

# Infant Feeding

*The terms “women” and “breast milk/breastfeeding” are used throughout this document to stay consistent with the data source. People with various gender identities can get pregnant and have children, and are included in these data.*

*The terms chestfeeding or bodyfeeding can also be used alongside breastfeeding.*

## Description

- Percentage of women who *intend to exclusively breastfeed* per the number of women who give birth.
- Percentage 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 (breastfeeding initiation)

## Ontario Public Health Standards

- Breastfeeding (Healthy Growth and Development Guideline, 2018)
- Growth and Development (Healthy Growth and Development Guideline, 2018)

## 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

- From 2015 to 2018, a [Locally Driven Collaborative Project \(LDCP\)](#), supported by Public Health Ontario (PHO), developed standard questionnaires / surveys and associated analytic guidance documents for infant feeding data collection. This work was led by several Public Health Units (PHUs) across Ontario. The resulting tools included a [6-Month Retrospective Single Time Point Questionnaire](#) and a [Prospective Multiple Time Point Questionnaire](#). Each of these tools includes the questionnaire, indicator definitions, and analysis codes. Further documentation on these LDCPs can be found on [PHO's LDCP site](#), on the 'past projects' tab. These tools can be viewed as model indicators as they give a standardized way to collect and analyze infant feeding data including duration (up to and beyond six months of age).

## Data Source

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

Original Source: Better Outcomes Registry & Network (BORN) Ontario

Distributed by: Better Outcomes Registry & Network (BORN) Ontario  
 Citation ([see Data Citation Notes](#)): Public Health Unit Analytic Reporting Tool (Cube), BORN Information System (BIS), BORN Ontario. Information accessed on [Month DD, YYYY]

Name of Table\* (Standard Report), BORN Information System (BIS), BORN Ontario.  
 Information accessed on [Month DD, YYYY]

\*For example: Distribution of Infant-feeding at entry to public health service, by public health unit and province OR Distribution of intention to breastfeed, by public health unit and province

## Alternative Data Sources

- None

## BIS Data Elements

Name and Description	Categories	Encounter	BORN ID
<b>Intention to Breastfeed</b> Identifies whether the mother intends to feed her infant breast milk. Self-reported during pregnancy or at time of birth.	Yes (prior to April 2014); 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	<b>M0047</b>
<b>Newborn feeding From Birth to Discharge from Hospital or Birth Centre</b> The type of feeding given to the newborn from the time of birth to discharge from hospital or birth centre.	Breast Milk Only; Combination of breast milk and breast milk substitute; Breast milk substitute - Formula only; Breast milk substitute - Other; None; Unknown	Postpartum (Child)	<b>N0044</b>

## 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, Missing data
Parity	0, 1, 2, 3-4, ≥5, Missing data
Newborn DOB Calendar	2013, 2014, etc.; Can also filter by year, quarter, or month if required

## Analysis Checklist

- 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 Unit Analytic Reporting Tool (cube). All users are required to sign a data sharing agreement and adhere to strict privacy and security measures.
- Refer to the [Using BORN Ontario Data for Public Health Surveillance – User Guide](#) and 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.
- Data from the Legacy Datasets (birth data prior to April 1, 2012) is available from BORN upon request. However, not all data elements available in BORN are available in the legacy datasets.

- Although the BIS was launched in April 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.
- The BORN licensing agreement with health units does not require suppression of small cells; however, BORN recommends the suppression of cells five or less, 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 counts.
- Data in the Standard Reports represents all data that has been entered, submitted, and acknowledged into the BIS as of the date of extraction. Data in the PHU Analytics cube is based on submitted data only. As such, the numbers are subject to change as organizations continue to submit, acknowledge and fix errors in their data.
- The date of extraction must be included in the data source citation. The date of extraction is not automatically recorded when the user exports BIS data; the user must add it.
- 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.
  - Every PHU standard report starts with a month-end data acknowledgement summary that can be used to verify the proportion of hospitals/midwife practice groups that have acknowledged their data in your area.
  - Please note: midwife-attended hospital births must have acknowledgement from both the hospital AND the midwifery practice group in order for the month to show as acknowledged in the PHU acknowledgement report. Unacknowledged data does not necessarily mean that the data is missing, it has just not been signed off by the submitting organization.
- Caution should be taken when interpreting data, if the percentage of “missing data” for a particular data element is  $\geq 10\%$ . BORN Ontario recommends not reporting data if the missing is  $\geq 30\%$  or more.
- In the Public Health Standard Reports, comparator data is provided for Ontario, and also for Statistics Canada Peer Group if there are more than three PHUs within the group. Both comparators are only available for six months prior to the date of extraction. The Ontario comparator includes all PHUs, while the Peer Group comparator excludes the PHU using the report. PHUs 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 and PHU 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:
    - It is not recommended to use the public health standard reports to calculate this indicator due to differences in the measure being used. See indicator comments for further information.
- **If using the Public Health Cube:**
  - Intention to Exclusively Breastfeed
    - Select Dimension of interest “Intention to Breastfeed” (found under Dimensions > Pregnancy > Feeding)

- Select Measure: “# of Pregnancies – Women Who Gave Birth” (found under Measures > Pregnancy)
- 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 Dimensions > Pregnancy > Maternal Characteristics) = <20, 20-24, 25-29, 30-34, 35-39, 40-44, ≥45
  - Newborn DOB Calendar (found under Dimensions > Newborn DOB > Newborn DOB Calendar) = Deselect 2012 and others as appropriate for your analysis
  - Parity (found under Dimensions > Pregnancy > Pregnancy History) = Parity 0, 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 of interest “Feeding at Hospital or MPG” (found under Dimensions > Newborn > Feeding)
  - Select Measure: “# of Births – Live Births (found under Measures > 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 Dimensions > Pregnancy > Maternal Characteristics) = <20, 20-24, 25-29, 30-34, 35-39, 40-44, ≥45
    - Newborn DOB Calendar (found under Dimensions > Newborn DOB > Newborn DOB Calendar) = Deselect 2012 and others as appropriate for your analysis
    - Parity (found under Dimensions > Pregnancy > Pregnancy History) = Parity 0, 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 who gave birth (live or still) who reported 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 *breast milk only* in hospital or MPG / Number of live births] x 100

[Number of infants being fed *combination breast milk and breast milk substitute* in hospital or MPG /

Number of live births] x 100

[Number of infants being fed *breast milk 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

- Breast milk is the optimal source of nutrition for infants from birth to six months of age (1). Breastfeeding is a topic of consideration for public health units in the Healthy Growth and Development Guideline of the Ontario Public Health Standards (2).

- Breastfeeding/chestfeeding has a number of well-documented short and long-term health benefits for both babies and breastfeeding persons (3,4). It is known to reduce the risk of sudden infant death syndrome, necrotizing enterocolitis, ear and respiratory infections throughout childhood (5). Breastfed infants may also have lower levels of diabetes and obesity later in life (6). Maternal benefits include prevention of breast cancer, improved birth spacing, and potential reduced risk of diabetes and ovarian cancer (5).
- Current Canadian and international guidelines recommend exclusive breastfeeding for six months, and continued breastfeeding for up to two years and beyond, with the introduction of age-appropriate complementary foods (1,7). 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) (1,7).
- Public health practitioners have a unique and important role in promoting and supporting breastfeeding in the community including working with partners in multiple settings through public awareness and education, creating supportive environments for breastfeeding and supporting individuals who are having difficulty breastfeeding (2).
- 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 (8). Data on some of these factors are also available in the BORN database, although there may be high proportions of missing information.
- The 'Infant Feeding at Entry to Public Health Service' indicator, also referred to as "Breastfeeding Initiation," is measured using the dimension 'Feeding at hospital or MPG' (Midwifery Practice Groups). The 'Feeding at hospital or MPG' dimension was chosen as opposed to 'Newborn Feeding at discharge' due to inconsistencies in time of discharge between hospitals and 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.
- The 'Infant Feeding at Entry to Public Health Service' indicator uses the '# of births – Live' measure for the denominator data. This denominator is used to ensure consistency between populations drawn for the numerator and denominator, (as opposed to '# of births - discharged home or home births'). 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 (9) 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 2023, BORN is currently addressing this issue and changes may be made in future data collection.
- The "# of births - Live" measure includes all live births. However, where a neonatal death occurs, infant feeding information is not captured. Therefore, these babies will be included in the data but will be missing feeding information.
- 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.

- It is important to understand the degree, as well as the distribution (i.e., random v.s. systematic) of missing data for infant feeding elements from BORN for your health unit prior to reporting on it. Factors affecting missing data rates may include, but are not limited to, issues such as 1) the designation of the data element within the BIS (i.e., mandatory, conditional, optional); 2) hospital resources to input these data into the BIS (e.g. as of May 2023, one Ontario level 3 neonatal intensive care unit (NICU) does not yet enter data into the BIS); 3) certain questions on sensitive subjects may elicit stronger social desirability response bias or non-response.
  - The total missing for *Intention to exclusively breastfeed* for Ontario was 5.7% in 2020. By Public Health Unit, the total missing ranged from 0.7-11.5% (10).
  - The total missing for *Infant Feeding at Entry to Public Health Service* for Ontario was 13.6% in 2020. By Public Health Unit, the total missing ranged from 4.6-23.7% (10).
- In the standard reports and cube, geography is assigned based on the infant's residence at the time of birth, not the location of birth. The majority of the time, but not always, the infant's residence is the same as the birthing parent residence. This is important for custom data requests, as requesters can specify if data should be analyzed by the infant's residence or the birthing parent's.
- Outside of the standard reports or a custom data request, Ontario comparator data and data for other PHUs for selected indicators can be accessed through Public Health Ontario's [Maternal Health Snapshot](#) (10).

## Cited References

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## Acknowledgements

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## Revision History

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
January 2024	Formal review	Reproductive Health Sub-Group	Reviewed document to ensure accuracy with data source and consistent wording across indicators. Updated indicator comments and related sources. Added in reference to the LDCP documents for duration data collection to the corresponding indicators section.