

FACT SHEET

November 2014



Key Findings

In British Columbia, between 2004/05 and 2012/13, 95.5% of newborns received breast milk during the hospital stay after birth.

Out of all newborns, 72.2% were exclusively breastfed (EBF), 23.3% were non-exclusively breastfed, and 3.8% were not breastfed during the hospital stay after birth.

The proportion of breastfed newborns who were given breast milk within one hour after birth increased from 52.4 to 62.4%.

Rates of EBF were highest among mothers who:

- initiated breastfeeding in the first hour after delivery;
- gave birth between 20 and 34 years of age;
- had a vaginal delivery;
- had a normal pre-pregnancy BMI;
- did not have pre-existing hypertension;
- had a midwife involved in her care;
- were not identified to have an alcohol risk; and/or
- did not smoke during pregnancy

Breastfeeding Trends in BC 2004/05 to 2012/13

Public Health Implications

Although breastfeeding rates in BC are among the highest in Canada, there remains room for improvement. Data from the BC Perinatal Data Registry (BCPDR) suggest a continued need to target breastfeeding promotion initiatives to older and younger mothers, women who are underweight, overweight or obese, have pre-existing hypertension, deliver via cesarean section, and are risk for smoking or consuming alcohol during pregnancy.

Breastfeeding remains a major population health issue that requires continued efforts to inform the public about the benefits of breastfeeding and to encourage attitudinal shifts in support of this practice.

Factors associated with breastfeeding should be recognized and thoroughly understood by health care providers across the perinatal continuum who have the potential to continue influencing breastfeeding practice.

Background

The World Health Organization advocates for breastfeeding as the best nutrition source for optimal infant growth and development and recommends initiation of breastfeeding within the first hour after birth and exclusive breastfeeding until six months of age.¹ This is based on the recognition that breast milk optimizes infant development and provides health benefits to infants and nursing mothers. These benefits, combined with its convenience and low cost, make breastfeeding a logical target for public health promotion.²

Data from the Canadian Community Health Survey (CCHS) conducted in 2012 found that 89 per cent of Canadian mothers who gave birth in the previous five years initiated any breastfeeding, with 26 per cent of mothers exclusively breastfeeding for at least six months. Within Canada, mothers in British Columbia had the highest rates of any breastfeeding (96 per cent) and EBF at six months (41 per cent).¹

This fact sheet further describes breastfeeding practices in BC by presenting population-based trends in newborn feeding and timing of breastfeeding initiation during the hospital stay after birth, using data from a provincial perinatal registry.



Methods

The British Columbia Perinatal Data Registry (BCPDR) contains data abstracted from maternal and newborn medical charts for virtually all births occurring in a BC hospital or at home with a Registered Midwife. The BCPDR collects two breastfeeding variables: newborn feeding type and timing of breastfeeding initiation.

Newborn feeding type is defined as all foods (i.e. exclusive breast milk, non-exclusive breast milk, no breast milk) given to a newborn during the entire hospital stay, including at time of discharge. Using this definition, **exclusive breastfeeding (EBF)** includes all newborns who received exclusive breast milk and any breastfeeding includes all newborns who received exclusive or non-exclusive breast milk.

Timing of breastfeeding initiation (TBF) is defined as the time frame during which any breastfeeding first commenced or was attempted following delivery (available as of April 1, 2008 discharges only).

This analysis was restricted to singleton, live, term (gestational age ≥ 37 weeks), hospital births to BC residents with discharge dates between April 1, 2004 (fiscal year 2004/05) and March 31, 2013 (fiscal year 2012/13). Rates of EBF and TBF were examined by resident health authority. EBF and any breastfeeding was further examined by selected maternal characteristics identified via literature review. Relative risks and associated 95 per cent confidence intervals were calculated to test for significant associations ($p < 0.05$) between each maternal characteristic and EBF, controlling for the effect of age. Records with missing information were omitted from the analysis. Data were analyzed using SAS Version 9.3 (SAS is a business analytics and business intelligence software).

Results

In total, 392,392 births occurred in BC between 2004/05 and 2012/13, with the number of annual births gradually increasing over time (from 40,745 to 44,867 births per year).

A total of 337,644 infants were included in this analysis. Most infants received any breastfeeding during the hospital stay, with almost three-quarters of the infants receiving EBF (Figure 1).

The rate of any breastfeeding (94.8 to 97.4 per cent) and EBF (72.3 to 73.4 per cent) remained constant over the nine-year period. EBF trends showed some variation across health authorities (Figure 2). A gradual increase over time was observed in Vancouver Coastal Health and a moderate decrease was observed in Island Health, whereas EBF rates were relatively constant in the other health authorities.

Figure 1. Rates of Newborn Feeding Type 2004/05 to 2012/13

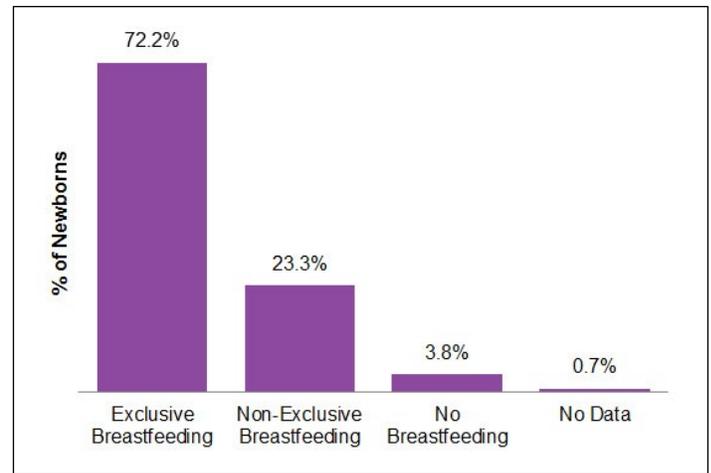
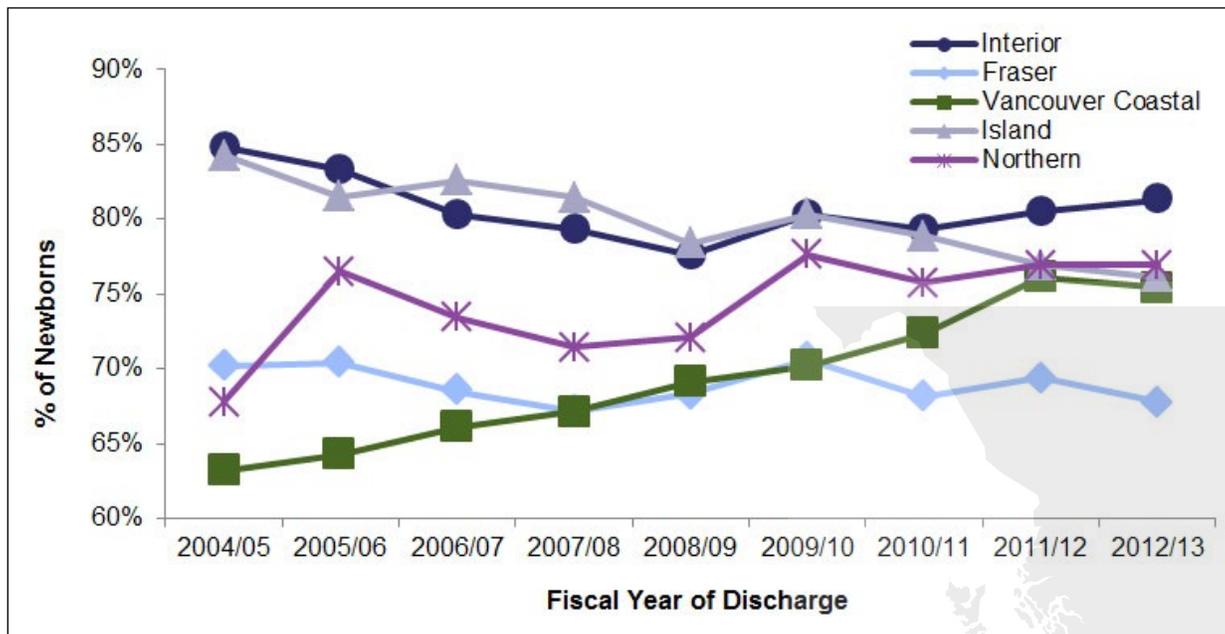


Figure 2. Annual EBF Rates by Resident Health Authority 2004/05 to 2012/13



The proportion of infants breastfed within the first hour after birth increased from 52.4 to 62.4 per cent between 2010/11 and 2011/12 (Figure 3). This increase was most noticeable in Island Health (Figure 4).

Figure 3. Annual TBF Rates, 2008/09 to 2012/13

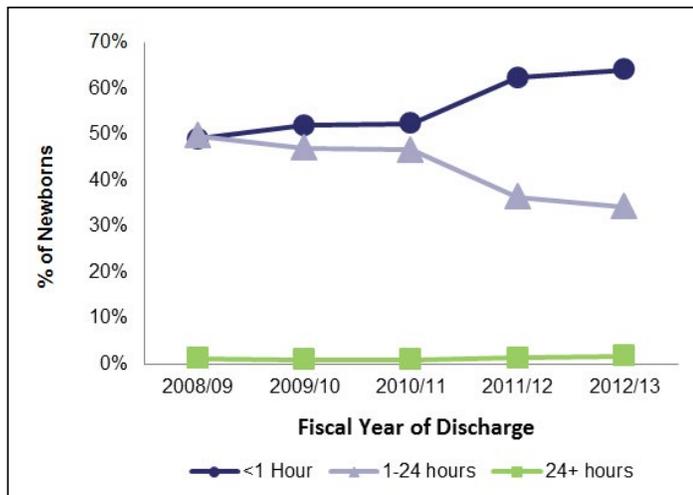
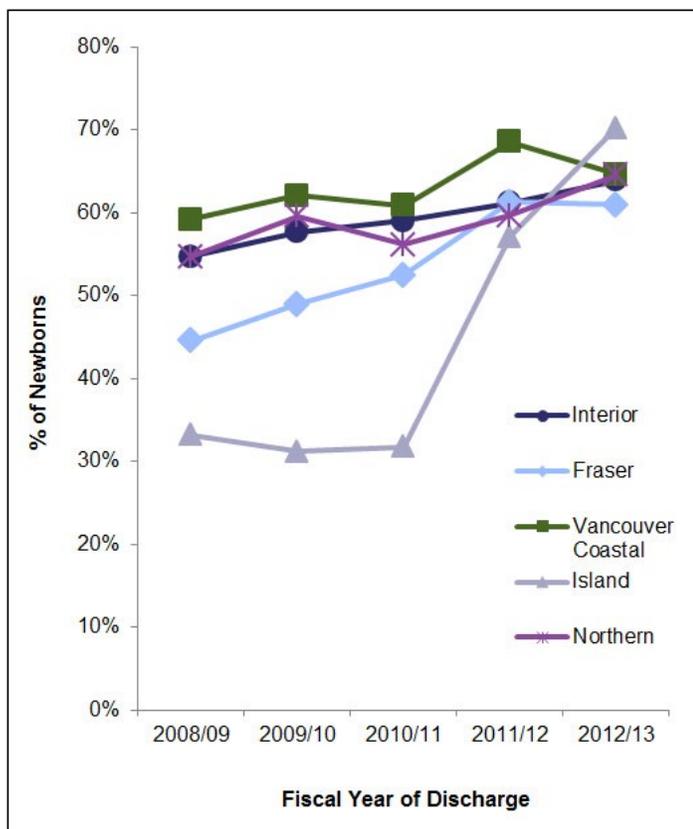


Figure 4. Annual Rates of Newborns Breastfed within One Hour After Birth by Resident Health Authority, 2008/09 to 2012/13



Factors significantly associated with EBF and associated relative risk estimates are presented in Table 1. Rates of EBF were highest among women who:

- initiated breastfeeding in the first hour after delivery;
- gave birth between 20 and 34 years of age;
- had a vaginal delivery;
- had a normal pre-pregnancy body mass index;
- did not have pre-existing hypertension;
- had a midwife involved in her care;
- were not identified to have an alcohol risk; and/or
- did not smoke during pregnancy.

Table 1. Factors Significantly Associated with EBF, 2004/05 to 2012/13

Maternal Characteristic	Freq (%)	EBF* (%)	Relative Risk of EBF (95% CI) [†]	Any BF [§] (%)
Timing of Breastfeeding Initiation^{††}				
<1 hour	56.1%	82.8%	Reference ^{††}	-
1-24 hours	42.7%	70.4%	0.85 (0.84-0.86)	-
24+ hours	1.2%	38.2%	0.46 (0.44-0.49)	-
Maternal Age				
<20	3.1%	69.8%	0.95 (0.94-0.96)	91.3%
20-24	13.9%	73.7%	1.00 (1.00-1.01)	94.5%
25-29	28.0%	74.0%	1.01 (1.00-1.01)	96.2%
30-34	32.8%	73.4%	Reference ^{††}	97.0%
35-39	18.2%	70.9%	0.97 (0.96-0.97)	96.8%
≥40	4.0%	65.0%	0.89 (0.87-0.90)	96.4%
Mode of Delivery				
Cesarean	29.9%	59.1%	0.75 (0.75-0.76)	95.9%
Vaginal	70.1%	78.5%	Reference ^{††}	96.3%
Pre-Pregnancy BMI^{**}				
Underweight	6.1%	68.2%	0.91(0.90-0.92)	95.7%
Normal	60.9%	74.0%	Reference ^{††}	97.2%
Overweight	20.6%	72.5%	0.97 (0.96-0.97)	96.7%
Obese	12.4%	66.7%	0.89 (0.88-0.90)	95.1%
Pre-Existing Hypertension				
Yes	1.8%	58.6%	0.81 (0.79-0.82)	95.2%
No	98.2%	73.0%	Reference ^{††}	96.2%
Midwifery Care				
Midwife	10.2%	90.1%	1.27 (1.27-1.28)	99.3%
No Midwife	89.8%	70.7%	Reference ^{††}	95.8%
Alcohol Use				
Yes	1.0%	63.2%	0.87 (0.84-0.89)	84.4%
No	99.0%	72.8%	Reference ^{††}	96.3%
Smoking Status				
Current Smoker	9.2%	68.2%	0.92 (0.92-0.94)	89.7%
Non-Smoker	90.8%	73.2%	Reference ^{††}	96.8%

* EBF = Exclusive breastfeeding.

[†] Excludes records with missing values. Relative risk <1 indicates a lower likelihood of EBF and relative risk >1 indicates a higher likelihood of EBF in comparison with the reference category. CI=Confidence Interval.

[§] Any BF = Any breastfeeding, includes exclusive and non-exclusive breastfeeding.

^{††} Includes exclusive and non-exclusive breastfeeding for discharges from fiscal years 2008/09 to 2012/13.

** BMI=Body Mass Index. BMI <18.5 underweight, 18.5-24.9 normal, 25.0-29.9 overweight, ≥30.0 obese.

^{†††} The category with the highest frequency was considered the reference.

Discussion

The data presented in this document provide a snapshot of breastfeeding trends in British Columbia based on a population-based data registry. Consistent with CCHS results, most term, singleton newborns received breast milk prior to hospital discharge. Breastfeeding rates were stable during the nine-year period. On the contrary, the TBF rate increased from 2010/11 to 2011/12. This increase might reflect an improvement in data collection as a result of changes in the data collection methodology.

Maternal and delivery characteristics affected EBF rates during the hospital stay. Newborns who received breast milk within the first hour were more likely to be exclusively breastfed compared to those who first received breast milk at least one hour after birth. This result is in line with an established body of literature that associates early initiation of breastfeeding with longer duration of breastfeeding.²

Positive associations between breastfeeding and maternal age have been consistently documented.^{1,3,4,5,6} As expected, mothers under 20 years of age had the lowest rate of any breastfeeding. However, in contrast to the literature, the lowest rate of EBF was observed among women aged 40 and older.⁷ This is an important finding given the increasing rates of women aged 35 years and older delivering in BC.⁸

The relationship between mode of delivery and breastfeeding practices is unclear.^{5,6,7,9} In this analysis, women with cesarean deliveries were less likely to exclusively breastfeed than women with vaginal deliveries. This is an important finding given the increasing trend of cesarean sections in some hospitals in BC over the last decade.⁸

In agreement with the literature,^{10,11,12} pre-existing conditions such as being overweight or obese and hypertension were associated with lower EBF rates. The prevalence of overweight and obesity among women delivering in BC is increasing (10.8 to 13.0 per cent from 2004/05 to 2012/13), suggesting the importance of targeted public health interventions.⁸

Women with Registered Midwife-involved care were more likely to exclusively breastfeed compared to those without midwifery care. Midwives in BC offer primary maternity care from early pregnancy to about six weeks postpartum.¹³ Evidence suggests that breastfeeding education spanning the perinatal period may increase breastfeeding initiation and EBF rates.⁶

Previous studies have shown that women who smoke or consume alcohol throughout their pregnancy have lower breastfeeding rates.^{6,11,14,15} In this analysis, lower rates of EBF were noted among current smokers and women identified to have an alcohol risk.

Potential limitations to the analysis should be noted. First, it is assumed that coding practices for newborn feeding practices were consistent across all facilities in BC. Second, home births were excluded due to a high proportion of missing breastfeeding data among this population. Finally, data available in the BCPDR are limited to information collected during the in-patient birth episode and thus do not capture practices following discharge, such as duration of breastfeeding. Socioeconomic indicators such as income, education, and marital status as well as intention to breastfeed, were also unavailable. BCPDR data can be supplemented by large surveys such as the Maternal Experiences Survey and the Canadian Community Health Survey, which provide insight into breastfeeding practices in the community following discharge.



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