

Infant Feeding

Description

- Proportion of women who *intend to exclusively breastfeed* per the number of women who give birth
- Proportion of infants fed *breastmilk only / combination breast milk and substitute / breast milk substitute* at hospital or Midwifery Practice Group (MPG) per the number of live births

Specific Indicators

- Intention to exclusively breastfeed
- Infant-feeding at entry to public health service

Ontario Public Health Standards

The Ontario Public Health Standards (OPHS) establish requirements for the fundamental public health programs and services carried out by boards of health, which include assessment and surveillance, health promotion and policy development, disease and injury prevention, and health protection. The OPHS consist of one Foundational Standard and 13 Program Standards that articulate broad societal goals that result from the activities undertaken by boards of health and many others, including community partners, non-governmental organizations, and governmental bodies. These results have been expressed in terms of two levels of outcomes: societal outcomes and board of health outcomes. Societal outcomes entail changes in health status, organizations, systems, norms, policies, environments, and practices and result from the work of many sectors of society, including boards of health, for the improvement of the overall health of the population. Board of health outcomes are the results of endeavours by boards of health and often focus on changes in awareness, knowledge, attitudes, skills, practices, environments, and policies. Boards of health are accountable for these outcomes. The standards also outline the requirements that boards of health must implement to achieve the stated results.

Outcomes Related to this Indicator

- Board of Health Outcome (Reproductive Health): The board of health is aware of and uses epidemiology to influence the development of healthy public policy and its programs and services for the promotion of reproductive health.
- Board of Health Outcome (Foundational Standard): The public, community partners, and health care providers are aware of relevant and current population health information.

Available at: <http://www.ontario.ca/publichealthstandards>

Assessment and Surveillance Requirement Related to this Indicator:

- Reproductive Health: The board of health shall conduct epidemiological analysis of surveillance data... in the area of reproductive health outcomes.

Corresponding Indicators in Public Health Practice

Corresponding Health Indicators from Statistics Canada and CIHI

- The Canadian Community Health Survey: In the CCHS 2.1 (2003) cycle, a Maternal experiences - Breastfeeding (MEX) Module was introduced and included in each

subsequent annual cycle for women aged 15-55 years. This module asks women who have given birth in the last 5 years if they breastfed or tried to breastfeed their last child and their reasons for not breastfeeding, if relevant. Breastfeeding data from multiple years of CCHS cross-sectional surveys can be combined to get a better understanding of trends over time. However, it is recommended to use BORN data for reporting on infant feeding, as BORN captures all mothers and babies born in Ontario, while the CCHS uses a more restricted sampling frame. Available at: <http://www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/prenatal/module-eng.php>

Corresponding Indicator(s) from Other Sources

- None

Data Source

Numerator & Denominator: [BORN Information System \(BIS\)](#)

Original Source: Better Outcomes Registry Network (BORN) Ontario

Distributed by: Better Outcomes Registry (BORN) Ontario

Suggested citation (see Data Citation Notes): BORN Information System [years], Date

Extracted: [date].

Alternative Data Sources

- None

Data Elements in the BORN Information System (BIS)

Name	BORN ID	Description	Categories	Encounter
Intention to Breastfeed	M0047	Identifies whether the mother intends to breast feed her infant. Self-reported during pregnancy or at time of birth.	Yes, intends to exclusively breastfeed; Yes, intends to combination feed (use breast milk and breast milk substitute); No, does not intend to breastfeed; Mother Unsure; Unknown, intent not collected	Birth (Mother), Labour, Antenatal General
Newborn feeding From Birth to Discharge from Hospital or Birth Centre	N0044	The type of feeding given to the newborn at time of discharge from hospital.	Breast Milk Only; Combination of breast milk and breast milk substitute; Breast milk substitute - Formula only; Breast milk substitute – Other; None; Unknown	Postpartum (Child)

Data Elements in the BORN Information System (BIS)

Dimension	Categories
Maternal Age Group	<20, 20-24, 25-29, 30-34, 35-39, 40-44, ≥45
Parity	1, 2, 3-4, ≥5, Missing Data
Newborn DOB Calendar	2013, 2014, etc.

Analysis Check List

- BORN data are available to PHUs by custom request and through the BORN Ontario reporting environment as Public Health Standard Reports and the Public Health Cube. All users are required to sign a data sharing agreement and adhere to strict privacy and security measures.
- Refer to the [BORN Information System \(BIS\)](#) resource for more information about the data and the [BORN Data Dictionary](#) for a list and description of data elements captured in the BIS.
- For key information used by the Reproductive Health Sub-Group (RHSG) in their revision of the reproductive health core indicators and accompanying resources, refer to the [Reproductive Health Core Indicators Documentation Report](#).
- The BORN licensing agreement with health units does not require suppression of small cells however BORN recommends the suppression of cells less than 6, although zero counts may be presented. This practice decreases the risk of re-identifying individuals. In general, caution should be used when reporting data at a level that could identify individuals (e.g., reporting at the dissemination area by maternal age).
- Aggregation (combining years, age groups, geographic levels, categories or pick-list items) should be considered for small numbers.
- In general, analyze by mother's residence, not place of infant's birth. The standard reports and cube are tabulated by maternal residence. Ontario births include only Ontario residents and exclude births to mothers that reside out-of-province.
- Data available represents all data that has been entered, submitted and acknowledged into the BIS as of the time of extraction and as such, the numbers are subject to change. The BIS is a live database. For any analysis of the BIS, ensure that all or a majority of hospitals and midwifery practice groups in your area have acknowledged their data.
- Caution should be taken when interpreting data if the percentage of "missing data" is greater than 5%. BORN Ontario recommends not reporting data if the missing is 30% or more. See "Indicator Notes" below for more information.
- Although the BIS was launched in January 2012, data may not be complete for some elements and geographical areas in that first year. It is recommended that analysis begin for calendar year 2013.
- In the Public Health Standard Reports, comparator data for Ontario or Peer Group is only available for six months prior to the date of extraction. Public Health Units are categorized into Peer Groups as per the 2011 classifications.
- If using the Public Health Standard Reports:
 - For Intention to Exclusively Breastfeed:
 - Select the PHU-Pregnancy report under Clinical Reports
 - Specify the dates/years of analysis
 - Go to the link for 'Distribution of intention to breastfeed, by public health unit and province'
 - Calculate the percentages from the standard report or export the table to Excel

- For Infant Feeding at Entry to Public Health Service:
 - Select the PHU-Newborn report under Clinical Reports
 - Specify the dates/years of analysis
 - Go to the link for 'Distribution of infant feeding from birth to discharge from hospital or birth centre'
 - Calculate the percentages from the standard report or export the table to Excel
- If using the Public Health Cube:
 - Intention to Exclusively Breastfeed
 - Select Dimension > Pregnancy > Feeding > Intention to Breastfeed
 - Select Measures > Pregnancy > # of Pregnancies – Women Who Gave Birth
 - Add filters to the tables and specify by right clicking on each of the following dimensions and selecting the following categories:
 - Maternal Age Group (found under Pregnancy > Maternal Characteristics) = <20, 20-24, 25-29, 30-34, 35-39, 40-44, ≥45
 - Newborn DOB Calendar (found under Newborn DOB > Newborn DOB Calendar) = Deselect 2012 (and others as appropriate for your analysis)
 - Parity (found under Dimensions > Pregnancy > Pregnancy History > Parity) = Parity 1, Parity 2, Parity 3-4, Parity ≥ 5
 - Calculate percentages within the Cube or export to Excel
 - Infant Feeding at Entry to Public Health Service
 - Select Dimension > Newborn > Feeding > Feeding at Hospital or MPG
 - Select Measures > Birth > # of Births – Live Births
 - Add filters to the tables and specify by right clicking on each of the following dimensions and selecting the following categories:
 - Maternal Age Group (found under Pregnancy > Maternal Characteristics) = <20, 20-24, 25-29, 30-34, 35-39, 40-44, ≥45
 - Newborn DOB Calendar (found under Newborn DOB > Newborn DOB Calendar) = Deselect 2012 (and others as appropriate for your analysis)
 - Parity (found under Dimensions > Pregnancy > Pregnancy History > Parity) = Parity 1, Parity 2, Parity 3-4, Parity ≥ 5
 - Calculate percentages within the Cube or export to Excel

Method of Calculation

Intention to Exclusively Breastfeed

[Number of women with intention to exclusively breastfeed / Total number of women who gave birth (live or still)] x 100

Infant Feeding at Entry to Public Health Service

[Number of infants being fed *breastmilk only* in hospital or MPG / Number of live births] x 100

[Number of infants being fed *combination breast milk and substitute* in hospital or MPG / Number of live births] x 100

[Number of infants being fed *breastmilk substitute (formula and other)* in hospital or MPG / Number of live births] x 100

Basic Categories

- Geographic areas of patient residence: Ontario, public health unit, dissemination area

Indicator Comments

- Breastfeeding has a number of well-documented short and long-term health benefits for both babies and mothers (1,2). It is known to reduce the risk of sudden infant death syndrome and gastrointestinal, ear and respiratory infections throughout childhood (1). Breastfeeding infants is also associated with lower levels of diabetes and obesity later in life (3).
- Exclusive breastfeeding of infants until 6 months of age is recommended by the World Health Organization (WHO) (4). Exclusive breastfeeding is defined as no other food or drink, not even water, except breast milk (including milk expressed or from a wet nurse) for 6 months of life, but allows the infant to receive oral rehydration solution, drops and syrups (vitamins, minerals and medicines).
- In recent years, there has been increased public health attention directed towards increasing rates of exclusive breastfeeding as part of the WHO Baby-Friendly Initiative (5). As such, public health practitioners have a unique and important role in promoting and supporting breastfeeding.
- There are many factors known to influence breastfeeding rates including: age, income, education, living with a partner, previous pregnancies, home delivery, attitudes and comfort with breastfeeding, hospital practices, social network and return to work / school (6). Data on these factors are also available in the BORN database, although there may be high rates of missing information.
- The 'Infant Feeding at Entry to Public Health Service' indicator is measured using the dimension 'Feeding at hospital or MPG'. The 'Feeding at hospital or MPG' dimension was chosen as opposed to 'Feeding at discharge' due to inconsistencies in time of discharge between hospitals and Midwifery Practice Groups (MPGs). In hospitals, discharge can be within a few days after birth but in MPGs it is measured when the MPG discharges the infant from their care, which is usually 6 weeks after birth. This results in high levels of missing information for the 'Feeding at discharge' dimension among infants born in MPGs. As such, the use of the 'Feeding at hospital or MPG' approximates infant feeding at entry to public health service in the best possible current method, given the data quality issues of the variable 'Feeding at discharge'.
- The 'Infant Feeding at Entry to Public Health Service' indicator uses the '# of births – Live' measure for the denominator data (as opposed to '# of births - discharged home or home births') to ensure consistency between populations drawn for the numerator and denominator. More specifically, infants who are discharged to the neonatal intensive care unit or to another hospital would be captured in the 'Feeding at hospital or MPG' but excluded from the '# of births - discharged home or home births'. However, the LDCP Infant Feeding Surveillance Pilot Study (7) and the BORN Standard Report available through the BIS use the '# of births - discharged home or home births' as the denominator for their infant feeding indicator. As of 2016, BORN is currently addressing this issue and changes may be made in future data collection.
- Data are available from April 1st, 2012 to present. BORN in their reports use a waiting period of 6 months to give hospitals and MPGs the opportunity to verify data before reporting. A recent report by Public Health Ontario found that the time to 99% completeness for BORN data ranges by public health unit and can be up to 15 months (8). For more information on the lag time by public health unit, please refer to Table 4 (page 20-21).
- Prior to April 2014, the indicator for 'intention to exclusively breastfeed' did not distinguish between intention to exclusively breastfeed and intention to breastfeed in combination with breast milk substitute. If data from before April 2014 is being used, the indicator can be adapted to 'intention to breastfeed (exclusively or in combination)' by

combining mothers who intended to exclusively or combination-feed in the more recent data.

- For any indicator, if missing is less than 5%, individuals with missing values should be excluded. If missing is 5-30%, individuals with missing values should be included as their own category. If missing is more than 30%, the indicator should not be reported.
- As of Fall 2014, there were three level 3 NICUs that had not yet started submitting data to BORN (i.e. Mount Sinai, London Health Sciences, and Sunnybrook). As such, for some public health units, there are large proportion of missing information. This error is currently being worked on and data from January 2016 onwards are expected to be more complete.
- Some cells may have very small counts, especially when obtaining data by dissemination area. Data can be rolled up into neighbourhood level or multiple years can be combined to address small cell counts that threaten confidentiality.

Cross-References to Other Indicators

- None

Cited References

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2. Office of the Surgeon General, Centers for Disease Control and Prevention & Office on Women's Health (2011). *The Surgeon General's Call to Action to Support Breastfeeding*. Rockville (MD): Office of the Surgeon General (US). Available from: <http://www.ncbi.nlm.nih.gov/books/NBK52687/>.
3. Owen, C. G., Martin, R. M., Whincup, P. H., Smith, G. D., & Cook, D. G. (2006). Does breastfeeding influence risk of type 2 diabetes in later life? A quantitative analysis of published evidence. *The American Journal of Clinical Nutrition*, 84(5), 1043-1054.
4. WHO. (2016). *The WHO's infant feeding recommendation*. *The World Health Organization*. Retrieved 26 January 2016, from http://www.who.int/nutrition/topics/infantfeeding_recommendation/en/.
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6. Ontario Public Health Association (2007). *Breastfeeding Position Paper*. Ontario: OPHA Breastfeeding Workgroup.
7. Haile R., Procter TD., Alton GD. et al. on behalf of LDCCP Breastfeeding Surveillance Project Team. (2015). *Infant Feeding Surveillance Pilot Study: Final Report and Recommendations*. Woodstock, Ontario: LDCCP Breastfeeding Surveillance Project Team.
8. Ontario Agency for Health Protection and Promotion (Public Health Ontario). (2016). *BORN Information System: Data quality assessment for public health monitoring*. Toronto: Queen's Printer for Ontario.

Changes Made

Date	Type of Review	Changes Made By	Changes Made
June 2016	New indicator	Reproductive Health Sub-Group	New indicator
December 2016	Formatting	Kandace Ryckman	Incorporating reviewer comments, updating format

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