, abnormal weight loss, and dehydration.
    - Respiratory Infections includes whooping cough, pneumonias, and upper and lower respiratory tract infections.
    - Respiratory Distress
    - Other Infections major inclusions are bacterial and viral infections, sepsis, external and middle ear infections, select abscesses, impetigo, cellulitis, osteomyelitis, congenital infections, and post-procedural infection.
    - Apnea obstructed sleep apnea or apnea of the newborn.
    - Urinary Tract Infections
    - Isoimmunization

#### **Perinatal Mortality**

Death occurred during any Baby Admission. Includes only deaths that occurred at an acute care facility. Complete pregnancy terminations are included only in the Crude Stillbirth Rate.

- Crude Stillbirths baby was born deceased.
  - o <u>Crude Stillbirth Rate</u> = stillbirths / (live births + stillbirths) x 1,000.
- Stillbirths >=500g baby weighing ≥500g was born deceased.
  - o Stillbirth Rate = stillbirths ≥500g / (live births + stillbirths ≥500g) x 1,000.
- Early Neonatal Death baby born alive died in hospital between 0 and 6 days after birth.

- Early Neonatal Mortality Rate = early neonatal death / live births x 1,000.
- <u>Perinatal Death</u> stillbirth ≥500g OR baby born alive died in hospital between 0 and 6 days after birth.
  - Perinatal Mortality Rate = (stillbirths ≥500g + early neonatal deaths) / (live births + stillbirths ≥500g) x 1,000.
- <u>Late Neonatal Death</u> baby born alive died in hospital between 7 and 27 days after birth.
  - <u>Late Neonatal Mortality Rate</u> = late neonatal death / live births x 1,000.
- <u>Post Neonatal Death</u> baby born alive died in hospital between 28 and 364 days after birth.
  - o Post Neonatal Mortality Rate = post neonatal death / live births x 1,000.
- Infant Death baby born alive died in hospital before 365 days after birth.
  - Infant Mortality Rate = (early neonatal + late neonatal + post-neonatal deaths) / live births x 1,000.

#### Section 4: 'Normal Labour'

Women with 'Normal Labour' are identified in accordance with the <u>Joint Policy Statement on Normal Childbirth</u>. Women with 'Normal Labour' deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour. Women with 'Normal Labour' do not have a history of cesarean delivery.

#### **Cervical Dilation at Admission**

 Dilation, in centimetres, of the cervix at the time the woman was admitted to acute care for delivery.

#### **Duration of Labour Stages**

- <u>Length of First Stage of Labour</u> hours between the onset of regular contractions and complete cervical dilation (10cm).
- <u>Length of Second Stage of Labour</u> hours between complete cervical dilation and the delivery of the baby.

#### 'Normal Childbirth'

According to the <u>Joint Policy Statement on Normal Childbirth</u>, 'Normal Childbirth' excludes the following: spinal anesthesia, general anesthesia, vacuum-assisted delivery, forceps-assited delivery, cesarean delivery, or episiotomy.

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

 Babies whose Apgar score – a composite of five criteria that assesses an infant's need for medical attention – is below 7 out of 10 at five minutes after birth.

# Episodes Included in the Perinatal Health Report This report is based on delivery admissions meeting the following minimum criteria:

**Delivery Admission** 

Include:	
Delivery	MOTHER_ADMISSION.screen_source = "DL" AND
,	April 1, 2009 ≤ discharge_date ≤ March 31, 2014
Linked maternal-newborn records	BABY_ADMISSION.screen_source = "NB" AND BABY_ADMISSION.mother_id is not null
Exclude from all but Crude Stillbirth	
Rate:	
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 all babies linked to mother

**Other Maternal Admissions** 

Admission t	уре	Criteria
Maternal Adn	<u>nission</u>	MOTHER_ADMISSION.screen_source = "DL" or "PP"
		For any woman whose Delivery Admission meets the inclusion criteria, above.
Post-Delivery	<u>/ Admission</u>	MOTHER_ADMISSION.screen_source = "PP" or (MOTHER_ADMISSION.screen_source =
		"DL" and actual_place_of_delivery=2)
		AND
		most responsible diagnosis is not Z76.3
		Thost responsible diagnosis is not 27 0.0
		For any woman whose Delivery Admission meets the inclusion criteria, above.
Delivery	Episode start	MOTHER_ADMISSION.screen_source = "DL" and April 1, 2009 ≤ discharge_date ≤ March
Episode of		31, 2014
<u>Care</u>	Include all admissions	MOTHER_ADMISSION.screen_source = "PP" and 101 ≤ institution_to <973
	linked to the delivery where:	
	Episode end	(MOTHER_ADMISSION.screen_source = "DL" or "PP") and institution_to <101
		For any woman whose Delivery Admission meets the inclusion criteria, above.

## **Baby Admissions**

Admission t	ype	Criteria
Birth Admissi	<u>on</u>	BABY_ADMISSION.screen_source = "NB"
		For any baby linked to a woman whose Delivery Admission meets the inclusion criteria, above.
Newborn Adr	<u>nission</u>	BABY_ADMISSION.screen_source = "NB" or "XF"
		For any baby linked to a mother whose Delivery Admission meets the inclusion criteria, above.
Post-Neonata	al Admission	(BABY_ADMISSION.screen_source = "NB" and MOTHER.actual_place_of_delivery=2) or 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.
<u>Birth</u>	Episode start	BABY_ADMISSION.screen_source = "NB"
Episode of	Include all admissions	BABY_ADMISSION.screen_source = "XF" and
<u>Care</u>	linked to the birth where:	discharge_to = "O" and
		101 ≤ institution_to <973
	Episode end	BABY_ADMISSION.screen_source = "NB" or "XF" AND
		(discharge_to ≠ "O" or institution_to = 973 or 974)
		For any baby linked to a mother whose Delivery Admission meets the inclusion criteria, above.

## **Detailed Specifications for Selected Variables**

	PDR variables	CIHI Codes
Fiscal year		
2009/10	screen_source = "DL" AND April 1, 2009 ≤ MOTHER_ADMISSION.discharge_date ≤ March 31, 2010	
2010/11	screen_source = "DL" AND April 1, 2010 ≤ MOTHER_ADMISSION.discharge_date ≤ March 31, 2011	
2011/12	screen_source = "DL" AND April 1, 2011 ≤ MOTHER_ADMISSION.discharge_date ≤ March 31, 2012	
2012/13	screen_source = "DL" AND April 1, 2012 ≤ MOTHER_ADMISSION.discharge_date ≤ March 31, 2013	
2013/14	screen_source = "DL" AND April 1, 2013 ≤ MOTHER_ADMISSION.discharge_date ≤ March 31, 2014	
Parity		
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, or 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)	

	PDR variables		CIHI Codes
Hypertensive Disorders of Pregnancy			
(hierarchy)			
Eclampsia			diagnosis_code begins with O15
HELLP syndrome	pp_hellp = "Y"		
	discharge_date ≥ April 1, 2012	AND	diagnosis_code begins with O142
Pre-Existing Hypertension with Pre-Eclampsia			diagnosis_code begins with O11
Pre-Eclampsia	discharge_date < April 1, 2012 AND pp_hellp ≠ "Y"	AND	diagnosis_code begins with O14
	discharge_date ≥ April 1, 2012 AND pp_hellp ≠ "Y"	AND	diagnosis_code begins with O140, O141, or O149
Pre-Existing Hypertension			diagnosis_code begins with O10
Gestational Hypertension			diagnosis_code begins with O13
(includes mild pre-eclampsia for discharges before April 1, 2012)			
Unspecified Hypertension			diagnosis_code begins with O16
Diabetes Mellitus in Pregnancy			
Gestational Diabetes	risk_code = 13 or 14	OR	diagnosis_code begins with O248
Pre-Existing Diabetes	risk_code = 15 or 16	OR	diagnosis_code begins with O245, O246, or O247
Artificial Reproductive Technology	ivf = "Y"	OR	diagnosis_code for mother = Z37xx1 or baby = Z38xx1
Augmentation of Labour	labour_aug_flg = "Y"		
Induction of Labour	labour_ind_flg = "Y"		
Method of Fetal Surveillance During Labour			
Auscultation Only	auscultation = "Y" and		
	elec_fetal_monitor_external ≠ "Y" and		
	elec_fetal_monitor_internal ≠ "Y" and		
	no_fetal_monitoring ≠ "Y"		
Auscultation and External Electronic	auscultation = "Y" and		
Monitoring	elec_fetal_monitor_external = "Y" and		
	elec_fetal_monitor_internal ≠ "Y" and		
	no_fetal_monitoring ≠ "Y"		
External Electronic Monitoring Only	auscultation ≠ "Y" and		
	elec_fetal_monitor_external = "Y" and		
	elec_fetal_monitor_internal ≠ "Y" and		
1. 15	no_fetal_monitoring ≠ "Y"		
Internal Electronic Monitoring Only	auscultation ≠ "Y" and		
	elec_fetal_monitor_external ≠ "Y" and elec_fetal_monitor_internal = "Y" and		
	no_fetal_monitoring ≠ "Y"		
No Fetal Monitoring	(auscultation ≠ "Y" and		
140 i Gtal Monitoring	elec_fetal_monitor_internal ≠ "Y" and		
	elec_fetal_monitor_external ≠ "Y" and		
	no_fetal_monitoring= "Y")		
	OR		

	PDR variables		CIHI Codes
	(auscultation ≠ "Y" and		
	elec_fetal_monitor_internal ≠ "Y" and		
	elec_fetal_monitor_external ≠ "Y" and		
	no_fetal_monitoring ≠ "Y")		
Delivery Provider			
Obstetrician	delivered_by = 2 or 6 for any infant		
Surgeon	else if delivered_by = 12		
Family Practice + Cesarean	else if delivered_by = 1 or 8	AND	procedure_code begins with 5MD60 (cesarean delivery)
Family Practice + Vaginal	else if delivered_by = 1 or 8	AND	procedure_code does not begin with 5MD60
Midwife	else if delivered by = 3 or 7		
Nurse	else if delivered_by = 4		
Other	else if delivered_by = 5, 9, 10, or 11		
Any Care Provided by a Registered Midwife	institution id = 976 or 977 or	OR	doctor_service = 11004
	midwife case = "Y" or		on DOCTORS or PROCEDURES_PERFORMED for mother
	delivered_by = 3 or 7 for any infant or		or baby record
	actual_place_of_delivery = 1 or 2		S. 545 J. 555.4
Delivery at Home	institution_id = 976 or 977 or		
	actual_place_of_delivery = 2		
Anesthesia or Analgesia			
Entonox	entonox_flg = "Y"		
Epidural	epidural_flg = "Y"	OR	anesthetic_type = 3 for a procedure_code beginning with 5MD
General	general flg = "Y"	OR	anesthetic_type = 1 or 4 for a procedure_code beginning with
General	general_lig = 1	OK	SMD
Local	local_flg = "Y"	OR	anesthetic_type = 7 for a procedure_code beginning with
			5MD
Narcotic	narcotic_flg = "Y"		
Spinal	spinal_flg = "Y"	OR	<pre>anesthetic_type = 2 for a procedure_code beginning with 5MD</pre>
Other	other_flg = "Y" or pudendal_flg = " Y"		
No Anesthetic	none_flg = "Y"		
Perineal Trauma			
Third or Fourth Degree Laceration	laceration_flg = "Y" AND	OR	diagnosis_code begins with O702 or O703
_	laceration_degree = 3 or 4		-
Episiotomy	episiotomy_flg = "Y"		
Cervical Tear	cervical_tear_flg = "Y"	OR	diagnosis_code begins with O713
Mode of Delivery			
Spontaneous Vaginal			procedure_code begins with 5MD50, 5MD51, 5MD52, 5MD56AA, 5MD56NL, 5MD56NP, 5MD56NU, 5MD56NM, 5MD56NQ, 5MD56NV, 5MD56GH, 5MD56PA, 5MD56PD, 5MD56PG, 5MD56PB, 5MD56PE, or 5MD56PH

	PDR variables		CIHI Codes
Assisted Vaginal			procedure_code begins with 5MD53, 5MD54, 5MD55, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, or 5MD56PJ
Vacuum			procedure_code begins with 5MD54
Forceps			procedure_code begins with 5MD53, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, or 5MD56PJ
Forceps and Vacuum			procedure_code begins with 5MD55
			procedure_code begins with 5MD54 AND one of the following codes is also on the abstract: 5MD53, 5MD55, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, or 5MD56PJ
Cesarean			procedure_code begins with 5MD60
	csection_type = 1, 2, 3, or 4	AND	no procedure code begins with 5MD5 or 5MD60
Emergency Primary	csection_type = 2	AND	procedure_code begins with 5MD60
Emergency Repeat	csection_type = 4	AND	procedure_code begins with 5MD60
Elective Primary	csection_type = 1	AND	procedure_code begins with 5MD60
Elective Repeat	csection_type = 3	AND	procedure_code begins with 5MD60
Vaginal Birth After Cesarean (VBAC)  VBAC Eligible			
J. T.	(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_eligible = "U" or " " and baby_presentation_delivery = 9 and gestational age ≥ 37 and prev_cesarian_deliv ≥1 and Maximum(baby_sequence) = 1)	AND	procedure_code begins with 5MD5
VBAC Attempted	<pre>(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")))</pre>		
VBAC Success	Woman VBAC Eligible and VBAC Attempted (above)	AND	procedure_code begins with 5MD5
Maternal Morbidity			
Liver Complications	pp_fatty_liver = "Y" or pp_liver_hematoma = "Y"	OR	diagnosis_code begins with O266, K760, or K768
Urinary Tract Infection	pp_uti = "CY", "PY", "OT", "UN"	OR	diagnosis_code begins with O23, O861, O862, O863, or N390

	PDR variables		CIHI Codes
Sepsis	pp_pos_blood_culture = "Y"	OR	diagnosis_code begins with A40, A41, or O85
Wound Infection	pp_wound_infection = "Y"	OR	diagnosis_code begins with O860 or T814
Postpartum Hemorrhage with Transfusion	blood_transfusion_flg = "Y"	AND	diagnosis_code begins with O72
Postpartum Hemorrhage with Hysterectomy			diagnosis_code begins with O72 AND (procedure_code begins with 5MD60CB, 5MD60KE, 5MD60RC, or 5MD60RD; OR procedure_code begins with 1RM87LAGX and extent = SU; OR
			procedure_code begins with 1RM89 AND there is no procedure_code beginning with 1PL74, 1RS74, or 1RS80)
Antepartum Hemorrhage with Transfusion	blood_transfusion_flg = "Y" and risk_code = 8	AND	diagnosis and baging with 0444 045 046 067 at 0604
Eglampaia	blood_transfusion_flg = "Y"	AND	diagnosis_code begins with O441, O45, O46, O67, or O694 diagnosis_code begins with O15
Eclampsia HELLP	no ballo IIVII		diagnosis_code begins with O15
HELLP	pp_hellp = "Y" discharge_date ≥ April 1, 2012	AND	diagnosis_code begins with O142
Anesthetic Complications	discharge_date 2 April 1, 2012	AND	diagnosis_code begins with O142 diagnosis_code begins with O29, O740, O741, O742, O743, O744, O747, O748, O749, O89, or T885
Shock			diagnosis_code begins with O751
Stroke			diagnosis_code begins with G459, I6, or I7
Pulmonary Embolism			diagnosis_code begins with O88
Adverse Outcome of Labour or Delivery			
Moderate Maternal Adverse Outcome	screen_source = "DL" AND blood_transfusion_flg = "Y" OR (laceration_flg = "Y" AND laceration_degree = 3 or 4)	OR	diagnosis_code begins with O702, O703 OR procedure_code begins with 5PC73JT, 5PC80JM, 5PC91GA, 5PC91GC OR (diagnosis_code begins with O722 AND procedure_code begins with 1KT51, 1RM13, 1RM87LAGX, 1RM89, 5MD60CB, 5MD60KE, 5MD60RC, 5MD60RD, 5PC91HT, 5PC91LA)
Moderate Neonatal Adverse Outcome	screen_source = "NB" and admission_weight ≥ 2,500 gestational age ≥ 37 and ((nicu_ii+nicu_iii ≥ 2) OR (Length of stay <24 hours and institution_to = 104, 202, 109, 116, 703, 609, 501, 401, 302, 130, 115, 112, 102) OR (0 ≤ apgar_5 minutes <7))	AND	diagnosis_code does not begin with P832 or Q

	PDR variables		CIHI Codes
Severe Maternal Adverse Outcome	screen_source = "DL"	AND	diagnosis_code begins with O7118, O95 or O97 OR procedure_code begins with 1GZ30CJ, 1GZ30JH, 1GZ31CAND, 1GZ31CBND, 1GZ31CRND, 1GZ31GPND, 1GZ38JAND, 1GZ38JANE, 1GJ50CANG, 1GJ50CATS
Severe Neonatal Adverse Outcome	screen_source = "NB" and admission_weight ≥ 2,500 gestational age ≥ 37 and (discharge_to = "D" or stillbirth = "A")	AND	diagnosis_code does not begin with P832 or Q
	screen_source = "NB" and admission_weight ≥ 2,000	AND	diagnosis_code begins with P100, P101, P104, P108, P109, P113, P114, P115, P122, P13 (excluding P134), P140, P141, P142, P143, P148, P149
Maternal Length of Stay			
Antepartum Length of Stay	For the Delivery Episode of Care, hours between (delivery_date  delivery_time – admission_date  admission_time) where institution_id for the Delivery Admission ≠ 976 or 977		
Postpartum Length of Stay	For the Delivery Episode of Care, hours between (discharge_date  discharge_time – delivery_date  delivery_time) where institution_id for the Delivery Admission ≠ 976 or 977		
Total Length of Stay	For the Delivery Episode of Care, hours between (discharge_date  discharge_time – admission_date  admission_time) where institution_id for the Delivery Admission ≠ 976 or 977		
Maternal Transfers			
Transferred to Acute Care	screen_source= "DL" and institution_to = 101, 102, 104, 105, 106, 107, 109, 111, 112, 113, 115, 116, 121, 123, 128, 130, 131, 134, 135, 136, 201, 202, 203, 204, 206, 217, 301, 302, 303, 305, 309, 401, 402, 403, 404, 405, 406, 408, 409, 417, 419, 501, 502, 507, 508, 510, 511, 601, 602, 603, 604, 606, 609, 651, 654, 655, 701, 702, 703, 704, 705, 707, 708, 713, 714, 715, 716, 717, 752, 753, 754, 755, 756, 801, 803, 804, 851, 854, 859, 901, 902, 903, 904, 906, 907, 912, 917, 918, 929, 973, or 974		

Transfer to a Higher Level of Care		PDR variables		CIHI Codes
302, 401, 703, or 501) OR (institution_id ≠104, 109, 202, or 102 AND institution_to = 104, 105, 109, 202, or 102)  Post-Delivery Admission Diagnoses Routine Postpartum Care Post-Delivery Admission AND diagnosis_type = "M" and diagnosis_cd begins with Z390, Z392 Postpartum Hemorrhage Post-Delivery Admission AND diagnosis_type = "M" and diagnosis_cd begins with O72  Postpartum Infection Post-Delivery Admission AND diagnosis_type = "M" and diagnosis_cd begins with A40, A41, O85, O86, N390, or T814	Transfer to a Higher Level of Care	1, 2013 AND (institution_id ≠ 104, 109, 202, 102, 302, 401, 703, or 501 AND institution_to = 104, 105, 109, 202, 102, 302, 401, 703, or 501)  OR (institution_id ≠ 104, 109, 202, or 102 AND institution_to =104, 105, 109, 202, or 102) screen_source = "DL" AND discharge_date ≥ April 1, 2013 AND (institution_id ≠ 104, 109, 202, 102, 116, 302, 401, 703, or 501		CIHI Codes
AND institution_to = 104, 105, 109, 202, or 102)  Post-Delivery Admission Diagnoses  Routine Postpartum Care  Post-Delivery Admission  AND diagnosis_type = "M" and diagnosis_cd begins with Z390, Z392  Postpartum Hemorrhage  Post-Delivery Admission  AND diagnosis_type = "M" and diagnosis_cd begins with O72  Postpartum Infection  Post-Delivery Admission  AND diagnosis_type = "M" and diagnosis_cd begins with A40, A41, O85, O86, N390, or T814		302, 401, 703, or 501) OR		
Routine Postpartum Care  Post-Delivery Admission  AND diagnosis_type = "M" and diagnosis_cd begins with Z390, Z392  Postpartum Hemorrhage  Post-Delivery Admission  AND diagnosis_type = "M" and diagnosis_cd begins with O72  AND diagnosis_type = "M" and diagnosis_cd begins with O72  AND diagnosis_type = "M" and diagnosis_cd begins with A40, A41, O85, O86, N390, or T814				
Postpartum Hemorrhage Post-Delivery Admission Postpartum Infection Post-Delivery Admission Post-Delivery Admission AND diagnosis_type = "M" and diagnosis_cd begins with O72 AND diagnosis_type = "M" and diagnosis_cd begins with A40, A41, O85, O86, N390, or T814	Post-Delivery Admission Diagnoses			
Postpartum Infection  Post-Delivery Admission  AND diagnosis_type = "M" and diagnosis_cd begins with A40, A41, O85, O86, N390, or T814	Routine Postpartum Care	Post-Delivery Admission	AND	
A41, O85, O86, N390, or T814	Postpartum Hemorrhage	Post-Delivery Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with O72
Other Diseases Complicating Pregnancy   Post Delivery Admission   AND diagnosis type = "M" and diagnosis ad basing with 000	Postpartum Infection	Post-Delivery Admission	AND	
	Other Diseases Complicating Pregnancy	Post-Delivery Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with O99
O10-O16	Hypertension or Eclampsia	Post-Delivery Admission	AND	
Other Wound Issues Post-Delivery Admission AND diagnosis_type = "M" and diagnosis_cd begins with O70, O71, O75404, O900, O901, O902, or T813	Other Wound Issues	Post-Delivery Admission	AND	
Care of Breasts  Post-Delivery Admission  AND diagnosis_type = "M" and diagnosis_cd begins with O91, O92, or Z391	Care of Breasts	Post-Delivery Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with O91,
Retained Placenta Without Hemorrhage Post-Delivery Admission AND diagnosis_type = "M" and diagnosis_cd begins with O73	Retained Placenta Without Hemorrhage	Post-Delivery Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with O73
Pregnancy-Associated Mental Health Post-Delivery Admission AND diagnosis type = "M" and diagnosis cd begins with F53	Pregnancy-Associated Mental Health	Post-Delivery Admission	AND	diagnosis type = "M" and diagnosis cd begins with F53
Complications of Anesthesia  Post-Delivery Admission  AND diagnosis_type = "M" and diagnosis_cd begins with O74, O89, or T885	Complications of Anesthesia	Post-Delivery Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with O74,
Multiple Gestation multiple_birth_count >1	Multiple Gestation	multiple_birth_count >1		
In-Hospital Perinatal Mortality				
Crude Stillbirths (includes complete late stillbirth = "A", "P", or "U"		stillbirth = "A", "P", or "U"		_

	PDR variables		CIHI Codes
pregnancy terminations)			
Stillbirth >=500g	stillbirth = "A", "P", or "U" and		
-	admission_weight ≥ 500		
Early Neonatal Death	stillbirth = "N" and		
	discharge_to = "D" and		
	(discharge_date - date_of_birth ) <7 days		
Late Neonatal Death	stillbirth = "N" and		
	discharge_to = "D" and		
	7 days≤ (discharge_date – date_of_birth) ≤ 27		
	days		
Post Neonatal Death	stillbirth = "N" and		
	discharge_to = "D" and		
	28 days ≤ (discharge_date – date_of_birth) ≤ 364		
	days		
Birth Injury			diagnosis_code begins with P100, P101, P104, P108, P109,
			P11, P12, P13, P14, or P15
Neonatal Morbidity			
Sepsis	baby_pos_blood_culture = "Y"	OR	diagnosis_code begins with A40, A41, or P36
Intracranial Hemorrhage			diagnosis_code begins with P10 or P52
Respiratory Distress Syndrome			diagnosis_code begins with P220
Transient Tachypnea			diagnosis_code begins with P221
Other Respiratory Condition			diagnosis_code begins with A481, J, P228, P229, P23-P27,
			P280, P281, P282, P283, P284, P288, P289, Q30-Q34,
			Q791, R091, or Z902
	0 ≤ apgar_5_minutes <7	AND	diagnosis_code begins with P285
Any Neonatal Morbidity			diagnosis_code begins with A40, A41, A481, J, P10, P220,
			P221, P228, P229, P23-P27, P36, P280, P281, P282, P283,
			P284, P288, P289, P52, Q30-Q34, Q791, R091, or Z902
	0 ≤ apgar_5_minutes <7	AND	diagnosis_code begins with P285
Congenital Anomalies			
Any Congenital Anomaly			diagnosis_code begins with Q, G901, or P293
Chromosomal			diagnosis_code begins with Q90-Q99
Circulatory System			diagnosis_code begins with Q20-Q28 or P293
Cleft Lip or Palate			diagnosis_code begins with Q35-Q37
Digestive System			diagnosis_code begins with Q38-Q45
Eye, Ear, Face, or Neck		1	diagnosis_code begins with Q10-Q18
Genital Organs			diagnosis_code begins with Q50-Q56
Musculoskeletal System		1	diagnosis_code begins with Q65-Q79
Nervous System		1	diagnosis_code begins with Q00-Q07 or G901
Respiratory System		1	diagnosis_code begins with Q30-Q34
Urinary System		1	diagnosis_code begins with Q60-Q64
Other Specific Anomaly			diagnosis_code begins with Q80-Q89

	PDR variables		CIHI Codes
Trisomy 18			diagnosis_code = Q91.0-Q91.3
Trisomy 21			diagnosis_code begins with Q90
Open Neural Tube Defect			diagnosis_code begins with Q00 or Q05
Newborn Length of Stay	For the Birth Episode of Care, hours between (discharge_date  discharge_time – admission_date  admission_time) where institution_id for the Birth Admission ≠ 976 or 977		
Newborn Feeding			
Exclusive Breastfeeding	newborn_feeding = "BR"		
Non-Exclusive Breastfeeding	newborn_feeding = "BF"		
No Breastfeeding	newborn_feeding = "FR"		
Any Breastfeeding	newborn_feeding = "BR" or "BF"		
Weight for Gestational Age			
Small for Gestational Age	Baby's weight is 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's weight is above 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"		
Low Birthweight Singletons	screen_source = "NB" and 5 ≤ admission_weight < 2500 and stillbirth = "N" and multiple_birth_count = 1		
Premature Birth			
Spontaneous Preterm	gestational age <37 and labour_spont_flg = "Y" gestational age <37 and labour_none_flg = "Y" and (cesarean_type = 0	OR	Mother does not have a procedure_code beginning with 5MD60)
latrogenic Preterm	gestational age <37 and labour_ind_flg = "Y" gestational age <37 and labour_none_flg = "Y" and cesarean_type = 1, 2, 3, or 4		
Neonatal Intensive Care Use	nicu_ii > 0 or nicu_iii > 0 for the Birth Episode of Care		

	PDR variables	CIHI Codes
Neonatal Transfer		
Transferred to Acute Care	screen_source= "NB" and discharge_to= "O" and institution_to = 101, 102, 104, 105, 106, 107, 109, 111, 112, 113, 115, 116, 121, 123, 128, 130, 131, 134, 135, 136, 201, 202, 203, 204, 206, 217, 301, 302, 303, 305, 309, 401, 402, 403, 404, 405, 406, 408, 409, 417, 419, 501, 502, 507, 508, 510, 511, 601, 602, 603, 604, 606, 609, 651, 654, 655, 701, 702, 703, 704, 705, 707, 708, 713, 714, 715, 716, 717, 752, 753, 754, 755, 756, 801, 803, 804, 851, 854, 859, 901, 902, 903, 904, 906, 907, 912, 917, 918, 929, 973, or 974	
Transfer to Higher Level of Care	screen_source = "NB" and institution_id ≠ 102, 104, 109, 112, 116, 121, 130, 202, 302, 401, 501, 609, or 703 and discharge_to = "O" and instititution_to = 102, 104, 105, 109, 112, 116, 121, 130, 202, 302, 401, 501, 609, or 703 screen_source = "NB" and discharge_to = "O" and institution_id ≠ 104, 109, 116, or 202 and institution_to = 104, 105, 109, 116, or 202	
Transfer to Acute Care Facility with Equal or Lower Level of Care	screen_source = "NB" and discharge_to = "O" and institution_id = 104, 109, 116, or 202 and institution_to = 101, 102, 104, 105, 106, 107, 109, 111, 112, 113, 115, 116, 121, 123, 128, 130, 131, 134, 135, 136, 201, 202, 203, 204, 206, 217, 301, 302, 303, 305, 309, 401, 402, 403, 404, 405, 406, 408, 409, 417, 419, 501, 502, 507, 508, 510, 511, 601, 602, 603, 604, 606, 609, 651, 654, 655, 701, 702, 703, 704, 705, 707, 708, 713, 714, 715, 716, 717, 752, 753, 754, 755, 756, 801, 803, 804, 851, 854, 859, 901, 902, 903, 904, 906, 907, 912, 917, 918, or 929 screen_source= "NB" and discharge_to = "O" and institution_id = 102, 112, 121, 130, 302, 401, 501, 609, or 703 and institution_to = 101, 102, 106, 107, 111, 112, 113,	

	PDR variables		CIHI Codes
	115, 121, 123, 128, 130, 131, 134, 135, 136,		
	201, 203, 204, 206, 217, 301, 302, 303, 305,		
	309, 401, 402, 403, 404, 405, 406, 408, 409,		
	417, 419, 501, 502, 507, 508, 510, 511, 601,		
	602, 603, 604, 606, 609, 651, 654, 655, 701,		
	702, 703, 704, 705, 707, 708, 713, 714, 715,		
	716, 717, 752, 753, 754, 755, 756, 801, 803,		
	804, 851, 854, 859, 901, 902, 903, 904, 906,		
Decree Heller After Dieth	907, 912, 917, 918, or 929		
Resuscitation After Birth	ippv_mask_flg = "Y" or		
	ippv_ett_flg = "Y" or		
	<pre>chest_compress_flg = "Y" or drugs = "Y"</pre>		
Post-Neonatal Admission Diagnoses	drugs = Y		
Jaundice	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with P58,
		AND	P59, or R17
Low Birth Weight or Preterm Birth	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with P07
Congenital Anomalies	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with G901, P293, or Q
Feeding Problems	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with K21, P741, P7881, P92, R633, or R634
Respiratory Infections	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with A37, J00-J06, J12-J18, J20-J22, or P23
Respiratory Distress	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with P22
Other Infections	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with A (except A37), B, H60-H66, K61, L0, M86, P027, P35-P38, P39 (except P393), P77, R572, T802, T814, T827, or T835
Apnea	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with G4730, P283, P284, R068
Urinary Tract Infections	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with N390 or P393
Isoimmunization			diagnosis_type = "M" and diagnosis_cd begins with P55
"Normal Labour"	labour_spont_flg = "Y" and prev_cesarian_deliv = 0 and multiple_birth_count = 1 and baby_presentation_delivery = 6 and gestational age is between 37 and 41		
"Normal Childbirth"	general_flg ≠ "Y" and spinal_flg ≠ "Y" and episiotomy_flg ≠ "Y"	AND	procedure_code does not begin with 5MD53, 5MD54, 5MD55, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, 5MD56PJ, or 5MD60 AND anesthetic_type ≠ 1, 2, or 4 for a procedure_code beginning with 5MD
Cervical Dilation on Admission			

	PDR variables	CIHI Codes
0-3cm	0 ≤ cervical_dilation_on_admis < 4	
4-10cm	cervical_dilation_on_admis ≥ 4	
Unknown	cervical_dilation_on_admis = null	
Duration of Labour Stages		
Duration of First Stage	hours between (second_stage_date  second_stage_time – first_stage_date  first_stage_time) where first_stage_date and second_stage_date ≠ null and labour_none_flg ≠ "Y"	
Duration of Second Stage	hours between (delivery_date  delivery_time – second_stage_date  second_stage_time) where second_stage_date ≠ null and labour_none_flg ≠ "Y"	
Low Apgar Score	0 ≤ 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§ 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^, 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.

<sup>\*</sup> 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.