

# **Perinatal Health Report 2008-09 to 2012-13**



**Residents of Island Health**

## **Publication Information**

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Suggested citation: Perinatal Services BC (October 2014). *Perinatal Health Report 2008-09 to 2012-13: Residents of Island Health*, Vancouver, BC.

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Published: October 2014

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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; pregnancies involving selective fetal reduction are retained.
- Mother's delivery record has a discharge date between April 1, 2008 and March 31, 2013.
- 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 and Health Service Delivery Area were derived by linking the postal code on the mother's delivery record with the 2011 BC Stats Translation Master File. Women may not deliver in the Health Authority in which they reside.
- Rates with numerators of 1-4 cases are not reported (NR).

### **Terms used in the Perinatal Health Report (see specifications on pages 86 and 87)**

#### **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.

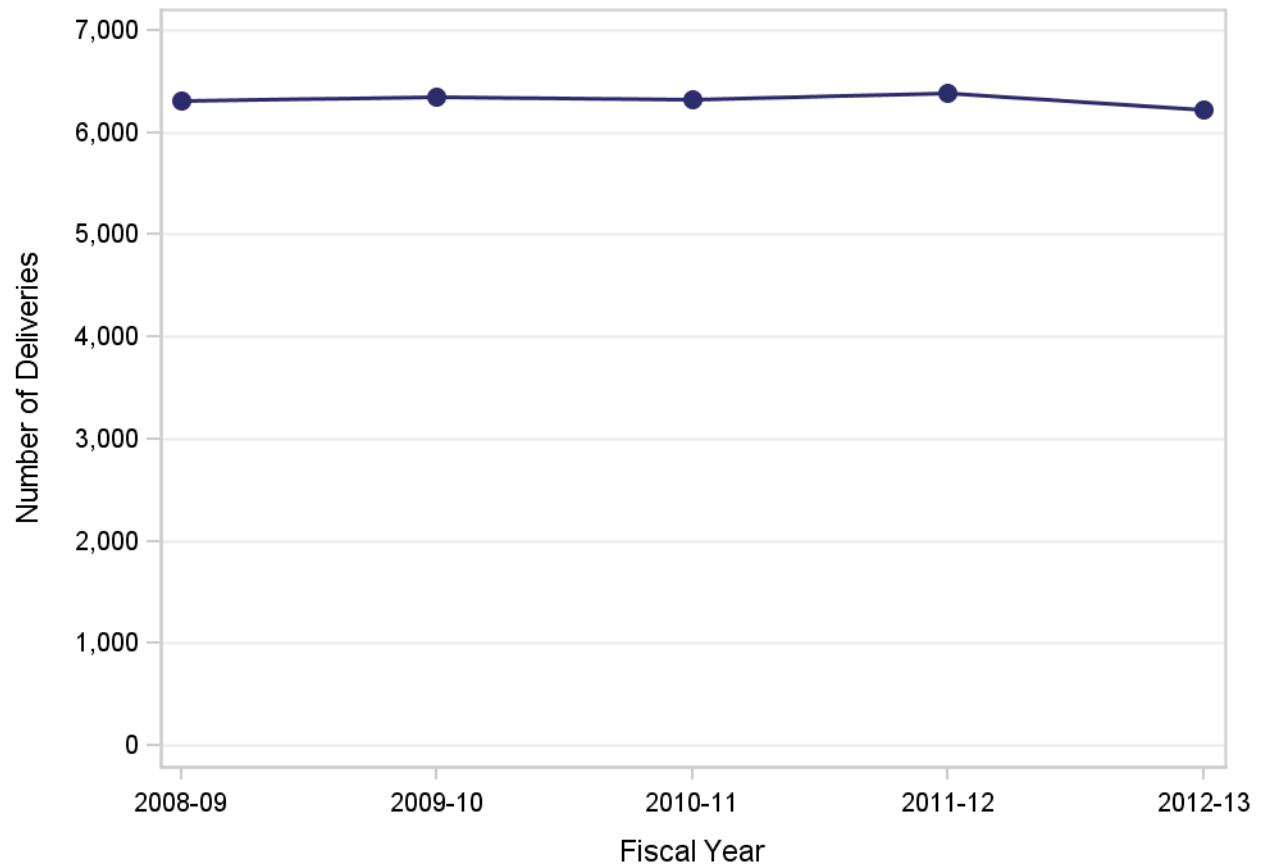
**Perinatal Health Report 2014**  
**Residents of Island Health**

**Section 1: Maternal Health**



## Total Deliveries

Residents of Island Health: April 1, 2008 - March 31, 2013

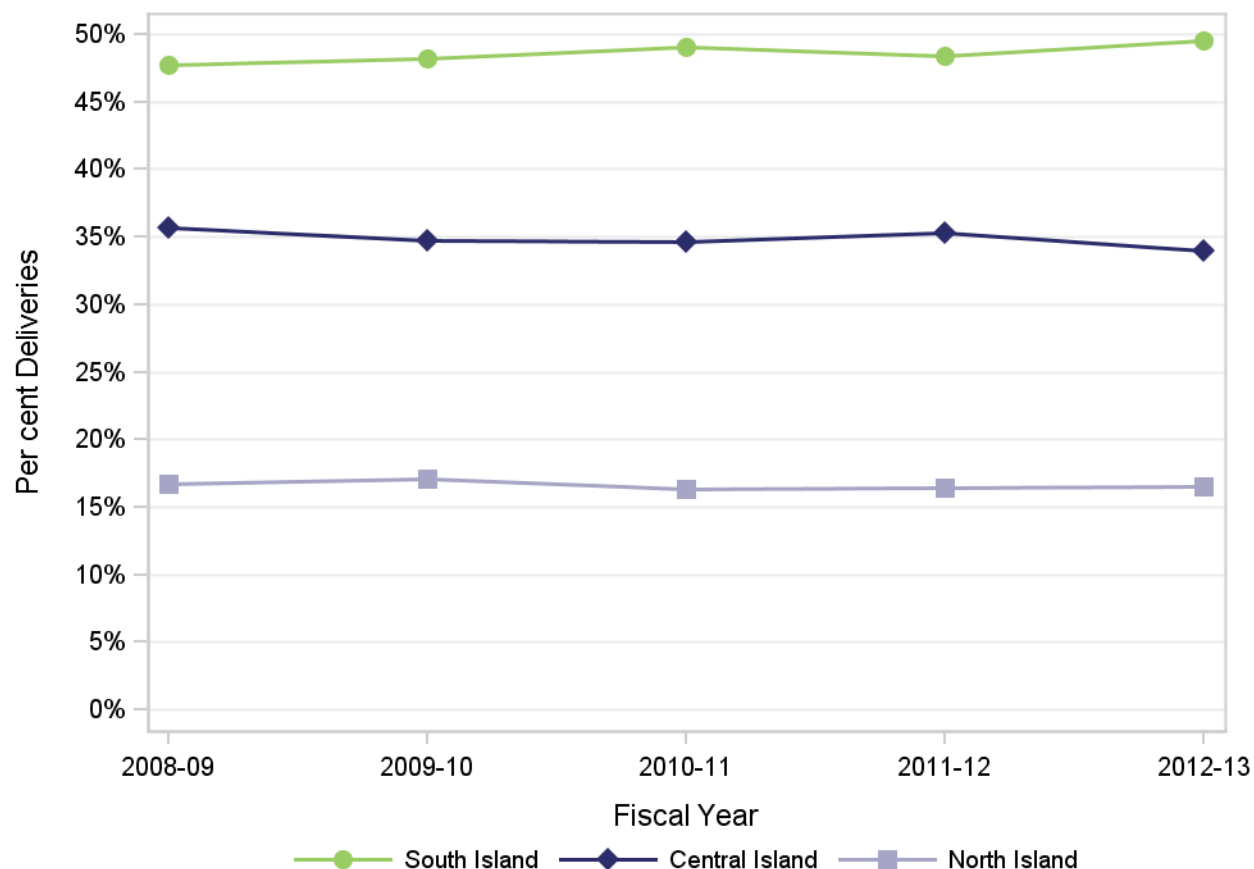


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Island Health	6,309	6,352	6,325	6,384	6,223

Definitions and specifications begin on Page 75 of this document.

## Deliveries by Resident Health Service Delivery Area

Residents of Island Health: April 1, 2008 - March 31, 2013

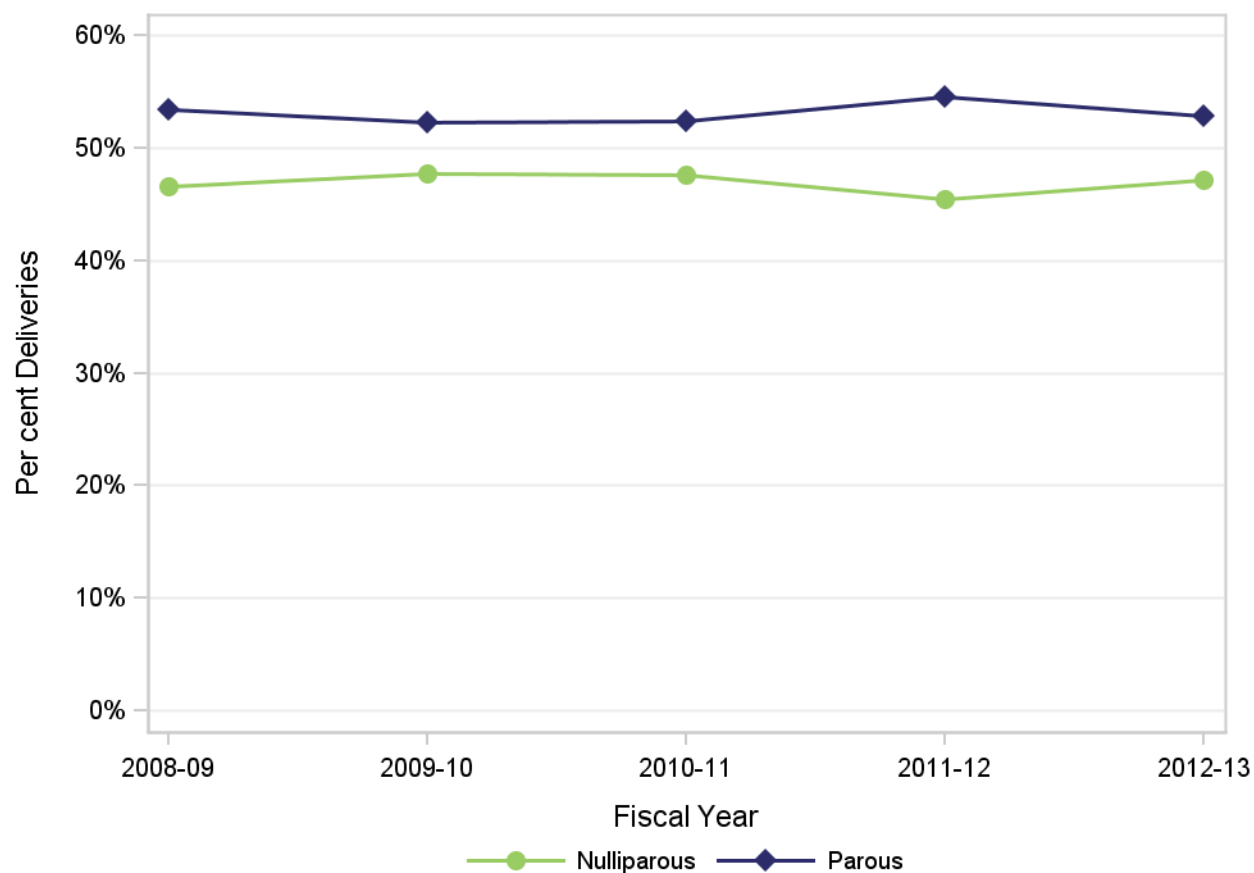


Health Service Delivery Area	Fiscal Year									
	2008-09		2009-10		2010-11		2011-12		2012-13	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
South Island	3,008	47.7%	3,059	48.2%	3,102	49.0%	3,087	48.4%	3,083	49.5%
Central Island	2,249	35.6%	2,206	34.7%	2,191	34.6%	2,251	35.3%	2,114	34.0%
North Island	1,052	16.7%	1,087	17.1%	1,032	16.3%	1,046	16.4%	1,026	16.5%

Definitions and specifications begin on Page 75 of this document.

## Deliveries by Parity

Residents of Island Health: April 1, 2008 - March 31, 2013



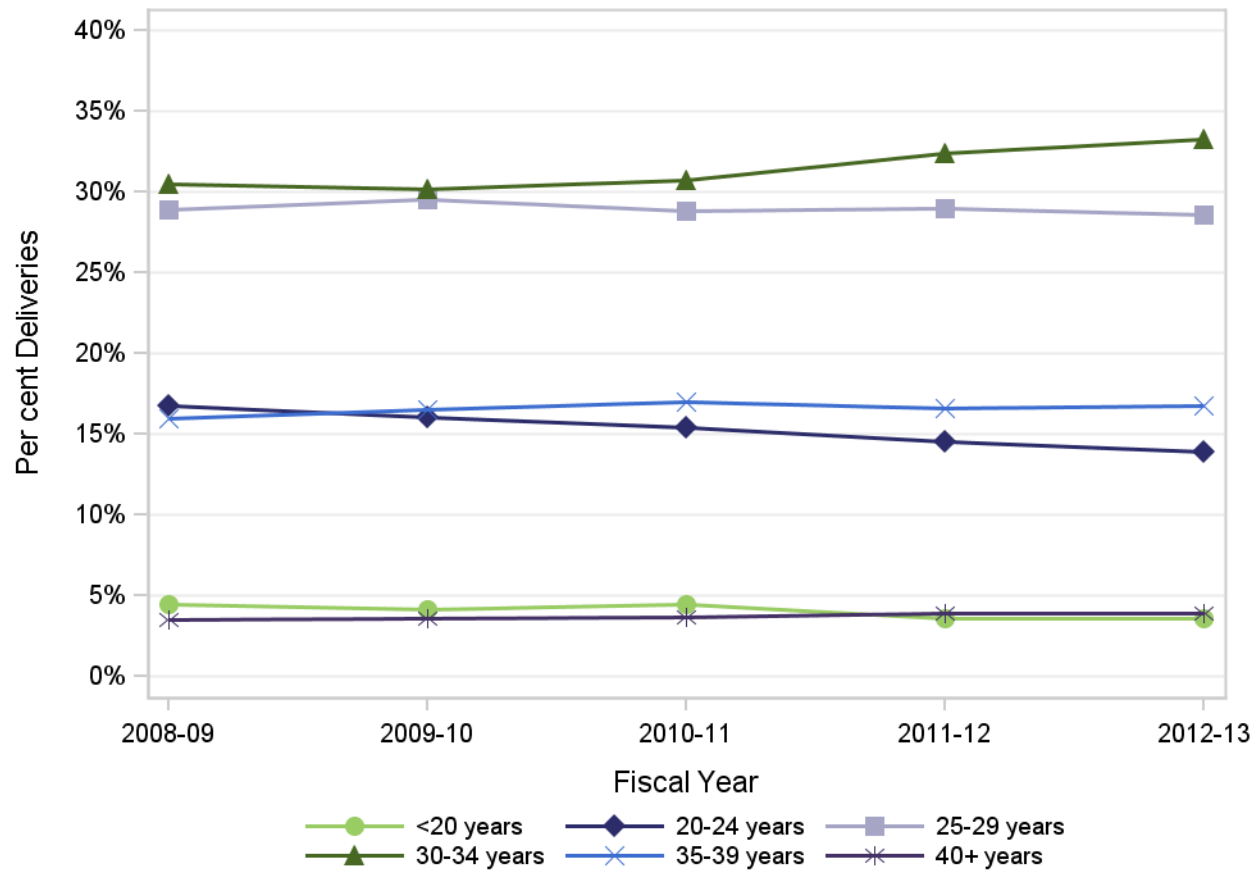
## Average and Median Maternal Age at Delivery by Parity

Parity	Fiscal Year									
	2008-09		2009-10		2010-11		2011-12		2012-13	
	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
All	29.8	29.9	29.9	30.0	30.1	30.1	30.2	30.4	30.3	30.5
Nulliparous	28.3	28.3	28.5	28.6	28.6	28.8	28.8	29.0	29.0	29.3
Parous	31.1	31.2	31.2	31.5	31.4	31.6	31.4	31.5	31.5	31.5

Definitions and specifications begin on Page 75 of this document.

## Maternal Age at Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013

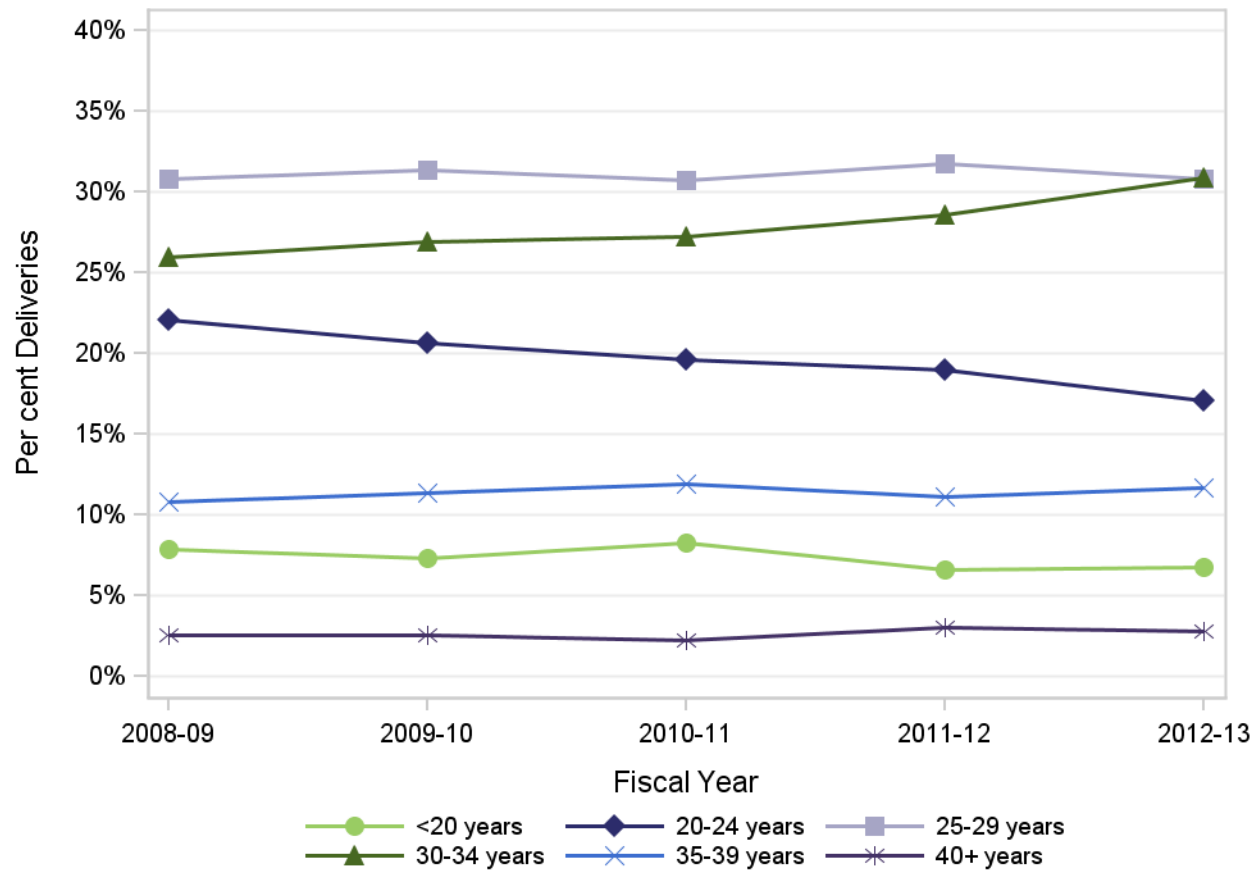


Maternal Age	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
<20 years	4.5%	4.2%	4.5%	3.6%	3.6%
20-24 years	16.7%	16.1%	15.4%	14.5%	13.9%
25-29 years	28.9%	29.5%	28.8%	29.0%	28.6%
30-34 years	30.5%	30.2%	30.7%	32.4%	33.2%
35-39 years	15.9%	16.5%	17.0%	16.6%	16.7%
40+ years	3.5%	3.6%	3.7%	3.9%	3.9%

Definitions and specifications begin on Page 75 of this document.

## Age of Nulliparous Women at Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013

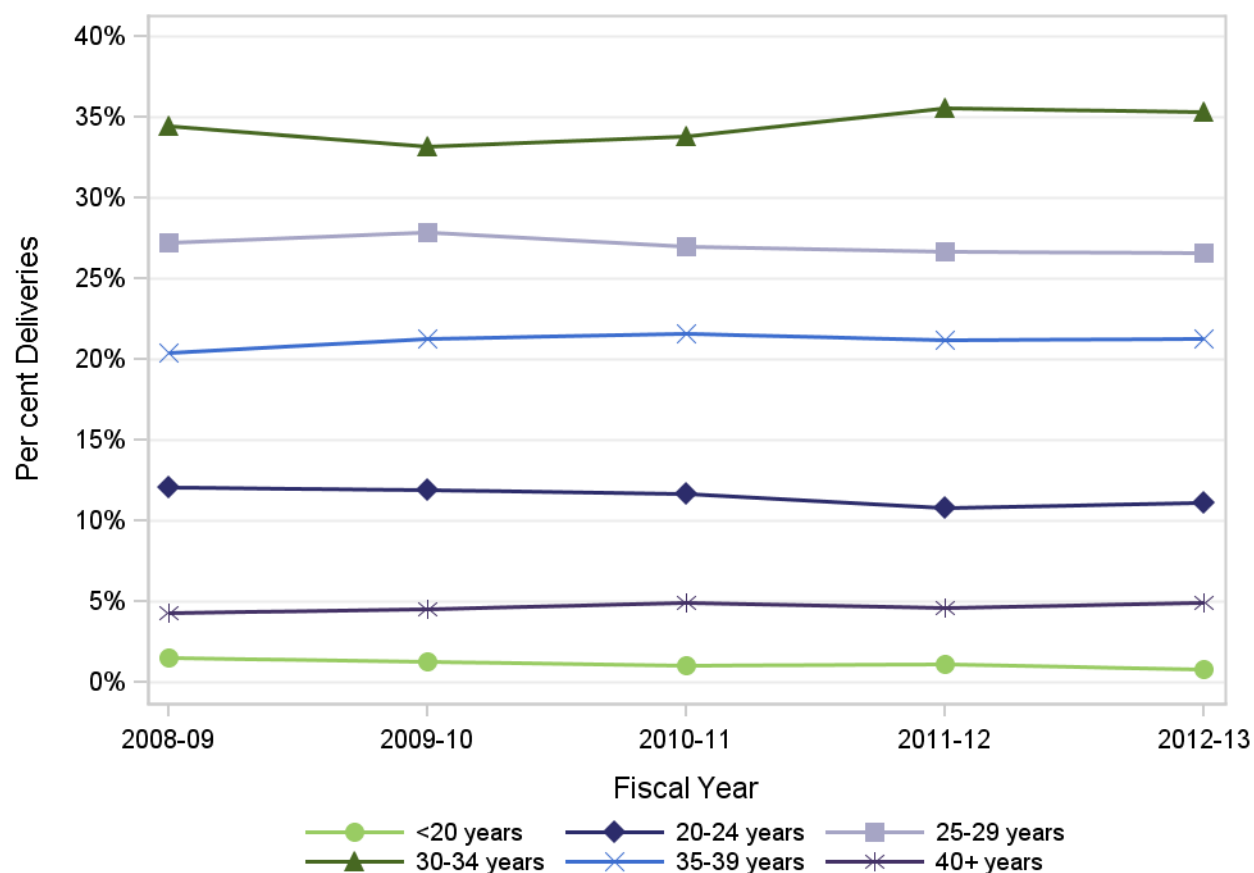


Maternal Age	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
<20 years	7.9%	7.3%	8.3%	6.6%	6.8%
20-24 years	22.1%	20.6%	19.6%	19.0%	17.0%
25-29 years	30.8%	31.3%	30.7%	31.7%	30.8%
30-34 years	25.9%	26.9%	27.2%	28.5%	30.9%
35-39 years	10.8%	11.3%	11.9%	11.1%	11.7%
40+ years	2.5%	2.5%	2.3%	3.0%	2.8%

Definitions and specifications begin on Page 75 of this document.

## Age of Parous Women at Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013



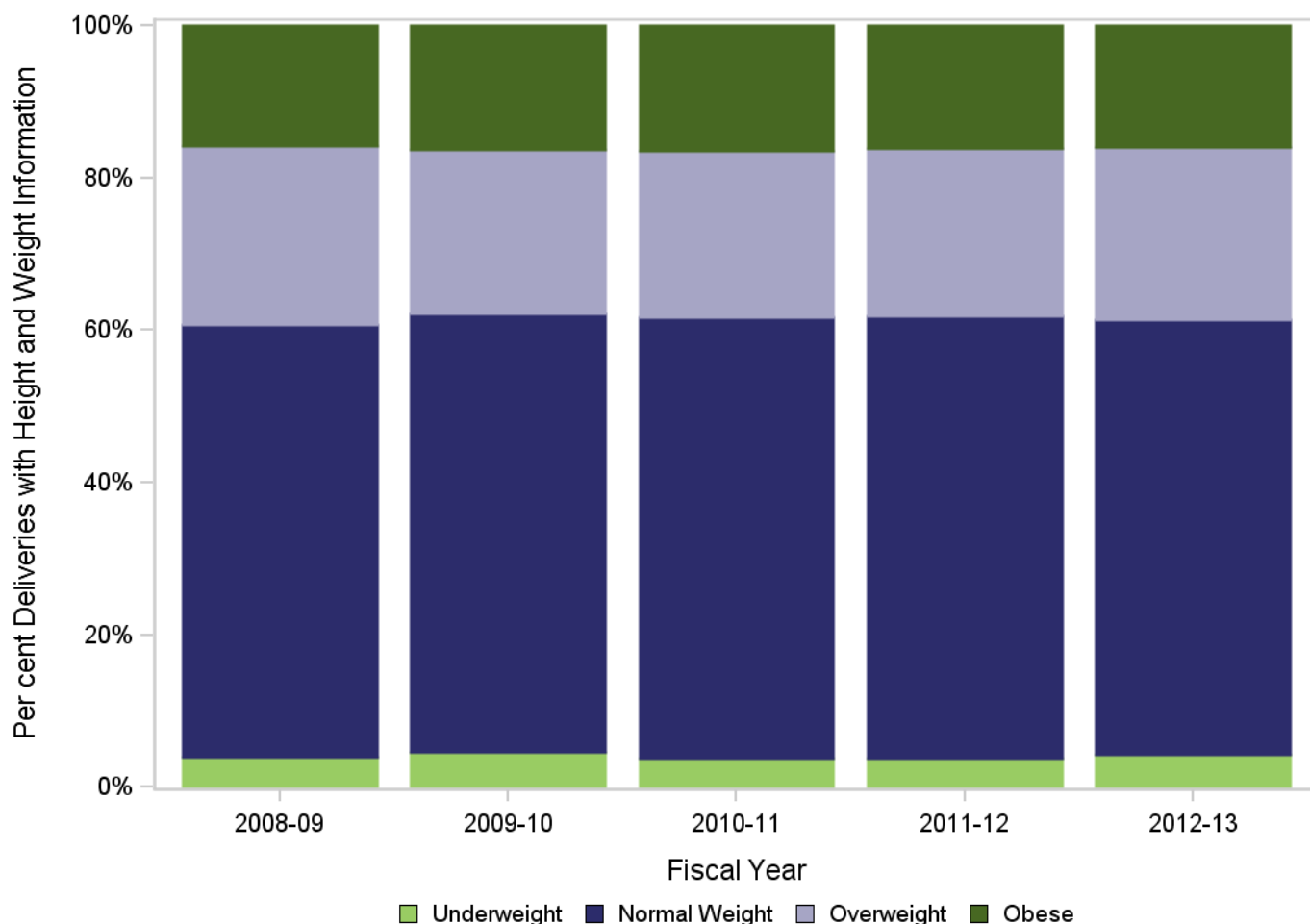
Maternal Age	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
<20 years	1.5%	1.3%	1.0%	1.1%	0.8%
20-24 years	12.1%	11.9%	11.7%	10.8%	11.1%
25-29 years	27.2%	27.9%	27.0%	26.7%	26.6%
30-34 years	34.4%	33.2%	33.8%	35.6%	35.3%
35-39 years	20.4%	21.2%	21.6%	21.2%	21.3%
40+ years	4.3%	4.5%	5.0%	4.6%	4.9%

Definitions and specifications begin on Page 75 of this document.

## Pre-Pregnancy Body Mass Index (BMI)

Residents of Island Health: April 1, 2008 - March 31, 2013

Distribution of Pre-Pregnancy BMI Among Women With **Complete** Height and Weight



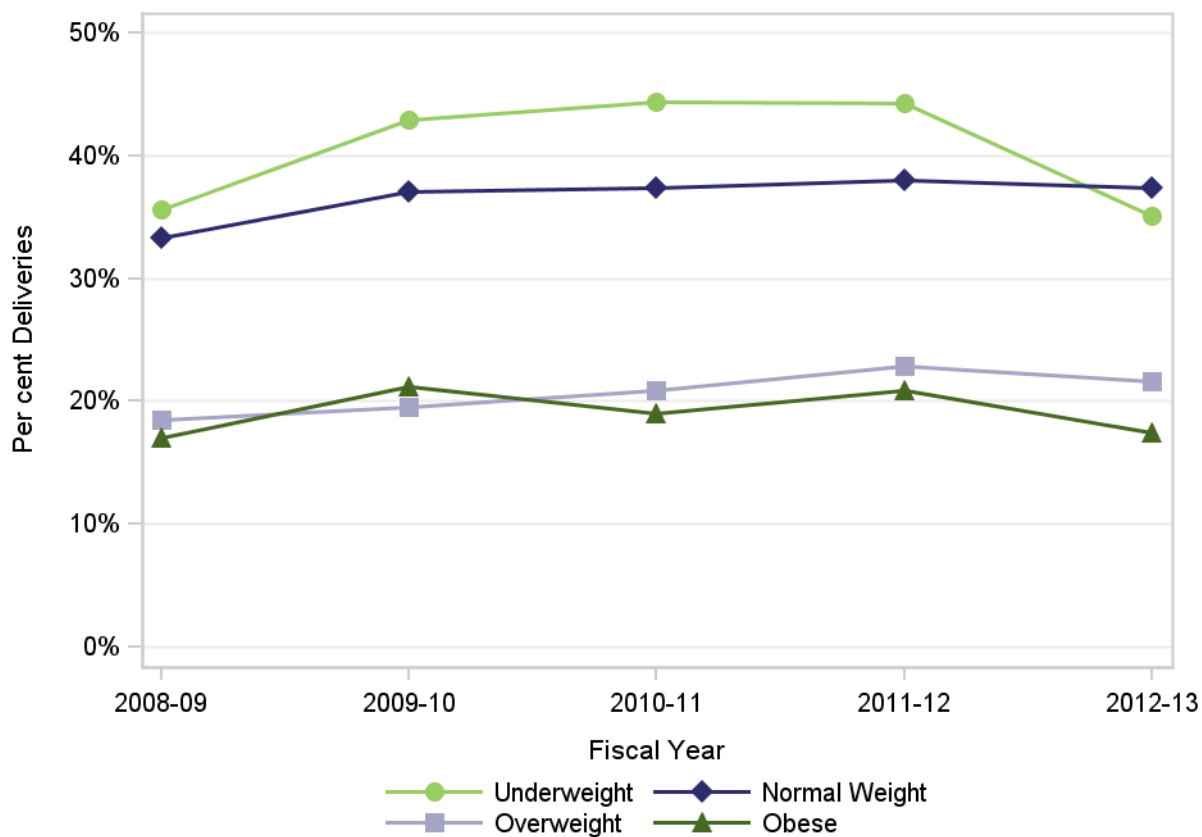
Distribution of Pre-Pregnancy BMI Among **ALL** Women

BMI Category	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Underweight	2.8%	3.3%	2.9%	3.0%	3.6%
Normal Weight	39.9%	41.0%	44.6%	46.5%	47.9%
Overweight	16.4%	15.4%	16.8%	17.7%	19.2%
Obese	11.2%	11.7%	12.7%	12.9%	13.4%
BMI Missing	29.7%	28.6%	23.0%	19.9%	15.9%

Definitions and specifications begin on Page 75 of this document.

## Appropriate\* Weight Gain During Pregnancy by Pre-Pregnancy Body Mass Index (BMI)

Residents of Island Health: April 1, 2008 - March 31, 2013



BMI Category	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Underweight	35.6%	42.9%	44.4%	44.3%	35.1%
Normal Weight	33.3%	37.1%	37.4%	37.9%	37.3%
Overweight	18.5%	19.5%	20.8%	22.9%	21.6%
Obese	17.1%	21.2%	19.0%	20.9%	17.5%

\* As defined by the Institute of Medicine.

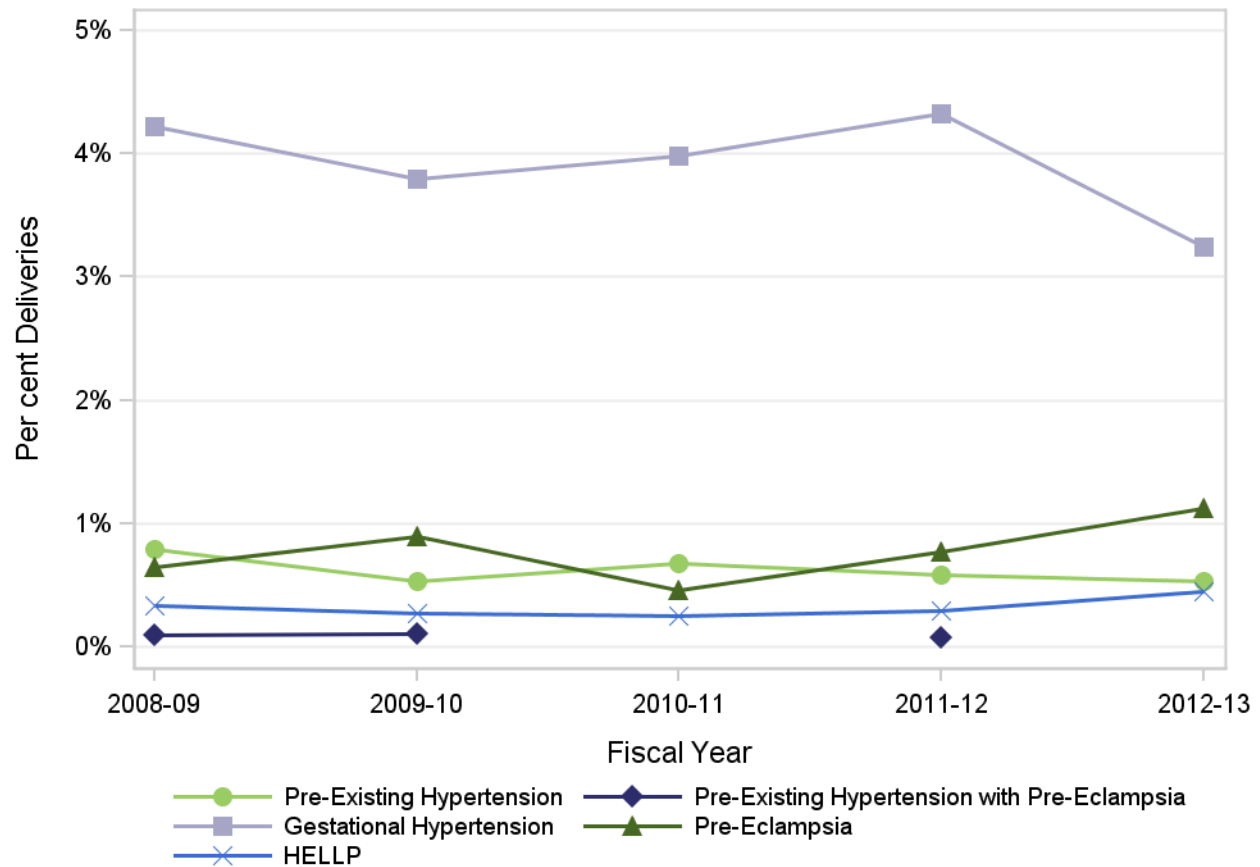
Data are limited to women with complete height and weight information (approximately 65% of deliveries).

Definitions and specifications begin on Page 75 of this document.



# Hypertension in Pregnancy

Residents of Island Health: April 1, 2008 - March 31, 2013



Type of Hypertension	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
No Hypertension	93.9%	94.4%	94.6%	93.9%	94.6%
Pre-Existing Hypertension	0.8%	0.5%	0.7%	0.6%	0.5%
Pre-Existing Hypertension with Pre-Eclampsia	0.1%	0.1%	NR	0.1%	NR
Gestational Hypertension	4.2%	3.8%	4.0%	4.3%	3.2%
Pre-Eclampsia	0.6%	0.9%	0.5%	0.8%	1.1%
Eclampsia	NR	NR	NR	NR	NR
HELLP	0.3%	0.3%	0.3%	0.3%	0.4%

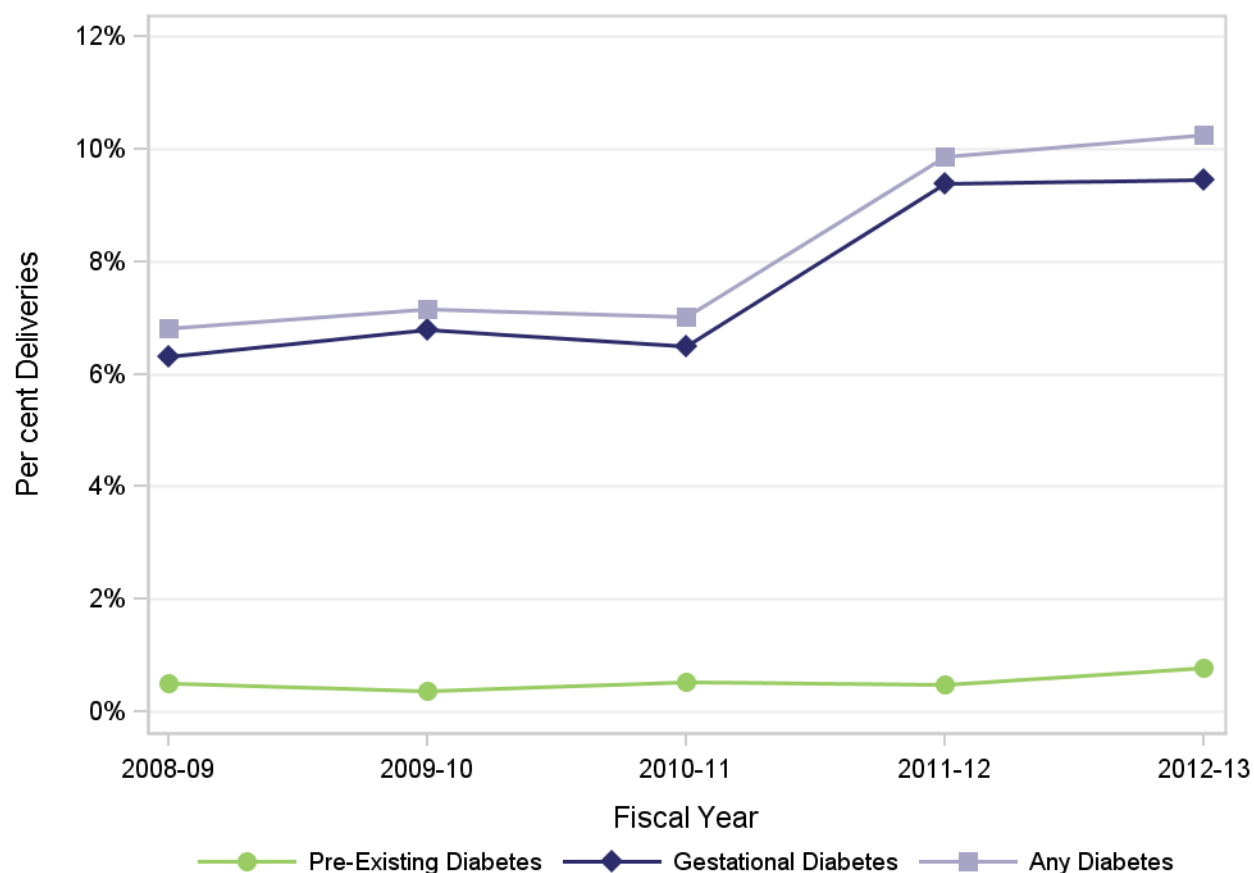
Diagnosis codes for hypertensive disorders in pregnancy, notably gestational hypertension and pre-eclampsia, changed effective April 1, 2012 discharges. This may cause a break in the trend for these two diagnoses.

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

Definitions and specifications begin on Page 75 of this document.

## Diabetes Mellitus in Pregnancy

Residents of Island Health: April 1, 2008 - March 31, 2013

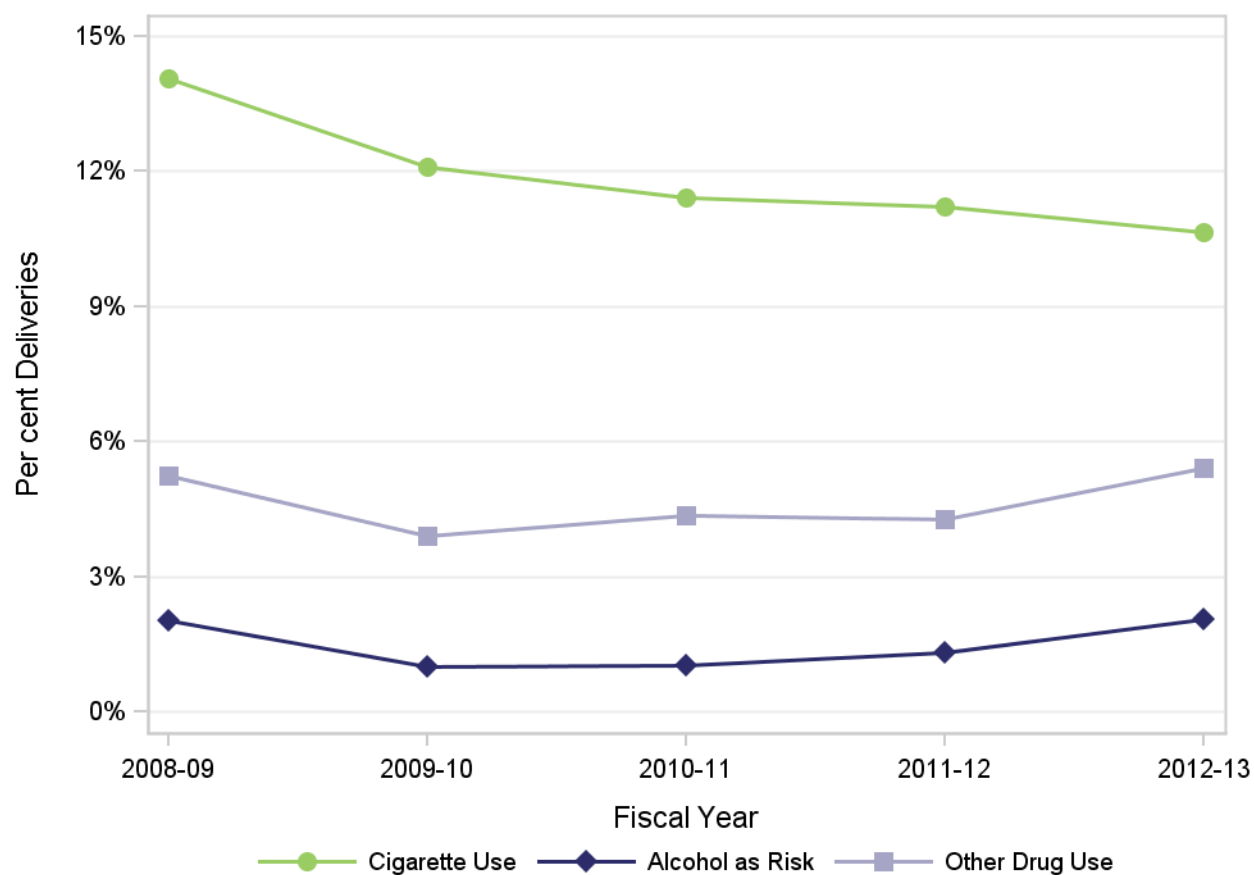


Type of Diabetes	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Pre-Existing Diabetes	0.5%	0.4%	0.5%	0.5%	0.8%
Gestational Diabetes	6.3%	6.8%	6.5%	9.4%	9.4%
Any Diabetes	6.8%	7.1%	7.0%	9.9%	10.2%

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 75 of this document.

## Substance Use During Pregnancy

Residents of Island Health: April 1, 2008 - March 31, 2013

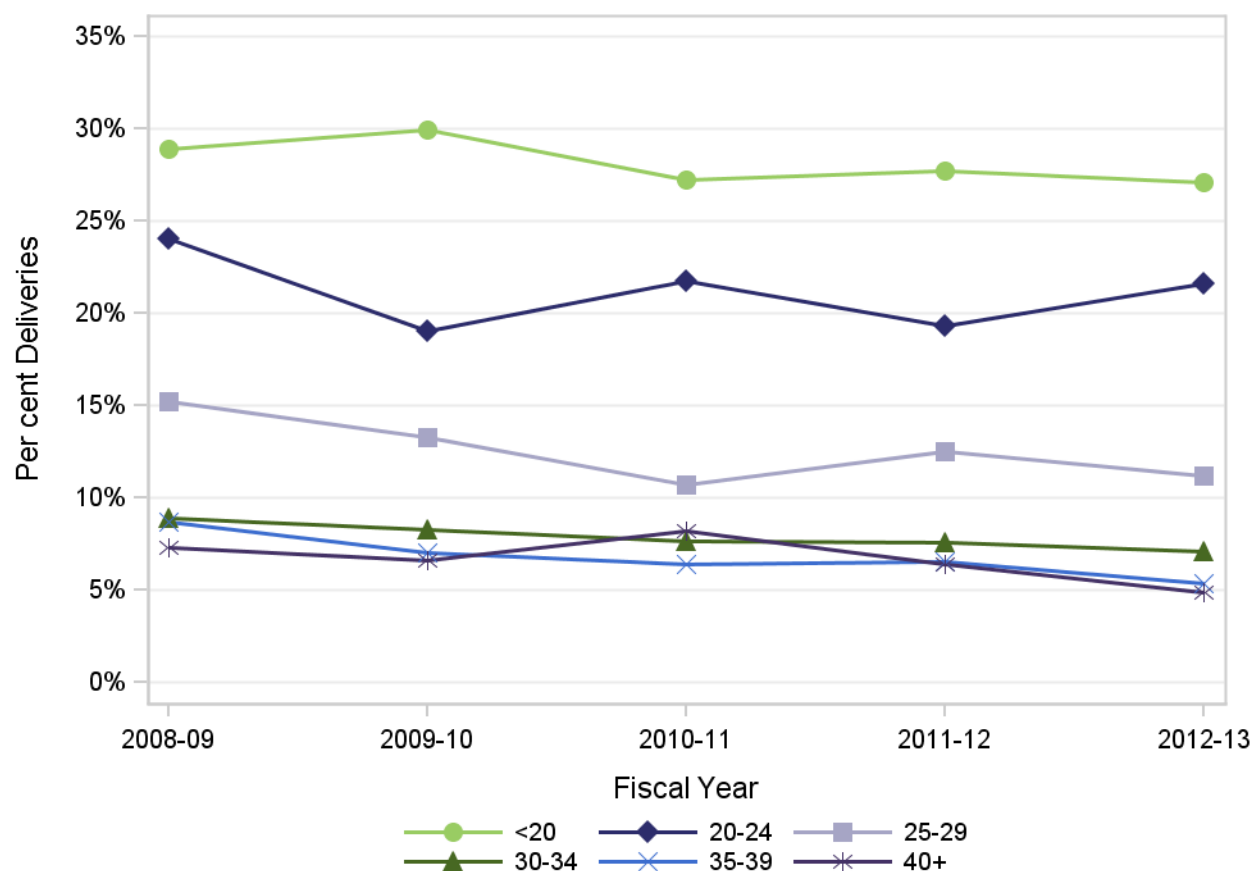


Substance	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Cigarette Use	14.1%	12.1%	11.4%	11.2%	10.6%
Alcohol as Risk	2.0%	1.0%	1.0%	1.3%	2.1%
Other Drug Use	5.2%	3.9%	4.3%	4.3%	5.4%

Definitions and specifications begin on Page 75 of this document.

## Cigarette Use at Any Time During Pregnancy by Maternal Age

Residents of Island Health: April 1, 2008 - March 31, 2013

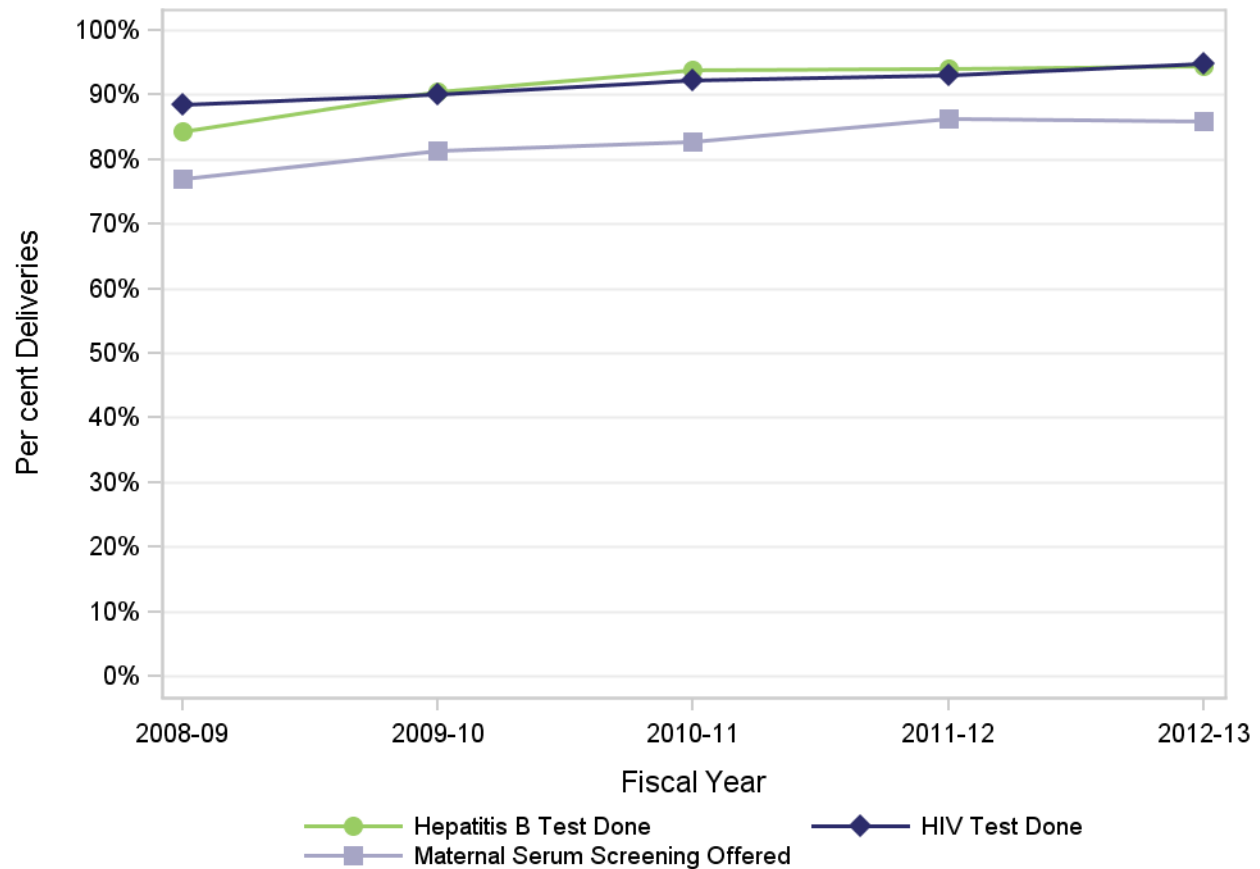


Maternal Age	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
<20 years	28.9%	29.9%	27.2%	27.7%	27.1%
20-24 years	24.1%	19.0%	21.7%	19.3%	21.6%
25-29 years	15.2%	13.3%	10.7%	12.5%	11.2%
30-34 years	8.9%	8.2%	7.7%	7.5%	7.1%
35-39 years	8.7%	7.1%	6.4%	6.5%	5.4%
40+ years	7.3%	6.6%	8.2%	6.4%	4.9%

Definitions and specifications begin on Page 75 of this document.

## Maternal Screening Tests

Residents of Island Health: April 1, 2008 - March 31, 2013



Type of Screening	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Hepatitis B Test Done	84.4%	90.5%	93.9%	94.1%	94.4%
HIV Test Done	88.5%	90.0%	92.3%	93.0%	94.9%
Maternal Serum Screening Offered	77.0%	81.2%	82.8%	86.3%	85.9%

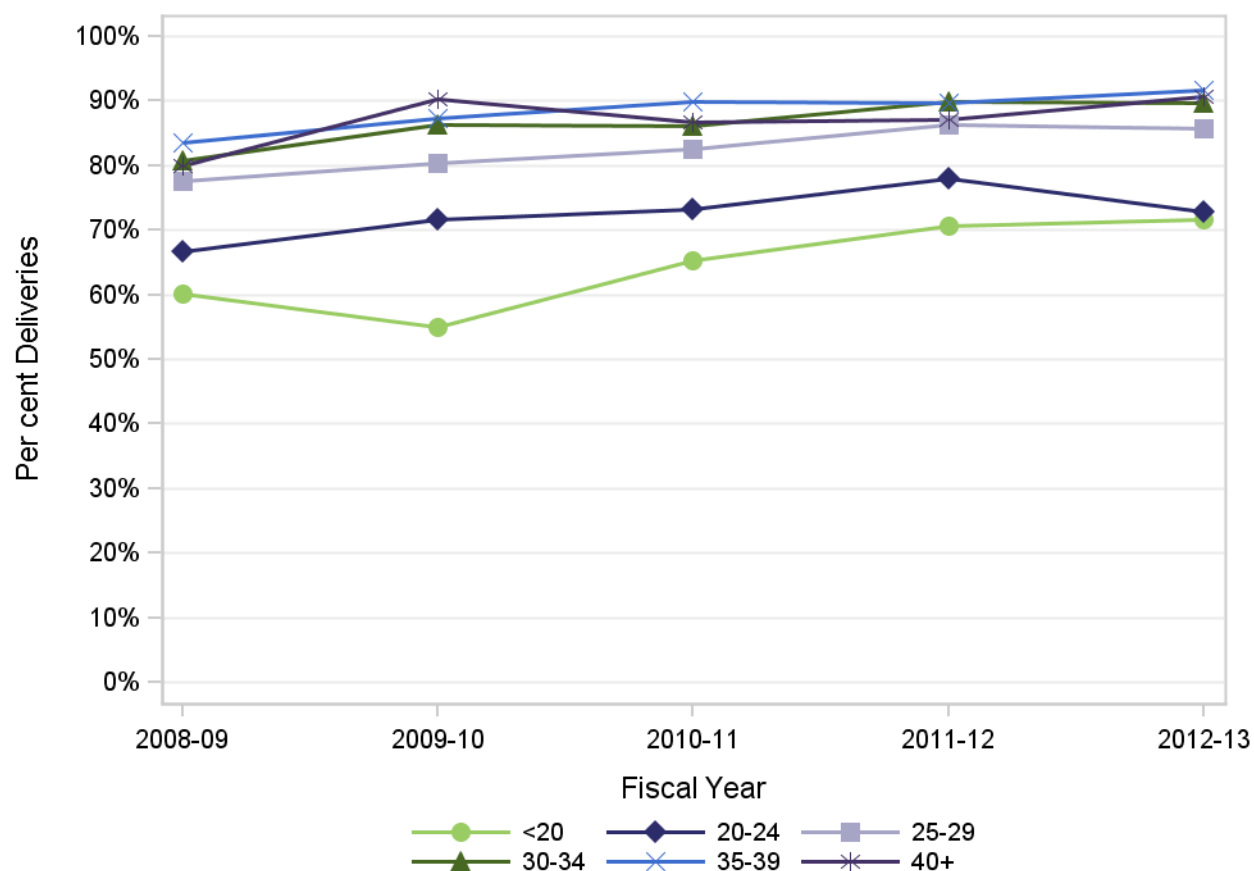
Maternal serum screening refers to testing offered through the BC Prenatal Genetic Screening Program.

[Click here for information on the BC Prenatal Genetic Screening Program.](#)

Definitions and specifications begin on Page 75 of this document.

## Offer of Maternal Serum Screening by Maternal Age

Residents of Island Health: April 1, 2008 - March 31, 2013



Maternal Age	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
<20 years	60.1%	54.9%	65.4%	70.6%	71.6%
20-24 years	66.8%	71.7%	73.3%	78.0%	72.8%
25-29 years	77.5%	80.4%	82.5%	86.3%	85.7%
30-34 years	80.8%	86.4%	86.2%	89.8%	89.6%
35-39 years	83.5%	87.3%	89.8%	89.7%	91.7%
40+ years	79.9%	90.3%	86.6%	87.1%	90.6%

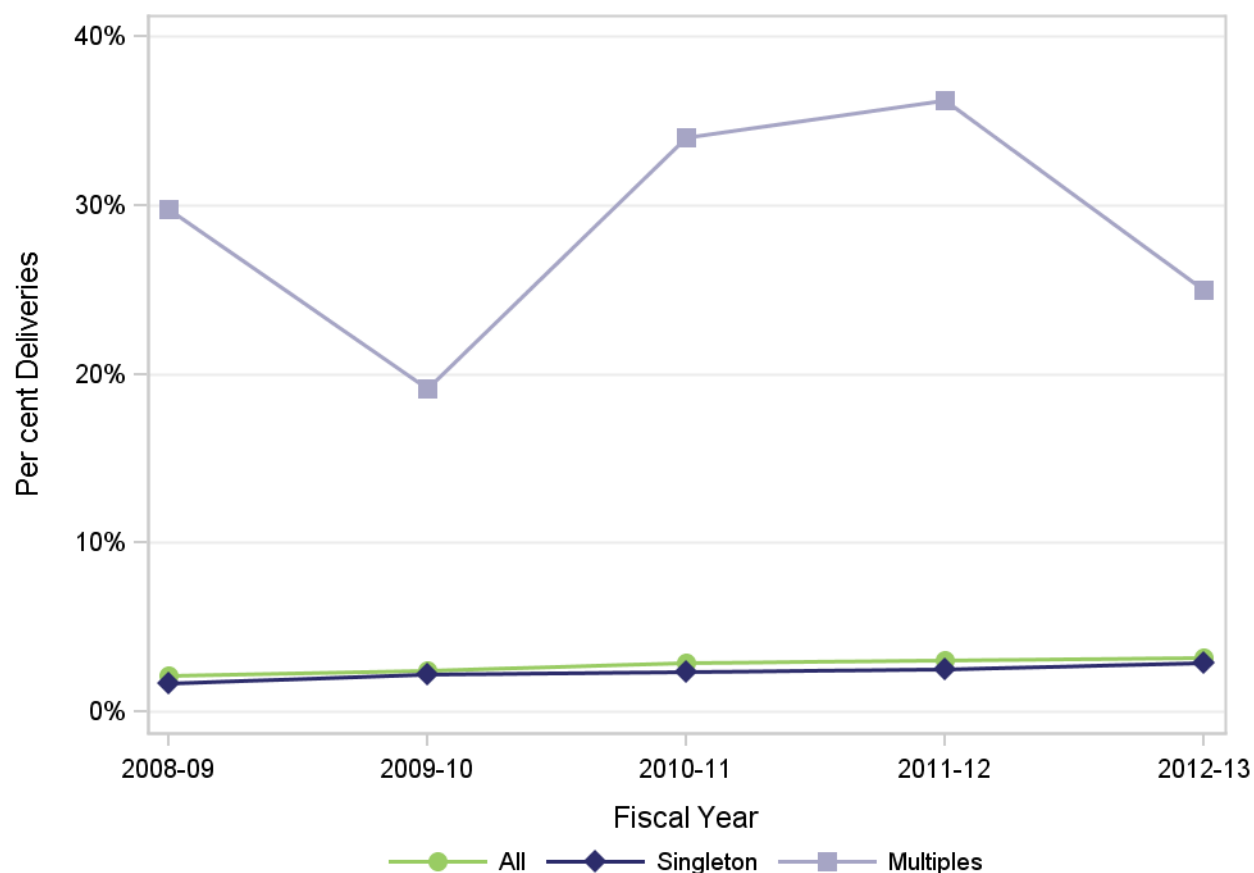
Maternal serum screening refers to testing offered through the BC Prenatal Genetic Screening Program.

[Click here for information on the BC Prenatal Genetic Screening Program.](#)

Definitions and specifications begin on Page 75 of this document.

## Use of Artificial Reproductive Technology by Plurality

Residents of Island Health: April 1, 2008 - March 31, 2013



Plurality	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
All	2.2%	2.5%	2.9%	3.1%	3.2%
Singleton	1.7%	2.2%	2.4%	2.5%	2.9%
Multiples	29.7%	19.1%	34.0%	36.2%	25.0%

Artificial reproductive technology data were captured differently beginning April 1, 2009 discharges. This may cause a break in the trend between 2008-09 and 2009-10.

Definitions and specifications begin on Page 75 of this document.

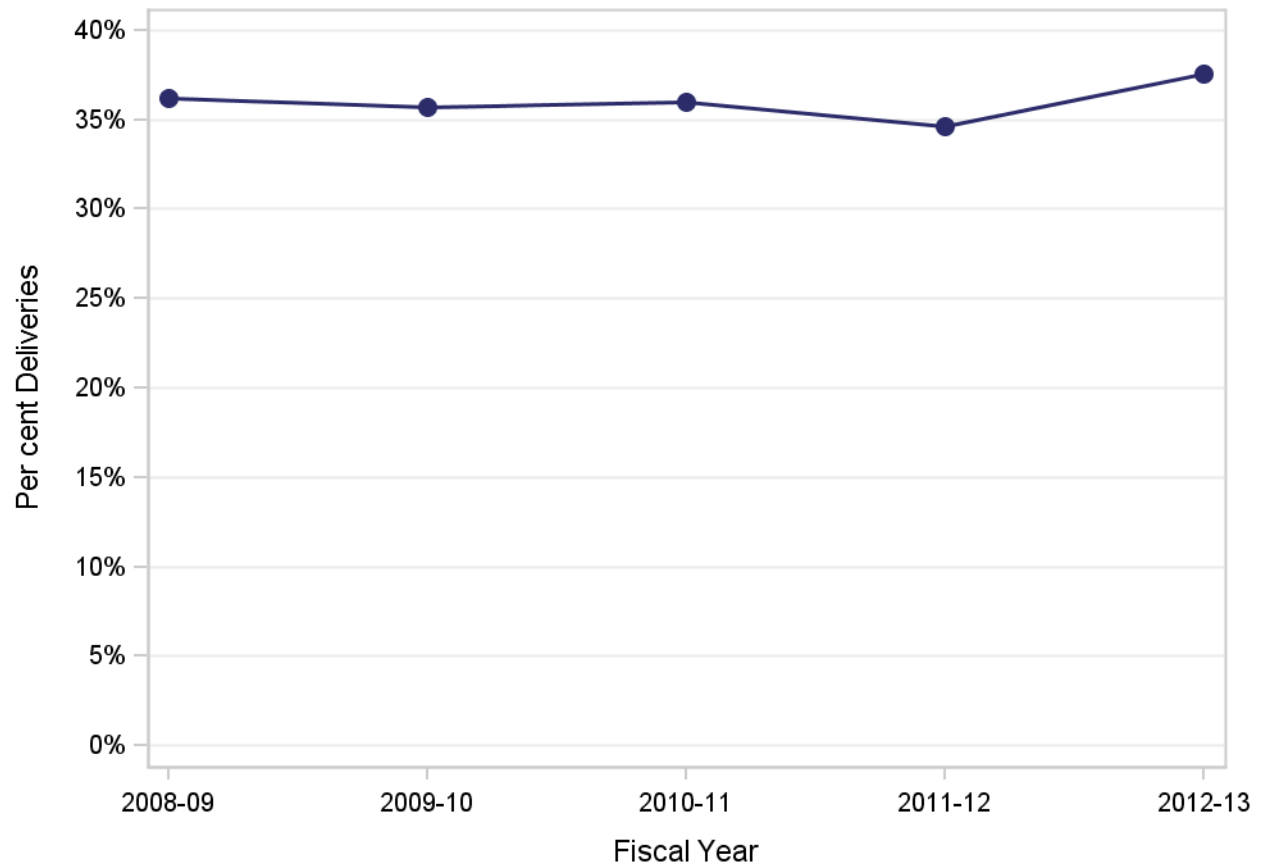
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**Residents of Island Health**

**Section 2: Labour and Delivery**



## Labour Augmentation

Residents of Island Health: April 1, 2008 - March 31, 2013

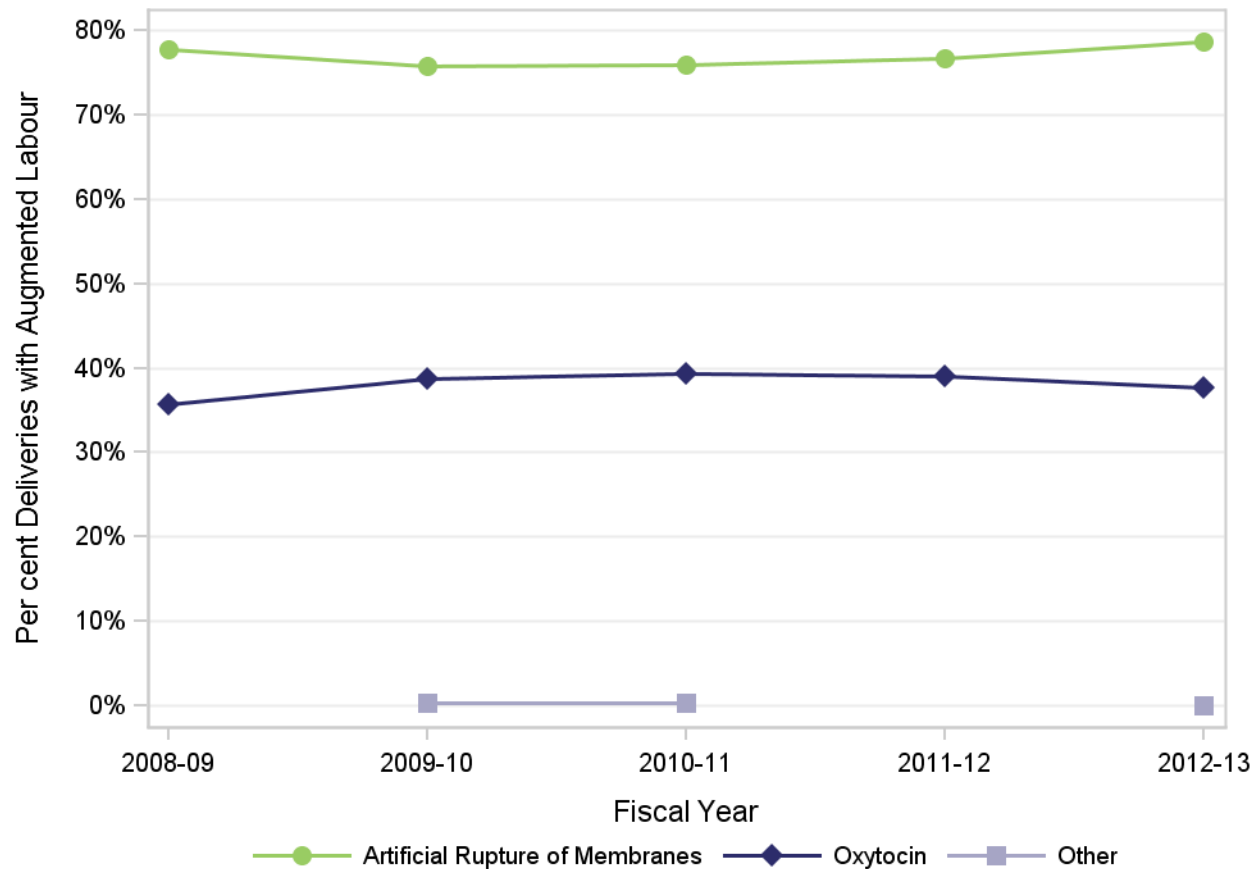


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Labour Augmentation	36.2%	35.7%	36.0%	34.6%	37.6%

Definitions and specifications begin on Page 75 of this document.

## Method of Labour Augmentation

Residents of Island Health: April 1, 2008 - March 31, 2013



Method of Labour Augmentation	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Artificial Rupture of Membranes	77.7%	75.8%	75.9%	76.7%	78.6%
Oxytocin	35.8%	38.7%	39.3%	39.0%	37.6%
Other	NR	0.3%	0.3%	NR	0.0%

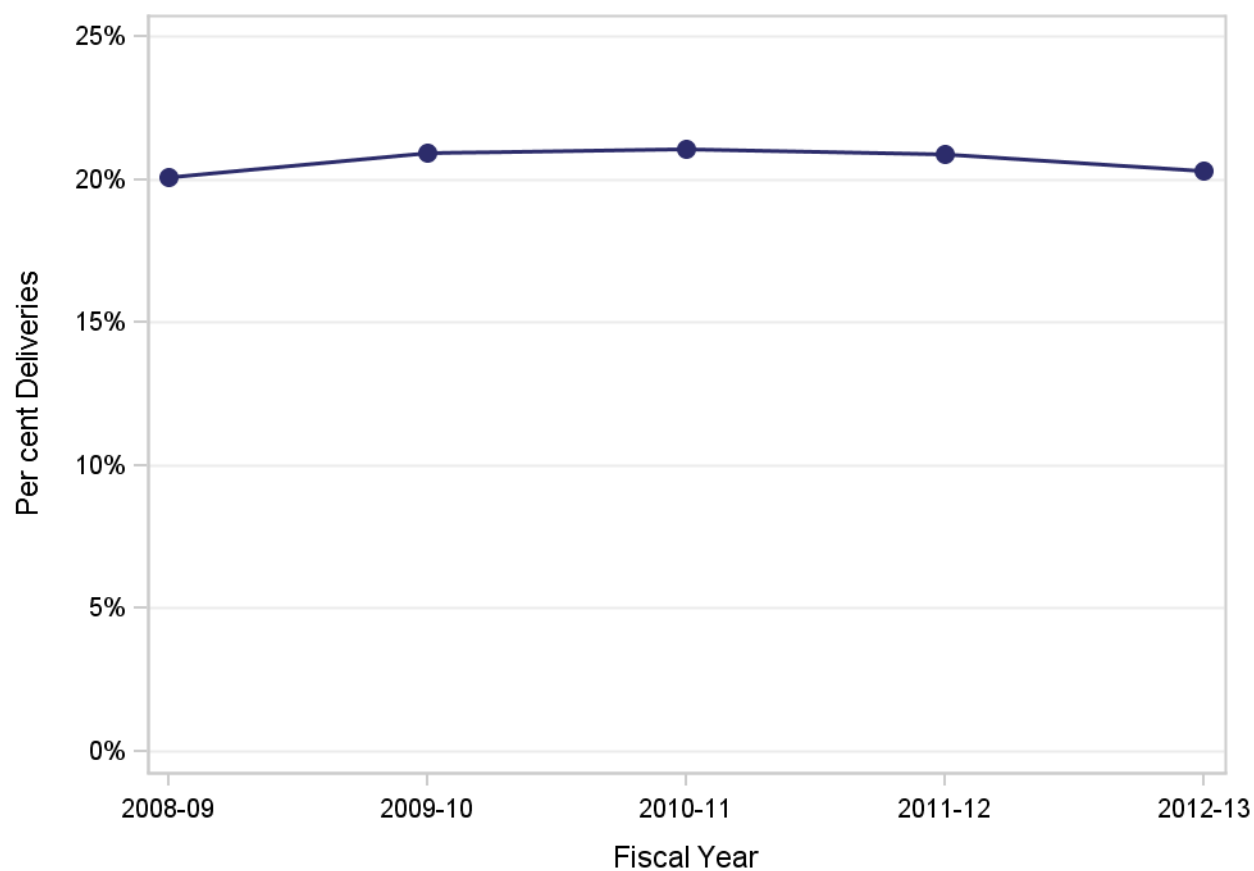
Multiple methods may be used.

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

Definitions and specifications begin on Page 75 of this document.

## Labour Induction

Residents of Island Health: April 1, 2008 - March 31, 2013

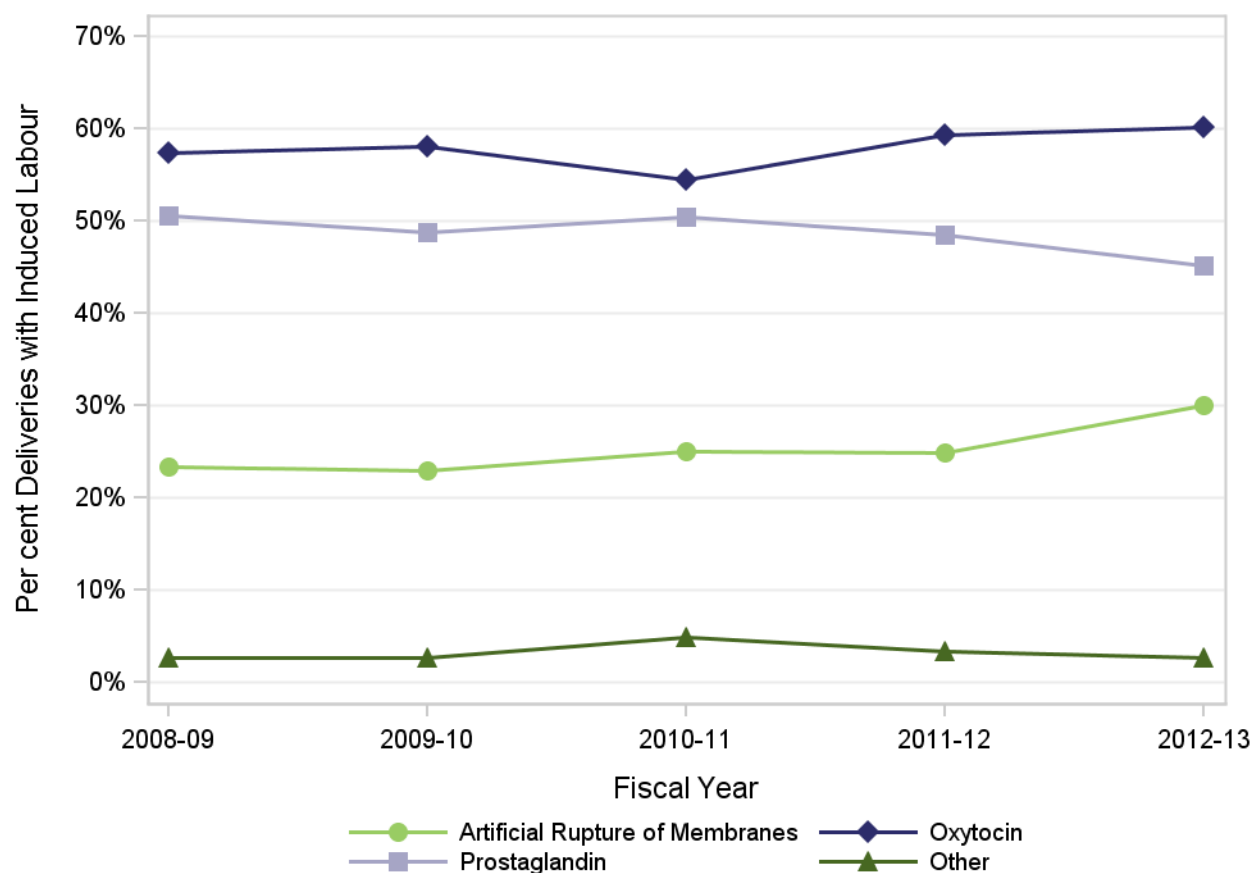


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Labour Induction	20.1%	20.9%	21.1%	20.9%	20.3%

Definitions and specifications begin on Page 75 of this document.

## Method of Labour Induction

Residents of Island Health: April 1, 2008 - March 31, 2013



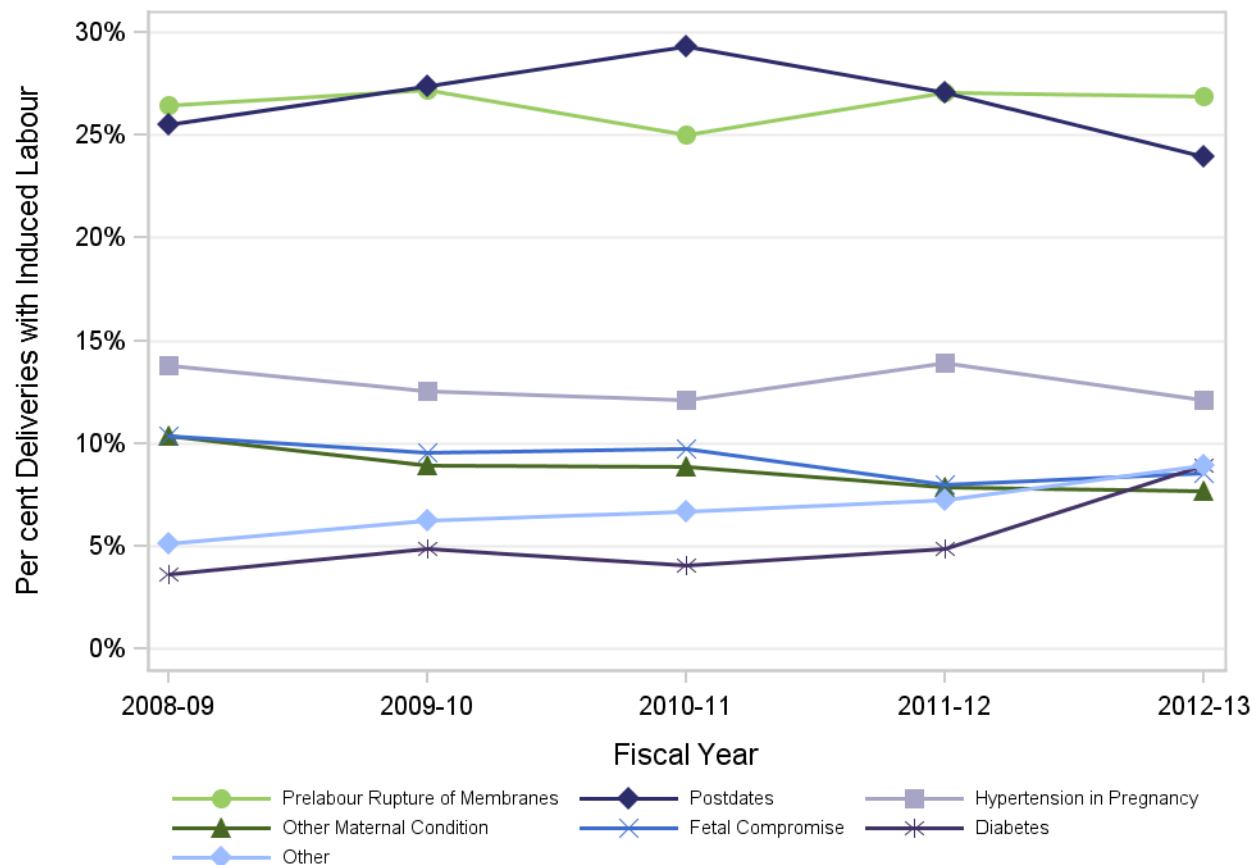
Method of Labour Induction	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Artificial Rupture of Membranes	23.4%	22.9%	25.0%	24.8%	30.0%
Oxytocin	57.3%	58.0%	54.4%	59.3%	60.1%
Prostaglandin	50.6%	48.8%	50.4%	48.5%	45.1%
Other	2.6%	2.7%	4.9%	3.4%	2.7%

Multiple methods may be used.

Definitions and specifications begin on Page 75 of this document.

## Primary Indication for Labour Induction

Residents of Island Health: April 1, 2008 - March 31, 2013



Primary Indication for Labour Induction	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Prelabour Rupture of Membranes	26.4%	27.2%	25.0%	27.1%	26.9%
Post Dates	25.5%	27.4%	29.3%	27.1%	24.0%
Hypertension in Pregnancy	13.8%	12.6%	12.1%	13.9%	12.1%
Other Maternal Condition	10.3%	9.0%	8.9%	7.9%	7.7%
Fetal Compromise	10.3%	9.6%	9.8%	8.0%	8.5%
Diabetes	3.6%	4.9%	4.1%	4.9%	8.9%
Fetal Demise	1.8%	1.2%	1.1%	1.2%	0.6%
Logistics	1.1%	1.1%	1.1%	1.3%	1.2%
Antepartum Hemorrhage	0.6%	NR	0.4%	NR	0.4%
Chorioamnionitis	NR	NR	NR	NR	NR
Other	5.1%	6.2%	6.7%	7.3%	8.9%
Unknown	1.3%	0.6%	1.7%	1.1%	0.7%

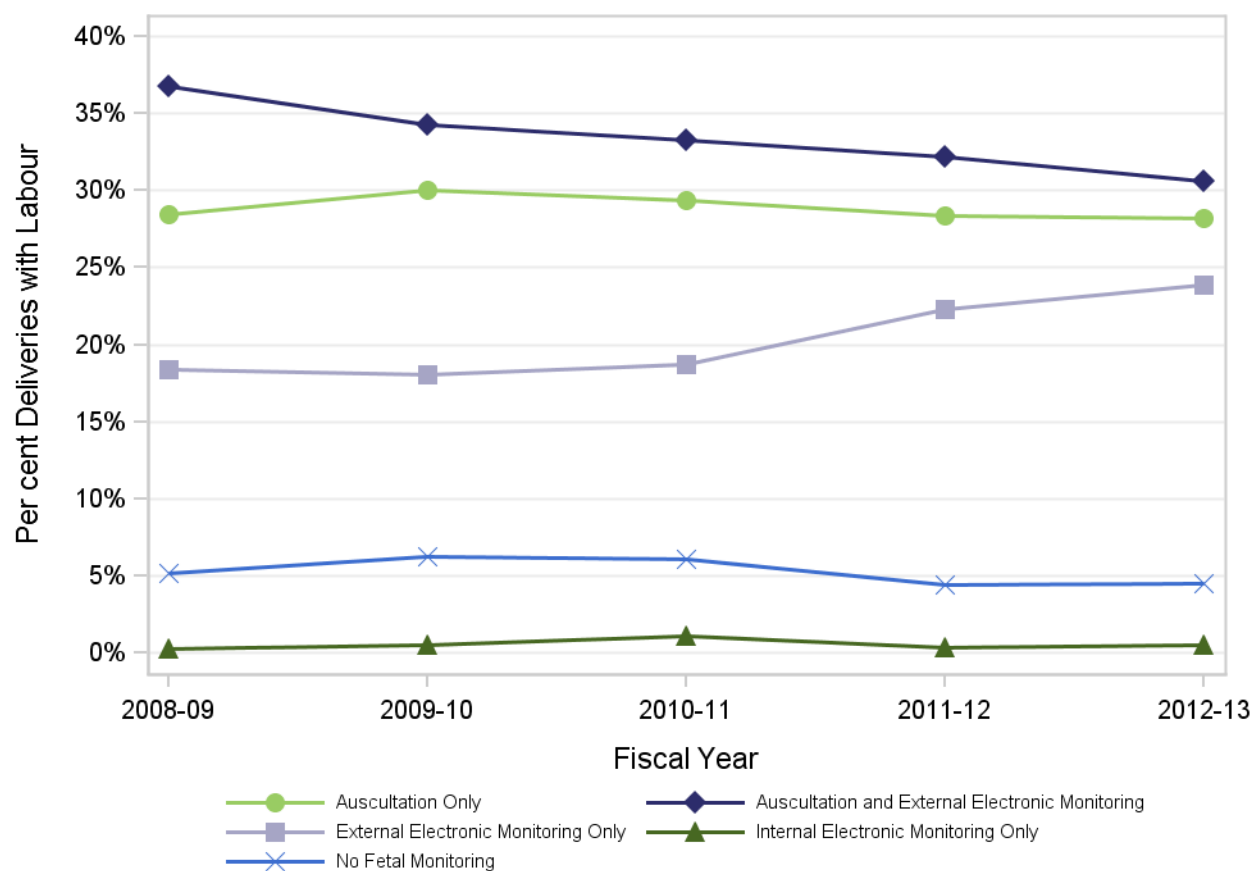
Selected indications are included in the figure; all indications are included in the table.

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

Definitions and specifications begin on Page 75 of this document.

## Method of Fetal Surveillance During Labour

Residents of Island Health: April 1, 2008 - March 31, 2013

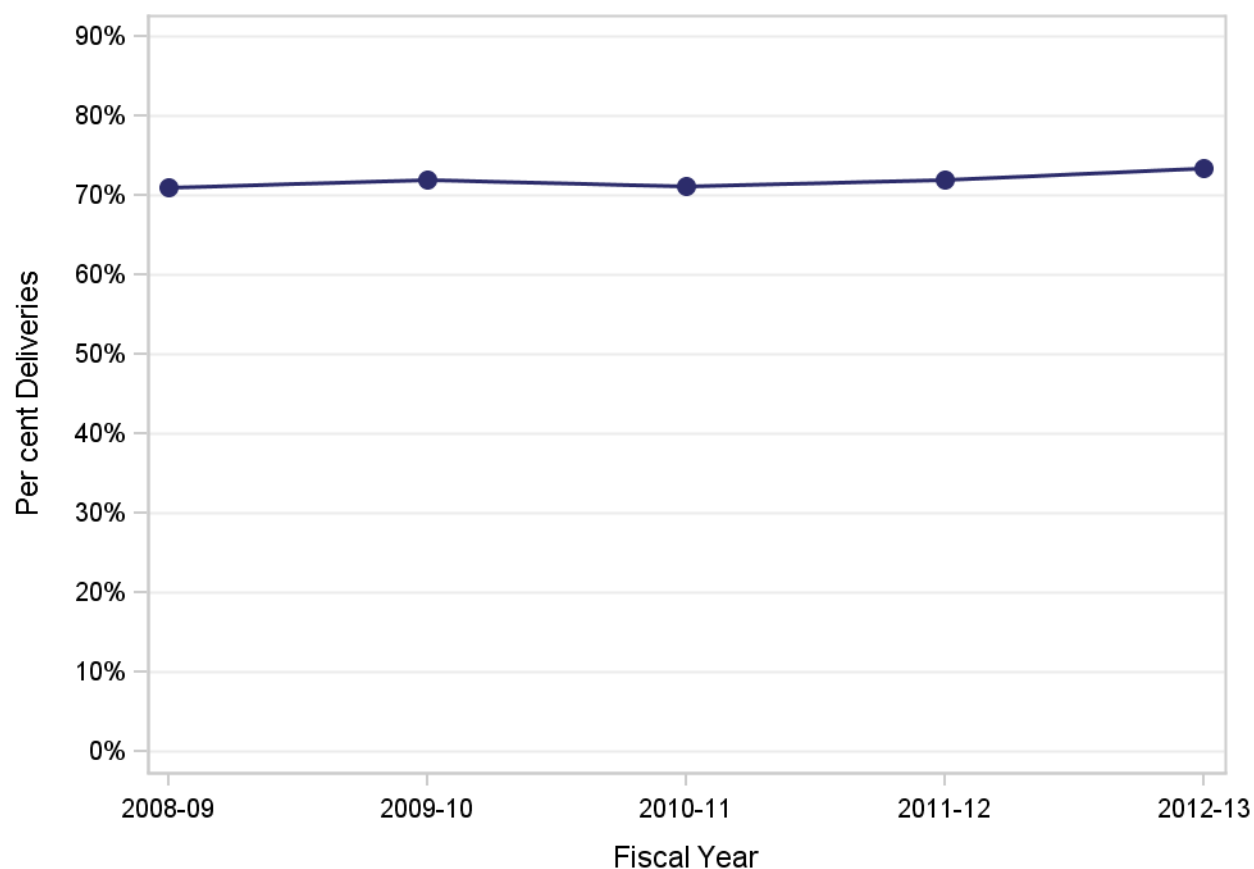


Method of Fetal Surveillance During Labour	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Auscultation Only	28.4%	30.1%	29.3%	28.3%	28.2%
Auscultation and External Electronic Monitoring	36.7%	34.2%	33.3%	32.1%	30.6%
External Electronic Monitoring Only	18.4%	18.1%	18.7%	22.3%	23.8%
Internal Electronic Monitoring Only	0.3%	0.5%	1.1%	0.4%	0.5%
No Fetal Monitoring	5.2%	6.2%	6.1%	4.4%	4.5%

Definitions and specifications begin on Page 75 of this document.

## Vaginal Delivery Rate

Residents of Island Health: April 1, 2008 - March 31, 2013

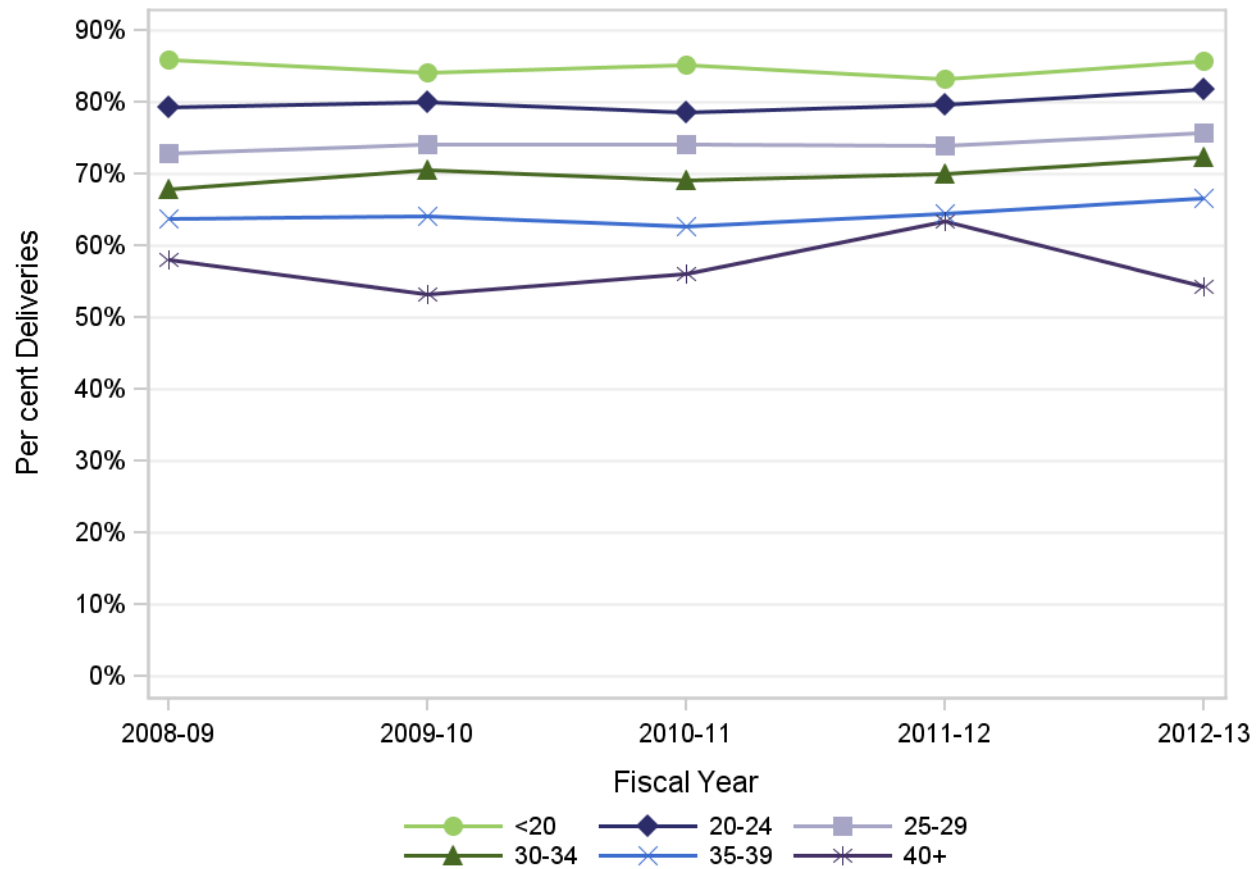


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Vaginal Delivery	71.0%	72.0%	71.2%	71.9%	73.4%

Definitions and specifications begin on Page 75 of this document.

## Vaginal Delivery Rate by Maternal Age

Residents of Island Health: April 1, 2008 - March 31, 2013



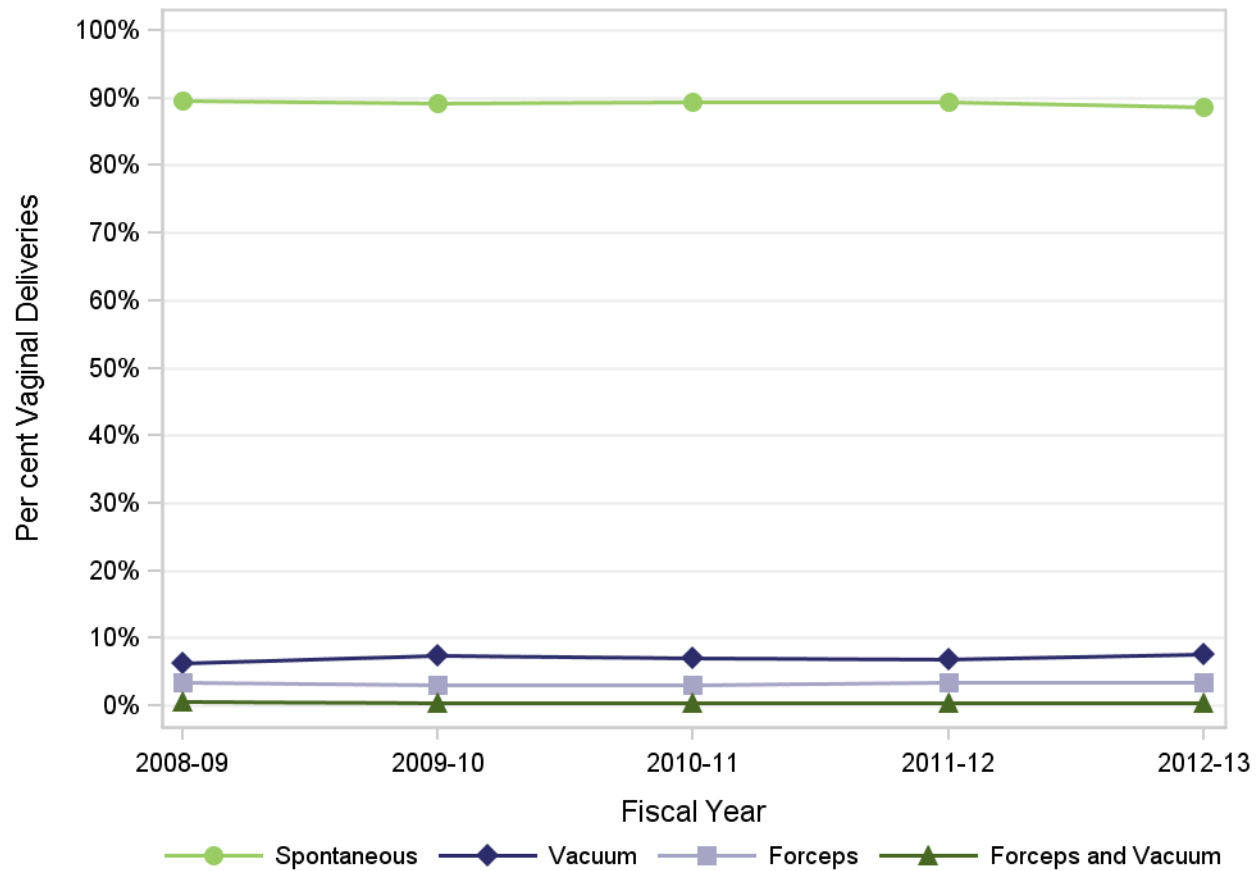
Maternal Age	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
<20 years	85.9%	84.1%	85.2%	83.1%	85.8%
20-24 years	79.4%	79.9%	78.6%	79.6%	81.7%
25-29 years	72.8%	74.2%	74.2%	73.9%	75.8%
30-34 years	67.8%	70.5%	69.2%	70.1%	72.3%
35-39 years	63.7%	64.1%	62.6%	64.5%	66.6%
40+ years	58.0%	53.3%	56.0%	63.5%	54.3%

Definitions and specifications begin on Page 75 of this document.



## Type of Vaginal Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013

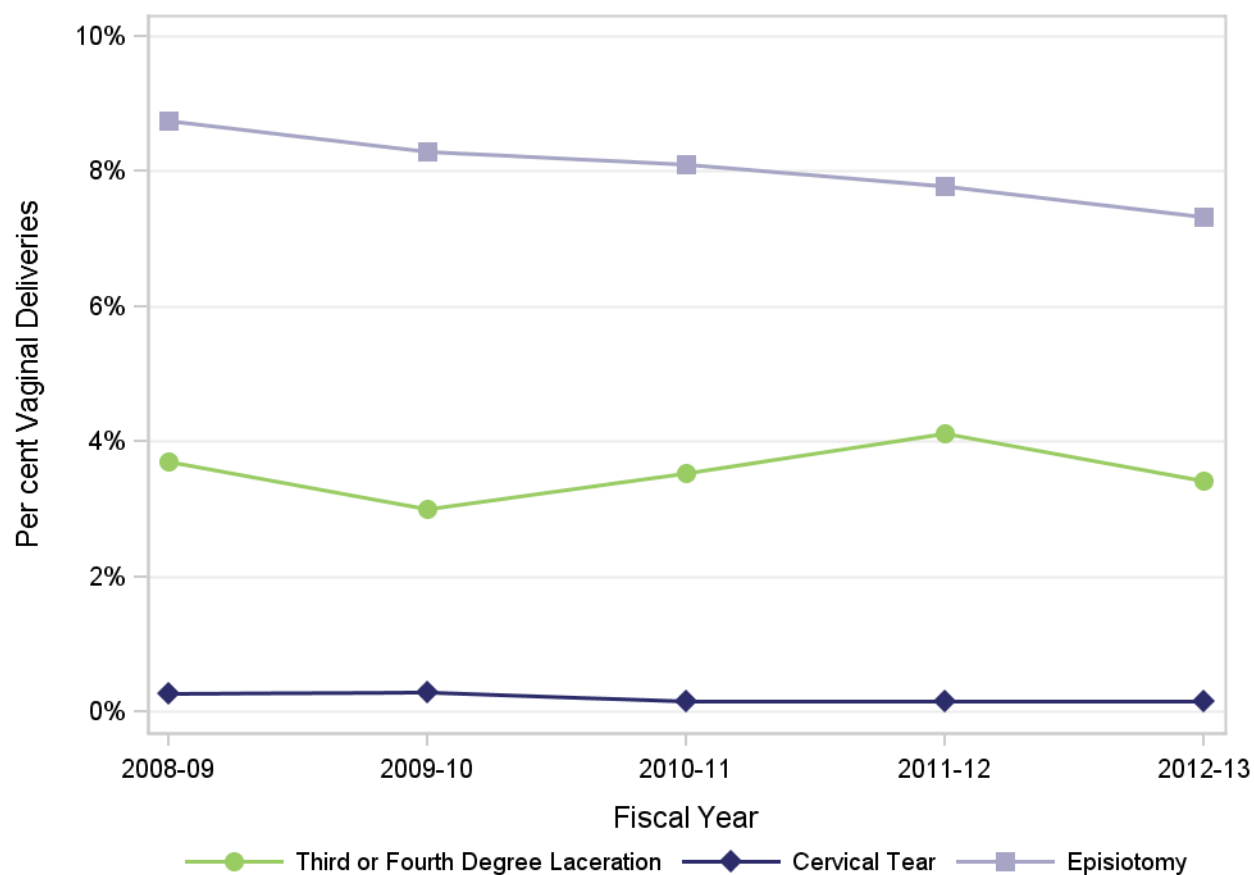


Type of Vaginal Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Spontaneous	89.6%	89.2%	89.4%	89.3%	88.7%
Vacuum	6.3%	7.4%	7.1%	6.9%	7.6%
Forceps	3.5%	3.0%	3.0%	3.4%	3.4%
Forceps and Vacuum	0.6%	0.3%	0.5%	0.5%	0.3%

Definitions and specifications begin on Page 75 of this document.

## Perineal Trauma

Residents of Island Health: April 1, 2008 - March 31, 2013

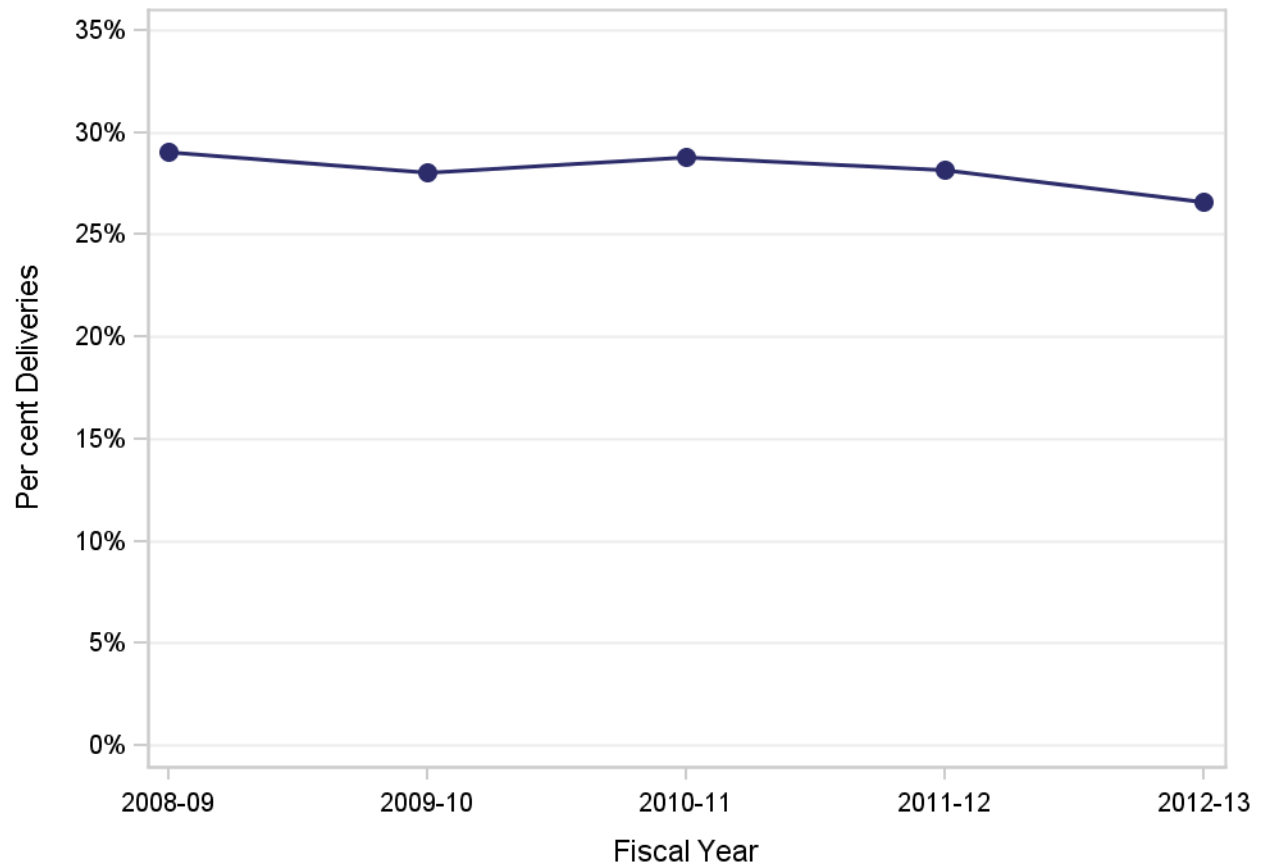


Perineal Trauma	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Third or Fourth Degree Laceration	3.7%	3.0%	3.5%	4.1%	3.4%
Cervical Tear	0.3%	0.3%	0.2%	0.2%	0.2%
Episiotomy	8.8%	8.3%	8.1%	7.8%	7.3%

Definitions and specifications begin on Page 75 of this document.

## Cesarean Delivery Rate

Residents of Island Health: April 1, 2008 - March 31, 2013

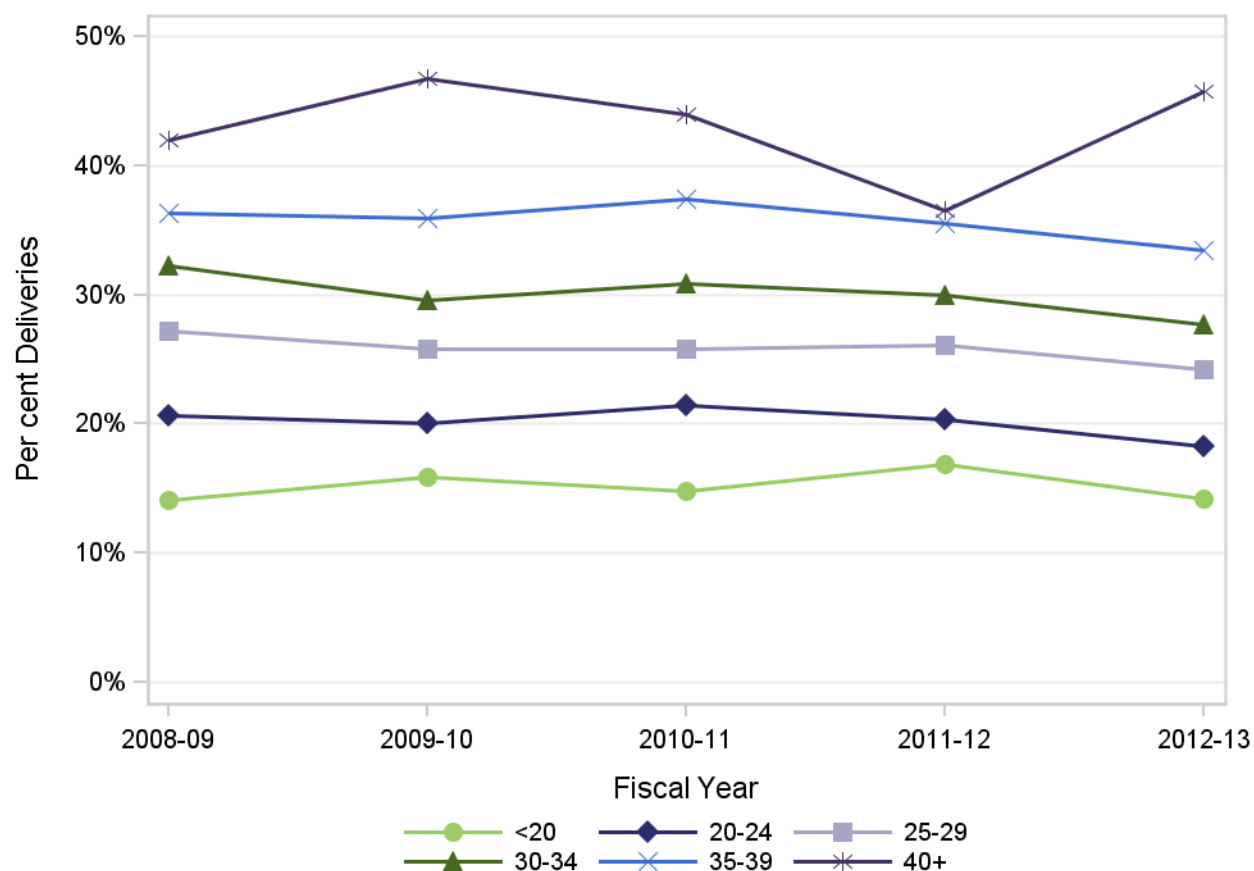


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Cesarean Delivery	29.0%	28.0%	28.8%	28.1%	26.6%

Definitions and specifications begin on Page 75 of this document.

## Cesarean Delivery Rate by Maternal Age

Residents of Island Health: April 1, 2008 - March 31, 2013

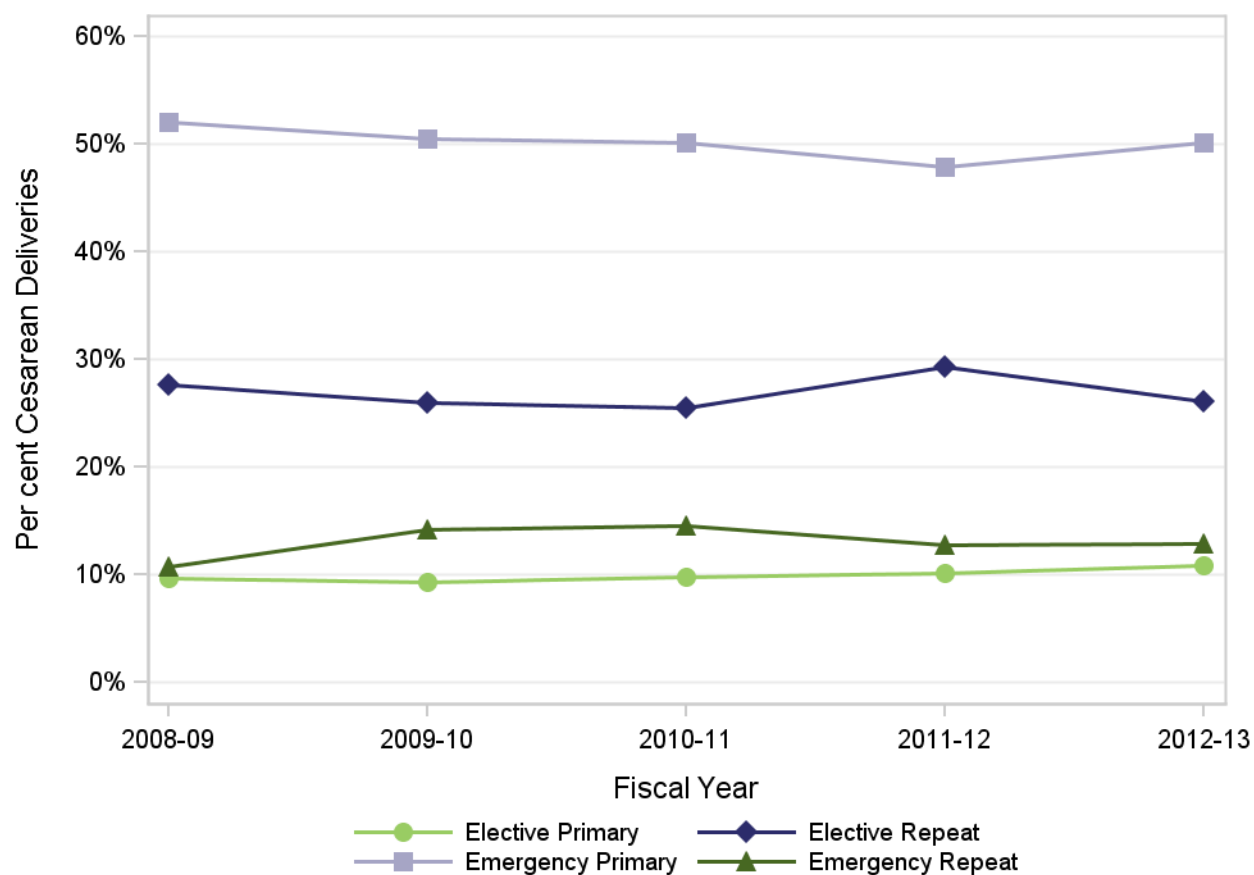


Maternal Age	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
<20 years	14.1%	15.9%	14.8%	16.9%	14.2%
20-24 years	20.6%	20.1%	21.4%	20.4%	18.3%
25-29 years	27.2%	25.8%	25.8%	26.1%	24.2%
30-34 years	32.2%	29.5%	30.8%	29.9%	27.7%
35-39 years	36.3%	35.9%	37.4%	35.5%	33.4%
40+ years	42.0%	46.7%	44.0%	36.5%	45.7%

Definitions and specifications begin on Page 75 of this document.

## Type of Cesarean Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013

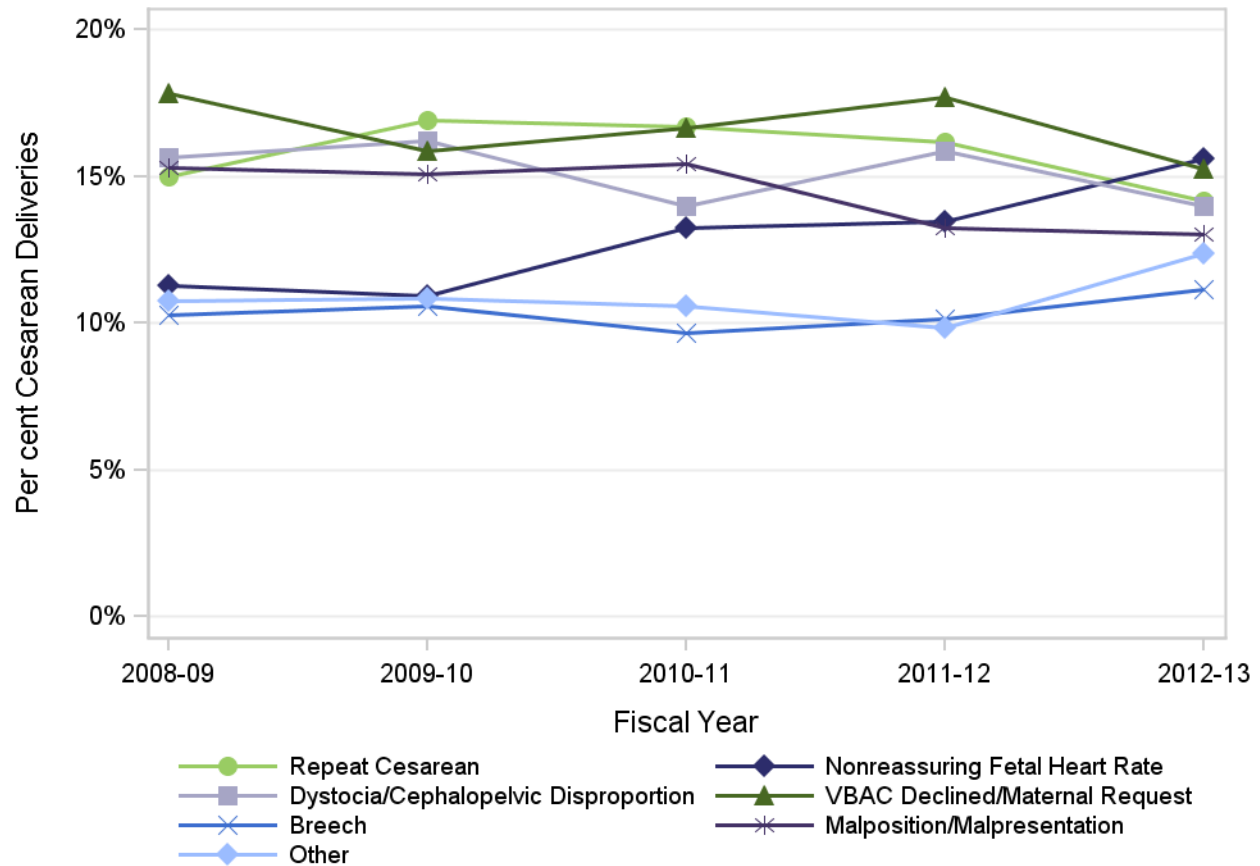


Type of Cesarean Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Elective Primary	9.7%	9.3%	9.8%	10.1%	10.8%
Elective Repeat	27.6%	26.0%	25.5%	29.3%	26.1%
Emergency Primary	52.0%	50.5%	50.2%	47.8%	50.2%
Emergency Repeat	10.8%	14.2%	14.6%	12.7%	12.9%

Definitions and specifications begin on Page 75 of this document.

## Primary Indication for Cesarean Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013



Primary Indication for Cesarean Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Repeat Cesarean	15.0%	16.9%	16.7%	16.1%	14.2%
Nonreassuring Fetal Heart Rate	11.3%	10.9%	13.2%	13.5%	15.6%
Dystocia/Cephalopelvic Disproportion	15.6%	16.2%	14.0%	15.9%	14.0%
VBAC Declined/Maternal Request	17.8%	15.8%	16.6%	17.7%	15.2%
Breech	10.3%	10.6%	9.7%	10.1%	11.1%
Malposition/Malpresentation	15.3%	15.1%	15.4%	13.2%	13.0%
Placenta Previa	1.8%	1.2%	1.3%	1.5%	2.2%
Abruptio Placenta	1.7%	1.8%	1.9%	1.7%	1.6%
Active Herpes	0.4%	0.6%	0.7%	0.4%	0.7%
Other	10.8%	10.8%	10.6%	9.8%	12.3%
Unknown	NR	NR	NR	NR	NR

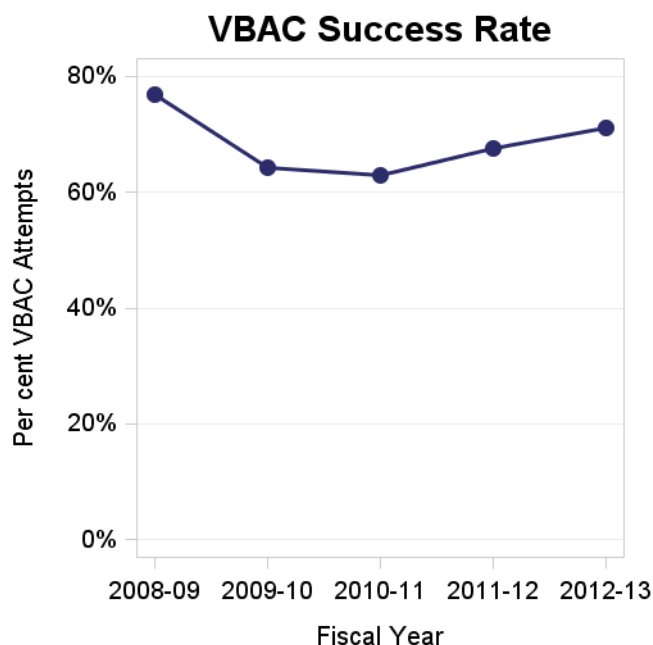
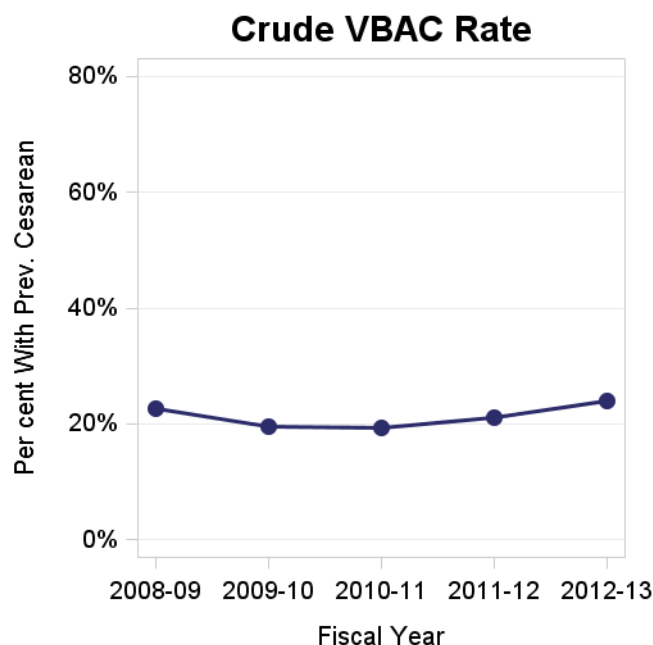
Selected indications are included in the figure; all indications are included in the table.

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

Definitions and specifications begin on Page 75 of this document.

## Vaginal Birth After Cesarean (VBAC)

Residents of Island Health: April 1, 2008 - March 31, 2013



### Vaginal Birth After Cesarean (VBAC)

	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Crude VBAC Rate	22.7%	19.6%	19.3%	21.0%	24.0%
VBAC Eligible Rate	80.9%	79.9%	78.9%	83.1%	83.6%
VBAC Attempted Rate	35.9%	37.8%	38.9%	37.4%	40.4%
VBAC Success Rate	76.9%	64.3%	62.9%	67.7%	71.1%

**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

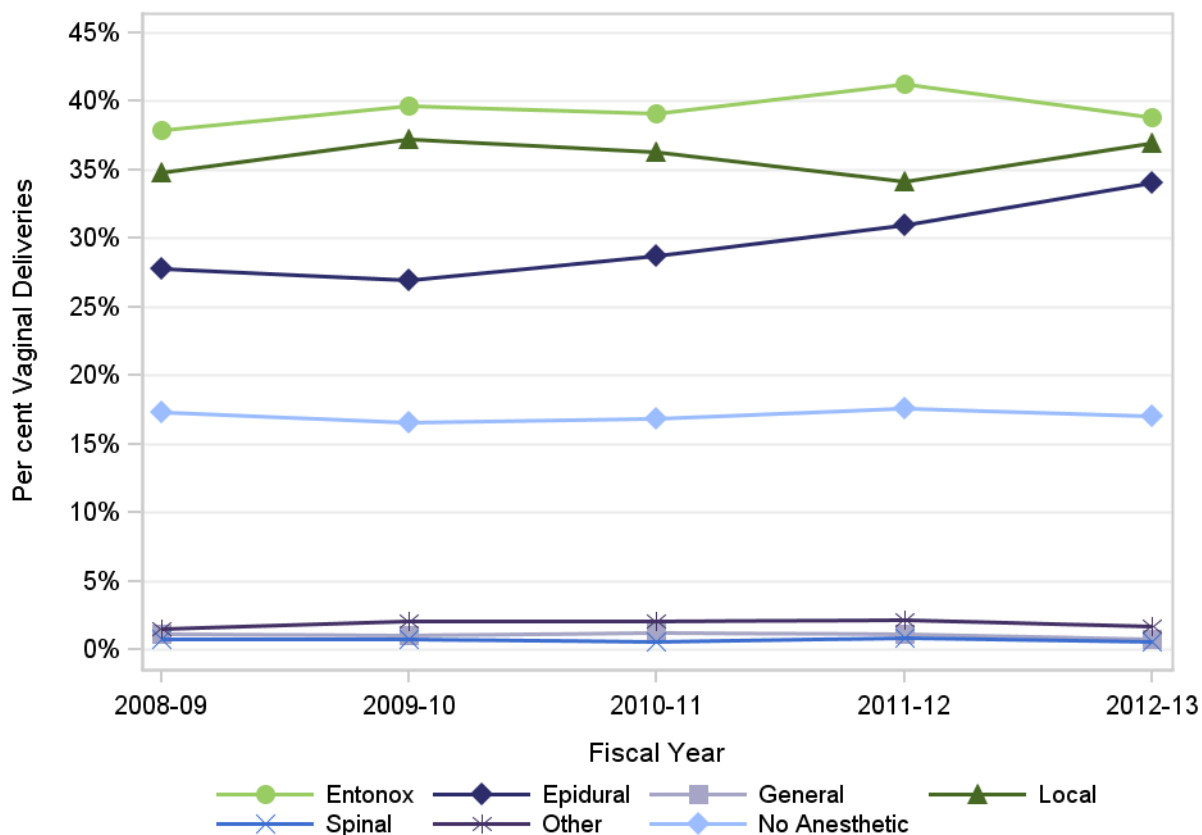
**VBAC Attempted Rate:** Women who attempted a VBAC / Women considered eligible for VBAC

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

Definitions and specifications begin on Page 75 of this document.

# Anesthesia or Analgesia During Labour and Delivery Vaginal Deliveries

Residents of Island Health: April 1, 2008 - March 31, 2013



Anesthesia or Analgesia	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Entonox	37.9%	39.7%	39.1%	41.2%	38.8%
Epidural	27.8%	26.9%	28.7%	31.0%	34.0%
General	1.1%	1.1%	1.3%	1.1%	0.8%
Local	34.8%	37.2%	36.3%	34.1%	36.9%
Spinal	0.8%	0.7%	0.6%	0.8%	0.6%
Other	1.5%	2.1%	2.1%	2.2%	1.7%
No Anesthetic	17.4%	16.5%	16.8%	17.6%	17.0%

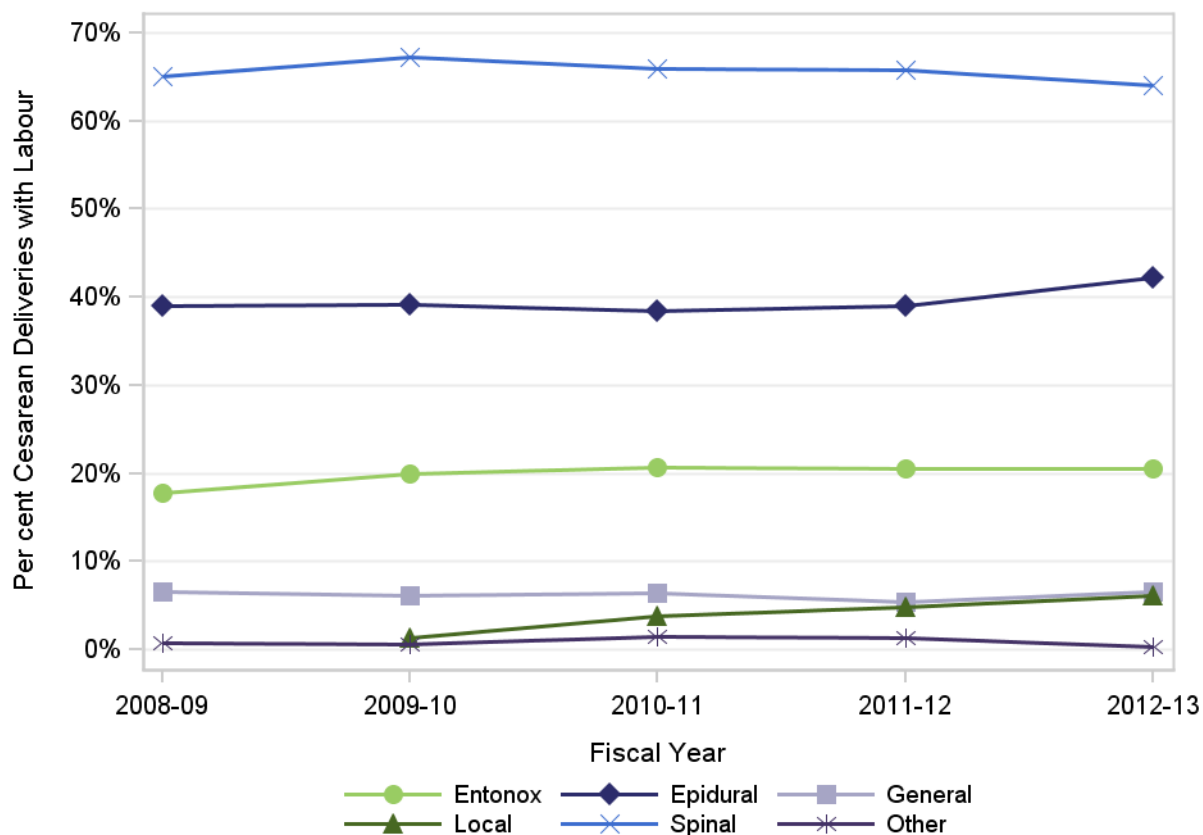
Multiple agents may be used.

Definitions and specifications begin on Page 75 of this document.



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

Residents of Island Health: April 1, 2008 - March 31, 2013



Anesthesia or Analgesia	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Entonox	17.8%	20.0%	20.7%	20.5%	20.6%
Epidural	39.0%	39.1%	38.4%	39.0%	42.2%
General	6.6%	6.1%	6.4%	5.5%	6.5%
Local	NR	1.4%	3.8%	4.9%	6.1%
Spinal	65.0%	67.2%	65.9%	65.7%	64.0%
Other	0.7%	0.6%	1.5%	1.3%	0.4%

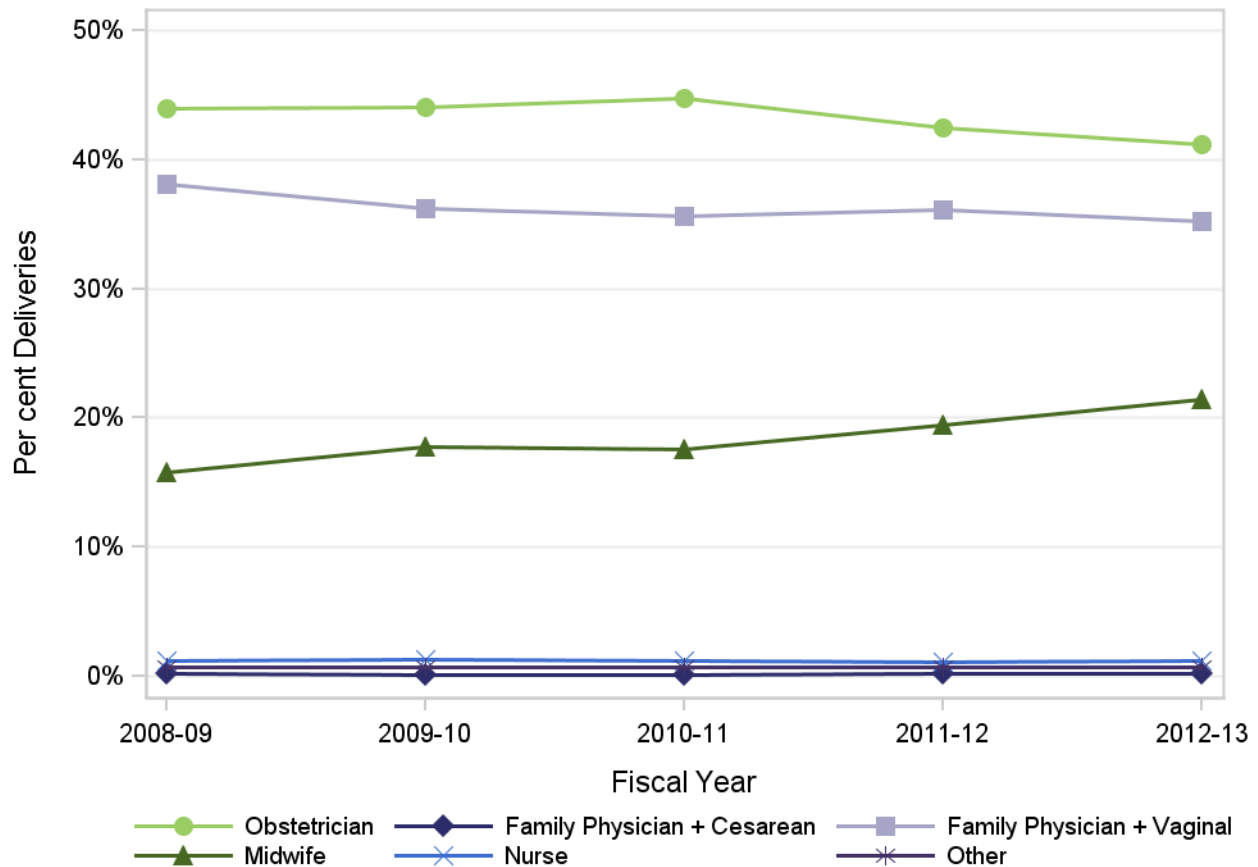
Multiple agents may be used.

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

Definitions and specifications begin on Page 75 of this document.

## Delivery Provider

Residents of Island Health: April 1, 2008 - March 31, 2013



Delivery Provider	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Obstetrician	43.9%	44.0%	44.8%	42.4%	41.1%
Surgeon	NR	NR	NR	NR	NR
Family Physician + Cesarean	0.2%	0.1%	0.1%	0.2%	0.2%
Family Physician + Vaginal	38.1%	36.2%	35.6%	36.1%	35.3%
Midwife	15.8%	17.7%	17.5%	19.4%	21.4%
Nurse	1.2%	1.3%	1.2%	1.1%	1.3%
Other	0.7%	0.7%	0.8%	0.7%	0.7%

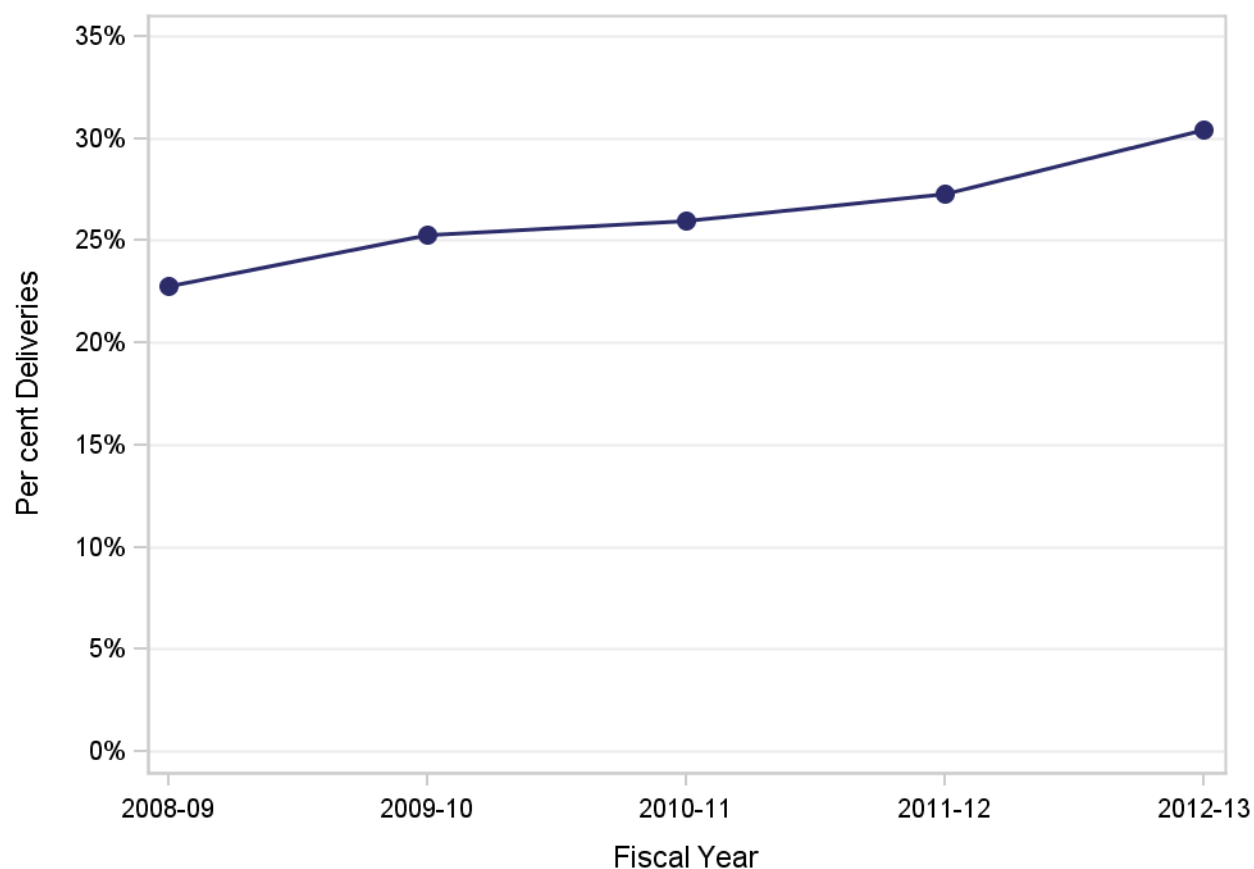
Describes the training of the provider who delivered the baby. This may not be the same type of health care professional who provided antenatal care.

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

Definitions and specifications begin on Page 75 of this document.

## Any Care Provided by a Registered Midwife

Residents of Island Health: April 1, 2008 - March 31, 2013

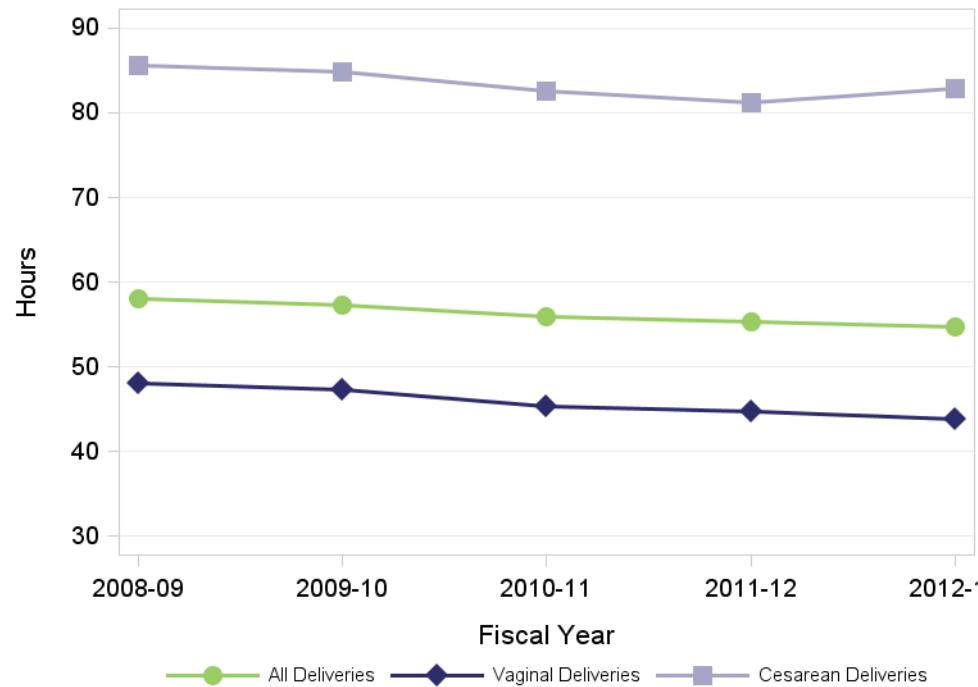


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Any Care by a Registered Midwife	22.8%	25.3%	26.0%	27.3%	30.4%

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 75 of this document.

## Median Total Length of Stay (Hours) for the Delivery Episode of Care by Mode of Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013



## Median Antepartum, Postpartum, and Total Length of Stay (Hours) for the Delivery Episode of Care

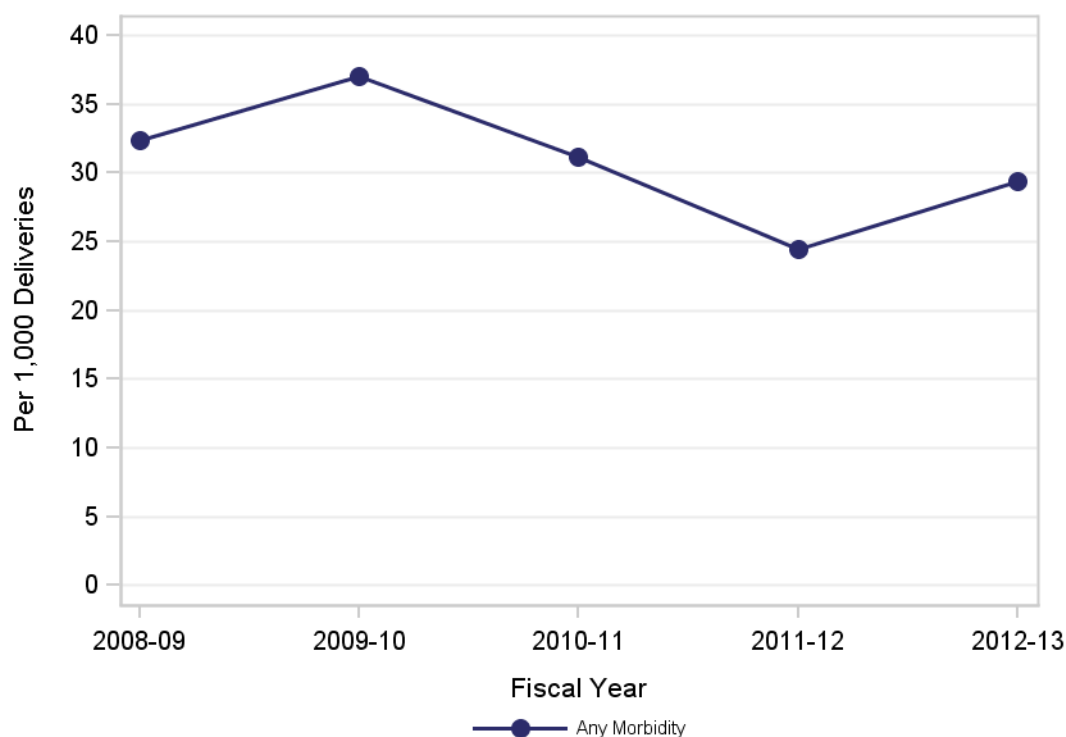
Mode of Delivery	Antepartum LOS (Hours)					Postpartum LOS (Hours)					Total LOS (Hours)				
	Fiscal Year					Fiscal Year					Fiscal Year				
	08-09	09-10	10-11	11-12	12-13	08-09	09-10	10-11	11-12	12-13	08-09	09-10	10-11	11-12	12-13
All Deliveries	6.6	6.4	6.4	6.4	6.4	49.7	49.1	47.7	47.3	46.3	58.0	57.3	56.0	55.2	54.7
Vaginal Deliveries	6.0	5.9	5.9	6.0	5.9	39.7	38.9	37.9	37.3	36.6	48.1	47.3	45.3	44.8	43.8
Cesarean Deliveries	9.2	8.9	7.6	7.7	8.9	75.1	75.2	73.0	71.9	73.3	85.7	84.9	82.5	81.3	82.9

Deliveries outside acute care facilities are excluded.

Definitions and specifications begin on Page 75 of this document.

## Maternal Morbidity Rate

Residents of Island Health: April 1, 2008 - March 31, 2013



### Rate of Selected Maternal Morbidities per 1,000 Deliveries

Type of Morbidity	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000
Any Morbidity	32.3	37.0	31.1	24.4	29.4
Liver Complications	NR	5.5	6.0	6.6	6.1
Postpartum Hemorrhage with Transfusion	6.7	3.9	5.5	3.4	5.3
Urinary Tract Infection	7.0	9.0	5.5	3.4	3.9
Sepsis	6.0	5.8	4.6	5.0	3.2
Wound Infection	10.5	13.9	9.8	6.4	9.0
HELLP	3.3	2.7	2.5	3.0	4.5
Anesthetic Complications	1.4	0.8	0.9	0.9	1.3
Antepartum Hemorrhage with Transfusion	1.3	1.6	1.1	NR	1.0
Eclampsia	1.0	NR	NR	NR	NR
Shock	1.0	NR	NR	NR	NR
Pulmonary Embolism	NR	NR	NR	NR	NR
Postpartum Hemorrhage with Hysterectomy	1.1	NR	0.0	NR	1.0
Stroke	NR	0.0	NR	NR	NR

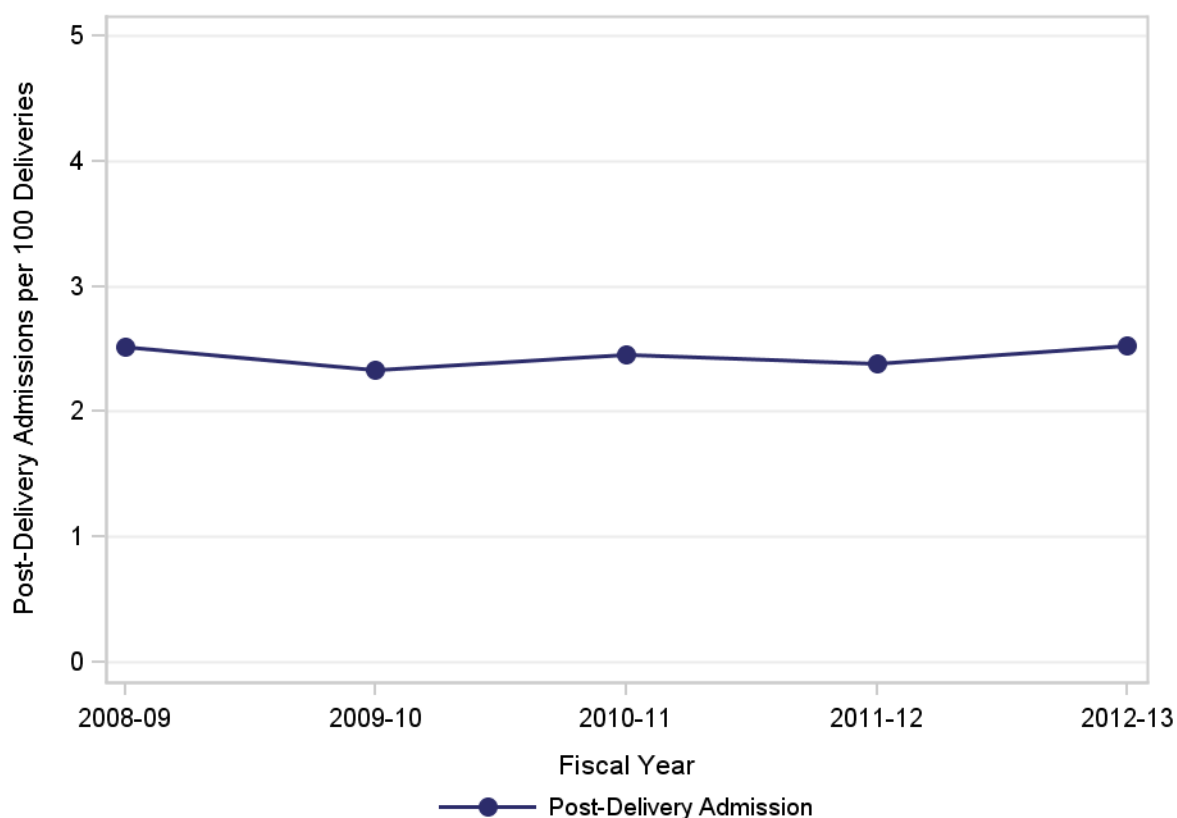
Cholestasis was added to the code for Liver Complications effective April 1, 2009 discharges. This may cause a break in the trend between 2008-09 and 2009-10.

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

Definitions and specifications begin on Page 75 of this document.

## Post-Delivery Admissions

Residents of Island Health: April 1, 2008 - March 31, 2013



### Leading Diagnoses Associated with Post-Delivery Admissions Per 100 Post-Delivery Admissions

Most Responsible Diagnosis	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Postpartum Hemorrhage	23.9%	16.9%	16.1%	23.0%	29.3%
Postpartum Infection	23.3%	17.6%	21.3%	21.7%	22.3%
Routine Postpartum Care	16.4%	25.7%	22.6%	17.8%	16.6%
Other Diseases Complicating Pregnancy	10.1%	10.1%	12.3%	8.6%	12.1%
Other Wound Issues	5.0%	4.7%	8.4%	4.6%	4.5%
Hypertension or Eclampsia	NR	4.7%	6.5%	5.9%	4.5%
Retained Placenta Without Hemorrhage	NR	5.4%	NR	NR	NR
Care of Breasts	NR	NR	NR	NR	0.0%
Complications of Anesthesia	NR	NR	NR	NR	NR
Pregnancy-Associated Mental Health	NR	4.1%	NR	NR	0.0%

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.

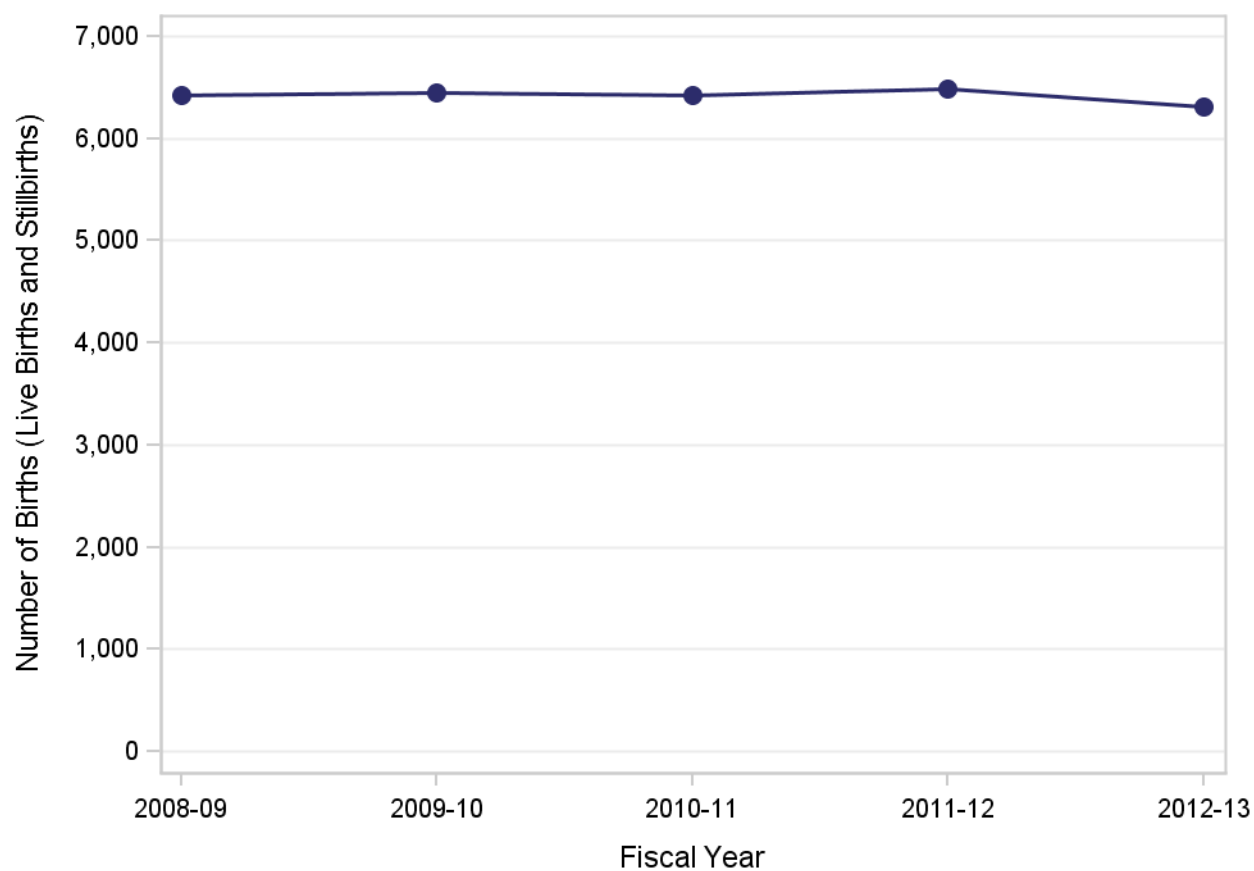
Definitions and specifications begin on Page 75 of this document.

**Perinatal Health Report 2014  
Residents of Island Health**

**Section 3: Newborn Health**

## Total Births by Year

Residents of Island Health: April 1, 2008 - March 31, 2013



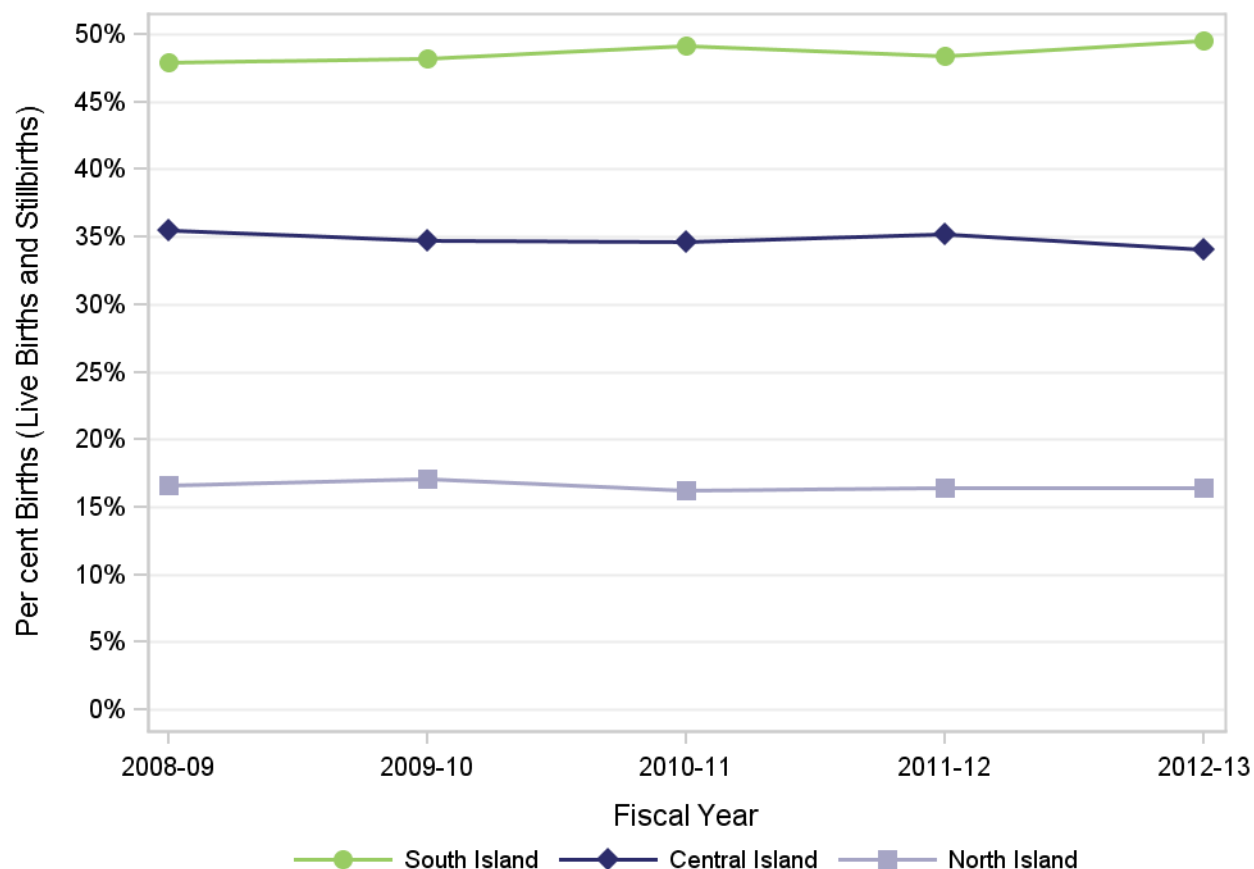
	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Island Health	6,423	6,446	6,428	6,488	6,315

Definitions and specifications begin on Page 75 of this document.



## Total Births by Resident Health Service Delivery Area

Residents of Island Health: April 1, 2008 - March 31, 2013

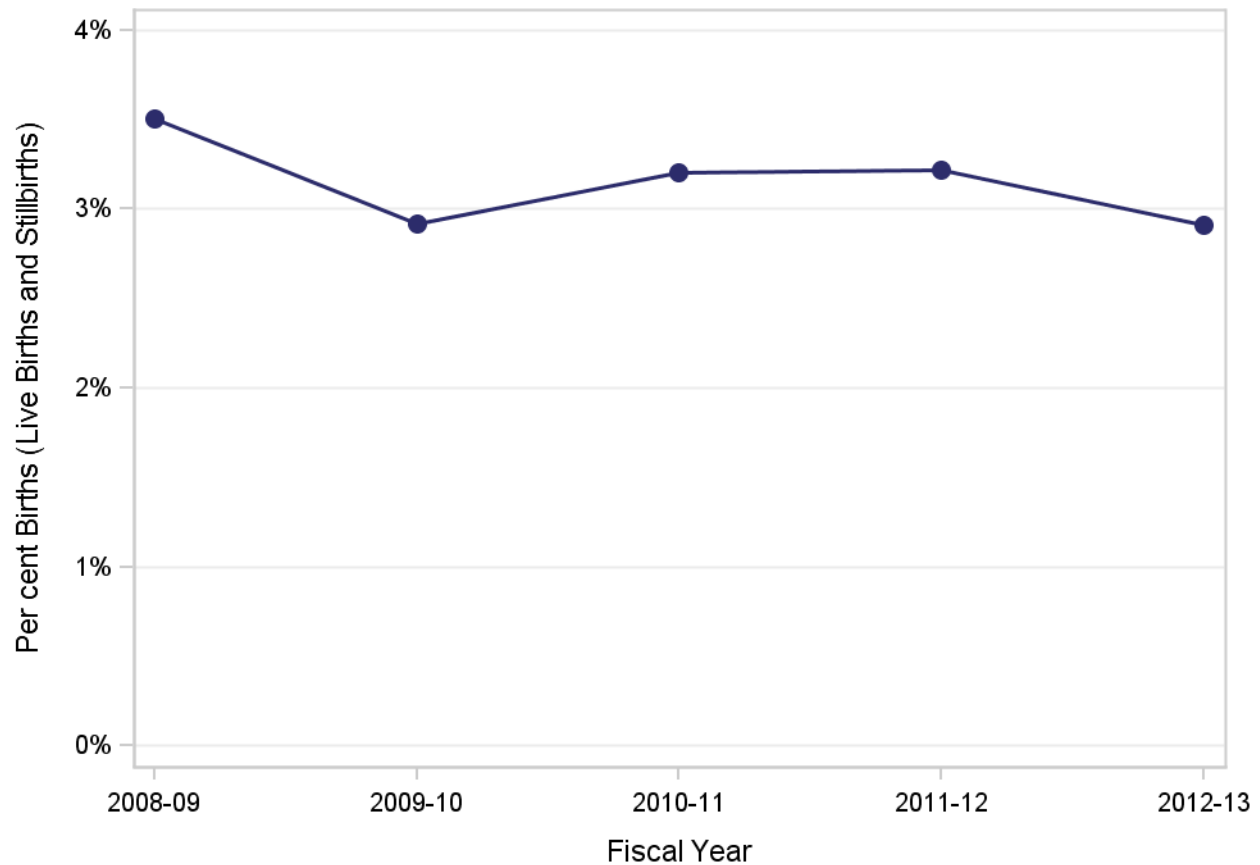


Health Service Delivery Area	Fiscal Year									
	2008-09		2009-10		2010-11		2011-12		2012-13	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
South Island	3,075	47.9%	3,106	48.2%	3,158	49.1%	3,140	48.4%	3,129	49.5%
Central Island	2,279	35.5%	2,241	34.8%	2,229	34.7%	2,285	35.2%	2,150	34.0%
North Island	1,069	16.6%	1,099	17.0%	1,041	16.2%	1,063	16.4%	1,036	16.4%

Definitions and specifications begin on Page 75 of this document.

## Births Part of a Multiple Gestation

Residents of Island Health: April 1, 2008 - March 31, 2013



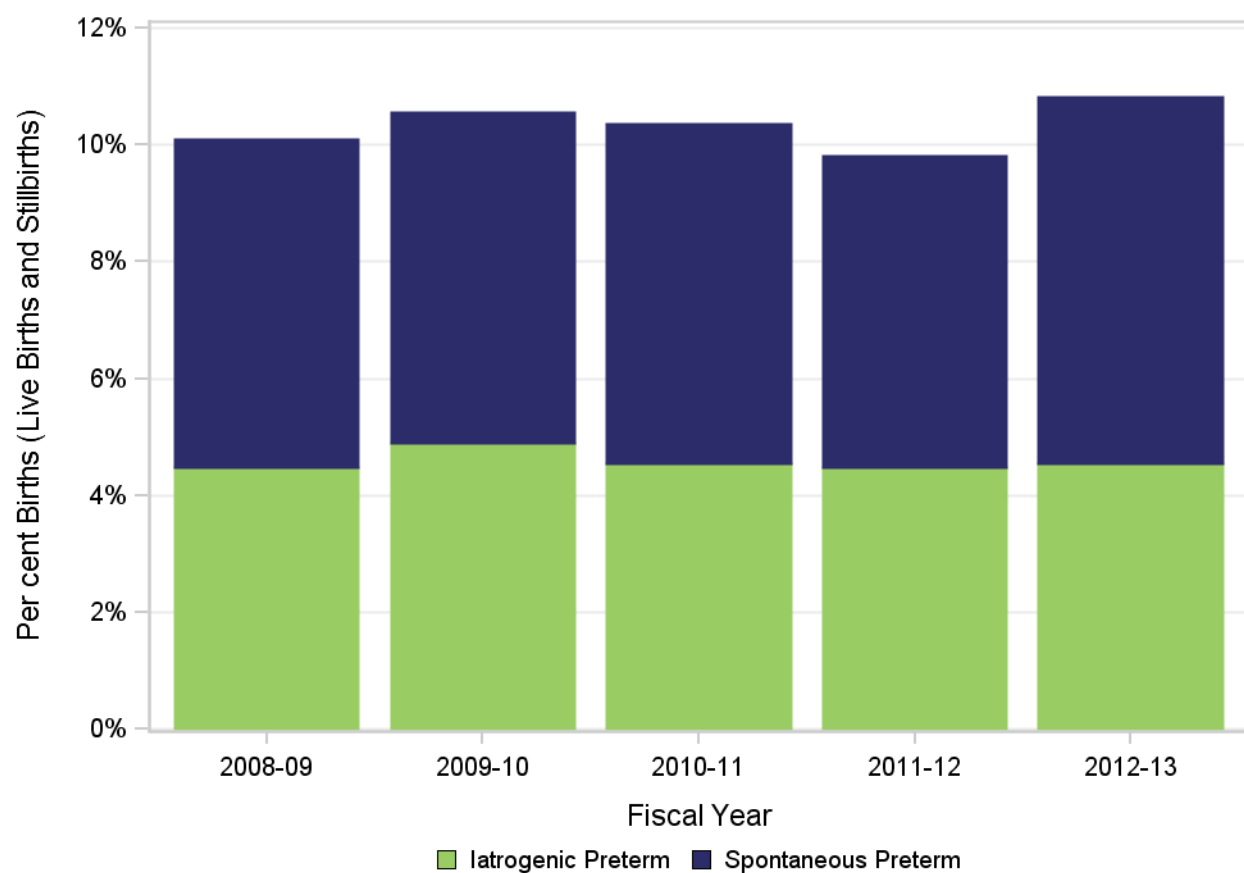
	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Multiple Gestation	3.5%	2.9%	3.2%	3.2%	2.9%

Includes twin, triplet, and quadruplet births.

Definitions and specifications begin on Page 75 of this document.

## Preterm Birth

Residents of Island Health: April 1, 2008 - March 31, 2013

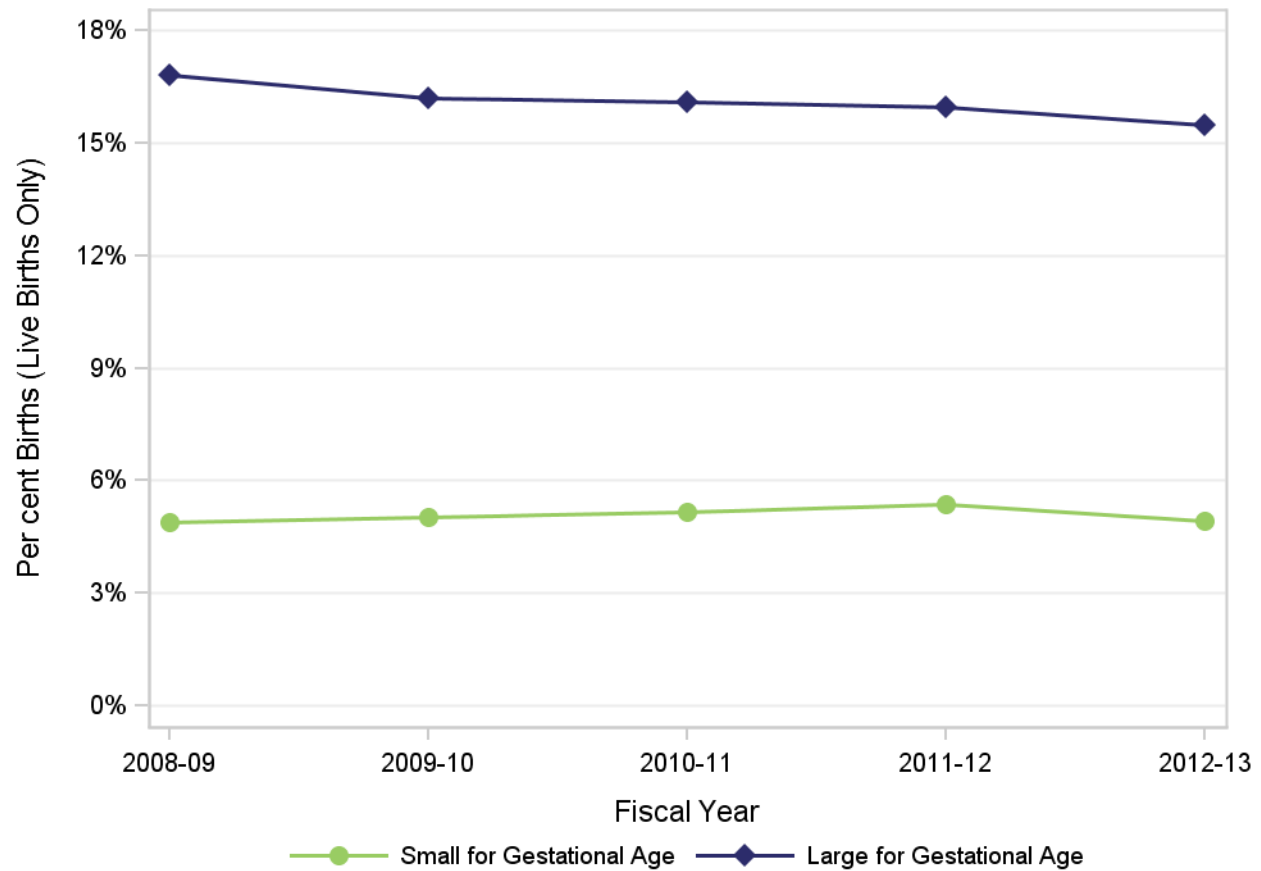


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Iatrogenic Preterm	4.5%	4.9%	4.5%	4.5%	4.5%
Spontaneous Preterm	5.6%	5.7%	5.8%	5.3%	6.3%
Total Preterm	10.1%	10.5%	10.4%	9.8%	10.8%

Definitions and specifications begin on Page 75 of this document.

## Weight for Gestational Age

Residents of Island Health: April 1, 2008 - March 31, 2013

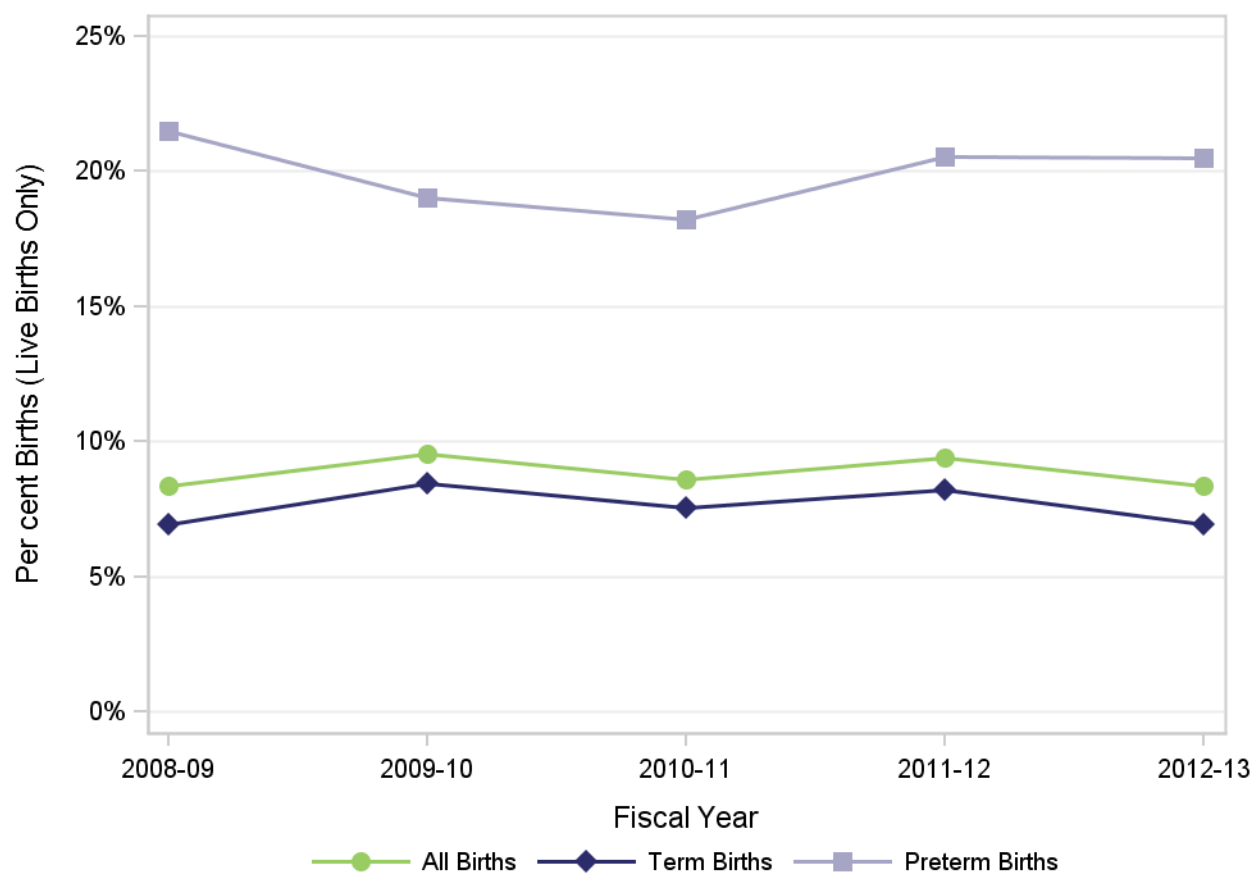


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Small for Gestational Age	4.9%	5.0%	5.2%	5.4%	4.9%
Large for Gestational Age	16.8%	16.2%	16.1%	16.0%	15.5%

Definitions and specifications begin on Page 75 of this document.

## Newborn Resuscitation by Gestational Age

Residents of Island Health: April 1, 2008 - March 31, 2013

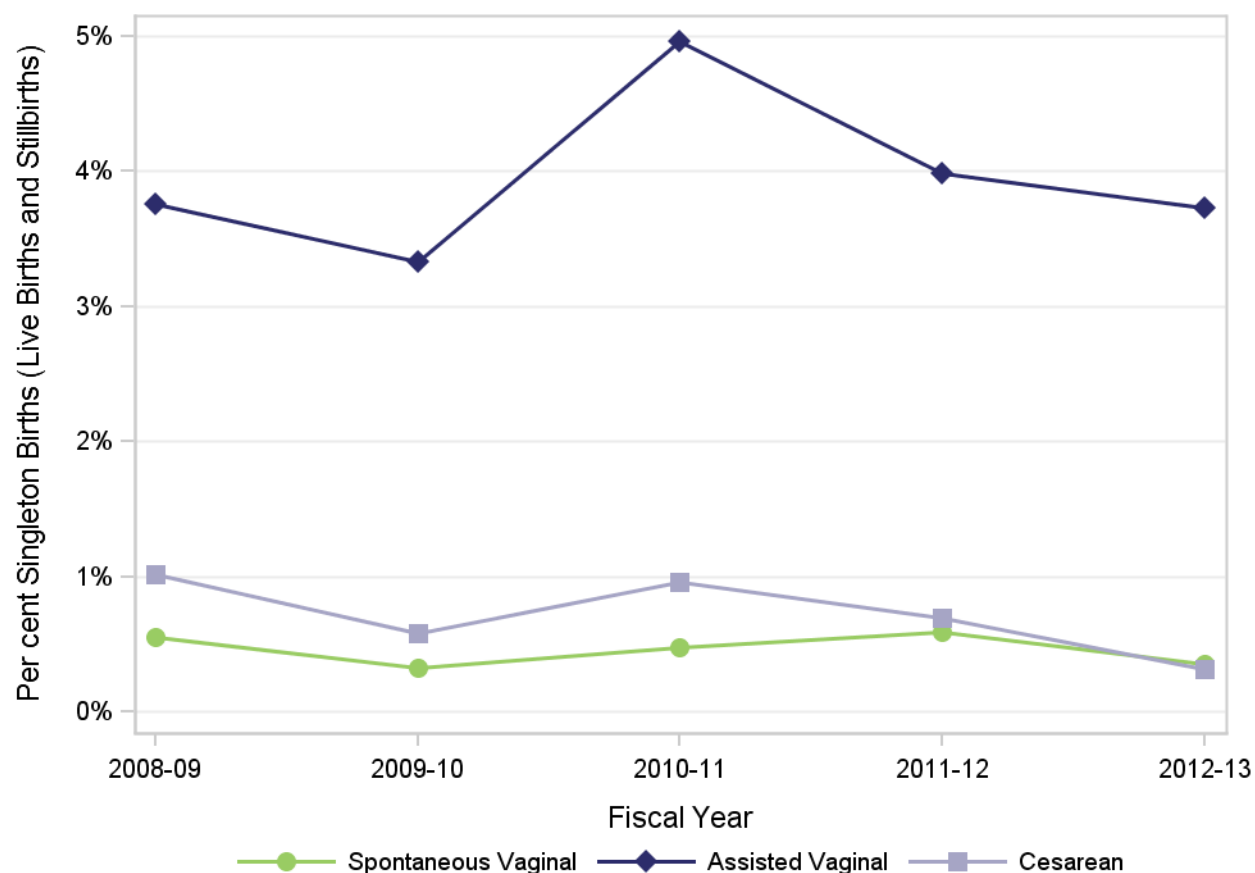


Gestational Age	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
All Births	8.3%	9.5%	8.6%	9.4%	8.3%
Term Births	6.9%	8.5%	7.5%	8.2%	6.9%
Preterm Births	20.9%	18.5%	18.2%	20.5%	20.4%

Definitions and specifications begin on Page 75 of this document.

## Birth Injury: Singletons by Mode of Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013

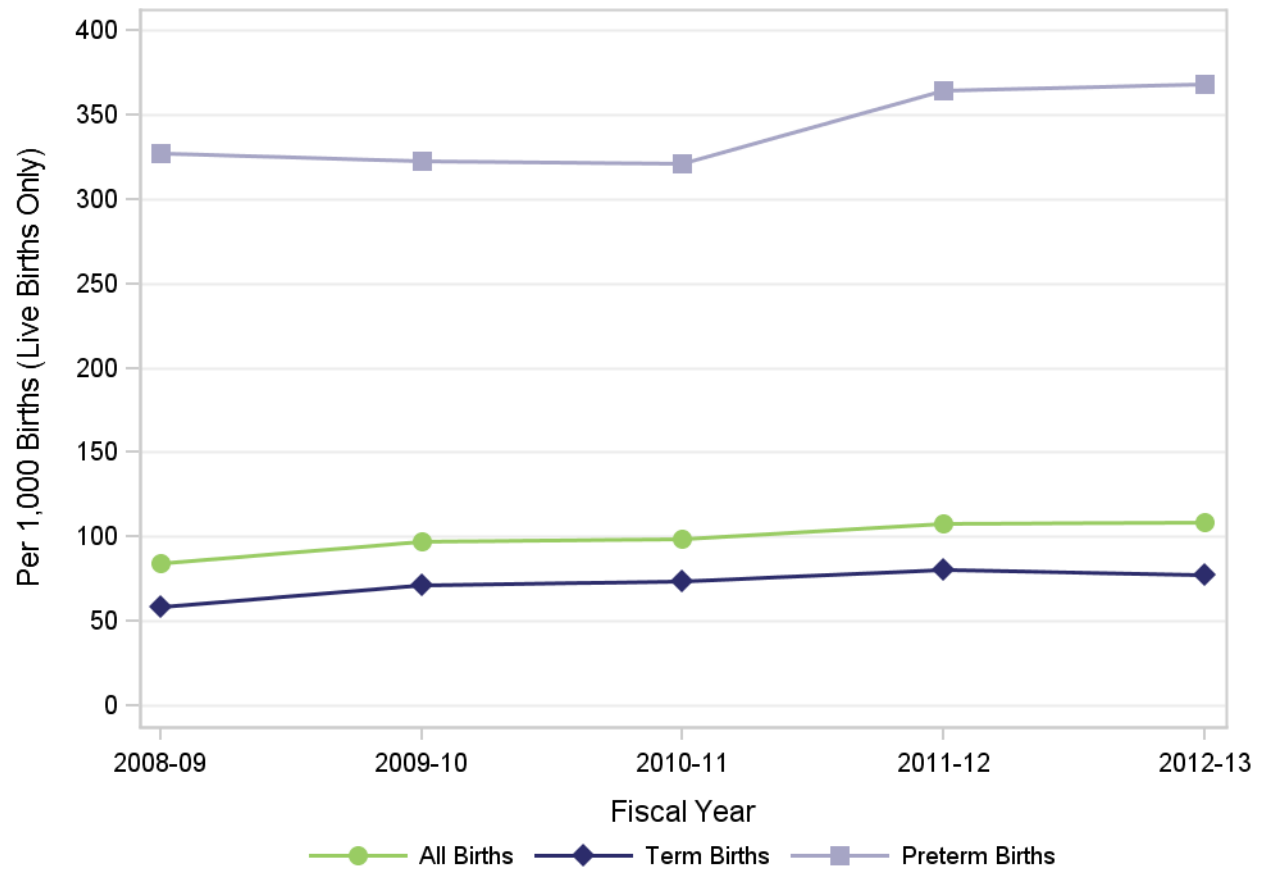


Mode of Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Spontaneous Vaginal	0.6%	0.3%	0.5%	0.6%	0.3%
Assisted Vaginal	3.8%	3.3%	5.0%	4.0%	3.7%
Cesarean	1.0%	0.6%	1.0%	0.7%	0.3%

Definitions and specifications begin on Page 75 of this document.

## Neonatal Morbidity

Residents of Island Health: April 1, 2008 - March 31, 2013

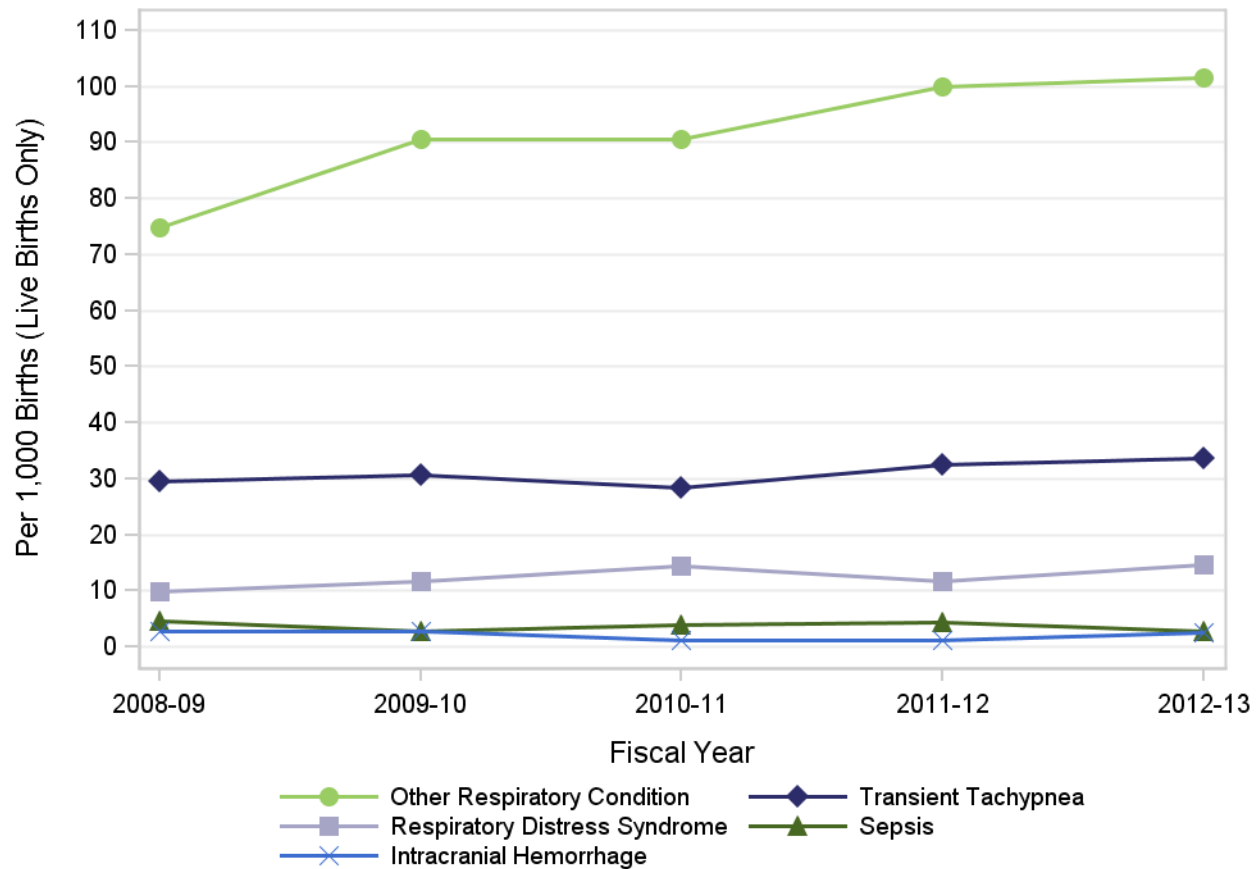


Gestational Age	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000
All Births	84.7	96.9	98.5	107.8	108.3
Term Births	58.4	71.1	73.7	80.6	77.5
Preterm Births	327.4	322.7	320.9	364.1	367.7

Definitions and specifications begin on Page 75 of this document.

## Type of Neonatal Morbidity

Residents of Island Health: April 1, 2008 - March 31, 2013



Per 1,000 Live Births

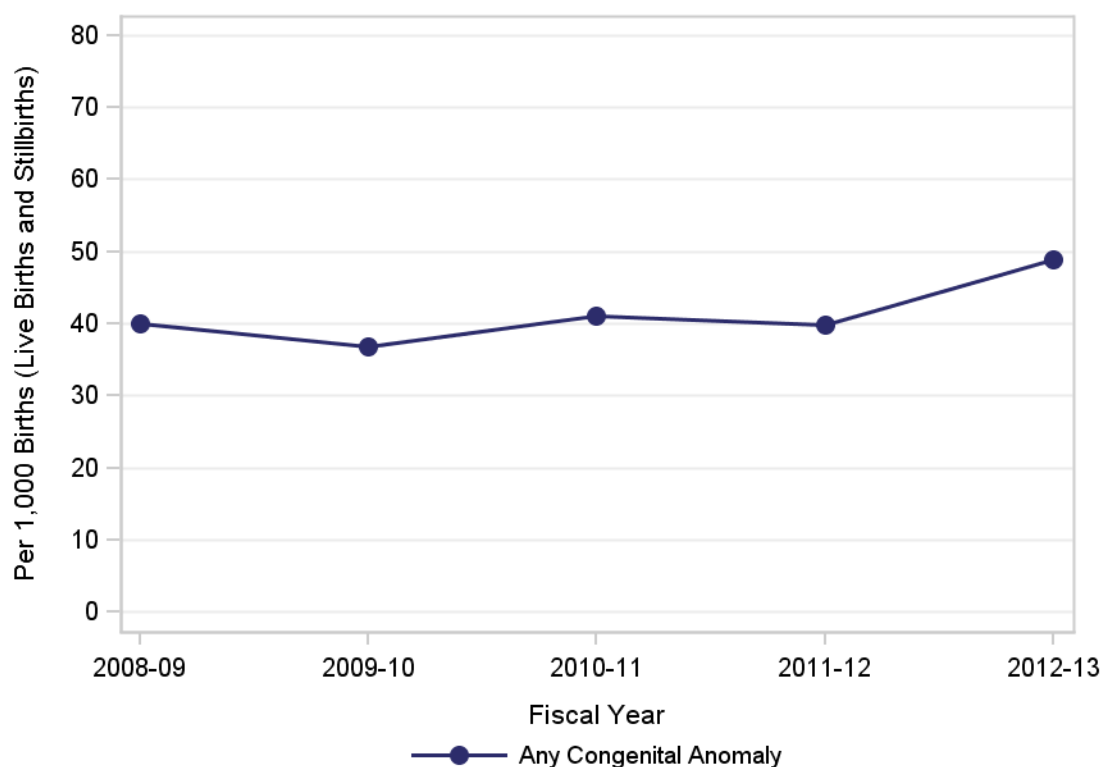
Type of Morbidity	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000
Other Respiratory Condition	74.7	90.5	90.5	99.9	101.6
Transient Tachypnea	29.5	30.7	28.3	32.5	33.7
Respiratory Distress Syndrome	9.9	11.7	14.4	11.8	14.8
Sepsis	4.7	2.8	3.9	4.3	2.9
Intracranial Hemorrhage	2.8	2.8	1.1	1.2	2.5

Definitions and specifications begin on Page 75 of this document.



## Congenital Anomalies

Residents of Island Health: April 1, 2008 - March 31, 2013



### Rate of Specific Congenital Anomalies Per 1,000 Live Births and Stillbirths

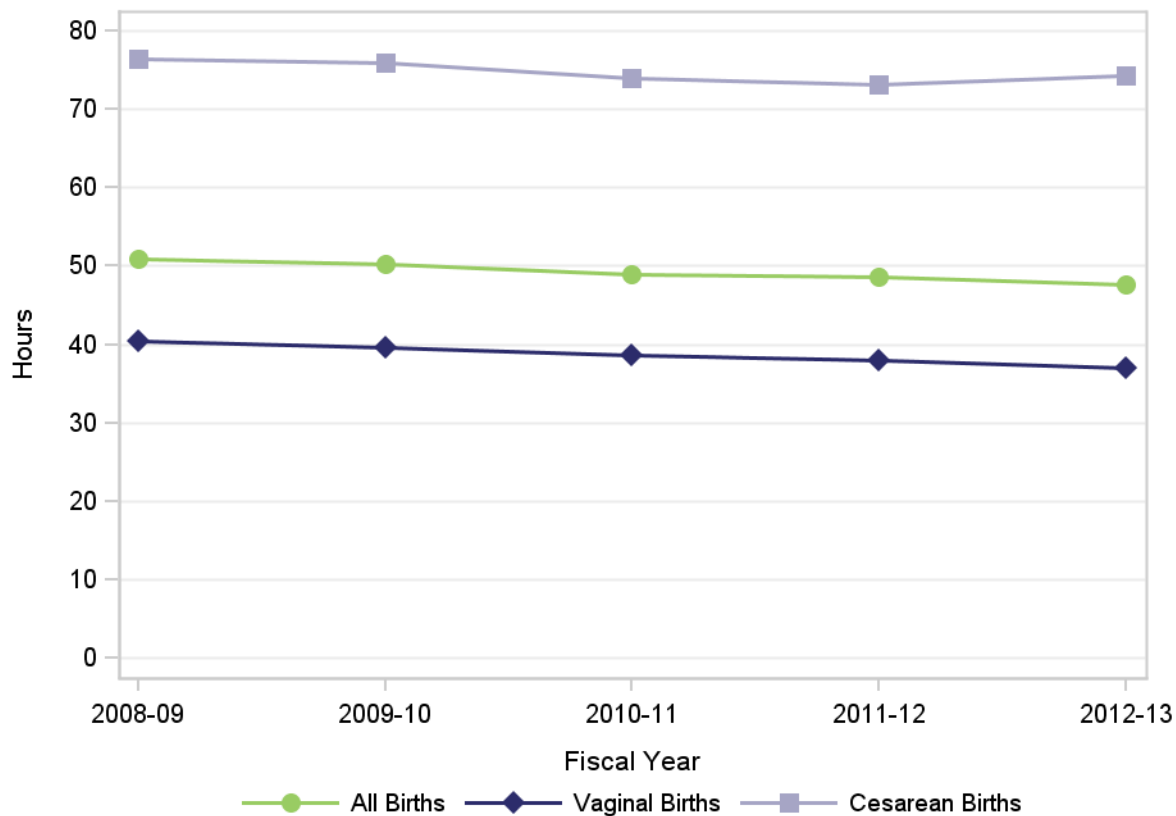
Type of Congenital Anomaly	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000
Chromosomal	2.3	1.7	1.7	1.7	2.2
Circulatory System	11.7	9.9	10.7	7.7	10.5
Cleft Lip or Palate	0.8	0.9	1.7	1.4	1.9
Digestive System	8.9	8.5	7.9	11.7	11.4
Eye, Ear, Face, or Neck	1.7	NR	0.9	1.5	1.9
Genital Organs	4.0	3.7	4.4	5.9	7.0
Musculoskeletal System	9.7	8.1	9.8	7.4	10.3
Nervous System	0.8	1.4	0.8	1.1	1.1
Respiratory System	0.9	1.4	2.5	NR	1.6
Urinary System	4.5	4.3	4.4	3.7	5.1
Other Specific Anomaly	1.2	1.1	2.2	2.9	2.4

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

Definitions and specifications begin on Page 75 of this document.

## Median Length of Stay (Hours) for the Birth Episode of Care Live Births by Mode of Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013



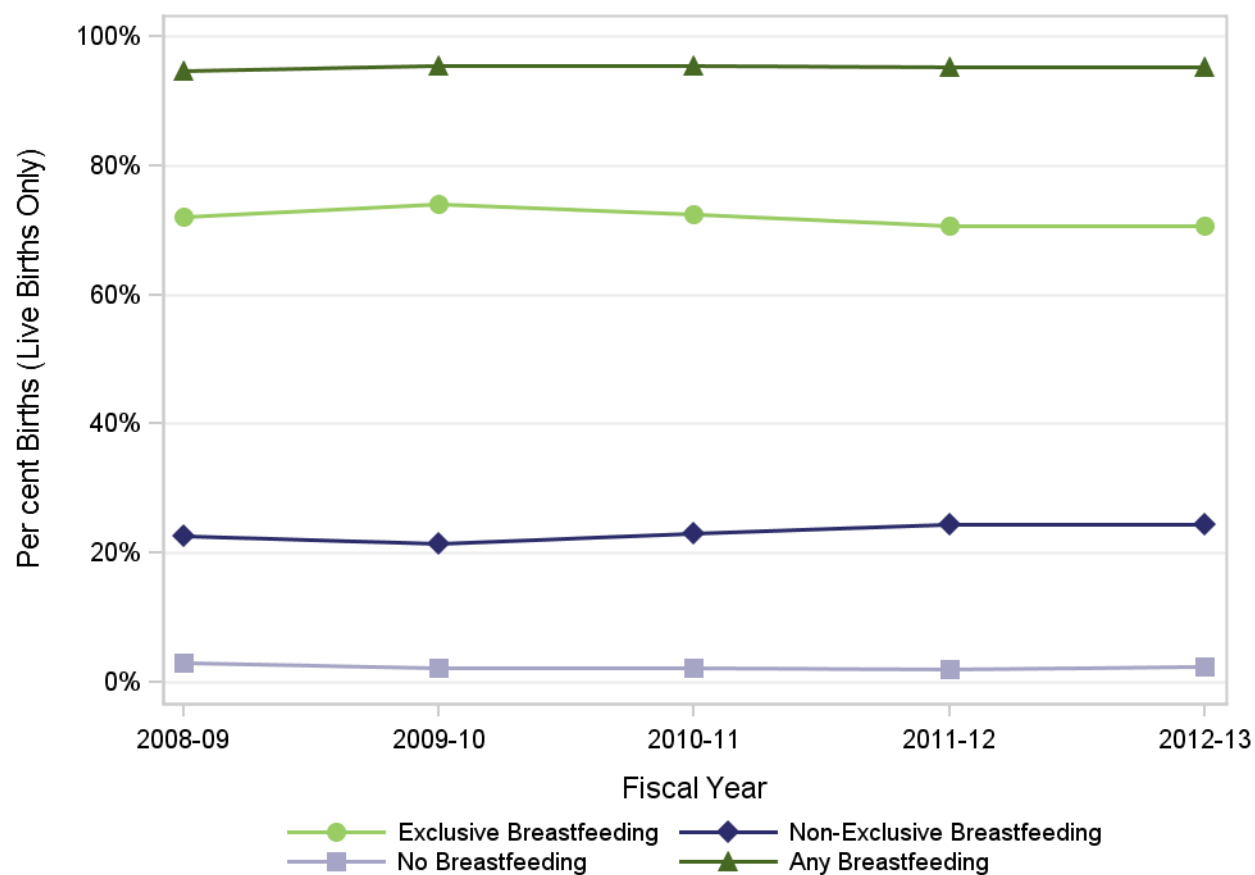
	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
All Births	50.9	50.2	49.0	48.5	47.6
Vaginal Births	40.4	39.7	38.6	37.9	37.0
Cesarean Births	76.4	75.9	73.9	73.2	74.3

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

Definitions and specifications begin on Page 75 of this document.

## Breastfeeding During the Birth Admission

Residents of Island Health: April 1, 2008 - March 31, 2013

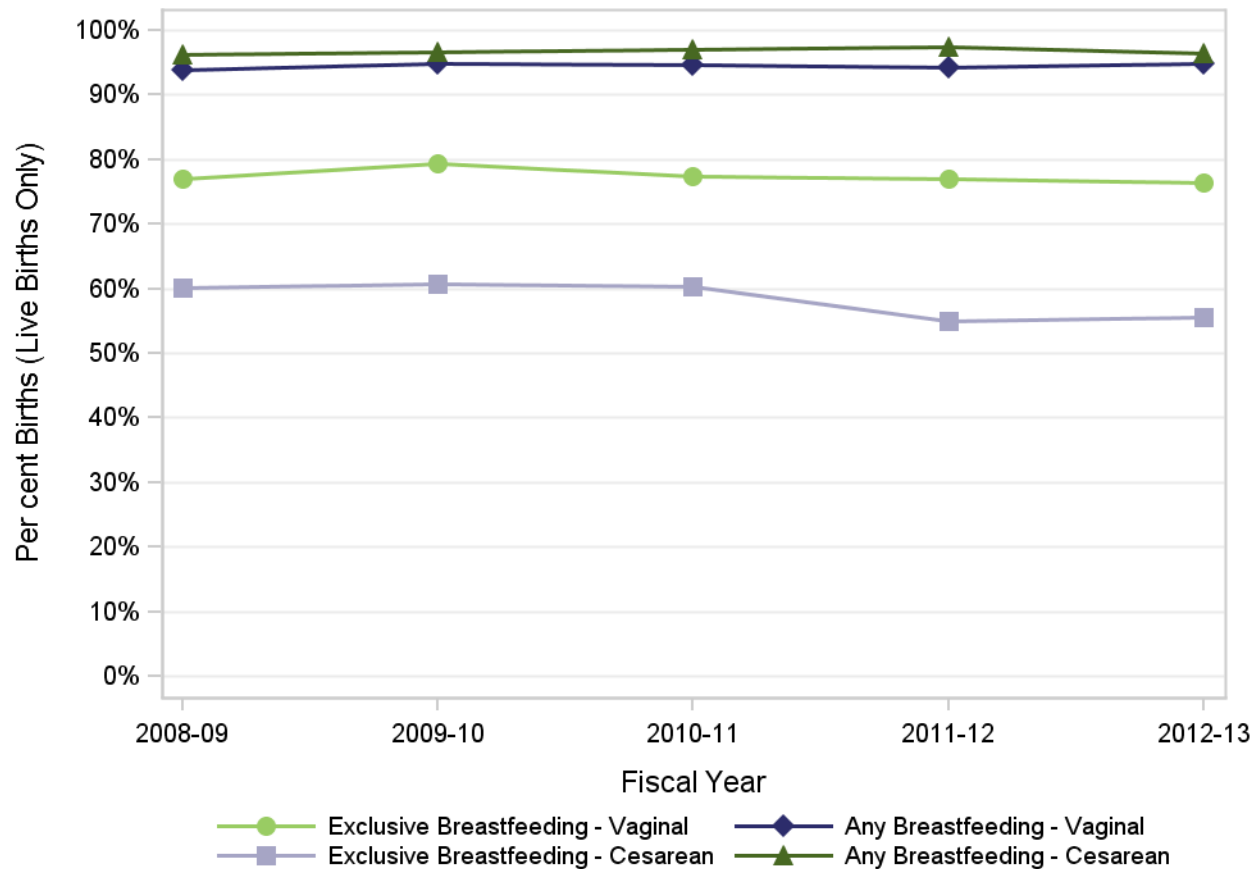


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Exclusive Breastfeeding	72.0%	74.0%	72.4%	70.6%	70.7%
Non-Exclusive Breastfeeding	22.6%	21.4%	23.0%	24.5%	24.5%
No Breastfeeding	3.0%	2.2%	2.1%	2.0%	2.5%
Any Breastfeeding	94.6%	95.4%	95.4%	95.2%	95.2%

Definitions and specifications begin on Page 75 of this document.

## Breastfeeding During the Birth Admission by Mode of Delivery

Residents of Island Health: April 1, 2008 - March 31, 2013

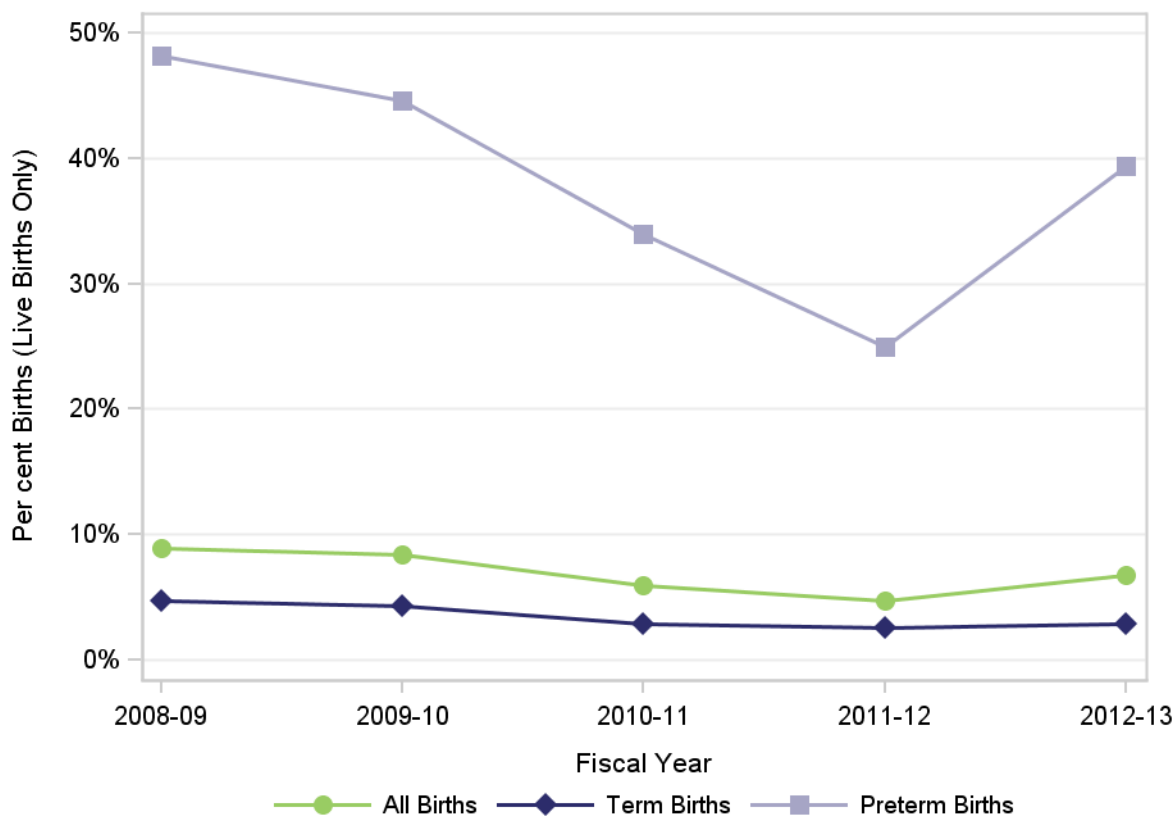


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Exclusive Breastfeeding - Vaginal	76.9%	79.3%	77.4%	77.0%	76.3%
Any Breastfeeding - Vaginal	93.9%	94.9%	94.7%	94.3%	94.8%
Exclusive Breastfeeding - Cesarean	60.2%	60.6%	60.4%	54.9%	55.5%
Any Breastfeeding - Cesarean	96.2%	96.7%	97.1%	97.4%	96.4%

Definitions and specifications begin on Page 75 of this document.

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

Residents of Island Health: April 1, 2008 - March 31, 2013



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

	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
All Births	4.0	4.0	5.0	4.0	4.0
Term Births	2.0	2.0	2.0	2.0	2.0
Preterm Births	11.0	11.0	8.5	8.0	7.0

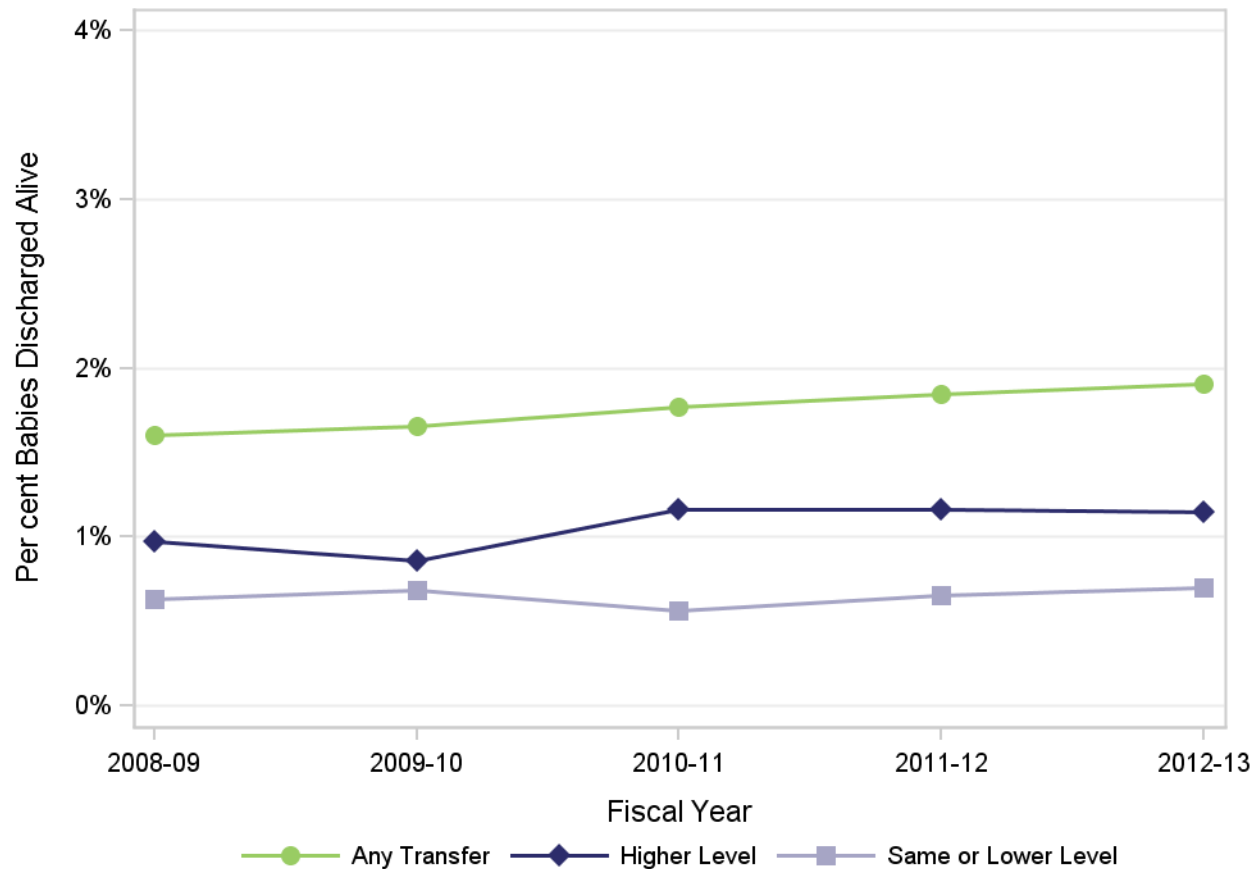
Between April 1, 2008 and March 31, 2010 discharges, NICU days were assigned when the baby received Level II or III care per the DAD abstraction manual. Effective April 1, 2010 discharges, NICU days are assigned based on baby's needs as defined by PSBC Neonatal Daily Classification Tool. Data for 2010-11 to 2012-13 should be interpreted with caution.

[Click here to access resources on the Neonatal Daily Classification Tool.](#)

Definitions and specifications begin on Page 75 of this document.

## Transfer to Another Hospital from the Birth Admission

Residents of Island Health: April 1, 2008 - March 31, 2013

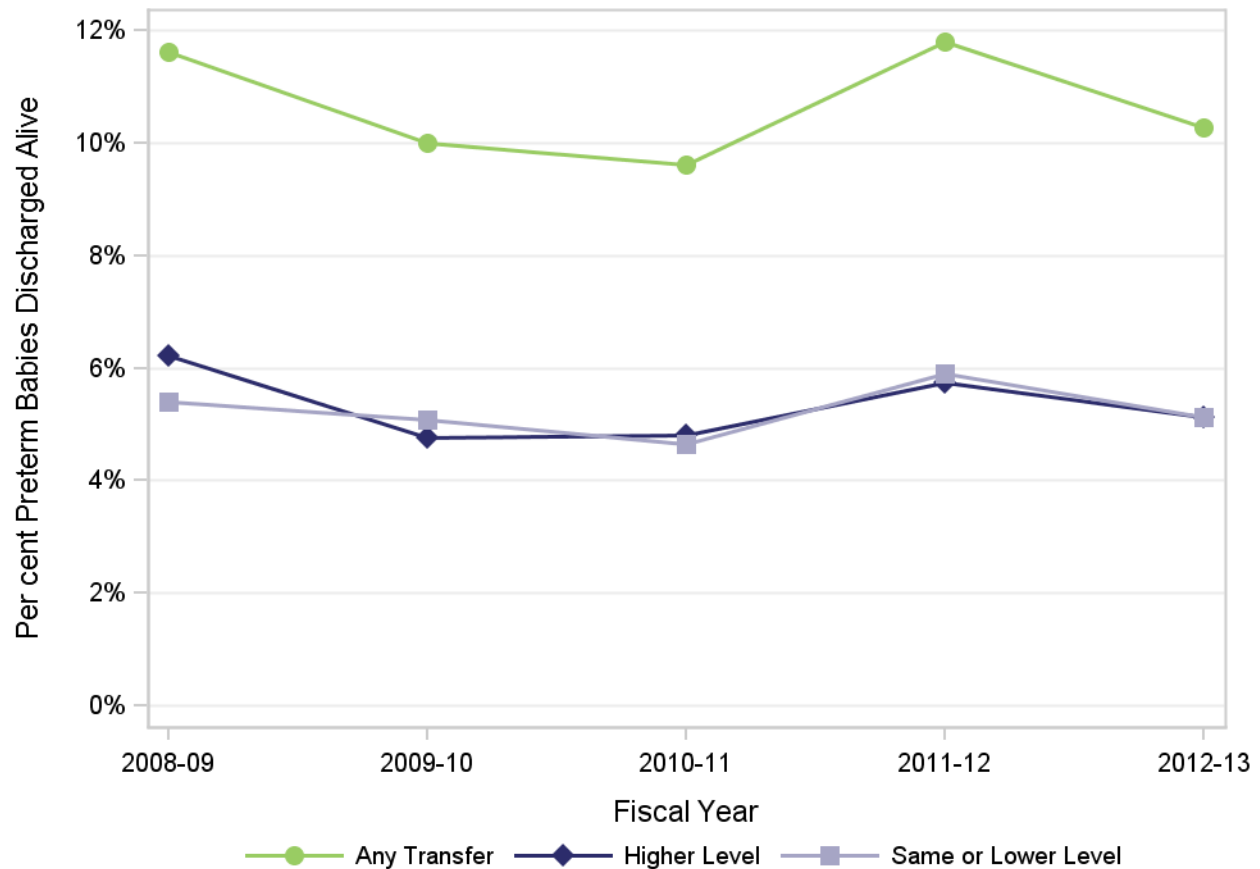


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Any Transfer	1.6%	1.7%	1.8%	1.8%	1.9%
Higher Level	1.0%	0.9%	1.2%	1.2%	1.1%
Same or Lower Level	0.6%	0.7%	0.6%	0.7%	0.7%

Definitions and specifications begin on Page 75 of this document.

## Neonatal Transfer Among Babies Born Preterm

Residents of Island Health: April 1, 2008 - March 31, 2013

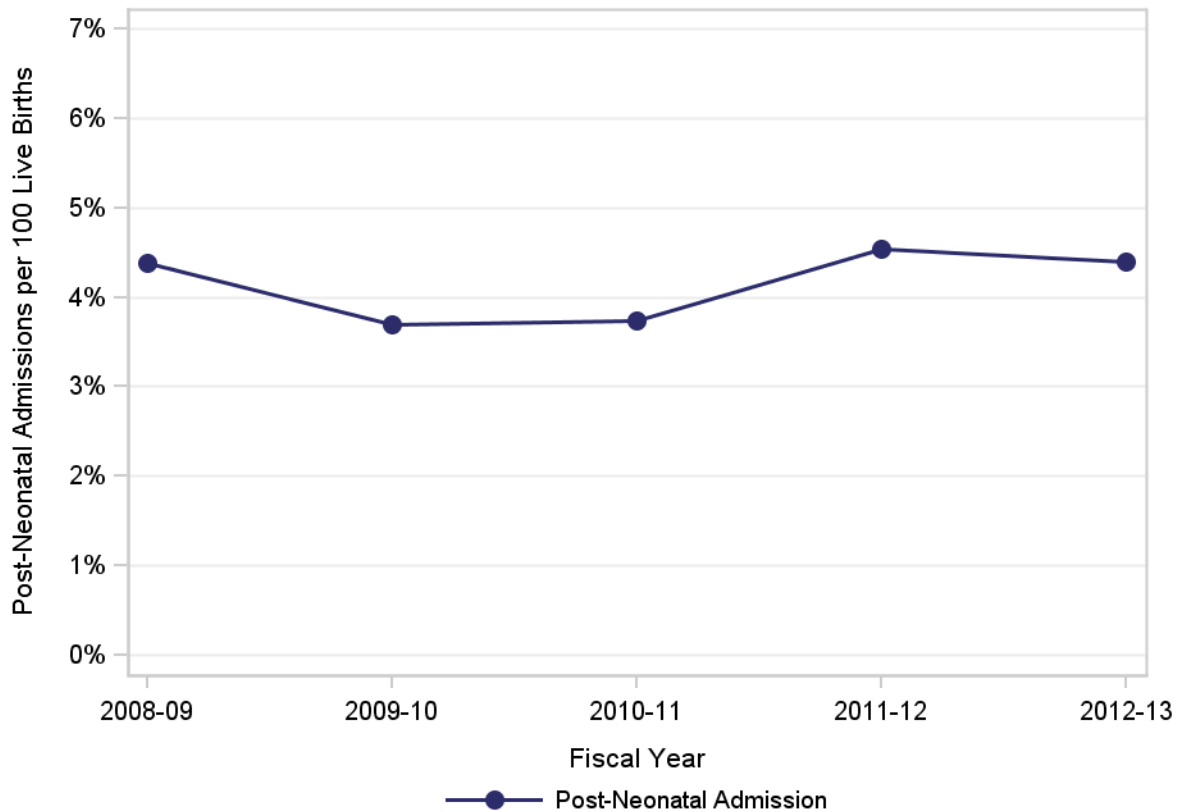


	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Any Transfer	11.6%	10.0%	9.6%	11.8%	10.3%
Higher Level	6.2%	4.8%	4.8%	5.7%	5.1%
Same or Lower Level	5.4%	5.1%	4.6%	5.9%	5.1%

Definitions and specifications begin on Page 75 of this document.

## Post-Neonatal Admissions

Residents of Island Health: April 1, 2008 - March 31, 2013



### Leading Diagnoses Associated with Post-Neonatal Admissions Per 100 Post-Neonatal Admissions

Most Responsible Diagnosis	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Jaundice	35.0%	37.1%	36.4%	38.6%	41.9%
Low Birth Weight or Preterm Birth	26.4%	25.7%	17.6%	21.8%	22.4%
Congenital Anomalies	8.2%	10.1%	13.0%	9.2%	9.4%
Feeding Problems	6.8%	5.9%	9.2%	8.9%	7.6%
Respiratory Infections	7.5%	3.8%	6.7%	6.1%	5.4%
Respiratory Distress	5.4%	6.3%	5.9%	4.4%	4.7%
Other Infections	4.6%	3.8%	5.9%	2.4%	3.2%
Apnea	NR	2.5%	2.9%	5.1%	3.6%
Urinary Tract Infections	2.5%	4.2%	NR	NR	NR
Isoimmunization	2.1%	NR	NR	2.0%	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.

Definitions and specifications begin on Page 75 of this document.



## In-Hospital Perinatal Mortality

Residents of Island Health: April 1, 2008 - March 31, 2013

	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
In-Hospital Perinatal Mortality	per 1,000	per 1,000	per 1,000	per 1,000	per 1,000
Total Stillbirth Rate = Total Stillbirths / (Live Births + Stillbirths)	5.6	4.5	4.4	4.0	2.5
Stillbirth Rate = Stillbirths $\geq$ 500g / (Live Births + Stillbirths $\geq$ 500g)	4.2	3.1	2.8	1.9	1.6
Early Neonatal Mortality Rate = Early Neonatal Deaths / Live Births	1.4	NR	2.7	1.2	1.1
Perinatal Mortality Rate = Perinatal Deaths / (Live Births + Stillbirths $\geq$ 500g)	5.6	3.6	5.4	3.1	2.7
Late Neonatal Mortality Rate = Late Neonatal Deaths / Live Births	NR	NR	NR	0.0	0.0
Total Neonatal Mortality Rate = Total Neonatal Deaths / Live Births	1.9	0.9	2.8	1.2	1.1
Post-Neonatal Mortality Rate = Post-Neonatal Deaths / Live Births	NR	NR	NR	NR	NR
Infant Mortality Rate = Infant Deaths / Live Births	2.0	1.2	3.0	1.4	1.4

### DEFINITIONS:

**Total Stillbirths:** Infant born deceased at any birthweight  $\geq$ 20 weeks' gestation. Includes selective fetal reductions.

**Stillbirths  $\geq$ 500g:** Infant born deceased weighing  $\geq$ 500g and  $\geq$ 20 weeks' gestation. Includes selective fetal reductions.

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

**Perinatal Deaths:** Stillbirths  $\geq$ 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.

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

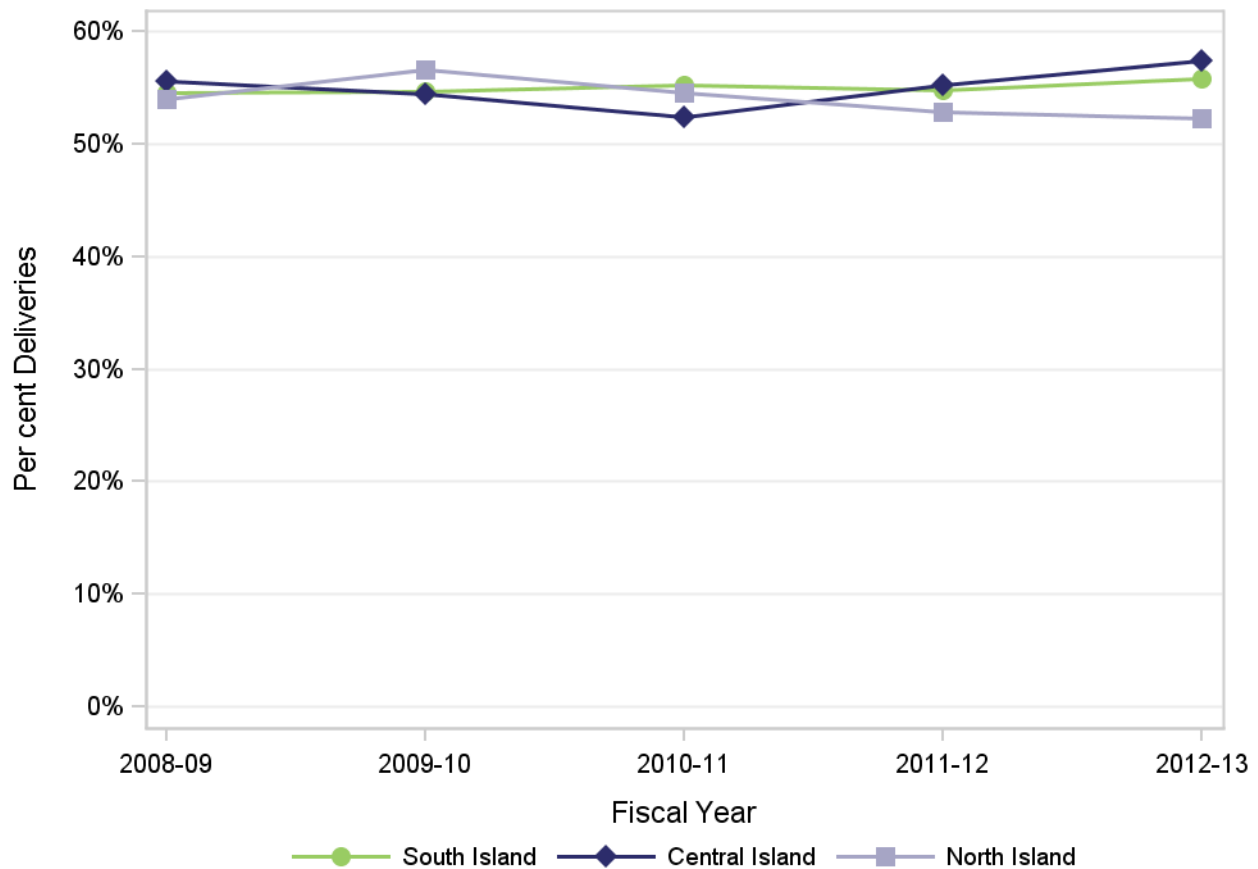
Definitions and specifications begin on Page 75 of this document.

**Perinatal Health Report 2014**  
**Residents of Island Health**

**Section 4: 'Normal Labour'**

## Deliveries with 'Normal Labour' by Resident Health Service Delivery Area

Residents of Island Health: April 1, 2008 - March 31, 2013



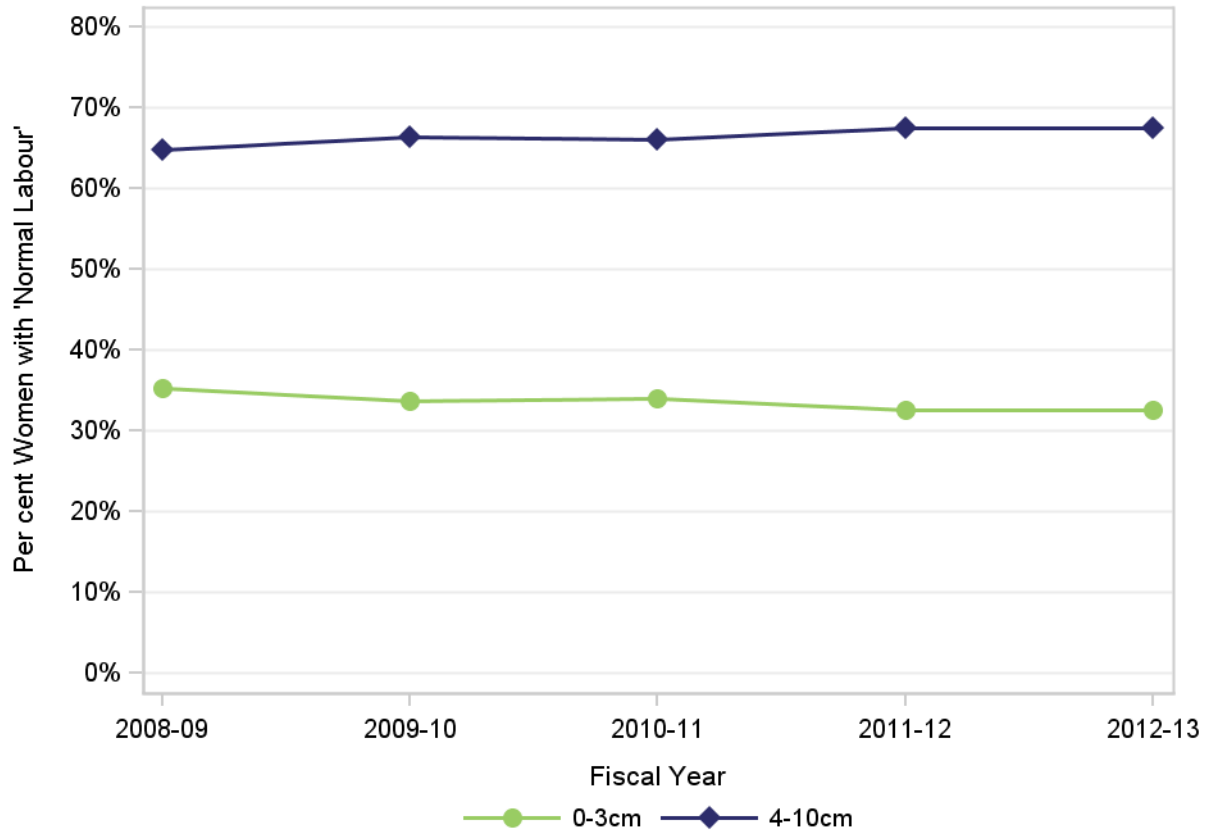
Health Service Delivery Area	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
South Island	54.6%	54.7%	55.3%	54.7%	55.8%
Central Island	55.5%	54.4%	52.4%	55.2%	57.4%
North Island	54.0%	56.6%	54.6%	52.9%	52.2%

Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

Definitions and specifications begin on Page 75 of this document.

## Cervical Dilation at Admission Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



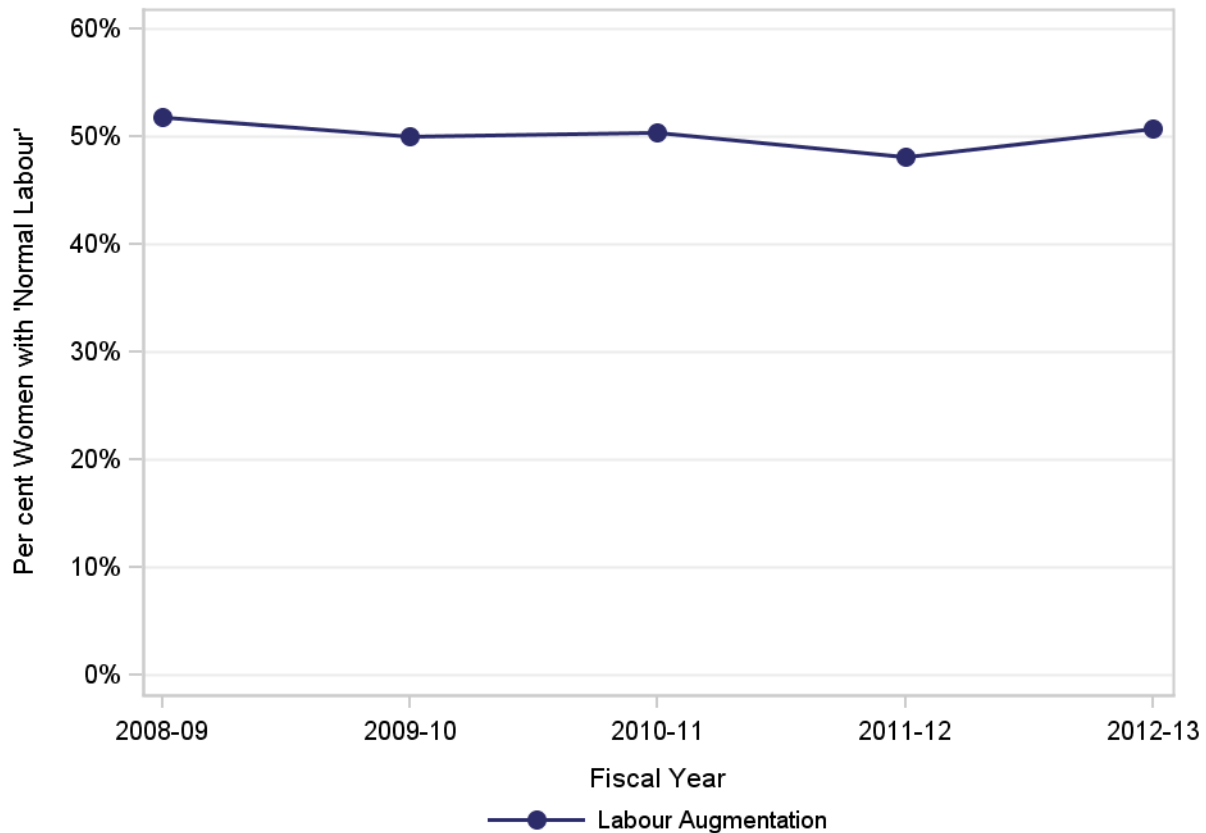
Cervical Dilation at Admission	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
0-3cm	35.2%	33.7%	33.9%	32.6%	32.5%
4-10cm	64.8%	66.3%	66.1%	67.4%	67.5%
Missing	25.3%	26.2%	26.5%	26.4%	27.1%

*Women with 'Normal Labour' have no history of cesarean delivery and deliver 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 75 of this document.

## Labour Augmentation Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



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

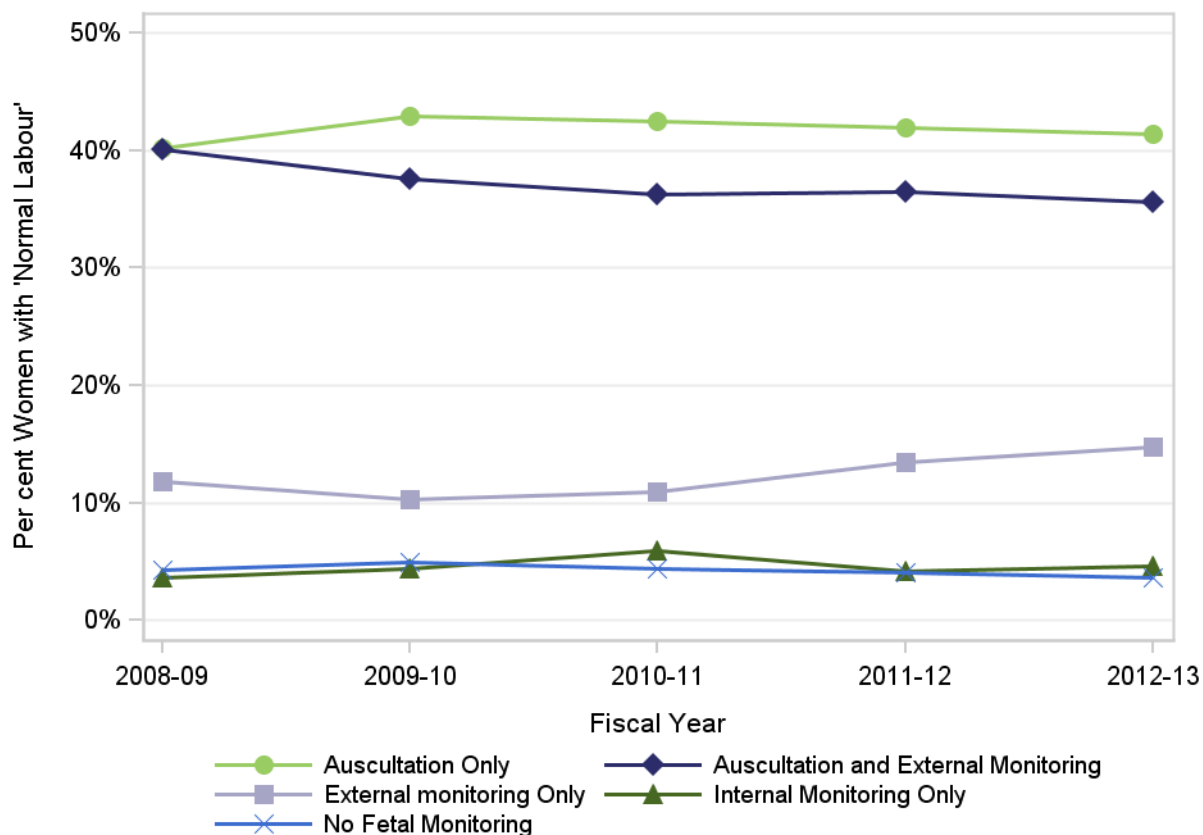
Mode of Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Spontaneous Vaginal	47.4%	45.8%	45.2%	43.9%	46.3%
Assisted Vaginal	70.1%	67.4%	71.6%	64.4%	71.6%
Cesarean	68.7%	68.0%	70.7%	68.3%	70.1%

*Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.*

Definitions and specifications begin on Page 75 of this document.

## Method of Fetal Surveillance During Labour Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



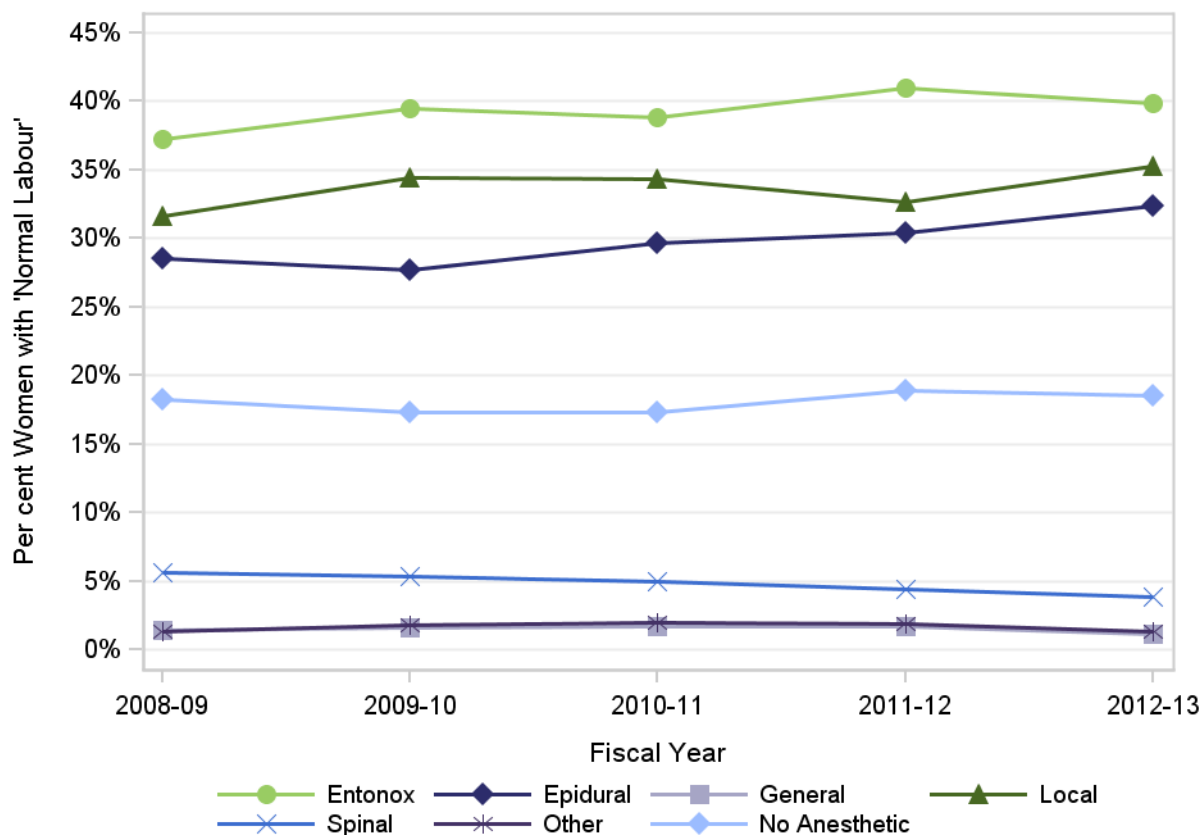
Method of Fetal Surveillance	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Auscultation Only	40.2%	42.9%	42.5%	41.9%	41.4%
Auscultation and External Monitoring	40.1%	37.5%	36.3%	36.4%	35.6%
External Monitoring Only	11.8%	10.3%	11.0%	13.5%	14.8%
Internal Monitoring Only	3.6%	4.4%	5.9%	4.2%	4.6%
No Fetal Monitoring	4.3%	4.9%	4.4%	4.0%	3.6%

Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

Definitions and specifications begin on Page 75 of this document.

## Anesthesia or Analgesia During Labour and Delivery Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



Type of Anesthesia or Analgesia	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Entonox	37.3%	39.4%	38.8%	41.0%	39.9%
Epidural	28.6%	27.7%	29.7%	30.4%	32.3%
General	1.4%	1.6%	1.7%	1.7%	1.2%
Local	31.6%	34.4%	34.3%	32.7%	35.3%
Spinal	5.6%	5.4%	4.9%	4.4%	3.9%
Other	1.3%	1.8%	2.0%	1.9%	1.4%
No Anesthetic	18.2%	17.3%	17.3%	18.9%	18.6%

Women with 'Normal Labour' have no history of cesarean delivery and deliver 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.

Definitions and specifications begin on Page 75 of this document.

## Median Length of Labour Stages (Hours), by Mode of Delivery Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013

Mode of Delivery	First Stage (Hours)					Second Stage (Hours)				
	08-09	09-10	10-11	11-12	12-13	08-09	09-10	10-11	11-12	12-13
Spontaneous Vaginal	5.2	5.0	4.8	4.6	4.8	0.4	0.5	0.4	0.4	0.4
Assisted Vaginal	8.8	8.3	9.0	8.2	8.3	2.3	1.9	2.0	1.9	2.2
Cesarean	9.8	10.2	10.6	10.1	10.0	3.4	3.6	3.5	3.7	3.7

## Median Length of Stay (Hours) in Acute Care for Delivery Episode of Care, by Mode of Delivery Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013

Mode of Delivery	Antepartum LOS (Hours)					Postpartum LOS (Hours)					Total LOS (Hours)				
	08-09	09-10	10-11	11-12	12-13	08-09	09-10	10-11	11-12	12-13	08-09	09-10	10-11	11-12	12-13
Spontaneous Vaginal	4.3	4.2	4.1	4.1	4.0	36.4	35.2	33.7	33.3	32.9	41.7	39.7	38.4	38.5	37.5
Assisted Vaginal	10.3	10.1	10.7	9.4	9.8	46.9	48.4	45.9	49.4	45.3	58.4	60.7	57.3	59.4	57.3
Cesarean	12.0	12.5	12.5	12.1	12.0	77.3	77.4	75.7	70.9	74.5	88.3	89.3	87.7	84.9	86.1

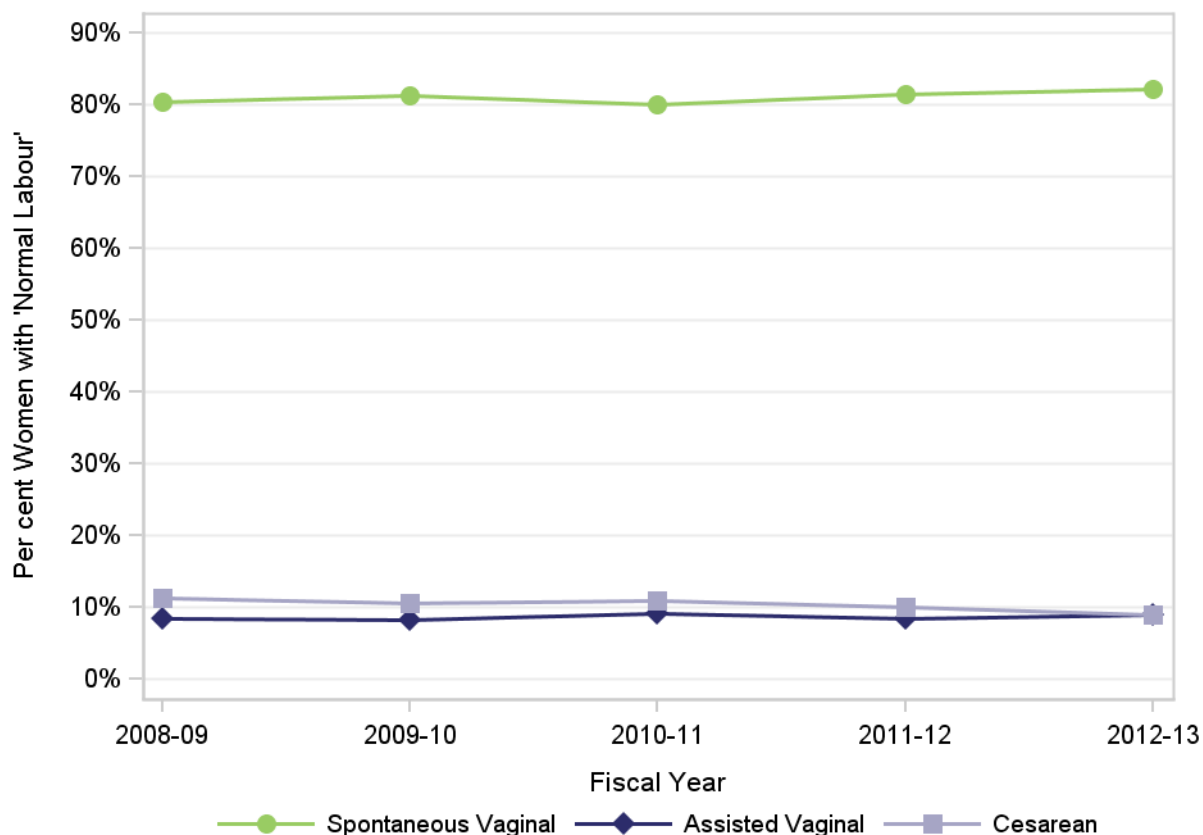
*Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.*

Deliveries outside acute care facilities are excluded.

Definitions and specifications begin on Page 75 of this document.



# **Mode of Delivery** **Women with 'Normal Labour'** Residents of Island Health: April 1, 2008 - March 31, 2013



Mode of Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Spontaneous Vaginal	80.3%	81.2%	80.0%	81.5%	82.1%
Assisted Vaginal	8.5%	8.3%	9.1%	8.5%	8.9%
Cesarean	11.2%	10.6%	10.9%	10.0%	9.0%

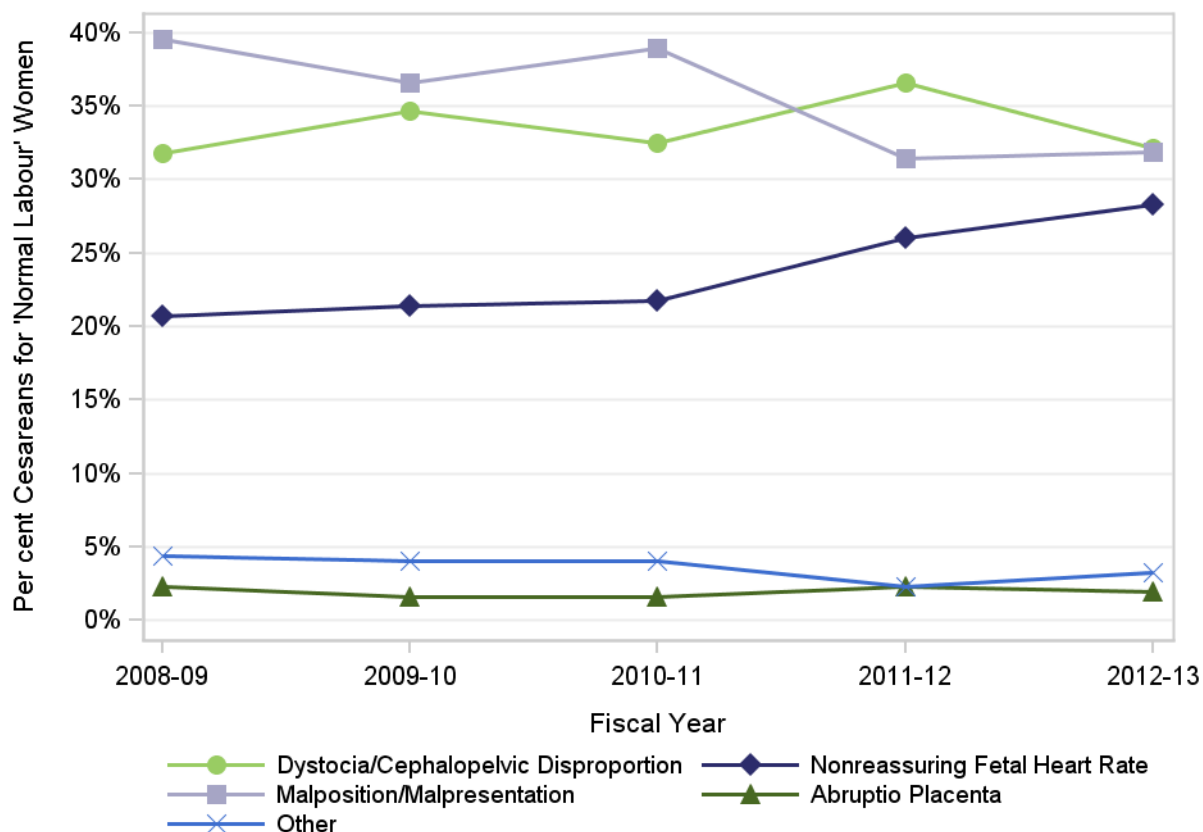
*Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.*

Definitions and specifications begin on Page 75 of this document.

## Primary Indication for Cesarean Delivery

### Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



Primary Indication for Cesarean Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Dystocia/Cephalopelvic Disproportion	31.8%	34.7%	32.5%	36.6%	32.2%
Nonreassuring Fetal Heart Rate	20.7%	21.4%	21.8%	26.0%	28.3%
Malposition/Malpresentation	39.5%	36.6%	39.0%	31.4%	31.8%
Maternal Request	NR	NR	NR	NR	NR
Abruptio Placenta	2.3%	1.6%	1.6%	2.3%	1.9%
Placenta Previa	NR	NR	NR	NR	NR
Active Herpes	NR	1.6%	NR	1.4%	1.6%
Other	4.4%	4.1%	4.0%	2.3%	3.2%

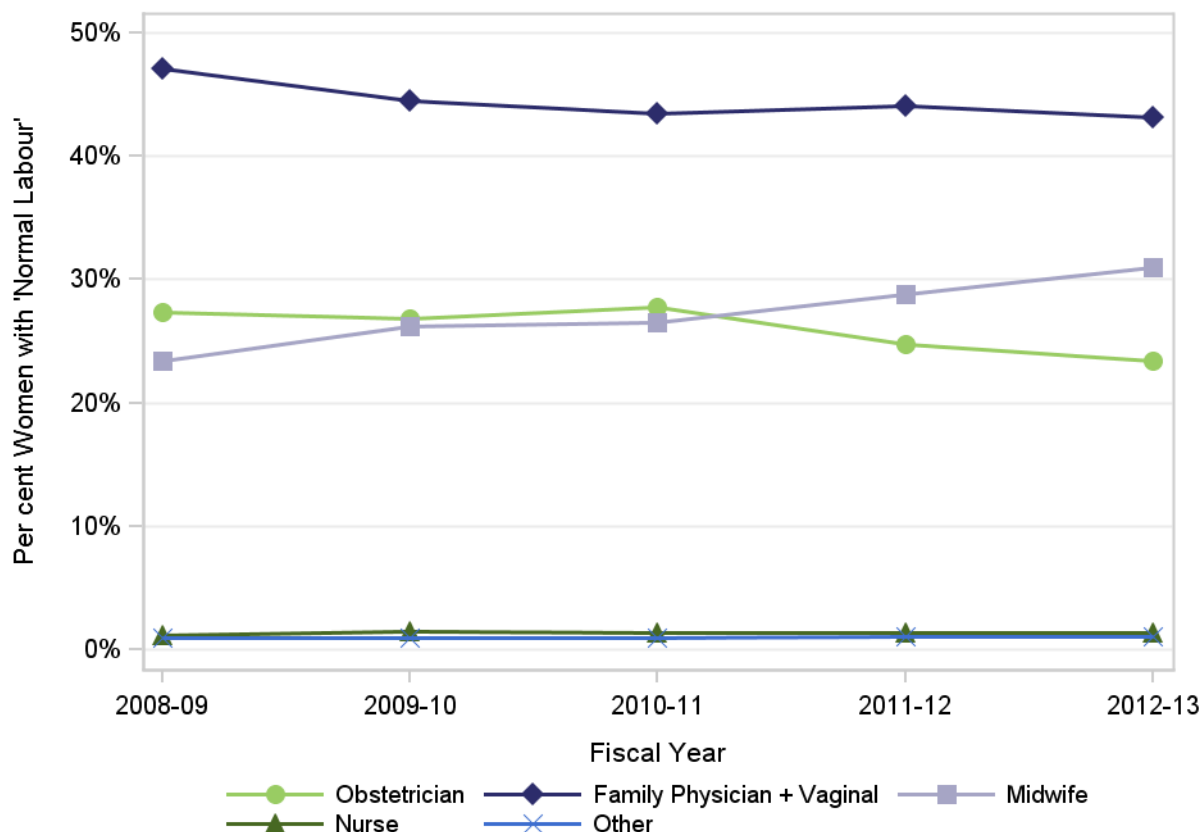
Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

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.

Definitions and specifications begin on Page 75 of this document.

# **Delivery Provider** **Women with 'Normal Labour'** Residents of Island Health: April 1, 2008 - March 31, 2013



Delivery Provider	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Obstetrician	27.3%	26.9%	27.8%	24.7%	23.4%
Surgeon	NR	NR	NR	NR	NR
Family Physician + Cesarean	NR	NR	NR	NR	NR
Family Physician + Vaginal	47.1%	44.5%	43.4%	44.0%	43.2%
Midwife	23.4%	26.2%	26.5%	28.8%	31.0%
Nurse	1.2%	1.5%	1.3%	1.4%	1.4%
Other	1.0%	1.0%	0.9%	1.0%	1.0%

Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.

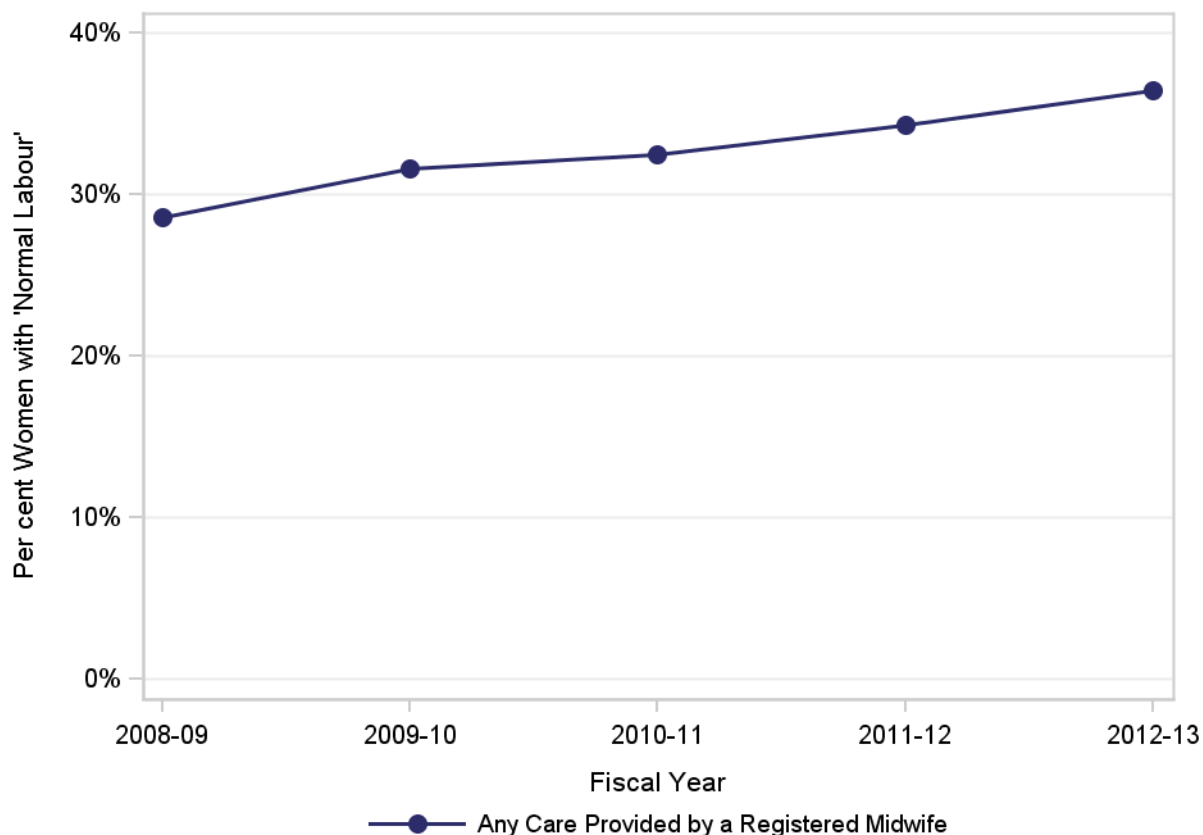
Describes the training level of the provider who delivered the baby. This may not be the same type of health care professional who provided antenatal care.

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

Definitions and specifications begin on Page 75 of this document.

## Any Care Provided by a Registered Midwife Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



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

	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Spontaneous Vaginal	30.5%	33.6%	34.1%	36.5%	38.6%
Assisted Vaginal	19.7%	20.1%	25.6%	22.4%	22.6%
Cesarean	21.4%	24.7%	25.8%	26.6%	29.9%

*Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.*

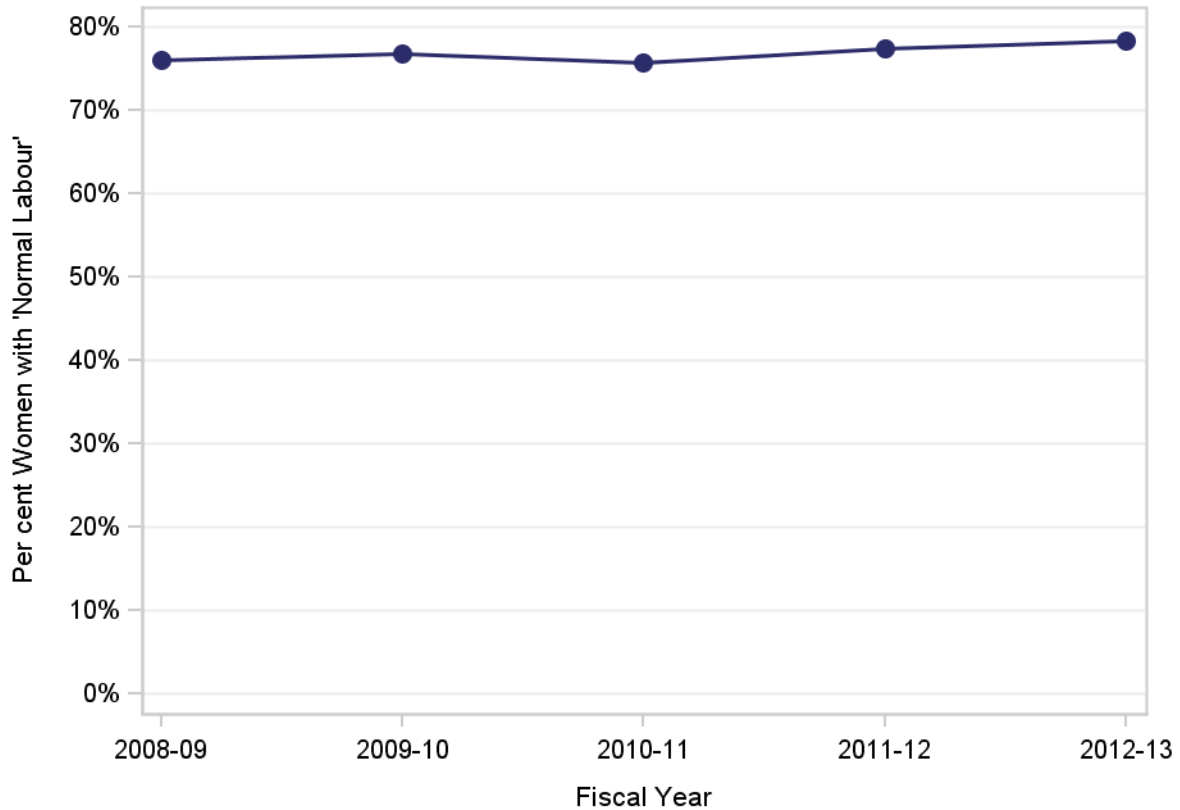
Indicates if a Registered Midwife was involved at any point during prenatal care or the delivery episode. May not be the provider who performs the delivery.

Definitions and specifications begin on Page 75 of this document.

## Women with 'Normal Childbirth'

### Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
'Normal Childbirth'	76.0%	76.7%	75.7%	77.4%	78.3%

*Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.*

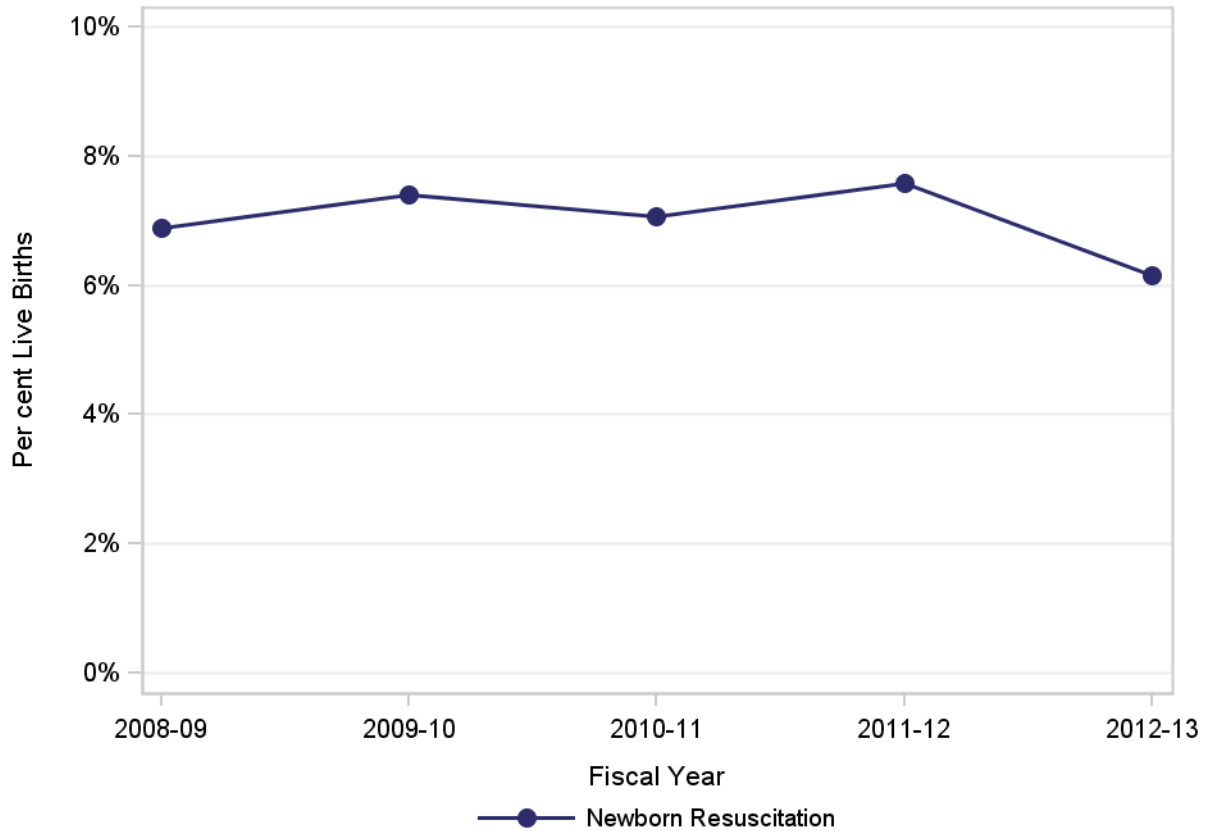
'Normal Childbirth' excludes the following: spinal anaesthesia, general anaesthesia, vacuum-assisted delivery, forceps-assisted delivery, cesarean delivery, or episiotomy.

Definitions and specifications begin on Page 75 of this document.

## Newborn Resuscitation

### Babies Born to Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



## Newborn Resuscitation by Mode of Delivery

### Babies Born to Women with 'Normal Labour'

Mode of Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Spontaneous Vaginal	6.0%	6.2%	5.9%	6.0%	4.8%
Assisted Vaginal	10.9%	12.5%	12.8%	13.6%	13.2%
Cesarean	10.1%	12.7%	11.0%	15.8%	11.3%

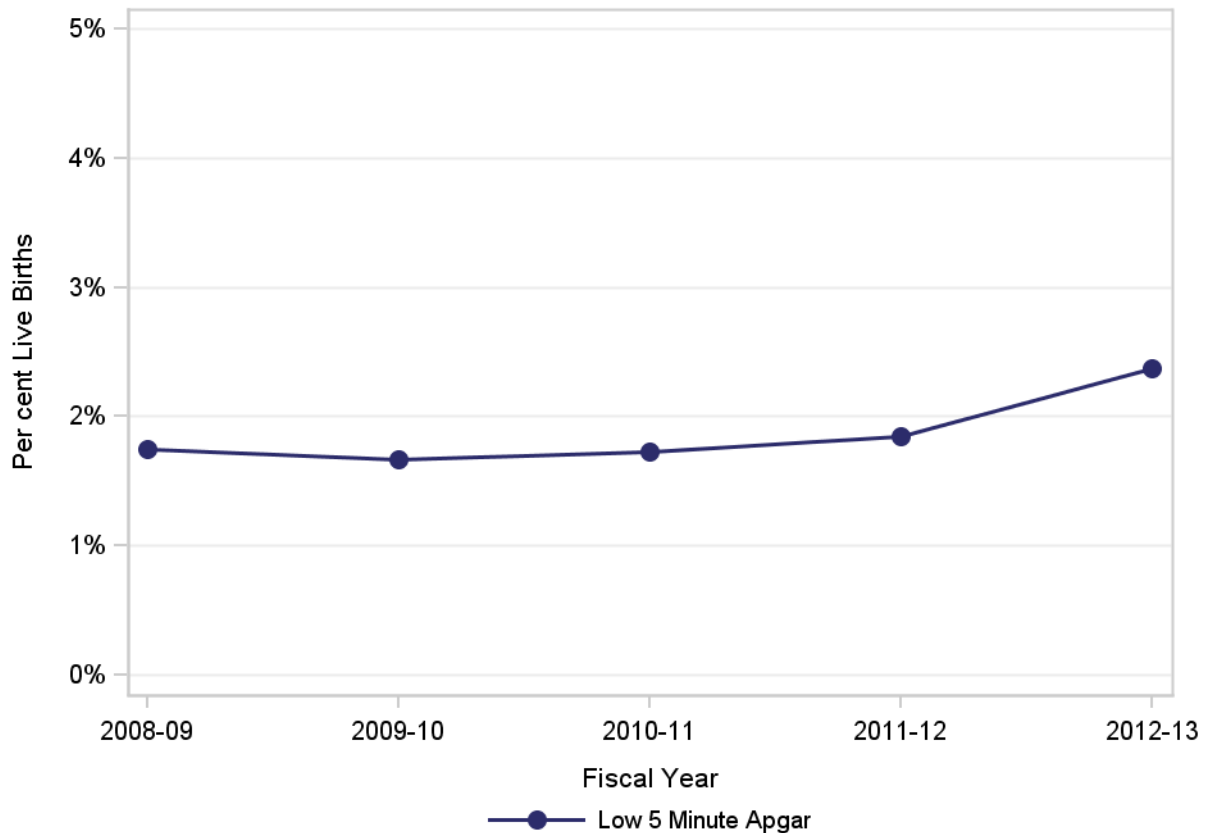
*Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.*

Definitions and specifications begin on Page 75 of this document.

## Low 5 Minute Apgar Score

### Babies Born to Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



## Low 5 Minute Apgar Score by Mode of Delivery

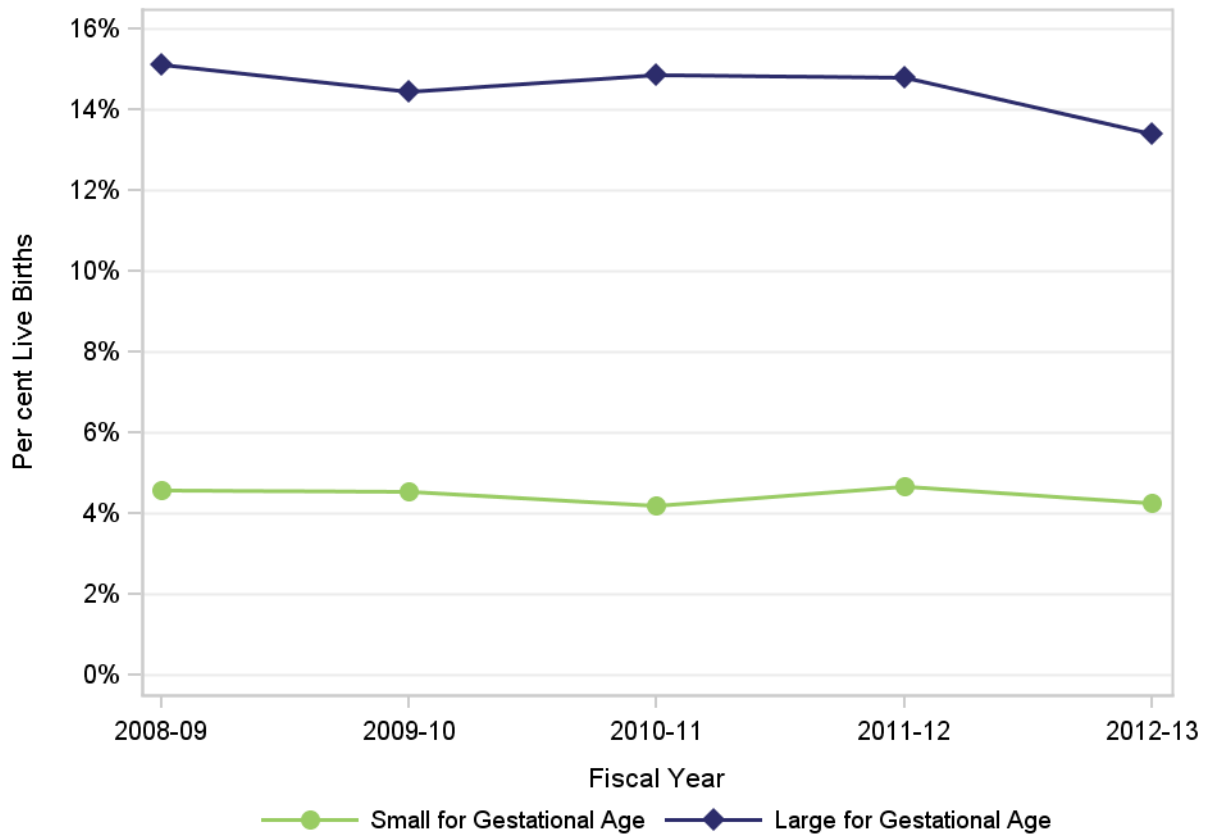
### Babies Born to Women with 'Normal Labour'

Mode of Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Spontaneous Vaginal	1.7%	1.6%	1.4%	1.6%	2.2%
Assisted Vaginal	1.7%	2.4%	2.9%	3.4%	2.9%
Cesarean	1.8%	1.9%	3.5%	2.6%	3.5%

*Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.*

Definitions and specifications begin on Page 75 of this document.

# **Weight for Gestational Age** **Babies Born to Women with 'Normal Labour'** Residents of Island Health: April 1, 2008 - March 31, 2013



	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Small for Gestational Age	4.6%	4.5%	4.2%	4.7%	4.3%
Large for Gestational Age	15.1%	14.4%	14.8%	14.8%	13.4%

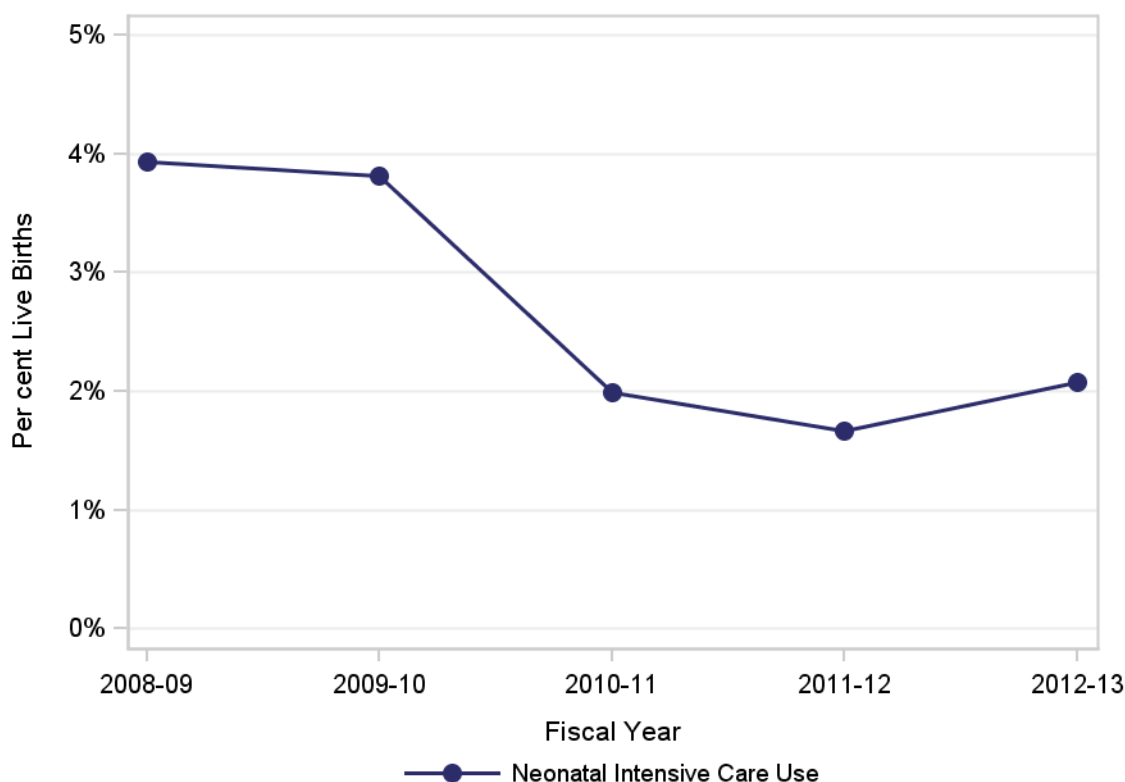
*Women with 'Normal Labour' have no history of cesarean delivery and deliver a singleton infant with the head as the presenting part between 37 and 41 estimated weeks' gestation after spontaneous onset of labour.*

Definitions and specifications begin on Page 75 of this document.



## Neonatal Intensive Care Use During Birth Episode of Care Babies Born to Women with 'Normal Labour'

Residents of Island Health: April 1, 2008 - March 31, 2013



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

Mode of Delivery	Fiscal Year				
	2008-09	2009-10	2010-11	2011-12	2012-13
Spontaneous Vaginal	3.2%	2.8%	1.6%	1.3%	1.4%
Assisted Vaginal	5.4%	8.0%	2.2%	2.0%	4.2%
Cesarean	7.8%	8.7%	4.6%	4.3%	6.1%

*Women with 'Normal Labour' have no history of cesarean delivery and deliver 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. Data for 2010-11 to 2012-13 should be interpreted with caution.

[Click here to access resources on the Neonatal Daily Classification Tool.](#)

Definitions and specifications begin on Page 75 of this document.

# **Definitions**

## **Section 1: Maternal Health**

### **Parity**

- Indicates whether a woman delivered a previous pregnancy  $\geq 20$  weeks gestation or  $\geq 500$ g. 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.

### **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>
- Underweight – BMI <18.5.
- Normal Weight – BMI between 18.5 and 24.9.
- Overweight – BMI between 25.0 and 29.9.
- Obese – BMI  $\geq 30.0$ .
- 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 [guidelines](#) published by the Institute of Medicine.

### **Hypertension in Pregnancy**

- No Hypertension – no hypertensive conditions were documented by a care provider.
- Pre-Existing Hypertension – mother had a documented hypertensive disorder before pregnancy. Mother may also have had gestational hypertension.
- Pre-Existing Hypertension with Pre-Eclampsia – mother had a documented hypertensive disorder before pregnancy and also had pre-eclampsia diagnosed in pregnancy.
- Gestational Hypertension – mother had hypertension diagnosed during pregnancy.
- Pre-Eclampsia – mother had pre-eclampsia diagnosed during pregnancy. Mother may also have had gestational hypertension.
- Eclampsia – mother had eclampsia diagnosed during pregnancy. Mother may have had pre-existing or gestational hypertension.
- HELLP – mother had HELLP syndrome (Hemolysis, Elevated Liver enzymes, and Low Platelet count) diagnosed during pregnancy.
  - NOTE: diagnosis codes for gestational hypertension and pre-eclampsia changed significantly effective April 1, 2012 discharges.

### **Diabetes Mellitus in Pregnancy**

- Pre-Existing Diabetes – mother had a diagnosis of diabetes mellitus type 1 or 2 documented by care provider before pregnancy.
- Gestational Diabetes – mother had gestational diabetes documented by care provider during pregnancy.

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

### **Substance Use During Pregnancy**

- Cigarette Use – care provider documented mother reports smoking cigarettes at any time during the pregnancy. Includes women who stopped or reduced smoking during pregnancy.
- Alcohol as Risk – 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.
- HIV Test Done – mother was screened for the Human Immunodeficiency Virus (HIV) during pregnancy.
- Maternal Serum Screening Offered – mother was offered blood test(s) to screen for fetal abnormalities (extra chromosomes or neural tube defects). Refers only to testing offered by the [BC Prenatal Genetic Screening Program](#).

### **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.
  - **NOTE:** Artificial reproductive technology data were captured differently beginning April 1, 2009 discharges.

## **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.

- Prelabour Rupture of Membranes – rupture of membranes before the onset of uterine contractions at term.
- Post Dates – the pregnancy has continued past the due date (41 completed weeks gestation).
- Hypertension in Pregnancy – 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.
- Auscultation and External Electronic Monitoring – 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.
- Internal Electronic Monitoring Only – 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.
    - Vacuum – the baby was delivered vaginally with the assistance of a vacuum extractor.
    - Forceps – the baby was delivered vaginally with the assistance of forceps.
    - Forceps and Vacuum – the baby was delivered vaginally with the assistance of vacuum and forceps extractors.
- Cesarean – the baby was delivered by an incision in the mother's abdomen.
  - Elective Primary – woman without a previous cesarean had a cesarean delivery with elective timing.
  - Elective Repeat – woman with a history of cesarean delivery had a cesarean delivery with elective timing.
  - Emergency Primary – woman without a previous cesarean needed a cesarean delivery with urgent or emergent timing.

- Emergency Repeat – woman with a history of cesarean delivery needed a cesarean delivery with urgent or emergent timing.

### **Perineal Trauma**

- Third or Fourth Degree Laceration – 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.
- Nonreassuring Fetal Heart Rate – increased or decreased fetal heart rate (tachycardia or bradycardia), especially during and after uterine contractions.
- Dystocia/Cephalopelvic Disproportion – abnormal or difficult labour. Includes failure to progress, incoordinate uterine activity, and cephalopelvic disproportion (large baby for maternal pelvis).
- VBAC Declined/Maternal Request – 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.
- Breech – the fetus' buttocks were the presenting part.
- Malposition/Malpresentation – 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.
- Placenta Previa – the placenta is low in the uterus, partially or completely covering the cervix.
- Abruptio Placenta – premature separation of the placenta from the uterus.
- Active Herpes – mother had an active herpes outbreak that could be transmitted to the infant during vaginal delivery.
- Other – other reason not captured.
- Unknown – reason for cesarean is unclear, unknown, or not documented.

### **Vaginal Birth after Cesarean**

- VBAC Eligible – 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.
- VBAC Attempted – women 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.
- VBAC Success – 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.
- Epidural – 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.
- Spinal – 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

- Delivery Provider – 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.
  - Family Physician + Vaginal – a family physician performed a vaginal delivery.
  - Family Physician + Cesarean – 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.

### Length of Stay for Delivery Episode of Care

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

- Liver Complications – mother had confirmed or suspected cholestasis, acute fatty liver, or liver hematoma .
  - NOTE: Cholestasis was added to the ICD code for liver complications effective April 1, 2009. 2008-09 data include only acute fatty liver and liver hematoma.
- Postpartum Hemorrhage with Transfusion – mother had a postpartum bleed and received blood products via transfusion.
- Urinary Tract Infection
- Sepsis – mother had confirmed or suspected sepsis.
- Wound Infection – mother had confirmed or suspected infection or disruption of an obstetric or surgical wound.
- HELLP – 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.

- Postpartum Hemorrhage with Hysterectomy – mother had a postpartum bleed and underwent a complete or subtotal (partial) hysterectomy.
- Stroke – mother had a confirmed or suspected stroke.

### **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.
- Diagnosis associated with Post-Delivery Admission – 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 88 per cent of diagnoses associated with Post-Delivery Admissions for 2008-09 to 2012-13, inclusive:
    - Postpartum Hemorrhage
    - Postpartum Infection – includes sepsis, obstetric wound infection, urinary tract infection, or post-procedural infection.
    - Routine Postpartum Care – care and examination immediately after delivery or routine postpartum follow-up.
    - 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
    - Care of Breasts – includes breast infection, lactation problems, or supervision of lactation mother.
    - Complications of Anesthesia – reactions to or complications of anesthesia.
    - Pregnancy-Associated Mental Health – includes postpartum depression and puerperal psychosis.

## **Section 3: Newborn Health**

### **Birth Type**

Defined in accordance with BC Vital Stats.

- Live Birth – baby displayed signs of life (breathing, heart beat, pulsation of umbilical cord, or movement of voluntary muscle) at birth.
- Stillbirth – baby born at  $\geq 20$  weeks' estimated gestation or  $\geq 500$  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.
  - Iatrogenic Preterm – 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**

- Small for Gestational Age – 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 [here](#).
- Large for Gestational Age – 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 [here](#).

### **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.
  - 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).
- Transient Tachypnea – baby had confirmed or suspected transient tachypnea.
- Respiratory Distress Syndrome – 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.
  - Chromosomal – includes Trisomy 13, 18, and 21 (Down's Syndrome); sex chromosome abnormalities (i.e. Turner's syndrome, Klinefelter's syndrome); and other monosomies, deletions, and chromosomal rearrangements.
  - Circulatory System – includes malformations of the heart chambers, septa, valves, veins and arteries.
  - Cleft Lip or Palate
  - Digestive System – includes malformation of the tongue, mouth, pharynx, esophagus, stomach, intestines, liver, gallbladder, bile 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.

### **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.

- Exclusive Breastfeeding – 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.
  - **PSBC has recently become aware of data quality issues related to NICU days for discharges beginning April 1, 2010. Data for 2010-11 to 2012-13 should be interpreted with caution.**

### **Transfer to Another Hospital**

- Any Transfer – baby was transferred from the Birth Admission to a different acute care facility.
- Higher Level – 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.

- Facilities with a Level III NICU – BC Women's Hospital & Health Centre, Royal Columbian Hospital, Surrey Memorial Hospital, and Victoria General Hospital.
- Facilities with a Level II NICU – 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.
- Same or Lower Level – baby was transferred directly from the facility of birth to a facility that provides a similar or lower intensity of care.

### Post-Neonatal Admissions

- Post-Neonatal Admission – 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.
- Diagnosis Associated with Post-Neonatal Admission – 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 82 per cent of diagnoses associated with Post-Neonatal Admissions for 2008-09 to 2012-13, inclusive:
    - Jaundice
    - Low Birth Weight or Preterm Birth
    - Congenital Anomalies – includes all congenital malformations, deformations, and chromosomal abnormalities.
    - Feeding Problems – 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.

- Total Stillbirths – baby was born deceased.
  - Total Stillbirth Rate = stillbirths / (live births + stillbirths) x 1,000.
- Stillbirths ≥500g – baby weighing ≥500g was born deceased.
  - 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.
- Perinatal Death – 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.
- Late Neonatal Death – baby born alive died in hospital between 7 and 27 days after birth.
  - Late Neonatal Mortality Rate = late neonatal death / live births x 1,000.
- Post Neonatal Death – baby born alive died in hospital between 28 and 364 days after birth.
  - 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 [Joint Policy Statement on Normal Childbirth](#). 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

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

### ‘Normal Childbirth’

- According to the [Joint Policy Statement on Normal Childbirth](#), ‘Normal Childbirth’ excludes the following: spinal anesthesia, general anesthesia, vacuum-assisted delivery, forceps-assisted 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

<b><u>Include:</u></b>	
Delivery	MOTHER_ADMISSION.screen_source = "DL" AND April 1, 2008 ≤ discharge_date ≤ March 31, 2013
Linked maternal-newborn records	BABY_ADMISSION.screen_source = "NB" AND BABY_ADMISSION.mother_id is not null
<b><u>Exclude:</u></b>	
Complete termination of pregnancy	(DIAGNOSES.diagnosis_cd begins with O04 (Mother) or (PROCEDURES_PERFORMED.procedure_code begins with 5CA88 OR 5CA89 (Mother) and woman delivered a singleton pregnancy)) OR DIAGNOSES.diagnosis_cd begins with P96.4 (Baby) for <b>all</b> babies linked to mother

### Other Maternal Admissions

<b><u>Admission type</u></b>		<b><u>Criteria</u></b>
<u>Maternal Admission</u>		MOTHER_ADMISSION.screen_source = "DL" or "PP"  For any woman whose Delivery Admission meets the inclusion criteria, above.
<u>Post-Delivery Admission</u>		MOTHER_ADMISSION.screen_source = "PP" or (MOTHER_ADMISSION.screen_source = "DL" and actual_place_of_delivery=2) AND most responsible diagnosis is not Z76.3  For any woman whose Delivery Admission meets the inclusion criteria, above.
<u>Delivery Episode of Care</u>	Episode start	MOTHER_ADMISSION.screen_source = "DL" and April 1, 2008 ≤ discharge_date ≤ March 31, 2013
	Include all admissions linked to the delivery where:	MOTHER_ADMISSION.screen_source = "PP" and 101 ≤ institution_to <973
	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

<b>Admission type</b>		<b>Criteria</b>
<u>Birth Admission</u>		<p>BABY_ADMISSION.screen_source = "NB"</p> <p>For any baby linked to a woman whose Delivery Admission meets the inclusion criteria, above.</p>
<u>Newborn Admission</u>		<p>BABY_ADMISSION.screen_source = "NB" or "XF"</p> <p>For any baby linked to a mother whose Delivery Admission meets the inclusion criteria, above.</p>
<u>Post-Neonatal Admission</u>		<p>(BABY_ADMISSION.screen_source = "NB" and MOTHER.actual_place_of_delivery=2) or BABY_ADMISSION.screen_source = "XF"</p> <p>AND</p> <p>most responsible diagnosis is not Z76.2, Z76.3, or Z76.4</p> <p>For any baby linked to a mother whose Delivery Admission meets the inclusion criteria, above.</p>
<u>Birth Episode of Care</u>	Episode start	BABY_ADMISSION.screen_source = "NB"
	Include all admissions linked to the birth where:	<p>BABY_ADMISSION.screen_source = "XF" and discharge_to = "O" and 101 ≤ institution_to &lt; 973</p>
	Episode end	<p>BABY_ADMISSION.screen_source = "NB" or "XF" AND (discharge_to ≠ "O" or institution_to = 973 or 974)</p> <p>For any baby linked to a mother whose Delivery Admission meets the inclusion criteria, above.</p>

## Detailed Specifications for Selected Variables

	PDR variables		CIHI Codes
<b>Fiscal year</b>			
2008-09	screen_source = "DL" AND April 1, 2008 ≤ MOTHER_ADMISSION.discharge_date ≤ March 31, 2009		
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		
<b>Parity</b>			
Nulliparous	(term = 0 and premature = 0 and prev_cesarian_deliv = 0 and prev_vaginal_deliv = 0) OR (term = null and premature = null and prev_cesarian_deliv = null and prev_vaginal_deliv = null and living = 0) OR (any of term, premature, prev_cesarian_deliv, 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
<b>Hypertension in pregnancy</b>			
Pre-Existing Hypertension			diagnosis_code begins with O10
Pre-Existing Hypertension with Pre-Eclampsia			diagnosis_code begins with O11
Gestational Hypertension (includes mild pre-eclampsia for discharges before April 1, 2012)			diagnosis_code begins with O13
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
Eclampsia			diagnosis_code begins with O15
HELLP syndrome	pp_hellp = "Y"		
	discharge_date ≥ April 1, 2012	AND	diagnosis_code begins with O142
<b>Diabetes Mellitus in Pregnancy</b>			
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
<b>Artificial Reproductive Technology</b>	ivf = "Y"	OR	diagnosis_code for mother = Z37xx1 or baby = Z38xx1
	April 1, 2008 ≤ discharge_date < April 1, 2009	AND	diagnosis_code for mother begins with Z311, Z312, or Z313
<b>Augmentation of Labour</b>	labour_aug_flg = "Y"		
<b>Induction of Labour</b>	labour_ind_flg = "Y"		
<b>Method of Fetal Surveillance During Labour</b>			
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 Monitoring	auscultation = "Y" and 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 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 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")		
<b>Delivery Provider</b>			
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		
<b>Any Care Provided by a Registered Midwife</b>	institution_id = 976 or 977 or midwife_case = "Y" or delivered_by = 3 or 7 for any infant or actual_place_of_delivery = 1 or 2	OR	doctor_service = 11004 on DOCTORS or PROCEDURES_PERFORMED for mother or baby record
<b>Anesthesia or Analgesia</b>			
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 5MD
Local	local_flg = "Y"	OR	anesthetic_type = 7 for a procedure_code beginning with 5MD
Narcotic	narcotic_flg = "Y"		
Spinal	spinal_flg = "Y"	OR	anesthetic_type = 2 for a procedure_code beginning with 5MD
Other	other_flg = "Y" or pudendal_flg = "Y"		
No Anesthetic	none_flg = "Y"		
<b>Perineal Trauma</b>			
Third or Fourth Degree Laceration	laceration_flg = "Y" AND laceration_degree = 3 or 4	OR	diagnosis_code begins with O702 or O703
Episiotomy	episiotomy_flg = "Y"		
Cervical Tear	cervical_tear_flg = "Y"	OR	diagnosis_code begins with O713
<b>Mode of Delivery</b>			
Spontaneous Vaginal			procedure_code begins with 5MD50, 5MD51, 5MD52, 5MD56AA, 5MD56NL, 5MD56NP, 5MD56NU, 5MD56NM, 5MD56NQ, 5MD56NV, 5MD56GH, 5MD56PA, 5MD56PD, 5MD56PG, 5MD56PB, 5MD56PE, or 5MD56PH
Assisted Vaginal			procedure_code begins with 5MD53, 5MD54, 5MD55, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, or 5MD56PJ



	PDR variables		CIHI Codes
Vacuum			<a href="#">procedure_code</a> begins with 5MD54
Forceps			<a href="#">procedure_code</a> begins with 5MD53, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, or 5MD56PJ
Forceps and Vacuum			<a href="#">procedure_code</a> begins with 5MD55
			<a href="#">procedure_code</a> begins with 5MD54 AND one of the following codes is also on the abstract: 5MD53, 5MD55, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, or 5MD56PJ
Cesarean			<a href="#">procedure_code</a> begins with 5MD60
	<a href="#">csection_type</a> = 1, 2, 3, or 4	AND	no <a href="#">procedure_code</a> begins with 5MD5 or 5MD60
Emergency Primary	<a href="#">csection_type</a> = 2	AND	<a href="#">procedure_code</a> begins with 5MD60
Emergency Repeat	<a href="#">csection_type</a> = 4	AND	<a href="#">procedure_code</a> begins with 5MD60
Elective Primary	<a href="#">csection_type</a> = 1	AND	<a href="#">procedure_code</a> begins with 5MD60
Elective Repeat	<a href="#">csection_type</a> = 3	AND	<a href="#">procedure_code</a> begins with 5MD60
<b>Vaginal Birth After Cesarean (VBAC)</b>			
VBAC Eligible	( <a href="#">vbac_eligible</a> = "Y" and <a href="#">prev_cesarian_deliv</a> ≥ 1) OR ( <a href="#">vbac_eligible</a> = "U" or " " and <a href="#">baby_presentation_delivery</a> = 6 and <a href="#">prev_cesarian_deliv</a> ≥ 1 and <a href="#">Maximum(baby_sequence)</a> = 1)		
	( <a href="#">vbac_eligible</a> = "U" or " " and <a href="#">baby_presentation_delivery</a> = 9 and gestational age ≥ 37 and <a href="#">prev_cesarian_deliv</a> ≥ 1 and <a href="#">Maximum(baby_sequence)</a> = 1)	AND	<a href="#">procedure_code</a> begins with 5MD5
VBAC Attempted	( <a href="#">vbac_attempted</a> = "Y" and <a href="#">prev_cesarian_deliv</a> is ≥ 1) OR ( <a href="#">vbac_attempted</a> = "U", "A", or " " and <a href="#">prev_cesarian_deliv</a> ≥ 1 and (( <a href="#">labour_ind_flg</a> = "Y") or ( <a href="#">labour_spont_flg</a> = "Y" and <a href="#">labour_aug_flg</a> = "Y"))))		
VBAC Success	Woman VBAC Eligible and VBAC Attempted (above)	AND	<a href="#">procedure_code</a> begins with 5MD5
<b>Maternal Morbidity</b>			
Liver Complications	<a href="#">pp_fatty_liver</a> = "Y" or <a href="#">pp_liver_hematoma</a> = "Y"	OR	<a href="#">diagnosis_code</a> begins with O266, K760, or K768
Urinary Tract Infection	<a href="#">pp_uti</a> = "CY", "PY", "OT", "UN"	OR	<a href="#">diagnosis_code</a> begins with O23, O861, O862, O863, or N390
Sepsis	<a href="#">pp_pos_blood_culture</a> = "Y"	OR	<a href="#">diagnosis_code</a> begins with A40, A41, or O85
Wound Infection	<a href="#">pp_wound_infection</a> = "Y"	OR	<a href="#">diagnosis_code</a> begins with O860 or T814
Postpartum Hemorrhage with Transfusion	<a href="#">blood_transfusion_flg</a> = "Y"	AND	<a href="#">diagnosis_code</a> begins with O72

	PDR variables		CIHI Codes
Postpartum Hemorrhage with Hysterectomy			<code>diagnosis_code</code> begins with O72 AND ( <code>procedure_code</code> begins with 5MD60CB, 5MD60KE, 5MD60RC, or 5MD60RD; OR <code>procedure_code</code> begins with 1RM87LAGX and <code>extent</code> = SU; OR <code>procedure_code</code> begins with 1RM89 AND there is no <code>procedure_code</code> beginning with 1PL74, 1RS74, or 1RS80)
Antepartum Hemorrhage with Transfusion	<code>blood_transfusion_flg</code> = "Y" and <code>risk_code</code> = 8		
Eclampsia	<code>blood_transfusion_flg</code> = "Y"	AND	<code>diagnosis_code</code> begins with O441, O45, O46, O67, or O694
HELLP	<code>pp_hellp</code> = "Y"		<code>diagnosis_code</code> begins with O15
	<code>discharge_date</code> ≥ April 1, 2012	AND	<code>diagnosis_code</code> begins with O142
Anesthetic Complications			<code>diagnosis_code</code> begins with O29, O740, O741, O742, O743, O744, O747, O748, O749, O89, or T885
Shock			<code>diagnosis_code</code> begins with O751
Stroke			<code>diagnosis_code</code> begins with G459, I6, or I7
Pulmonary Embolism			<code>diagnosis_code</code> begins with O88
<b>Maternal Length of Stay</b>			
Antepartum Length of Stay	For the Delivery Episode of Care, hours between ( <code>delivery_date</code>    <code>delivery_time</code> – <code>admission_date</code>    <code>admission_time</code> ) where <code>institution_id</code> for the Delivery Admission ≠ 976 or 977		
Postpartum Length of Stay	For the Delivery Episode of Care, hours between ( <code>discharge_date</code>    <code>discharge_time</code> – <code>delivery_date</code>    <code>delivery_time</code> ) where <code>institution_id</code> for the Delivery Admission ≠ 976 or 977		
Total Length of Stay	For the Delivery Episode of Care, hours between ( <code>discharge_date</code>    <code>discharge_time</code> – <code>admission_date</code>    <code>admission_time</code> ) where <code>institution_id</code> for the Delivery Admission ≠ 976 or 977		
<b>Post-Delivery Admission Diagnoses</b>			
Routine Postpartum Care	Post-Delivery Admission	AND	<code>diagnosis_type</code> = "M" and <code>diagnosis_cd</code> begins with Z390, Z392
Postpartum Hemorrhage	Post-Delivery Admission	AND	<code>diagnosis_type</code> = "M" and <code>diagnosis_cd</code> begins with O72

	PDR variables		CIHI Codes
Postpartum Infection	Post-Delivery Admission	AND	<a href="#">diagnosis_type</a> = "M" and <a href="#">diagnosis_cd</a> begins with A40, A41, O85, O86, N390, or T814
Other Diseases Complicating Pregnancy	Post-Delivery Admission	AND	<a href="#">diagnosis_type</a> = "M" and <a href="#">diagnosis_cd</a> begins with O99
Hypertension or Eclampsia	Post-Delivery Admission	AND	<a href="#">diagnosis_type</a> = "M" and <a href="#">diagnosis_cd</a> begins with I100 or O10-O16
Other Wound Issues	Post-Delivery Admission	AND	<a href="#">diagnosis_type</a> = "M" and <a href="#">diagnosis_cd</a> begins with O70, O71, O75404, O900, O901, O902, or T813
Care of Breasts	Post-Delivery Admission	AND	<a href="#">diagnosis_type</a> = "M" and <a href="#">diagnosis_cd</a> begins with O91, O92, or Z391
Retained Placenta Without Hemorrhage	Post-Delivery Admission	AND	<a href="#">diagnosis_type</a> = "M" and <a href="#">diagnosis_cd</a> begins with O73
Pregnancy-Associated Mental Health	Post-Delivery Admission	AND	<a href="#">diagnosis_type</a> = "M" and <a href="#">diagnosis_cd</a> begins with F53
Complications of Anesthesia	Post-Delivery Admission	AND	<a href="#">diagnosis_type</a> = "M" and <a href="#">diagnosis_cd</a> begins with O74, O89, or T885
<b>Multiple Gestation</b>	<a href="#">multiple_birth_count</a> >1		
<b>Perinatal Mortality</b>			
Total Stillbirths	<a href="#">stillbirth</a> = "A", "P", or "U"		
Stillbirth >=500g	<a href="#">stillbirth</a> = "A", "P", or "U" and <a href="#">admission_weight</a> ≥ 500		
Early Neonatal Death	<a href="#">stillbirth</a> = "N" and <a href="#">discharge_to</a> = "D" and ( <a href="#">discharge_date</a> – <a href="#">date_of_birth</a> ) <7 days		
Late Neonatal Death	<a href="#">stillbirth</a> = "N" and <a href="#">discharge_to</a> = "D" and 7 days ≤ ( <a href="#">discharge_date</a> – <a href="#">date_of_birth</a> ) ≤ 27 days		
Post Neonatal Death	<a href="#">stillbirth</a> = "N" and <a href="#">discharge_to</a> = "D" and 28 days ≤ ( <a href="#">discharge_date</a> – <a href="#">date_of_birth</a> ) ≤ 364 days		
<b>Neonatal morbidity</b>			
Sepsis	<a href="#">baby_pos_blood_culture</a> = "Y"	OR	<a href="#">diagnosis_code</a> begins with A40, A41, or P36
Intracranial Hemorrhage			<a href="#">diagnosis_code</a> begins with P10 or P52
Respiratory Distress Syndrome			<a href="#">diagnosis_code</a> begins with P220
Transient Tachypnea			<a href="#">diagnosis_code</a> begins with P221
Other Respiratory Condition			<a href="#">diagnosis_code</a> begins with A481, J, P228, P229, P23-P27, P280, P281, P282, P283, P284, P288, P289, Q30-Q34, Q791, R091, or Z902
	0 ≤ <a href="#">apgar_5_minutes</a> <7	AND	<a href="#">diagnosis_code</a> begins with P285
Any Neonatal Morbidity			<a href="#">diagnosis_code</a> 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 ≤ <a href="#">apgar_5_minutes</a> <7	AND	<a href="#">diagnosis_code</a> begins with P285

	PDR variables		CIHI Codes
<b>Congenital Anomalies</b>			
Any Congenital Anomaly			<a href="#">diagnosis_code</a> begins with Q, G901, or P293
Chromosomal			<a href="#">diagnosis_code</a> begins with Q90-Q99
Circulatory System			<a href="#">diagnosis_code</a> begins with Q20-Q28 or P293
Cleft Lip or Palate			<a href="#">diagnosis_code</a> begins with Q35-Q37
Digestive System			<a href="#">diagnosis_code</a> begins with Q38-Q45
Eye, Ear, Face, or Neck			<a href="#">diagnosis_code</a> begins with Q10-Q18
Genital Organs			<a href="#">diagnosis_code</a> begins with Q50-Q56
Musculoskeletal System			<a href="#">diagnosis_code</a> begins with Q65-Q79
Nervous System			<a href="#">diagnosis_code</a> begins with Q00-Q07 or G901
Respiratory System			<a href="#">diagnosis_code</a> begins with Q30-Q34
Urinary System			<a href="#">diagnosis_code</a> begins with Q60-Q64
Other Specific Anomaly			<a href="#">diagnosis_code</a> begins with Q80-Q89
<b>Newborn Length of Stay</b>	For the Birth Episode of Care, hours between ( <a href="#">discharge_date</a>    <a href="#">discharge_time</a> – <a href="#">admission_date</a>    <a href="#">admission_time</a> ) where <a href="#">institution_id</a> for the Birth Admission ≠ 976 or 977		
<b>Newborn Feeding</b>			
Exclusive Breastfeeding	<a href="#">newborn_feeding</a> = "BR"		
Non-Exclusive Breastfeeding	<a href="#">newborn_feeding</a> = "BF"		
No Breastfeeding	<a href="#">newborn_feeding</a> = "FR"		
Any Breastfeeding	<a href="#">newborn_feeding</a> = "BR" or "BF"		
<b>Weight for Gestational Age</b>			
Small for Gestational Age	Baby's weight is below the 10 <sup>th</sup> percentile for gestational age and sex Based on gestational age, <a href="#">sex</a> , <a href="#">multiple_birth_count</a> , and <a href="#">admission_weight</a> where <a href="#">screen_source</a> = "NB" and <a href="#">sex</a> = "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, <a href="#">sex</a> , <a href="#">multiple_birth_count</a> , and <a href="#">admission_weight</a> where <a href="#">screen_source</a> = "NB" and <a href="#">sex</a> = "M" or "F"		
<b>Premature Birth</b>			
Spontaneous Preterm	gestational age <37 and <a href="#">labour_spont_flg</a> = "Y" gestational age <37 and <a href="#">labour_none_flg</a> = "Y" and ( <a href="#">cesarean_type</a> = 0	OR	Mother does not have a <a href="#">procedure_code</a> beginning with 5MD60)

	PDR variables		CIHI Codes
Iatrogenic Preterm	gestational age <37 and <a href="#">labour_ind_flg</a> = "Y"		
	gestational age <37 and <a href="#">labour_none_flg</a> = "Y" and <a href="#">cesarean_type</a> = 1, 2, 3, or 4		
Neonatal Intensive Care Use	<a href="#">nicu_ii</a> > 0 or <a href="#">nicu_iii</a> > 0 for the Birth Episode of Care		
Neonatal Transfer			
Transferred to Acute Care	<a href="#">screen_source</a> = "NB" and <a href="#">discharge_to</a> = "O" and <a href="#">institution_to</a> = 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	<a href="#">screen_source</a> = "NB" and <a href="#">institution_id</a> ≠ 102, 104, 109, 112, 116, 121, 130, 202, 302, 401, 501, 609, or 703 and <a href="#">discharge_to</a> = "O" and <a href="#">institution_to</a> = 102, 104, 105, 109, 112, 116, 121, 130, 202, 302, 401, 501, 609, or 703		
	<a href="#">screen_source</a> = "NB" and <a href="#">discharge_to</a> = "O" and <a href="#">institution_id</a> ≠ 104, 109, 116, or 202 and <a href="#">institution_to</a> = 104, 105, 109, 116, or 202		
Transfer to Acute Care Facility with Equal or Lower Level of Care	<a href="#">screen_source</a> = "NB" and <a href="#">discharge_to</a> = "O" and <a href="#">institution_id</a> = 104, 109, 116, or 202 and <a href="#">institution_to</a> = 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,		

	PDR variables		CIHI Codes
	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, 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, 907, 912, 917, 918, or 929		
Resuscitation After Birth	ippv_mask_flg = "Y" or ippv_ett_flg = "Y" or chest_compress_flg = "Y" or drugs = "Y"		
<b>Post-Neonatal Admission Diagnoses</b>			
Jaundice	Post-Neonatal Admission	AND	diagnosis_type = "M" and diagnosis_cd begins with P58, 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
<b>“Normal Labour”</b>	labour_spont_flg = "Y" and prev_cesarian_deliv = 0 and multiple_birth_count = 1 and baby_presentation_delivery = 6 and		

	PDR variables		CIHI Codes
	gestational age is between 37 and 41		
“Normal Childbirth”	<code>general_flg</code> ≠ "Y" and <code>spinal_flg</code> ≠ "Y" and <code>episiotomy_flg</code> ≠ "Y"	AND	<code>procedure_code</code> does not begin with 5MD53, 5MD54, 5MD55, 5MD56NN, 5MD56NR, 5MD56NW, 5MD56PC, 5MD56PF, 5MD56PJ, or 5MD60 AND <code>anesthetic_type</code> ≠ 1, 2, or 4 for a <code>procedure_code</code> beginning with 5MD
<b>Cervical Dilation on Admission</b>			
0-3cm	$0 \leq \text{cervical\_dilation\_on\_admis} < 4$		
4-10cm	<code>cervical_dilation_on_admis</code> ≥ 4		
Unknown	<code>cervical_dilation_on_admis</code> = null		
<b>Duration of Labour Stages</b>			
Duration of First Stage	hours between ( <code>second_stage_date</code>    <code>second_stage_time</code> – <code>first_stage_date</code>    <code>first_stage_time</code> ) where <code>first_stage_date</code> and <code>second_stage_date</code> ≠ null and <code>labour_none_flg</code> ≠ "Y"		
Duration of Second Stage	hours between ( <code>delivery_date</code>    <code>delivery_time</code> – <code>second_stage_date</code>    <code>second_stage_time</code> ) where <code>second_stage_date</code> ≠ null and <code>labour_none_flg</code> ≠ "Y"		
<b>Low Apgar Score</b>	$0 \leq \text{apgar\_5\_minutes} < 7$		

## **Gestational Age Algorithm**

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

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

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

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

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

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