



Infant Feeding in Oxford County

An In-depth Analysis of Infants Born Between January 2015 and December 2017

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Summary

This is the first comprehensive analysis of data collected from the infant feeding surveys completed by mothers living in Oxford County. This information provides insight into infant feeding behaviours when babies are 2 months, 6 months and 12 months old. This data also allows us to monitor the proportion of mothers breastfeeding exclusively or breastfeeding in combination with formula over time. This type of continuous data collection (surveillance) can be used to see the impact of public health interventions, such as those aimed at increasing rates of breastfeeding in the population.

Across all three survey time points, there were some common themes. The first two weeks after birth were a key time when babies were first introduced formula. The first month was a key time when mothers stopped breastfeeding or providing breastmilk. Whether mothers were feeding their babies breastmilk only or a combination of breastmilk and formula, they reported similar difficulties or concerns with breastfeeding. These concerns included: not having enough milk, infant hunger, fussy or colicky baby, baby being unable to latch or breastfeed well, nipple/breast pain or biting and problems delivering or expressing breastmilk. Many mothers, however, also reported that they stopped breastfeeding for convenience or because they were returning to work or school; especially at the 12-month time point.

Mothers completing these surveys are more likely to be:

- exclusively breastfeeding at entry to public health service
- first-time mothers
- older (i.e., 30 to 34 years)
- living in an urban area (i.e., Woodstock, Ingersoll or Tillsonburg)
- living with a high household income (i.e., \$90,000 or more)
- college or university educated

It is important to recognize that these results may not be generalizable to all new mothers living in Oxford County. Furthermore, these surveys do not include mothers who give birth outside of a hospital or mothers whose babies were transferred to a neonatal intensive care unit (NICU). The limitations of these results should be considered when applying these findings across the population.

Infant Feeding in Oxford County

Background

The World Health Organization (WHO) recommends that mothers exclusively breastfeed their newborn babies for the first six months and continue to breastfeed while introducing solids and other appropriate liquids for up to two years and beyond.¹ Breastfeeding provides all the nutrients that a baby needs for healthy growth and development while offering protection against health conditions such as respiratory infections, asthma and diabetes and reducing the risk of sudden infant death syndrome (SIDS).^{2,3} Breastfeeding also benefits mothers by reducing the risk of ovarian and breast cancer.⁴ Furthermore, exclusively breastfeeding during the first six months reduces infant deaths from gastrointestinal infections and naturally spaces pregnancies through hormonal birth control, known as lactation amenorrhea.⁵ Because of the importance of breastfeeding for child and maternal health, the WHO recently set a goal to increase the global rate of exclusive breastfeeding in the first 6 months to at least 50% by 2025.² It is important to recognize, however, that every situation is different and not all mothers may choose to offer breastmilk.

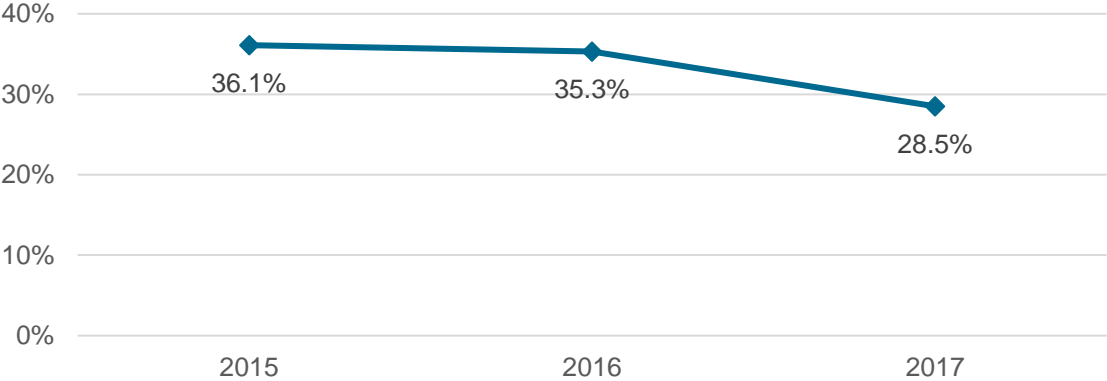
One way to increase breastfeeding rates is through the Baby-Friendly Initiative (BFI). The BFI is an international program created by the WHO and UNICEF to promote, support and protect breastfeeding. High quality recent evidence shows that the BFI in hospitals increases the rate of exclusive breastfeeding in the first six months.⁶ Designated facilities are required to provide families with information that allows them to make an informed decision about infant feeding. The program recognizes that all families should be supported regardless of feeding method. From 2011 to 2018, BFI designation was an accountability agreement indicator used by the Ministry of Health and Long-Term Care to measure health unit performance.⁷ The former Oxford County Public Health first achieved BFI designation in 2014. In order to maintain BFI designation, health units are required to continue monitoring breastfeeding statistics, which are to be reported every year to the provincial BFI Committee and every two years to the Breastfeeding Committee for Canada.

In order to continue monitoring breastfeeding statistics, Southwestern Public Health administers a series of three surveys to consenting new mothers in Oxford County: one each when the baby is 2 months, 6 months and 12 months old.^a The BFI Online database developed by Ericsson Analytics was created to hold data from these surveys. This report is the first to share results from the BFI Online surveys conducted in Oxford County for babies born between 2015 and 2017. Importantly, the data presented in this report is not comparable to Elgin St. Thomas or to other health units because the surveys were administered differently. The results from this report will be used to inform programs and services offered by Southwestern Public Health and may be used to increase awareness of the importance of breastfeeding and supports available in the community.

Results

In Oxford County, there are approximately 1,200 live births each year.⁸ Southwestern Public Health endeavours to recruit most new mothers living in Oxford County to participate in the BFI Online surveys (excluding those with preterm births). From 2015 to 2017, an average of 33.4% new mothers consented to be contacted about these surveys via the Healthy Babies Healthy Children (HBHC) screening tool consent form. As noted in Figure 1, the response rate has been declining over time.

Figure 1. Consent rates, Oxford County, 2015-2017

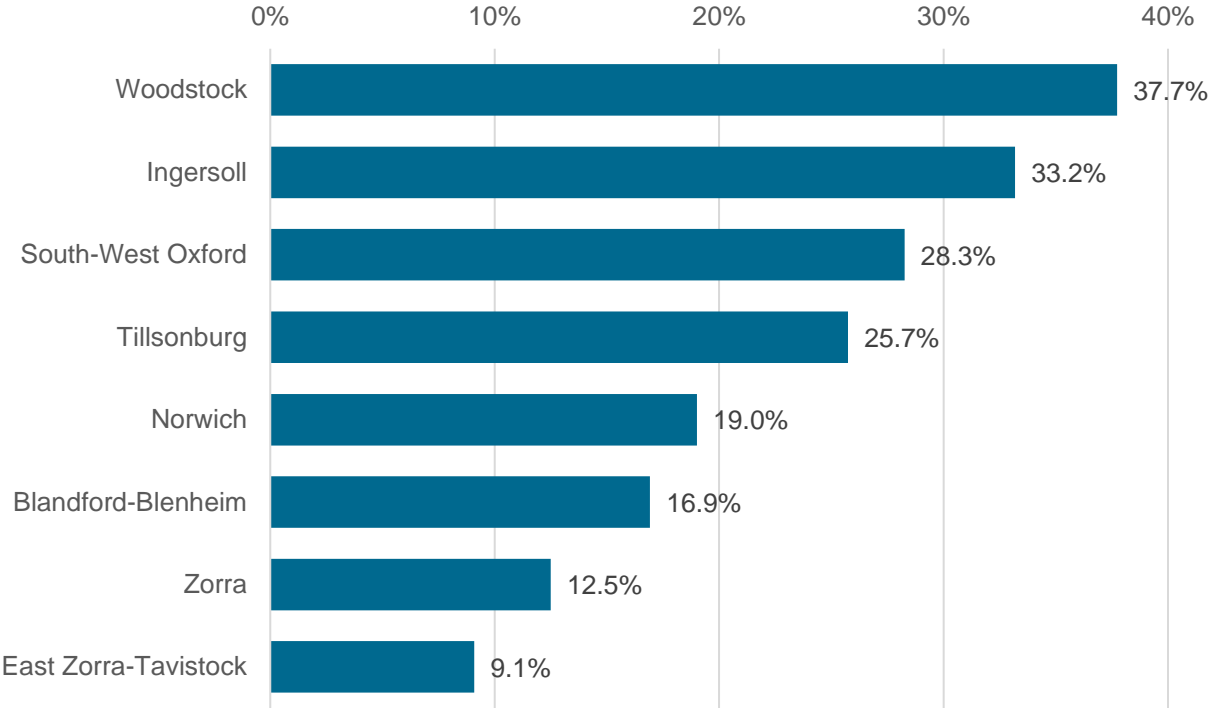


^a Please see the appendices for more information about methods (including survey development and analysis), the introduction email sent to consenting clients and the survey questions.

Prior to 2017, an incentive for completing the survey was added to increase response rates. Mothers who completed all three surveys were entered into a draw to win a \$50 gift card; this draw occurred twice per year (June and December). Telephone and/or email reminders were also given to participants at each survey time point. However, not all clients necessarily received those reminders.

Within Oxford County, the consent rate varied by municipality. From 2015 to 2017 combined, mothers living in Woodstock had the highest consent rate (37.7%) followed by mothers living in Ingersoll (33.2%) and South-West Oxford (28.3%; Figure 2).

Figure 2. Consent rates by municipality, Oxford County, 2015-2017 (combined)

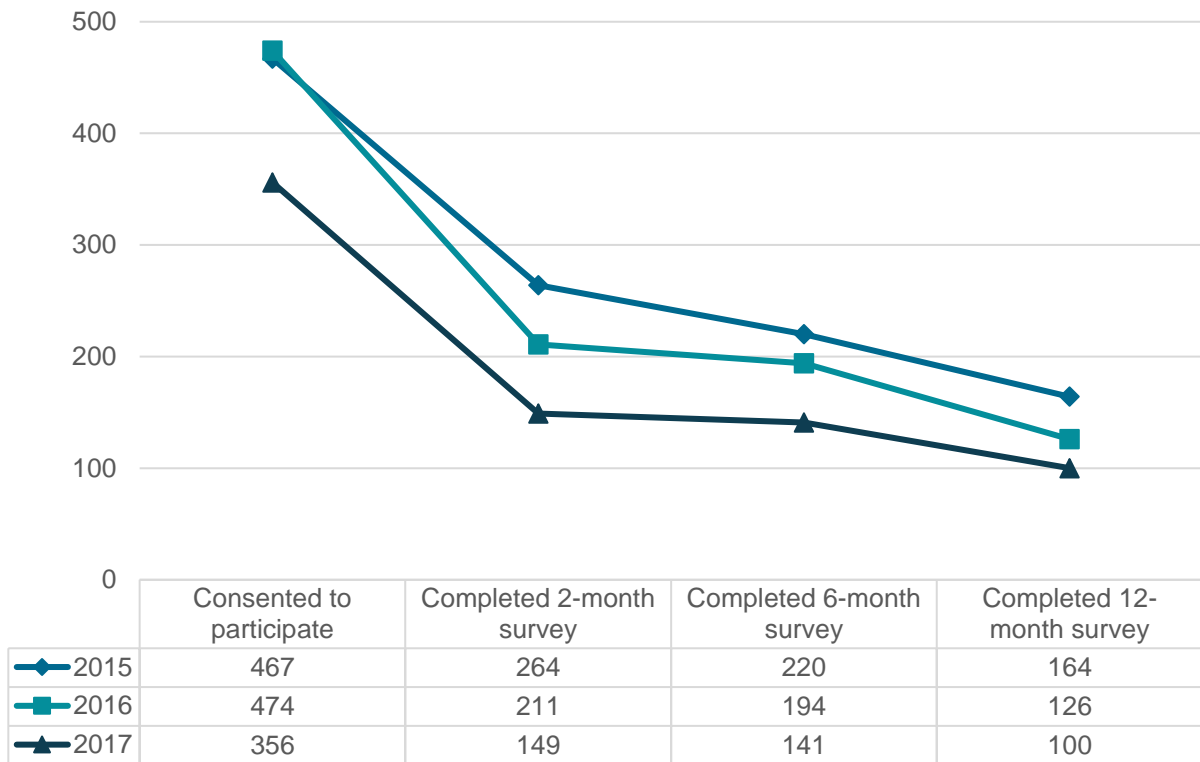


Between 2015 and 2017, most consenting participants gave birth at Woodstock Hospital (92.3%) and less than one in twenty (4.1%) gave birth at London Health Sciences Centre. There were 47 mothers who gave birth at other surrounding hospitals, including Brantford General Hospital, Cambridge Memorial Hospital, Grand River Hospital, Norfolk General Hospital, St. Mary’s Memorial Hospital, St. Thomas Elgin General Hospital and Stratford General Hospital. This representation differs from the birth locations of all new mothers in Oxford County over the same time period; 56.4% gave birth at the Woodstock Hospital and 20.7% gave birth at London Health Sciences Centre.⁸

Almost all mothers who consented to be contacted gave birth to one baby (i.e., singleton births; 99.4%), but there were eight mothers who gave birth to twins. In the case of twins, the mother was asked to fill out the series of surveys twice (once for each baby) because feeding practices can differ by baby.

Longitudinal surveys (i.e., surveys that follow the same people over time) often experience loss to follow-up, meaning that people who begin the series of surveys may not complete all subsequent surveys. The BFI Online surveys are administered over a period of 12 months and, not surprisingly, experience considerable loss to follow-up by the last survey (Figure 3). Most mothers were lost to follow-up after they consented to be contacted about the survey; with approximately half of consenting mothers completing the two-month survey each year.

Figure 3. Number of participants lost to follow-up at each survey time point by year, Oxford County, 2015-2017



Note: some participants may have skipped the two-month survey but completed the six-month survey. This was the case for approximately 30 people each year (between approximately 10% to 20% of the six-month survey sample). However, if someone skipped the six-month survey, they could not complete the twelve-month survey.

Healthy Babies Healthy Children Program Screening

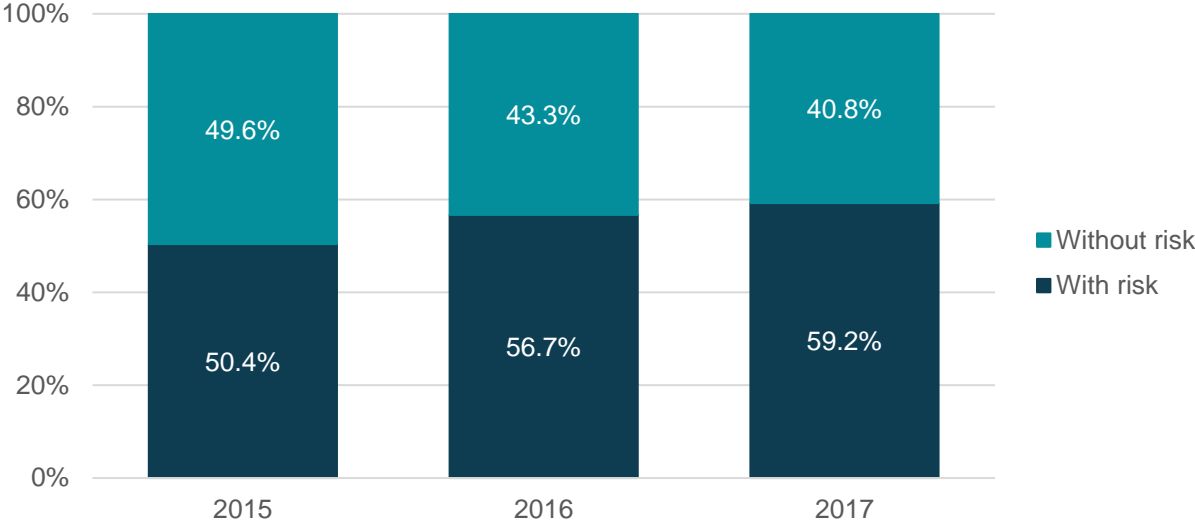
Prior to mothers completing the first survey, staff working in the Healthy Babies Healthy Children (HBHC) program check the answers to three questions from the mother's HBHC screen and enter the data into the BFI Online database.^b The information entered includes: the mother's municipality, the HBHC screening tool risk score and the infant feeding practices that occurred in hospital.

Between 2015 and 2017, 84.3% of women living in Oxford County who gave birth in a hospital or with a midwifery practice group completed the HBHC screening tool.⁸ There were some notable differences in the HBHC screening tool completion rates between locations of birth. Over this time period, 93.5% of women who gave birth at the Woodstock General Hospital completed the screening tool compared to 76.2% of women with midwifery practice groups and 69.4% of women who gave birth at London Health Sciences Centre.⁸ These differences may help explain the differences in BFI Online survey consent rates by municipality. Women who live in the outlying municipalities (e.g., East Zorra-Tavistock, Zorra and Blandford-Blenheim) may be more likely to give birth in a location other than the Woodstock General Hospital and may be less likely to have the opportunity to consent to receiving information about these surveys.

Mothers are universally screened as a first step in identifying families and children who may be at risk for poor child development or parenting, and who would benefit from further assessment or supports. Examples of risk factors include: labour/delivery complications; experience of a previous loss; current and past tobacco, alcohol or drug use during pregnancy; infant concerns (i.e., birth weight \geq 4,000 g); mental health issues and general concerns for the mom or infant by the health care provider.⁹ Among mothers who consented to participate in the BFI Online surveys, 59.2% were identified with risk in 2017, which was higher than in 2015 (Figure 4).

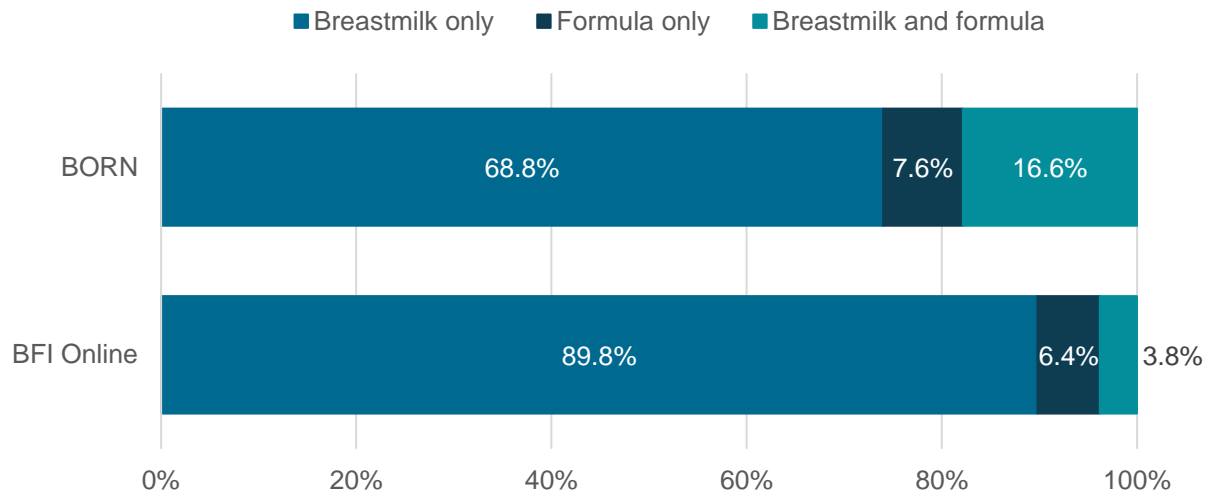
^b The HBHC screening tool is voluntary to complete after birth. The results of this screening tool are sent to the health unit so that a public health nurse can contact the mother to help answer any questions they may have about the health of their new baby or themselves, including topics such as breastfeeding, mood changes and parenting. They can also connect new mothers with local community services for additional support and may offer home visits.

Figure 4. Healthy Babies Healthy Children screening risk level by year, mothers that consented to the BFI Online survey, Oxford County, 2015-2017



The final screening question is about infant feeding at the hospital or midwifery practice group, which is also commonly called infant feeding at entry to public health service. Based on the HBHC screening results of mothers who consented to participate, 89.8% were exclusively breastfeeding between 2015 and 2017 (Figure 5). However, mothers who consented to participate in the BFI Online surveys appear to be more likely to report exclusively breastfeeding at entry to service compared to the general population of new mothers living in the SWPH region (based on the Better Outcomes Registry & Network (BORN) Information System, which is currently the most comprehensive registry of births in hospitals and midwifery practice groups across Ontario).¹⁰ Therefore, the BFI Online surveys are potentially biased towards mothers who exclusively breastfeed and may not represent all new mothers, especially mothers of preterm infants and those who give birth at home (because there are lower HBHC screening tool completion rates among midwifery practice groups).

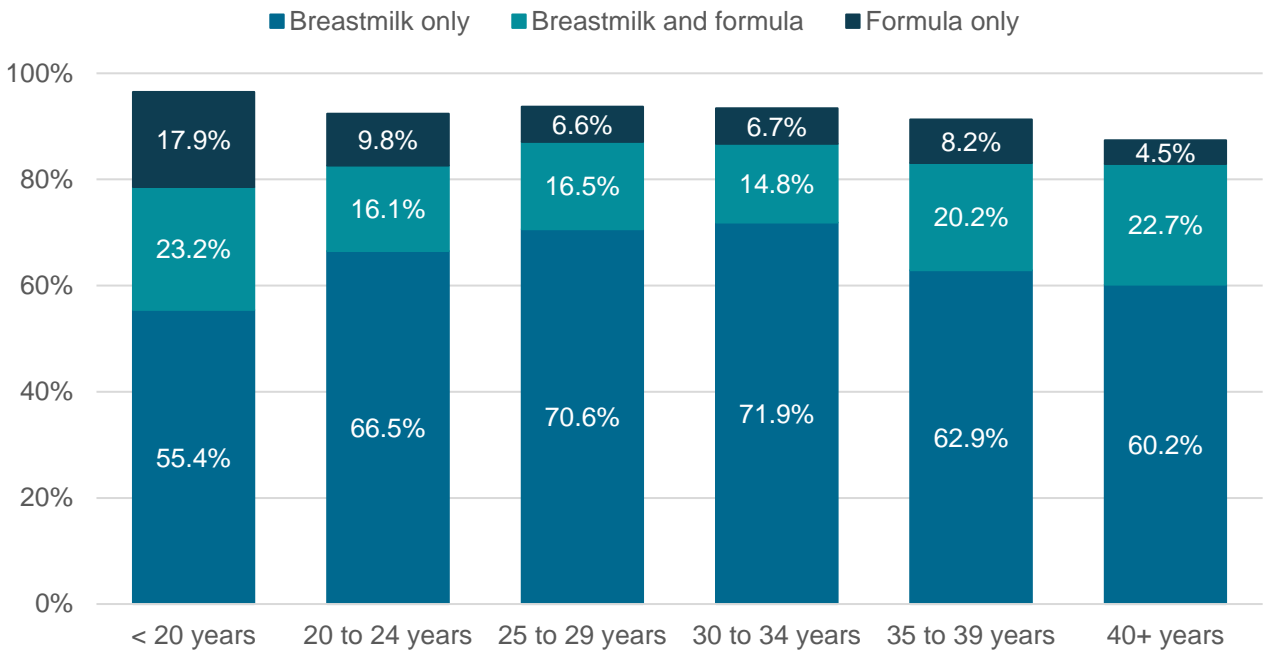
Figure 5. Infant feeding at entry to public health service by data source, Oxford County, 2015-2017 (combined)



BORN = Better Outcomes Registry & Network (BORN) Information System
Source: BORN Information System (2015-2017), Date Extracted: January 8, 2019.

Additional data from the BORN Information System shows that mothers who are less than 20 years old are the least likely to be exclusively breastfeeding at entry to service and are the most likely to be formula feeding only (Figure 6). There was a similar trend among mothers who consented to be contacted about the BFI Online surveys; however, the rate of exclusive breastfeeding at entry to service was much higher across all age groups in the survey population compared to the general population. For example, in the BFI Online database, 88.9% of mothers less than 20 years old were reportedly exclusively breastfeeding at entry to service compared to 55.4% of mothers less than 20 years old in Oxford County overall (Figure 7 and Figure 6).

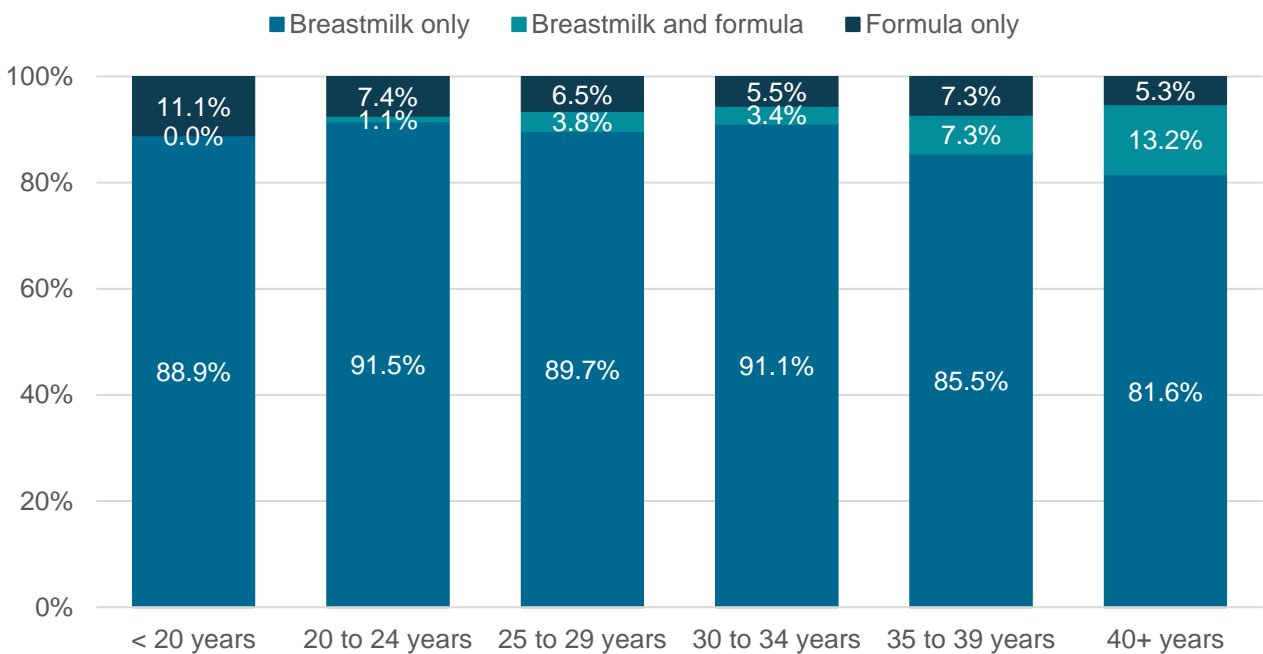
Figure 6. Infant feeding at entry to public health service by maternal age group, Oxford County, 2015-2017 (combined)



Note: totals do not equal 100% due to missing data.

Source: BORN Information System (2015-2017), Date Extracted: January 8, 2019.

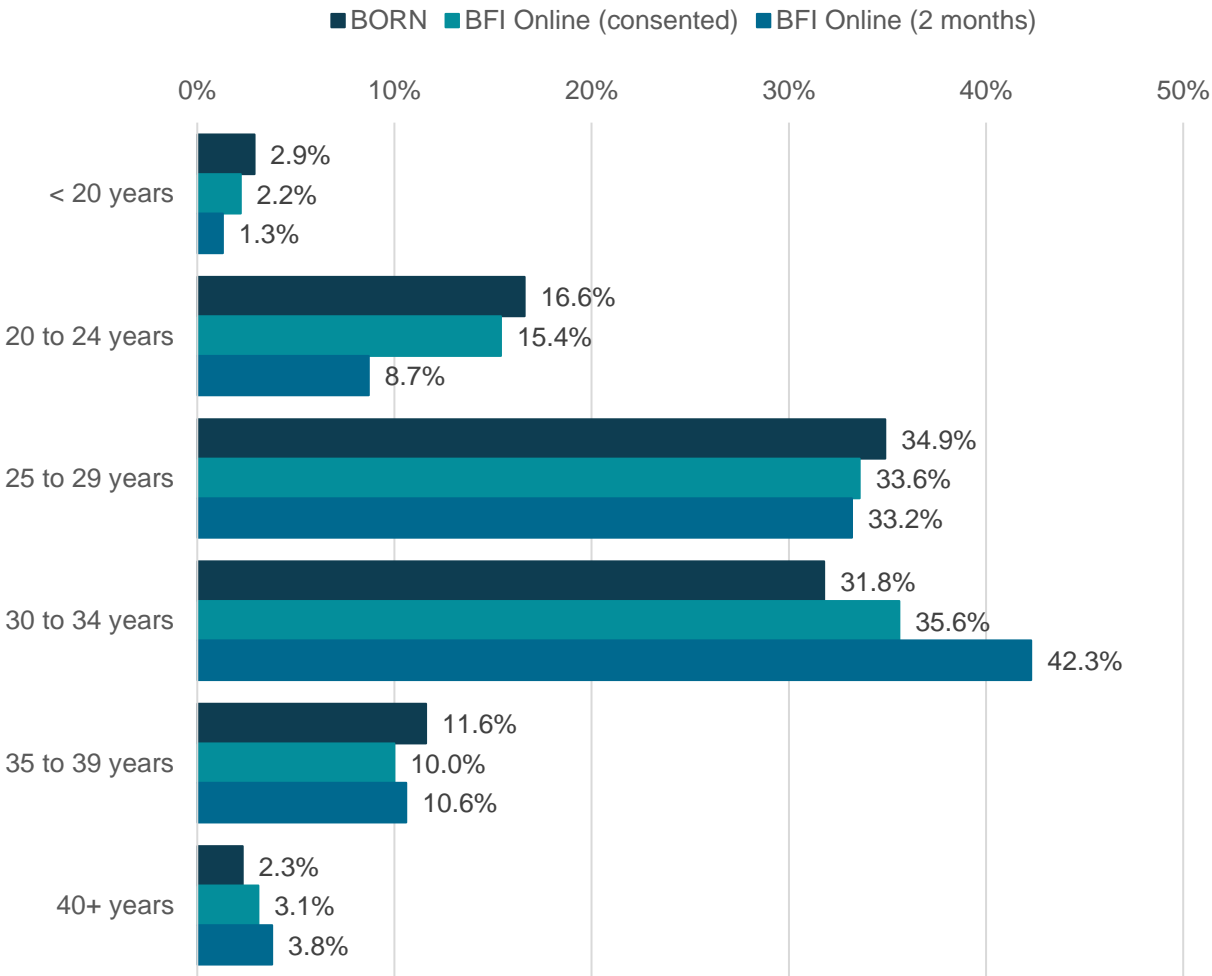
Figure 7. Infant feeding at entry to public health service by maternal age group, mothers consenting to BFI Online surveys, Oxford County, 2015-2017 (combined)



Survey Demographics

Demographic questions, except for maternal age, were asked when mothers completed the two-month BFI Online survey. Maternal age was inputted into the BFI Online database from client HBHC records and thus was not asked as part of this survey. Since maternal age data was gathered in this manner, it is possible to compare mothers from the general population to those that consented to participate and to those that completed the two-month survey. Figure 8 shows that mothers who consented to be contacted about the BFI Online surveys were similar in maternal age to the general population. However, mothers that proceeded to complete the two-month survey were slightly older than the general population; there was a higher proportion of mothers who were 30 to 34 years and a lower proportion who were 20 to 24 years.

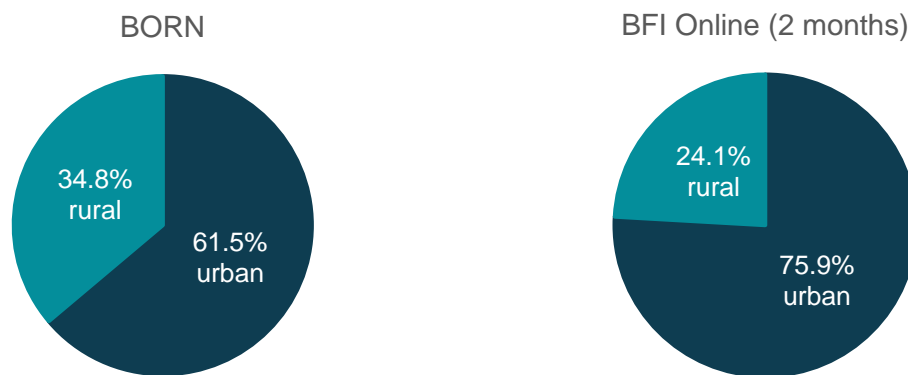
Figure 8. Maternal age group by data source, Oxford County, 2015-2017 (combined)



Source: BORN Information System (2015-2017), Date Extracted: January 14, 2019.

In addition to age, there were differences in survey representativeness by geography. There was slightly more representation from people living in urban areas (i.e., Woodstock, Ingersoll and Tillsonburg) compared to rural areas among mothers that completed the two-month survey compared to the general population (Figure 9). The geography of participating mothers was similar to those that consented to be contacted about the surveys. Interestingly, almost half (48.4%) of mothers that participated in the two-month survey lived in Woodstock. Additionally, among mothers that participated in the two-month survey, 88.5% of those that lived in rural areas gave birth at the Woodstock General Hospital.

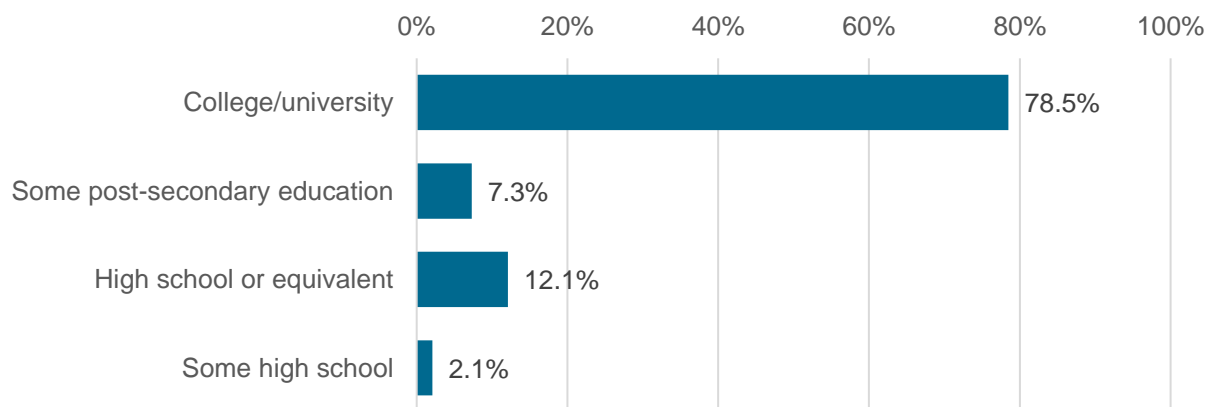
Figure 9. Location of residence by data source, Oxford County, 2015-2017 (combined)



Source: BORN Information System (2015-2017), Date Extracted: January 8, 2019.

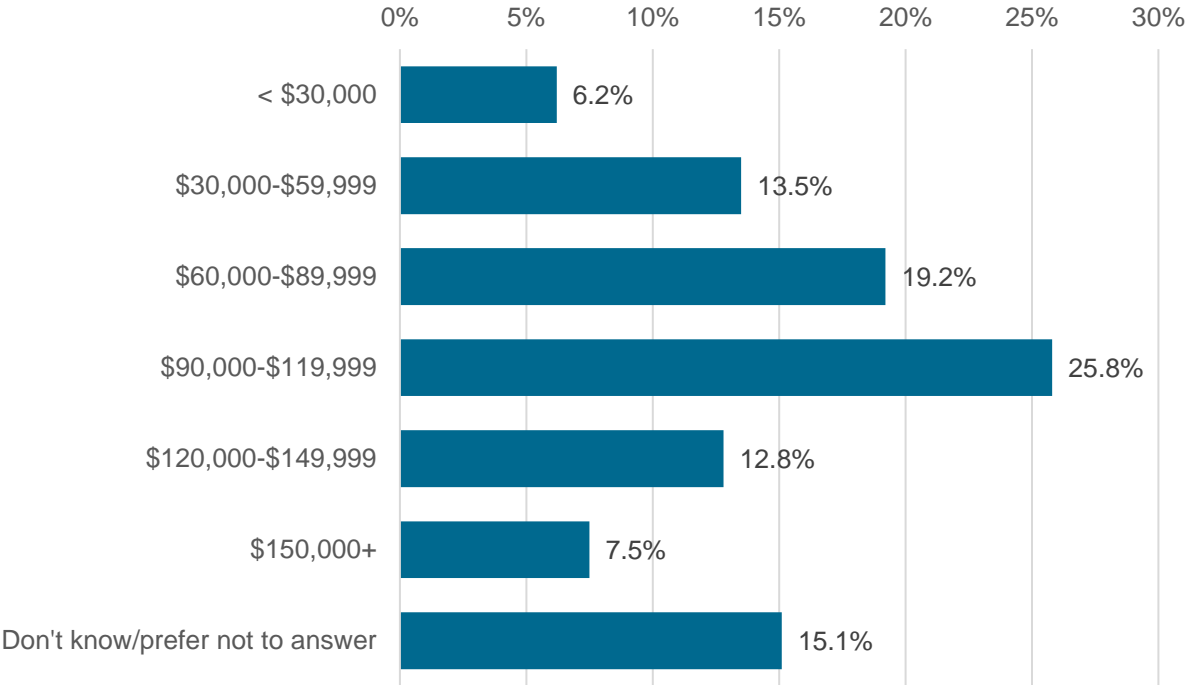
Between 2015 and 2017, most mothers that completed the two-month survey were married or living common-law (94.3%) and 5.3% were single. Over three-quarters of mothers (78.5%) reported that college or university was their highest level of education (Figure 10).

Figure 10. Highest level of education, Oxford County, 2015-2017 (combined)



One-quarter of mothers (25.8%) reported that their household income before taxes during the previous year was between \$90,000 and \$119,999 (Figure 11).

Figure 11. Household income before taxes, Oxford County, 2015-2017 (combined)



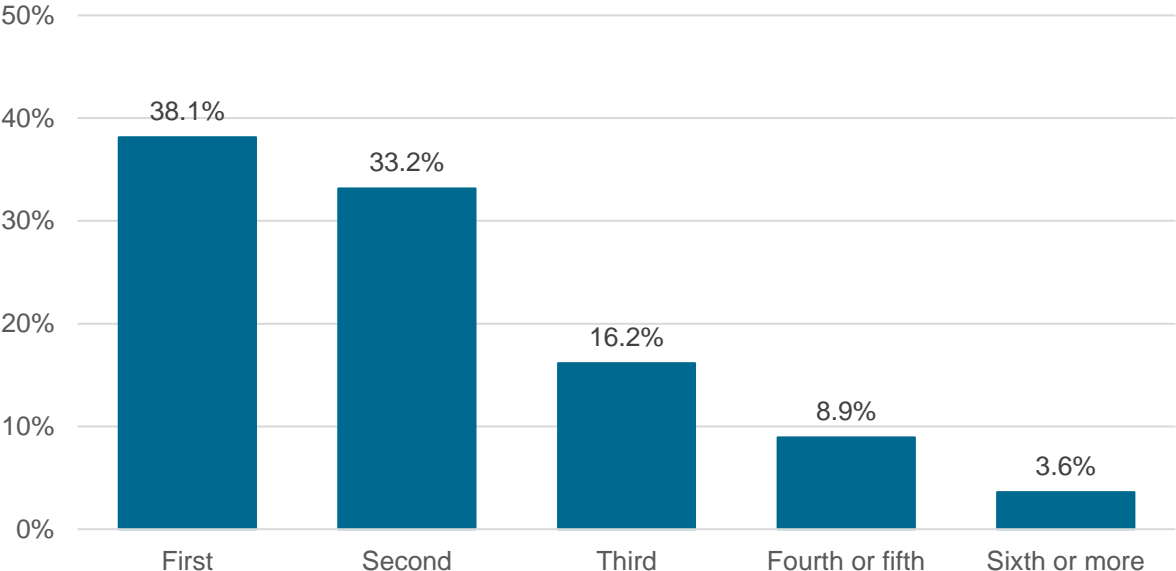
Based on the number of people this income supports, participants were grouped into three income categories:

- **Low income:** household income is less than \$30,000 regardless of the number of people supported by it or between \$30,000 and \$59,999 and supporting three or more people.
- **Middle income:** household income is between \$30,000 and \$59,999 and supporting two people or between \$60,000 and \$89,999 and supporting three or more people.
- **High income:** household income is between \$60,000 and \$89,999 and supporting two people or \$90,000 or higher regardless of the number of people supported by it.

These income cut-offs were used to match a report produced by the former Elgin St. Thomas Public Health.¹¹ Between 2015 and 2017, among participants that were not missing income data, 17.6% were living with a low income, 19.7% were living with a middle income and 62.7% were living with a high income.

Almost half (49.0%) of mothers that completed the two-month survey were first-time mothers. The survey did not ask how many times participants had given birth. Among those that were not first-time mothers, 94.2% reported that they tried to breastfeed before. The proportion of survey participants who were first-time mothers was higher than expected based on the general population (as represented in BORN), where 38.1% of women during this time period were first-time mothers (Figure 12).

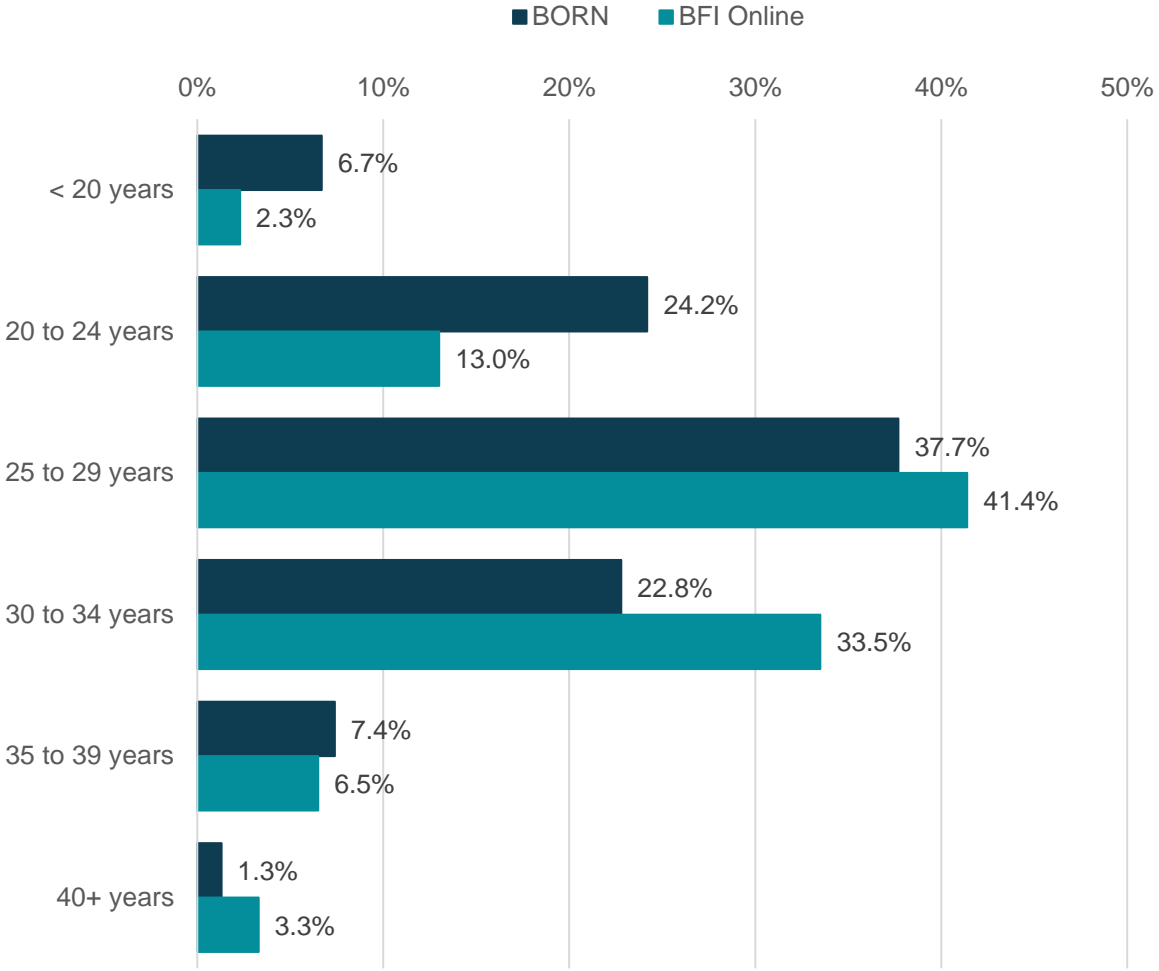
Figure 12. Parity (number of times given birth), general population, Oxford County, 2015-2017 (combined)



Source: BORN Information System (2015-2017), Date Extracted: July 20, 2018.

Like the overall survey sample, participants that completed the two-month survey who were first-time mothers were slightly older than the general population (Figure 13). There was a higher than expected proportion of first-time mothers aged 25 to 34 years and a smaller proportion of first-time mothers that were less than 25 years.

Figure 13. Age group of first-time mothers by data source, Oxford County, 2015-2017 (combined)



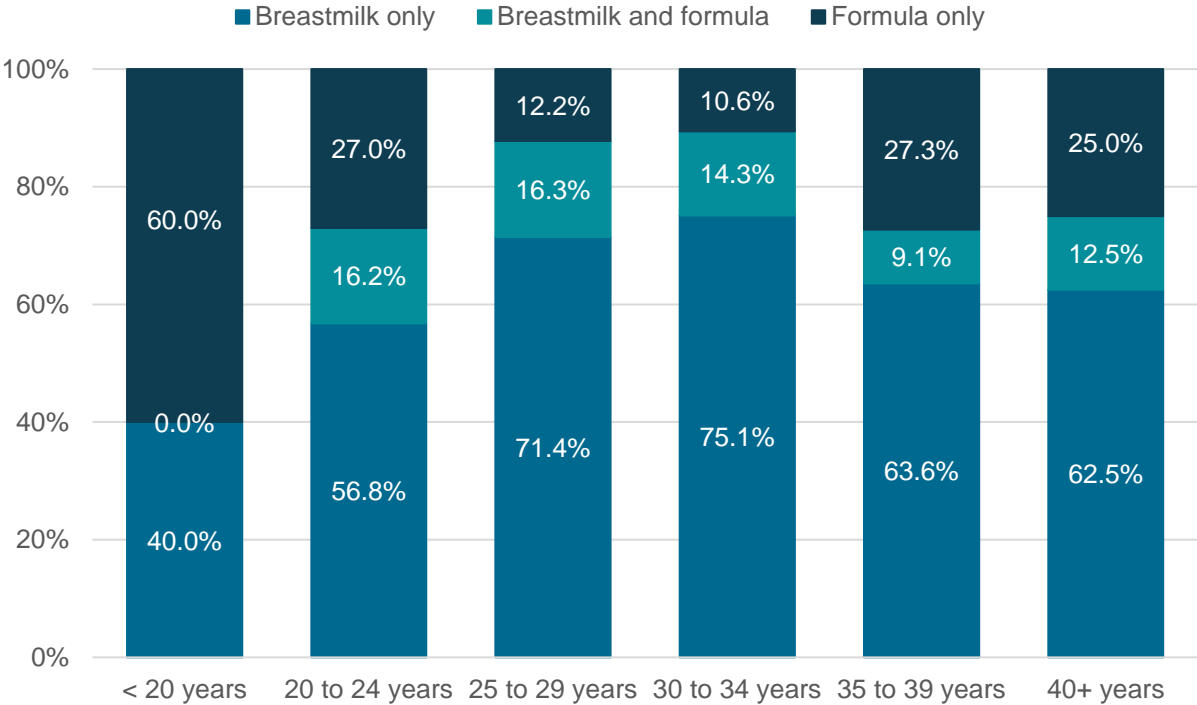
Source: BORN Information System (2015-2017), Date Extracted: January 15, 2019.

Infant Feeding Experiences

Two months (N=624)

When their baby was two months old, 70.4% of mothers reported that they fed their baby breastmilk only (including breastfeeding and expressed breastmilk) in the past week, 14.4% fed a combination of breastmilk and formula and 15.3% fed formula only. Younger mothers (in particular those less than 20 years) and older mothers (35 years and older) were more likely to have fed formula only in the past week whereas mothers 25 to 34 years were more likely to have fed breastmilk in the past week (Figure 14).

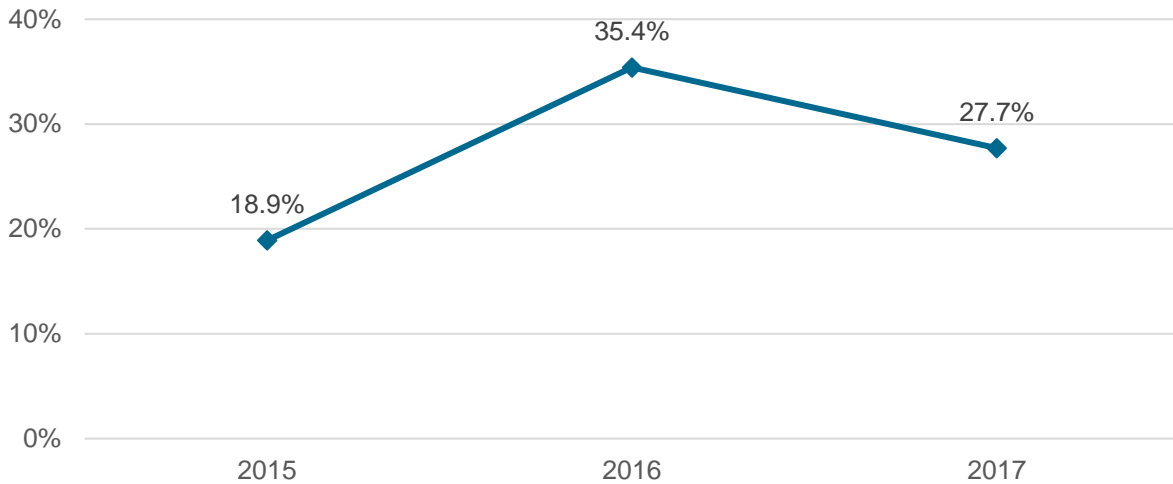
Figure 14. Infant feeding in the past week by maternal age group, Oxford County, 2015-2017 (combined)



One-quarter (24.9%) of mothers giving any breastmilk in the past week reported that returning to work or school was a factor in how long they planned to breastfeed or give breastmilk.

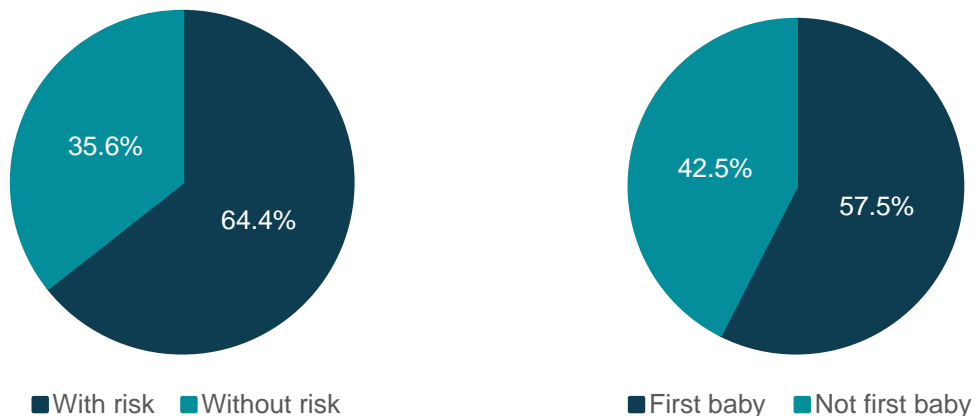
Between 2015 and 2017, among participants that fed their baby breastmilk only in the past week, 28.2% reported that their baby was given formula at some point since birth, including time spent in the hospital. A higher proportion of these babies were given formula in 2016 compared to 2015 (35.4% versus 18.9%; Figure 15).

Figure 15. Baby was given formula at least once since birth by year, mothers who fed breastmilk only in the past week, Oxford County, 2015-2017



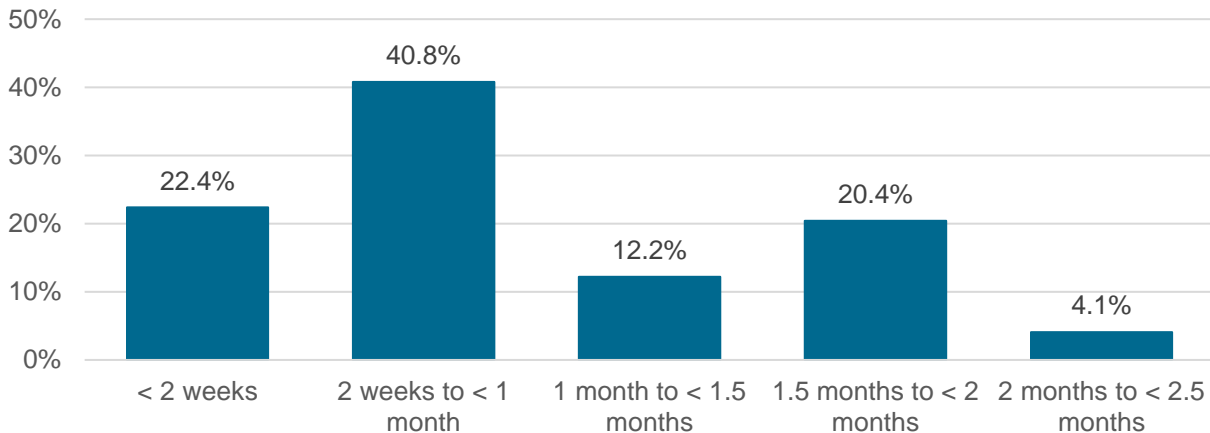
There were some differences in the characteristics of mothers that fed their baby breastmilk only in the past week but reported giving formula at least once since birth. This scenario was more likely to occur among mothers who were with risk based on the HBHC screening tool and among first-time mothers (Figure 16).

Figure 16. Baby was given formula at least once since birth, mothers who fed breastmilk only in the past week, by HBHC risk and parity, Oxford County, 2015-2017 (combined)



Among participants that fed their baby formula only in the past week, 74.6% reported that they attempted to breastfeed or provide breastmilk to their baby, even if only once. Of these participants, 40.8% stopped breastfeeding when their baby was between two weeks to less than one month old (Figure 15).

Figure 17. Baby's age when mother stopped breastfeeding, mothers who fed formula only in the past week, Oxford County, 2015-2017 (combined)



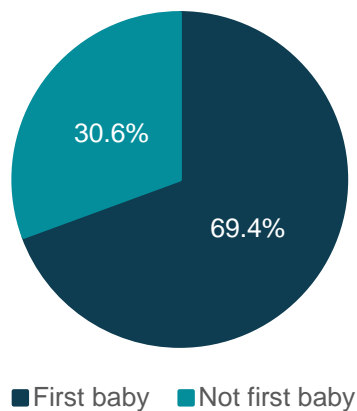
The most common reasons why mothers stopped breastfeeding or giving breastmilk at two months was because:

1. There was not enough milk (56.0%)
 - This difficulty was more commonly reported by mothers living in the urban municipalities of Woodstock, Ingersoll or Tillsonburg compared to the rural municipalities (85.2% versus 14.8%).
2. Baby was hungry, fussy or colicky (34.0%)
3. Baby was unable to latch or wasn't breastfeeding well/was tongue tied (26.0%)
 - This difficulty was more commonly reported by mothers living with a middle income (46.2%) compared to mothers living with a low income (23.1%) or high income (30.8%).
4. Pain such as sore nipples/breasts or biting (22.0%)
5. Mother had problems with expressing or delivering breastmilk (including pumping and lactation aids; 16.0%)
6. Baby was not gaining weight well (12.0%)
7. Convenience (12.0%)
 - This difficulty was only reported by mothers who had previously given birth.

Among mothers who did not try to breastfeed or give breastmilk to their baby, the most common reasons were: convenience (23.5%), previous experience (17.6%) and maternal lifestyle (e.g., smoking, alcohol, diet; 11.8%).

Among participants that fed their baby a combination of breastmilk and formula in the past week, 28.6% reported that their baby was given formula in the hospital. Comparatively, among participants that fed their baby formula only in the past week, 62.0% reported that their baby was given formula in the hospital. Overall, 43.4% of participants who fed any formula in the past week reported that their baby was given formula in the hospital. Notably, babies of first-time mothers were more likely to be given formula in the hospital (Figure 18).

Figure 18. Baby was given formula in the hospital by parity, Oxford County, 2015-2017 (combined)

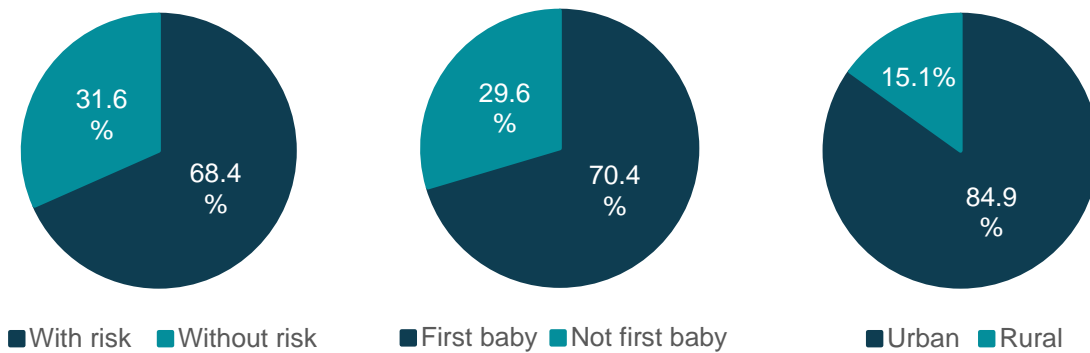


Among participants who gave their baby any formula in the hospital, 57.1% reported that a health care professional recommended giving their baby formula. The most common types of health care professionals that recommended giving formula were:

1. Nurse in the hospital (78.6%)
2. Doctor in the hospital (including obstetrician; 21.4%)
 - This provider was more commonly reported among mothers with risk based on the HBHC screening tool compared to those without risk (86.4% versus 13.6%).
3. Lactation consultant in the hospital (14.3%)
 - This provider was only reported by first-time mothers.
4. Doctor in the community (7.1%)

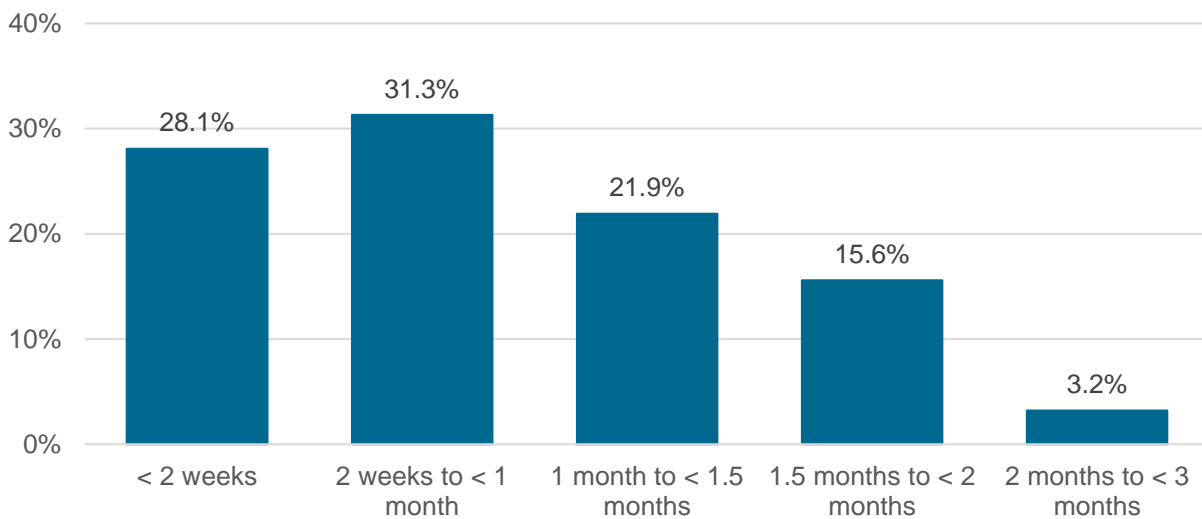
Mothers who were with risk based on the HBHC screening tool, first-time mothers and mothers living in the urban municipalities (i.e., Woodstock, Ingersoll and Tillsonburg) were more likely to report that a health care professional recommended giving their baby formula (Figure 19). Interestingly, mothers living in the urban municipalities were not more likely to be with risk or first-time mothers compared to mothers living in the rural municipalities.

Figure 19. Health care professional recommended giving formula by HBHC risk, parity and urban or rural residence, Oxford County, 2015-2017 (combined)



Among participants whose baby was not given formula in the hospital, 31.3% were first given formula when they were between two weeks to less than one month old (Figure 20). The higher proportion of formula feeding may correspond to growth spurts that occur when infants are around two weeks to less than a month old.

Figure 20. Baby's age when mother first gave formula, babies who were not given formula in the hospital, Oxford County, 2015-2017 (combined)



Among those who were not recommended by a health care professional to give their baby formula, the most common reasons for first giving formula were:

1. Baby was hungry, fussy or colicky (37.3%)
 - This reason was more commonly reported among mothers without risk based on the HBHC screening tool compared to those with risk (53.8% versus 46.2%).
2. There was not enough milk (35.3%)
3. Baby was unable to latch or wasn't breastfeeding well/was tongue tied (18.6%)
 - This reason was more commonly reported by first-time mothers compared to mothers who had given birth before (78.0% versus 22.0%).
4. Pain such as sore nipples/breasts or biting (17.6%)
5. Convenience (8.8%)
6. Encouraged by family, friends or partner (6.9%)
7. Separation (5.9%)
 - This reason was more commonly reported by mothers who had given birth before compared to first-time mothers (85.7% versus 14.3%).

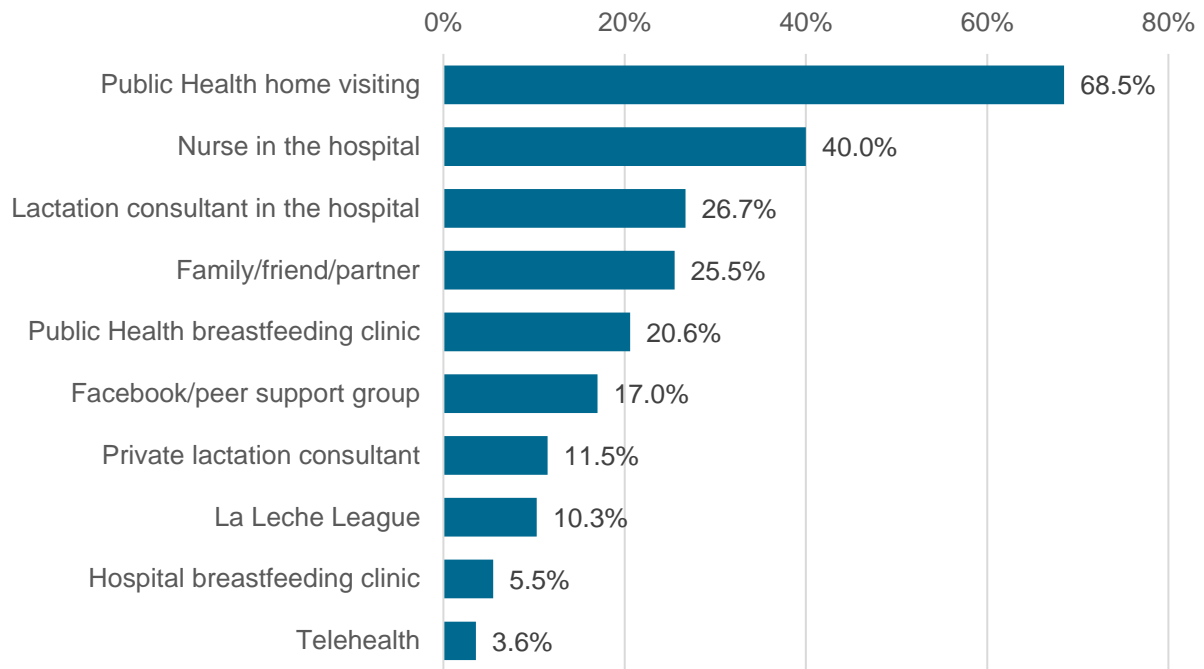
At two months, 34.8% of mothers doing any breastfeeding or providing breast milk reported that they had difficulties or concerns feeding their baby. First-time mothers were more likely to report difficulties or concerns compared to mothers who had given birth before (59.9% versus 40.1%).

The most common concerns were:

1. Baby was unable to latch or wasn't breastfeeding well/was tongue tied (41.5%)
 - This concern was more commonly reported by first-time mothers compared to mothers who had given birth before (70.5% versus 29.5%).
2. Pain such as sore nipples/breasts or biting (34.7%)
3. Baby was hungry, fussy or colicky (25.2%)
4. There was not enough milk (20.4%)
5. Baby was not gaining weight well (16.3%)
6. Mother had problems with expressing or delivering breastmilk (including pumping and lactation aids; 10.2%)

Over one-third (39.1%) of mothers used programs or services to support infant feeding, the most common being Public Health home visiting (68.5%; Figure 21).

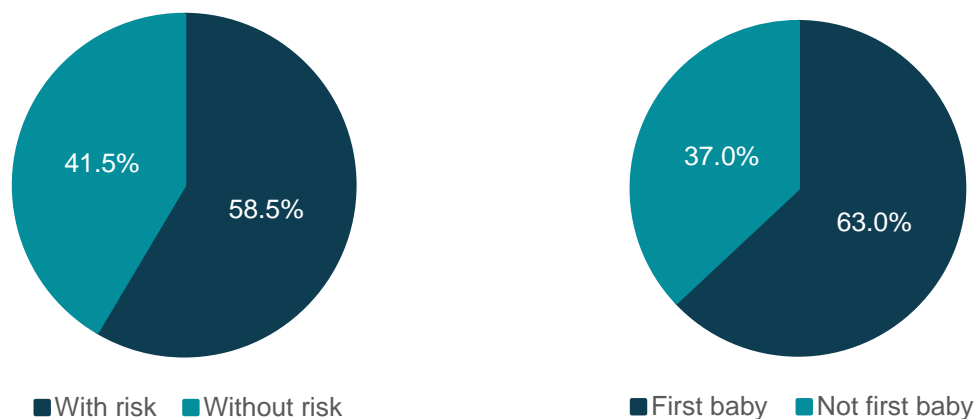
Figure 21. Programs and services used to help infant feeding, Oxford County, 2015-2017 (combined)



Other responses included: books about breastfeeding, doctor in the community or family doctor, midwife and the International Breastfeeding Centre/Newman Breastfeeding Clinic.

Mothers who were with risk based on HBHC screening and first-time mothers were more likely to report that they used programs or services to help feed their baby (Figure 22).

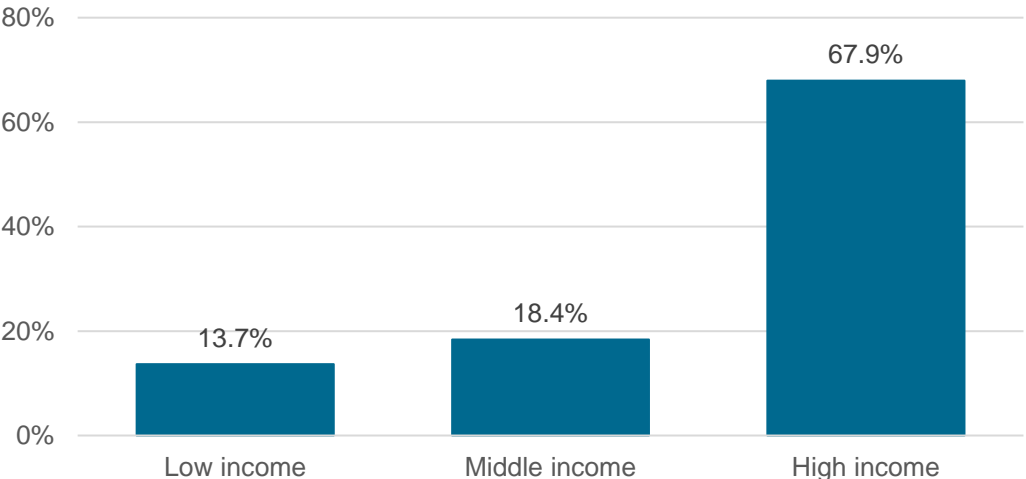
Figure 22. Used programs or services to help with infant feeding by HBHC risk and parity, Oxford County, 2015-2017 (combined)



Mothers with risk were more likely to use Public Health home visiting compared to mothers without risk (67.3% versus 32.7%). This difference may exist because mothers with risk are scheduled for a home visits unless they decline whereas mothers without risk must call and request a home visit. First-time mothers were more likely to use a lactation consultant in the hospital (77.2% versus 22.7%), a private lactation consultant (84.2% versus 15.8%) and family, friends or partners (83.3% versus 16.7%) compared to mothers who gave birth before.

Just over half (53.3%) of participants reported that they attended a breastfeeding class or a prenatal class that included information about breastfeeding (either in-person or online) in the past five years. Among those that attended one of these classes, 88.9% reported that the class was provided by the local health unit. Mothers living with a high income were more likely to reported attending one of these classes in the past five years compared to mothers living with a middle income and mothers living with a low income (Figure 23).

Figure 23. Attended a breastfeeding class or a prenatal class that discussed breastfeeding in the past five years (in-person or online) by income level, Oxford County, 2015-2017 (combined)



Most participants (95.4%) reported that they were aware of their rights to breastfeed in public and were provided a link to the *Ontario Human Rights Code* that was first approved in 1996 and updated in 2014. This *Code* states that it is against the law to discriminate based on pregnancy and breastfeeding. Women have the right to breastfeed in public places undisturbed (i.e., they should not be asked to “cover up” or move somewhere more “discrete”).

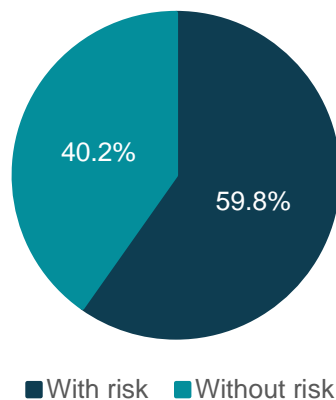
Six months (N=555)

When their baby was six months old, 57.8% of mothers reported that they fed their baby breastmilk only (including breastfeeding and expressed breastmilk) in the past week, while 15.8% fed a combination of breastmilk and formula and 26.5% fed formula only.

Among mothers who fed any breastmilk in the past week, over one-third (39.9%) reported that returning to work or school was a factor in how long they planned to breastfeed or give breastmilk. First-time mothers were more likely to report this as a factor compared to non-first-time mothers (64.4% versus 35.6%, respectively). Three-quarters (74.5%) of mothers who fed their baby any breastmilk were aware that employers must consider their breastfeeding needs when they returned to work.

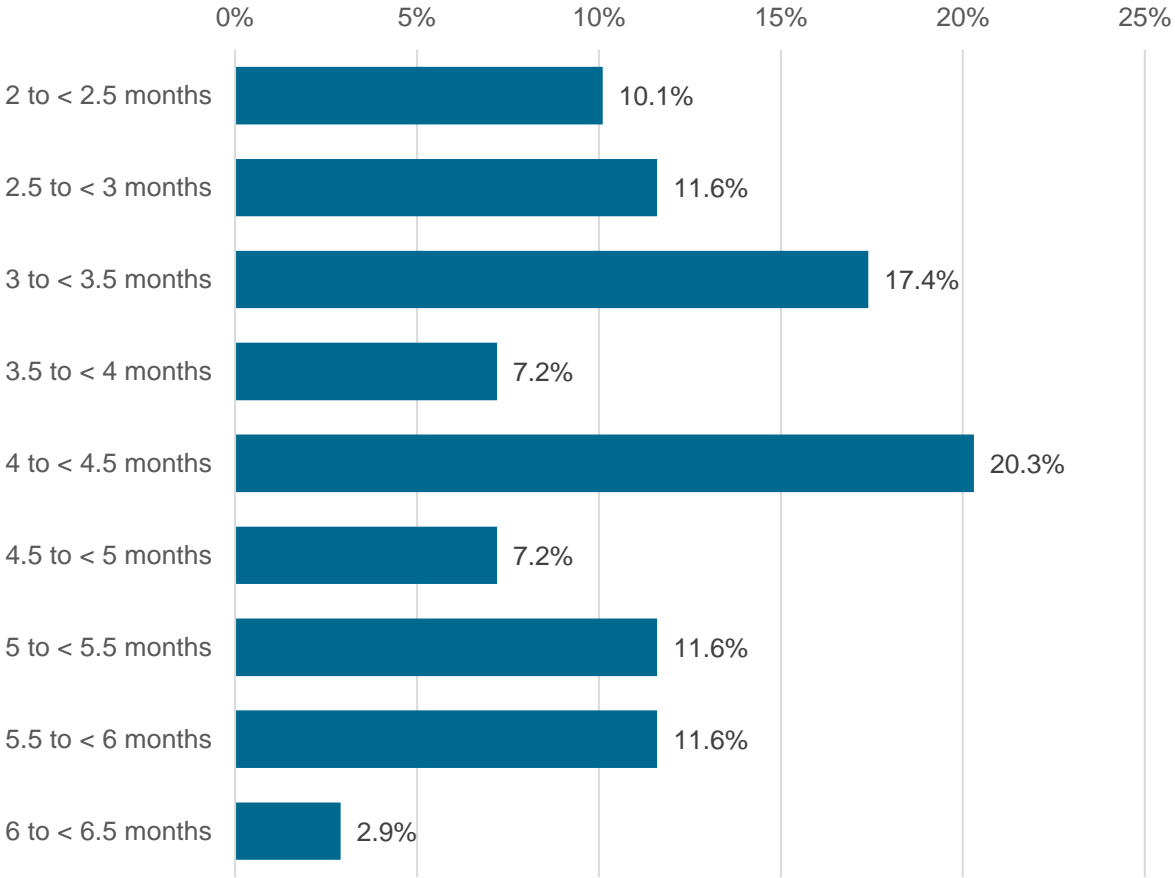
Among participants that fed their baby breastmilk only in the past week, 34.4% reported that their baby was given formula at some point since birth, including time spent in the hospital. Mothers identified with risk were more likely to report that their baby was given formula at some point since birth compared to mothers without risk (Figure 24).

Figure 24. Baby was given formula since birth, mothers who fed breastmilk only in the past week, by HBHC risk, Oxford County, 2015-2017 (combined)



Among participants that fed their baby formula only in the past week, 50.7% reported that they attempted to breastfeed or provide breastmilk to their baby, even if only once, since they were last contacted (when their baby was about two months old). Of those participants, 20.3% stopped breastfeeding when their baby was between four months to less than four and a half months old (Figure 25).

Figure 25. Infant’s age when stopped providing breastmilk, mothers who fed their baby formula only in the past week, Oxford County, 2015-2017 (combined)

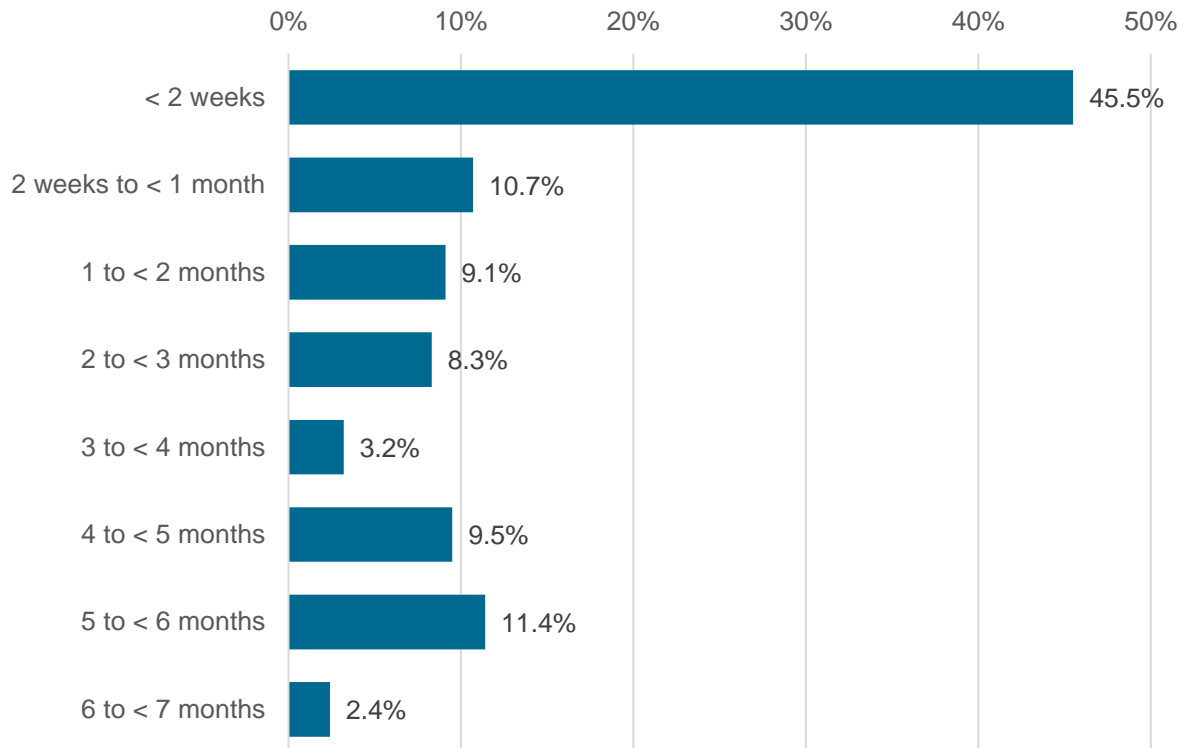


The most common reasons why mothers stopped breastfeeding or giving breastmilk at six months was because:

1. Not enough milk (50.7%)
2. Mother had problems with expressing or delivering breastmilk (including pumping and lactation aids) (20.3%)
3. Convenience (17.4%)
4. Baby was unable to latch or was not breastfeeding well/tongue tied (15.9%)
5. Baby was hungry, fussy or colicky (15.9%)
6. Baby was not gaining weight well (10.1%)

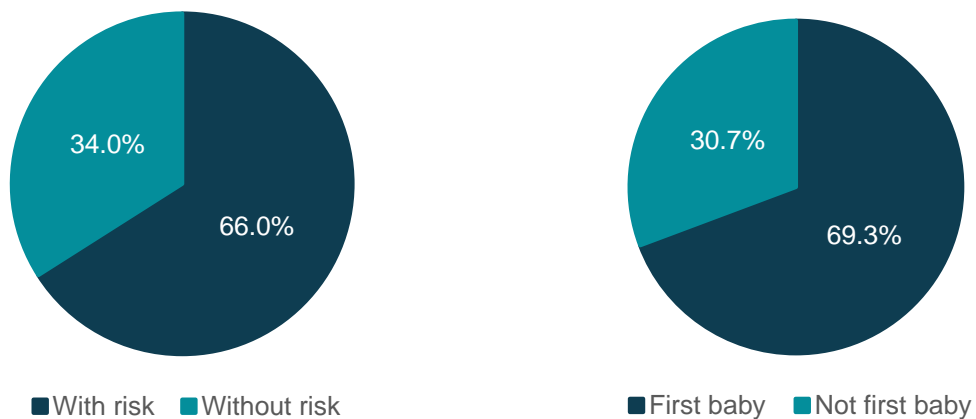
Among babies who were given formula at some point, almost half (45.5%) were first given formula when they were less than two weeks old, which is reflective of practices within hospitals and midwifery practice groups (Figure 26).

Figure 26. Infant’s age when first given formula, including all mothers (providing any breast milk or formula feeding only) Oxford County, 2015-2017 (combined)



Over one-third (37.9%) of mothers who gave their baby formula reported that a health care professional recommended that they give their baby formula. Mothers identified with risk and first-time mothers were more likely to report that a health care professional recommended giving their baby formula (Figure 27).

Figure 27. Health care professional recommended giving formula by HBHC risk and parity, Oxford County, 2015-2017 (combined)



The most common health care professionals that recommended giving formula were:

1. Nurse in the hospital (45.7%)
 - This provider was more commonly reported among mothers with risk based on the HBHC screening tool compared to those without risk (78.7% versus 21.3%).
 - This provider was also more commonly reported among first-time mothers compared to mothers who gave birth before (81.6% versus 18.4%).
2. Doctor in the community (35.3%)
3. Doctor in the hospital (including obstetrician; 25.9%)
4. Lactation consultant in the hospital (12.9%)
5. Public health nurse (8.6%)

The most common reasons that mothers reported first giving their baby formula were:

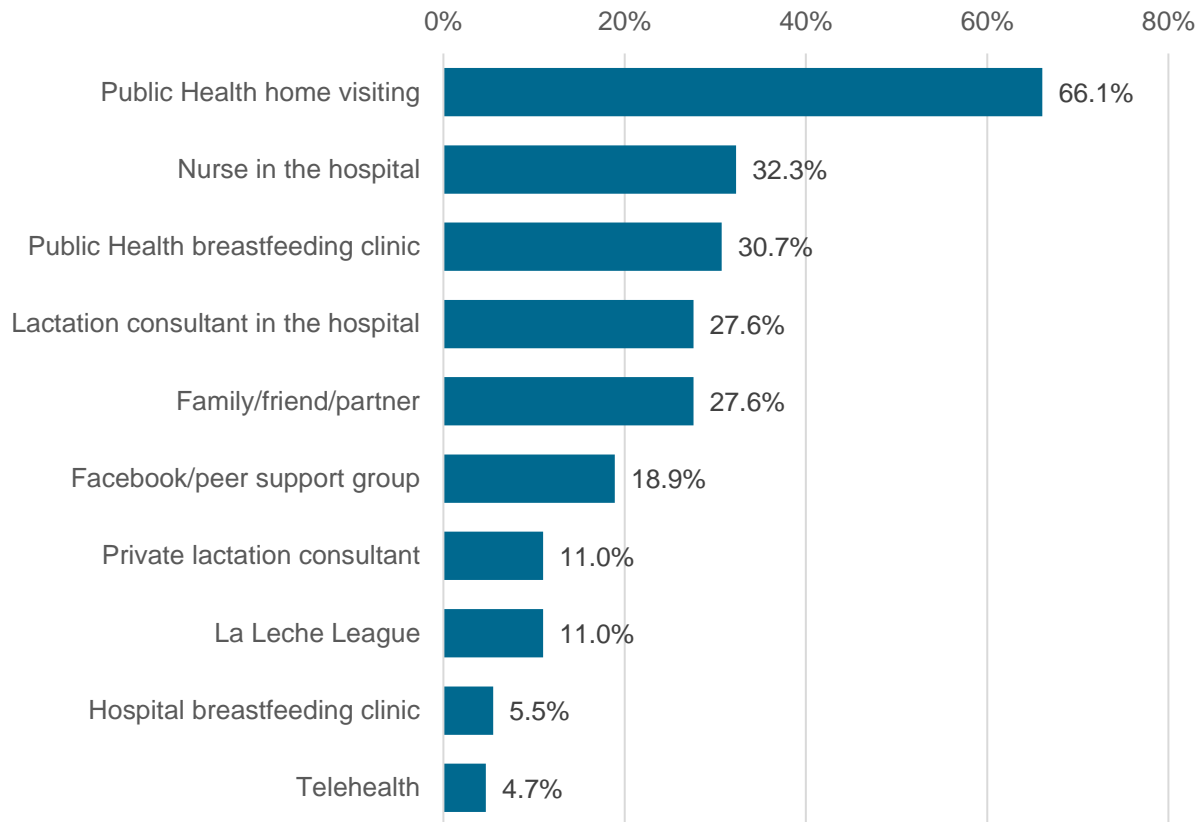
1. Not enough milk (27.0%)
2. Baby was hungry, fussy or colicky (21.4%)
3. Convenience (16.7%)
4. Baby was unable to latch or not breastfeeding well/tongue tied (14.9%)
5. Separation (8.4%)

Among mothers who were providing any breastmilk in the past week, 9.0% reported that they had difficulties or concerns with feeding their baby since they were last contacted (i.e., at the two-month survey). The most commonly reported difficulties were:

1. Baby was hungry, fussy or colicky (26.7%)
2. Not enough milk (24.4%)
3. Pain such as sore nipples/breasts or biting (24.4%)
4. Baby was unable to latch or not breastfeeding well/tongue tied (20.0%)
5. Baby was not gaining weight well (15.6%)

Over one-quarter (26.1%) of mothers reported that they used programs or services to help with feeding their baby, the most common of which was Public Health home visiting (66.1%; Figure 28).

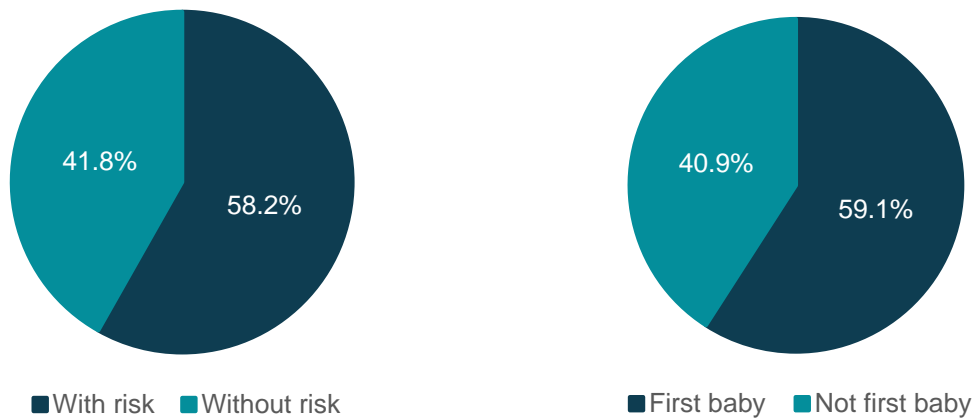
Figure 28. Programs and services used to help infant feeding, Oxford County, 2015-2017 (combined)



Other responses included: doctor, midwife and the International Breastfeeding Centre/Newman Breastfeeding Clinic.

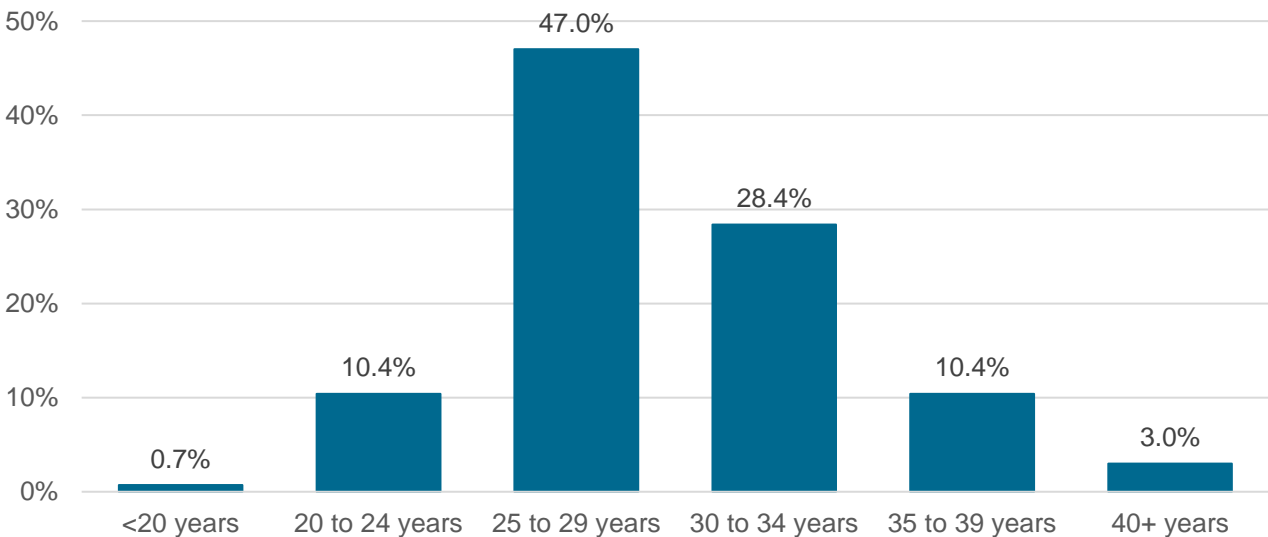
Since completing the two-month survey, 28.6% of mothers reported that their baby was given liquids other than breastmilk or formula, such as water, sugar water or juice. This statistic does not include vitamins or medications. There were some differences in the proportion of mothers who gave their baby other liquids based on maternal sociodemographic characteristics. In particular, mothers who were with risk based on HBHC screening and first-time mothers were more likely to report that their baby was given other liquids (Figure 29).

Figure 29. Baby was given liquids other than breastmilk or formula (excluding vitamins or medications) by HBHC risk and parity, Oxford County, 2015-2017 (combined)



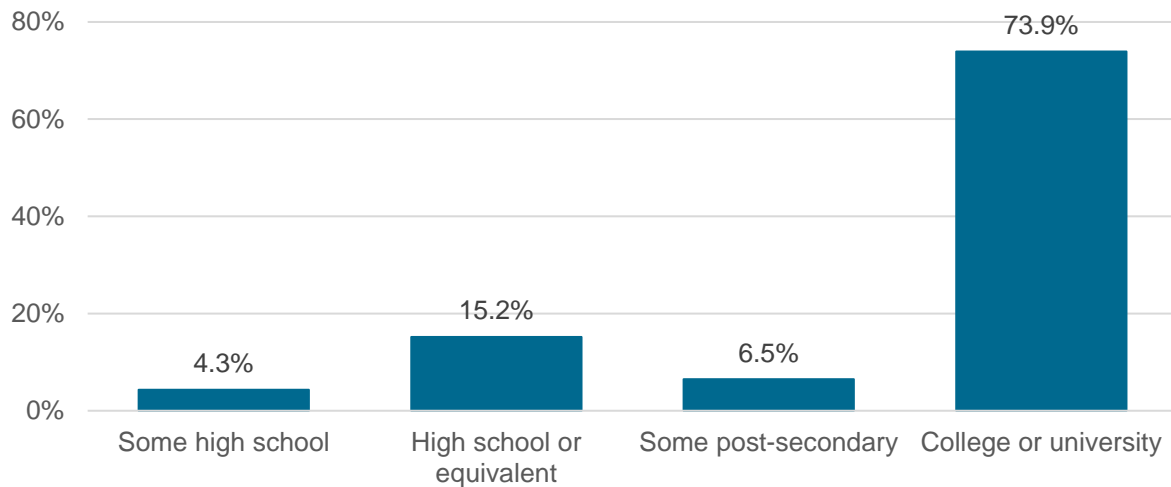
Additionally, mothers aged 25 to 29 years were the most likely to report giving their baby liquids other than breastmilk or formula, followed by mothers aged 30 to 34 years (Figure 30).

Figure 30. Baby was given liquids other than breastmilk or formula (excluding vitamins or medications) by maternal age group, Oxford County, 2015-2017 (combined)



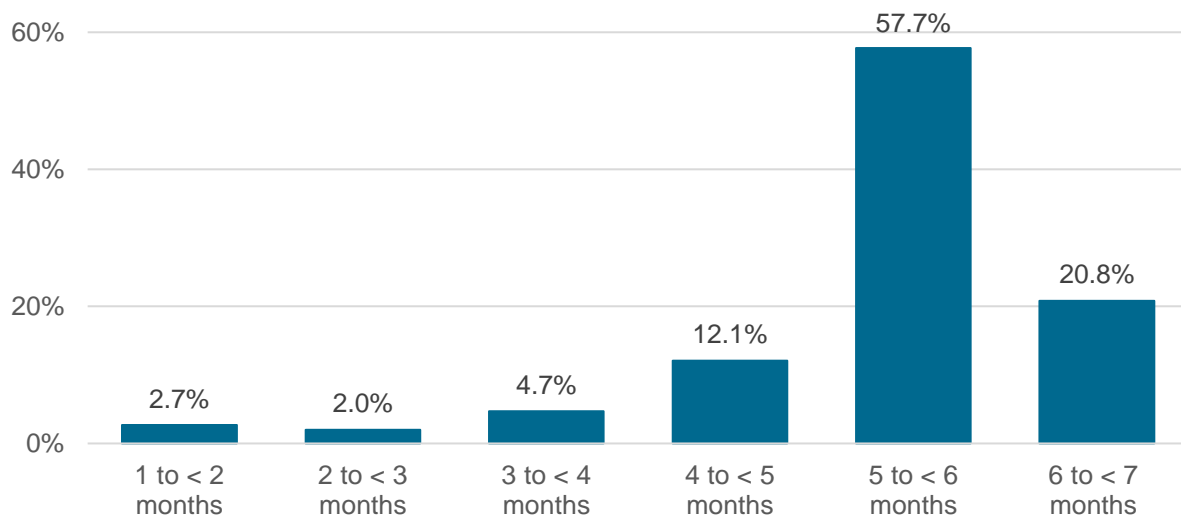
Finally, mothers with a college or university education were the most likely to report giving their baby liquids other than breastmilk or formula (Figure 31).

Figure 31. Baby was given liquids other than breastmilk or formula (excluding vitamins or medications) by education level, Oxford County, 2015-2017 (combined)



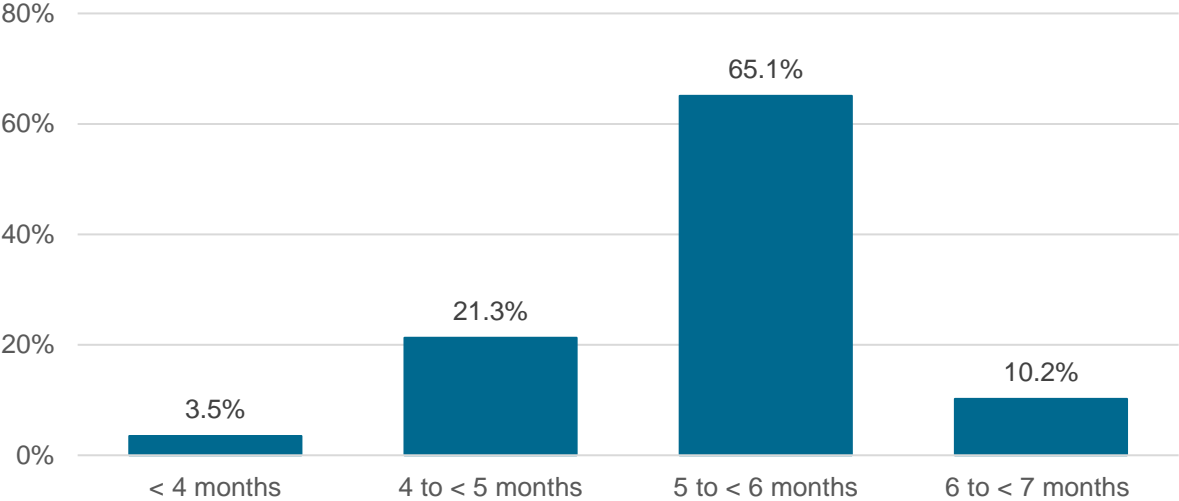
The most commonly reported types of liquids that babies were given include water (86.2%), juice (17.8%) and sugar water (3.9%). Over one-third (39.6%) of these babies were first given other liquids when they were five and a half months to less than six months old, 19.5% were six months to less than six and a half months old and 18.1% were five months to less than five and a half months old (Figure 32).

Figure 32. Infant's age when first given liquids other than breastmilk or formula (excluding vitamins or medications), Oxford County, 2015-2017 (combined)



Since birth, most (81.6%) mothers reported that their baby was given solid food, such as meat, cereal, vegetables or fruit. Almost half (43.9%) were first given solid food when they were five and a half months to less than six months old and one-fifth (21.2%) were five months to less than five and a half months old (Figure 33).

Figure 33. Infant’s age when first given solid food, Oxford County, 2015-2017 (combined)



Just over half (53.1%) of these mothers reported that a health care professional recommended giving their baby solid foods at the time they were introduced. First-time mothers were more likely to report that a health care professional recommended giving their baby solid foods compared to mothers who have given birth before (63.2% versus 36.8%, respectively).

The most common reasons that mothers reported first giving their baby solid foods included:

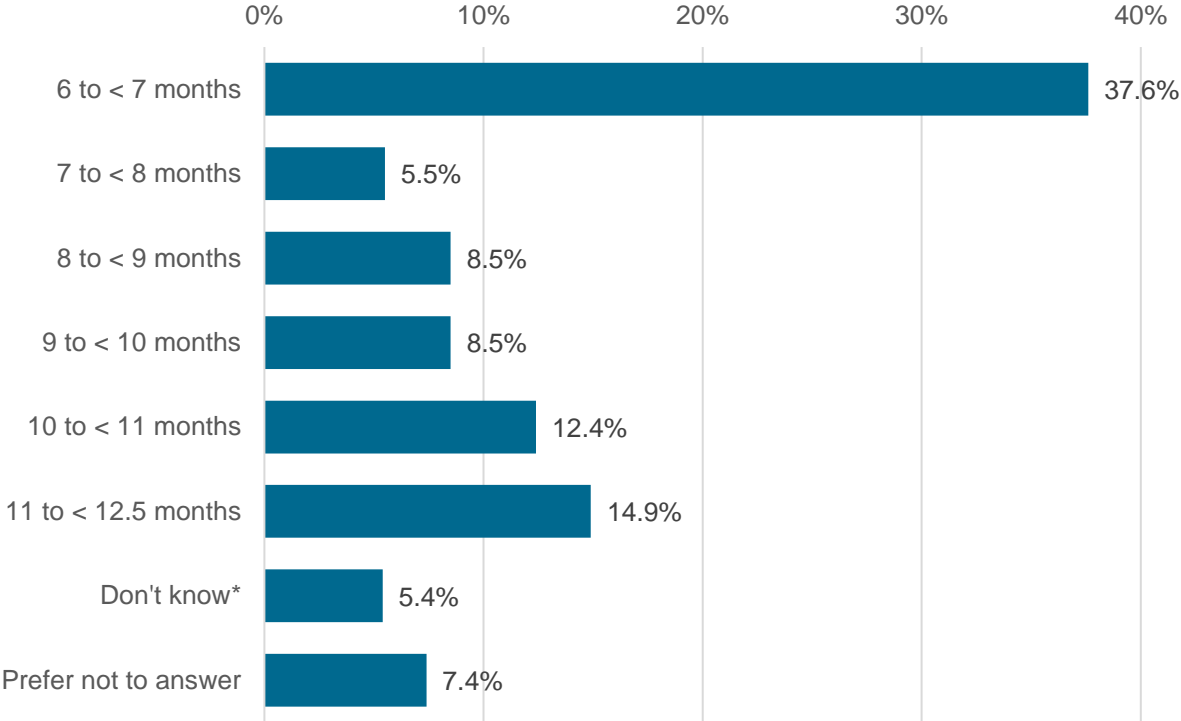
1. Felt like the baby was ready (81.1%)
 - A smaller proportion of mothers reported this in 2017 (25.3%) compared to in 2016 (39.3%) and 2015 (35.4%).
2. Baby wanted solids or baby-led weaning (41.9%)
 - Mothers living with a high income were more likely to report this (55.9%) compared to mothers living with a middle income (21.6%) and mothers living with a low income (22.5%).
3. Previous experience (18.4%)
4. To sleep better (12.9%)
5. To avoid allergies (4.8%)

Among mothers who had not introduced solid foods at the time of this survey, 66.3% intended to introduce them when their baby is between six months to less than six and a half months old and 16.3% intended to introduce them when their baby is between six and a half months to less than seven months old. Less than 1 in 10 mothers (8.2%) had no plans or did not know when they were going to introduce solid foods and 3.1% planned to introduce solid foods when their baby got teeth.

Twelve months (N=390)

Among mothers that completed the 12-month survey, 45.7% reported that they fed their infant breastmilk in the past week. Among mothers that did not feed their infant breastmilk in the past week, 31.7% reported that they stopped providing breastmilk when their baby was six months to less than six and a half months old (Figure 34).

Figure 34. Infant’s age when stopped providing breastmilk, mothers who did not provide breastmilk in the past week, Oxford County, 2015-2017 (combined)



*Some mothers noted that they stopped providing breastmilk before six months, which was not a possible response option. This was due to an error in the survey logic; mothers who were not providing any breastmilk at six months should not have been asked to complete the twelve-month survey since the twelve-month survey only consists of three questions, all about providing breastmilk.

The most common reasons why mothers stopped breastfeeding or providing breastmilk were:

- Not enough milk (34.0%)
- Other (30.0%)
- Convenience (15.8%)
- Baby was unable to latch or was not breastfeeding well/tongue tied (12.3%)
- Baby was not gaining weight well (8.4%)
- Pain such as sore nipples/breasts and biting (8.4%)
- Mother had problems with expressing or delivering breastmilk (including pumping and lactation aids; 7.9%)
- Baby was hungry, fussy or colicky (6.9%)
- Previous experience (6.4%)

Other common responses included: baby no longer wanted to nurse/baby-led weaning, mother was ready to stop, mother returned to work, and mother was pregnant again/trying to conceive.

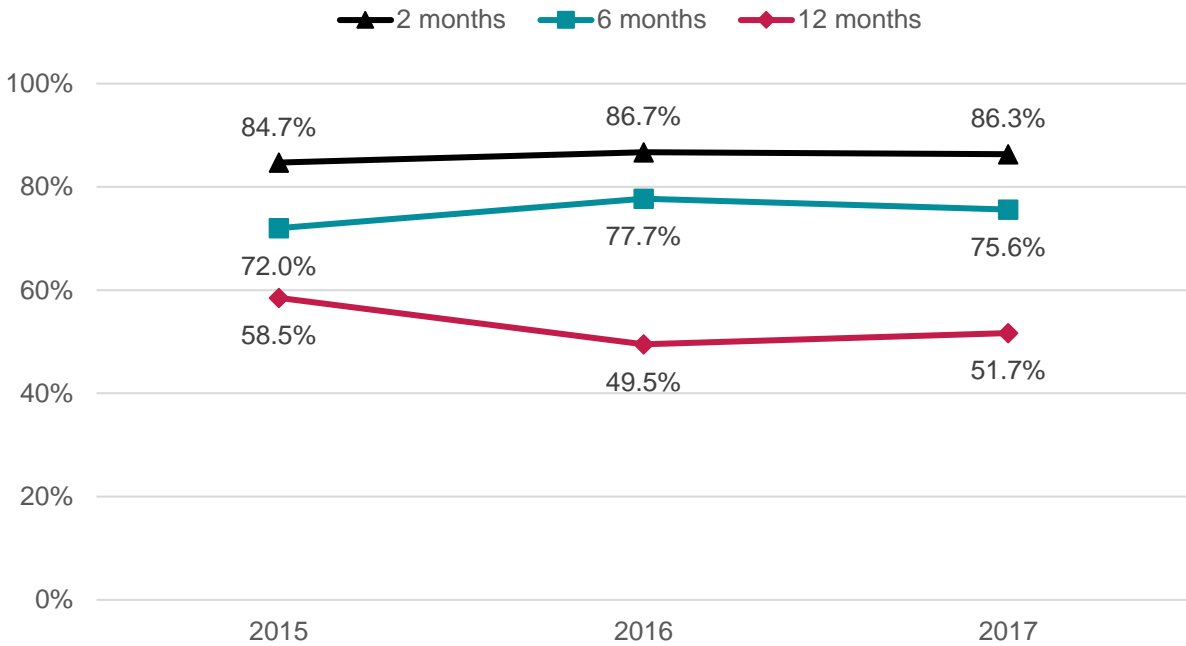
Summary Calculations: Any and Exclusive Breastfeeding

By analyzing many of the breastfeeding questions presented throughout this report together, we can calculate summary measures for any breastfeeding at 2 months, 6 months and 12 months and exclusive breastfeeding at 2 months and 6 months.^{c,12} Similar data was presented in a previous report;¹³ however, the twelve month any breastfeeding data was based on a partial sample of babies for 2017 (i.e., those born between January 1 to July 24, 2017) and has since been updated here to include all babies born in 2017. Although many of the breastfeeding rates were consistent between 2015 and 2017, because they are a key indicator for public health, they are presented separately for each year.

In 2017, 86.3% of mothers were breastfeeding in some capacity at 2 months and this decreased to 75.6% at 6 months and again to 51.7% at 12 months (Figure 35). This statistic includes infant feeding with breastmilk only or a combination of breastmilk and formula.

^c The data were analyzed cross-sectionally, not longitudinally. Therefore, each time point (i.e., 2 months, 6 months and 12 months) could include a different denominator. This was done to maximize the number of participants kept in the analysis and to reduce bias. At each time point, mothers were lost to follow-up and mothers who completed all three surveys were more likely to be breastfeeding.¹²

Figure 35. Any breastfeeding by time point, Oxford County, 2015-2017

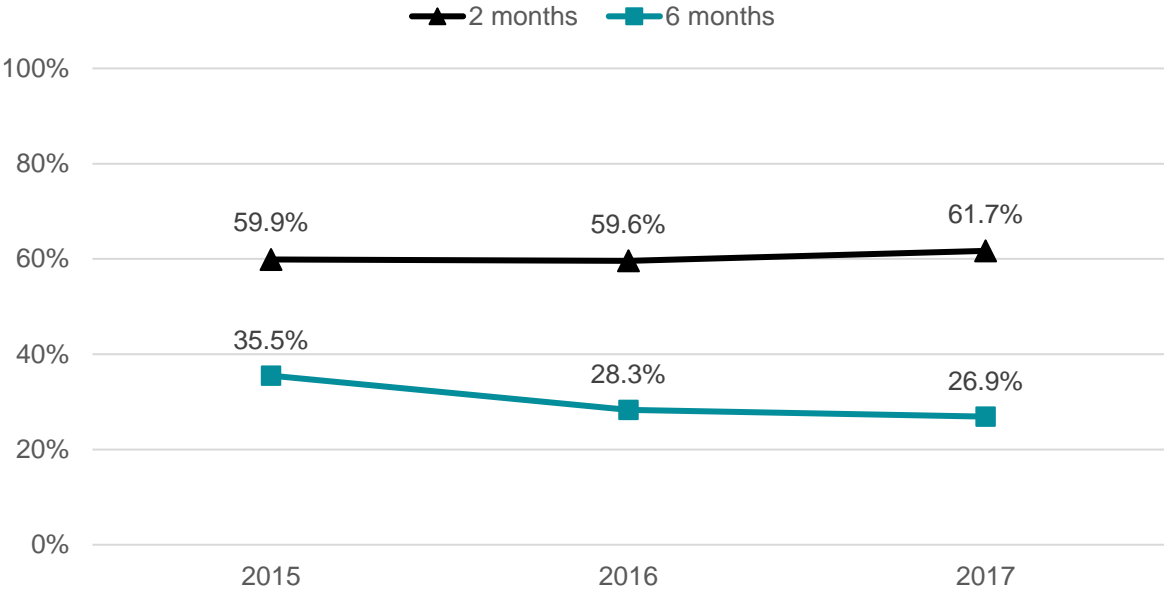


Note: 2015 data is based on a partial year (June to December) to match previous analyses in other reports.^{13,14}

In 2017, 61.7% of mothers were exclusively breastfeeding at two months and this decreased to 26.9% at six months^d (Figure 36). Exclusive breastfeeding includes infant feeding with breastmilk only. Exclusive breastfeeding means that infants did not receive formula or other liquids such as water, juice and tea (exclusivity does not apply to vitamins or medications). This also excludes infants that had solid foods before five and a half months of age. There is no exclusive breastfeeding measure for 12 months due to the importance of introducing solid foods.

^d Breastfeeding at six months is measured as “around” six months – more specifically, at five and a half months. This cut-off was deemed appropriate by the Breastfeeding Committee for Canada to measure breastfeeding at six months because parents commonly introduce solid foods around this age.¹²

Figure 36. Exclusive breastfeeding by time point, Oxford County, 2015-2017



Note: 2015 data is based on a partial year (June to December) to match previous analyses in other reports.^{13,14}

Recommendations

Based on the findings in this report, we recommend SWPH do the following:

1. Continue to promote breastfeeding as a public health intervention and support families with infant feeding through programs such as home visiting and prenatal classes. Prenatal classes should aim to increase attendance from mothers living with a low or middle income.
2. Aim to increase the proportion of mothers breastfeeding at 2 months, 6 months and 12 months and exclusive breastfeeding at 2 months and 6 months using evidence-based practices.
3. Continue to partner with local hospitals to support breastfeeding initiation at birth and encourage exclusive breastfeeding when supplementation with formula is not medically indicated.
4. Target breastfeeding messaging towards young mothers (less than 25 years old) and first-time mothers as these two groups were more likely to be feeding their infant formula only or were more likely to give formula in the hospital.

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Appendix A: Methods

In 2015, Public Health Ontario funded a Locally Driven Collaborative Project (LDCP) led by the former Oxford County Public Health to support health units working together to develop a standardized infant feeding surveillance system.¹⁵ A standardized way of collecting and analyzing infant feeding data was a priority for health units to meet BFI accreditation and to have comparable data across the province. This LDCP was a pilot study that included a situational assessment, tool and method development, pilot testing, pilot evaluation and recommendations for conducting infant feeding surveillance, including time points; sampling; consent; contact method, windows and attempts; and a questionnaire.

Prior to this LDCP, Oxford County Public Health was routinely collecting infant feeding data based on a survey created by the Family Health Team, which was only conducted when babies were two months old. In 2015, new pilot survey questions were implemented as part of the LDCP. In June 2015, the health unit modified the pilot questions to implement the final recommended LDCP questionnaire. As a result, responses to some questions in the survey are based on a partial year of data for 2015. This applies to questions that were removed (Table 1), which may have been replaced with similar concepts (see Appendix C: Surveys). However, among mothers with infants born between January 1 and May 31, 2015, there was still a substantial amount of useable data in the BFI Online database. Therefore, all of 2015 was analyzed to include as many responses as possible. Throughout the report, the responses to most questions did not differ between years; therefore, this missing data did not appear to affect the findings.

Table 1. Survey questions removed in June 2015

Questions	Type
How old will your baby be when you return to work or school?	Open text
What difficulties or concerns have you had with breastfeeding since we last contacted you?	Open text
How old was your baby, in days, when you stopped breastfeeding?	Open text
Have you used any programs or services to help you with breastfeeding?	Yes/No
Which services or programs have you used to help you with breastfeeding?	Open text
Which programs or services have you used to help you with breastfeeding since we last contacted you?	Open text
How old was your baby, in days, the first time he/she was given formula?	Open text
What were the reasons your baby was first given formula?	Open text

Questions	Type
If more than one reason, what was the main reason formula was first given to your baby?	Open text
Since birth, has your baby ever been given any liquids other than breastmilk or formula, such as water, sugar water or juice? Other liquids do not include vitamins or medications. If only vitamin drops or medications have been given to your baby, answer 'no' to this question.	Yes/No
How old was your baby, in days, the first time they were given liquids other than breastmilk or formula?	Open text
Did you attend a prenatal class that included information about breastfeeding?	Yes/No
Were you born in Canada? If no, what year did you come to Canada	Yes/No, Open text
How would you best describe your cultural, ethnic or racial group? Asian – East (e.g., Chinese, Japanese, Korean) Asian – South (e.g., Indian, Sri Lankan, Pakistani) Asian – South East (e.g., Malaysian, Filipino, Vietnamese) Black – Africa (e.g., Ghanaian, Kenyan, Somali) Black – North American (e.g., Canadian, American) Black – Caribbean (e.g., Jamaican, Barbadian) First Nations – Non-status First Nations – Status Indian – Caribbean (e.g., Guyanese with origins in India) Indigenous/Aboriginal not included elsewhere Inuit Latin American (e.g., Argentinean, Chilean, Salvadorian) Métis Middle Eastern (e.g., Egyptian, Iranian, Lebanese) White – European (e.g., English, Italian, Portuguese, Russian) White – North American (e.g., Canadian, American) Mixed Heritage (e.g., Black-African and White – North American): please specify Other(s): please specify Prefer not to answer	Select one, Open text
Did you use any programs or services to help you with breastfeeding?	Yes/No
Which programs or services have you used to help you with breastfeeding?	Open text
Was your baby given formula in the hospital?	Yes/No
How old was your baby, in days, the first time they were given formula? Since birth Age in days	Select one, Open text
What were the reasons for starting to give formula to your baby?	Open text
What was the MAIN reason formula was first given to your baby?	Open text
What was the MAIN reason you stopped breastfeeding?	Open text
How long do you plan to breastfeed or give breastmilk?	Open text
What liquids other than breastmilk or formula has your baby been given?	Open text
Since the last survey, has your baby ever been given any formula?	Yes/No
How old was your baby, in weeks or months, the first time they were given formula? Weeks	Open text

Questions	Type
Months	
In addition to solid foods, are you currently breastfeeding or supplying breastmilk to your baby?	Yes/No
How old was your baby (in days or weeks) the first time he/she was given formula? Since birth Age in days Age in weeks	Select one, Open text
Have you had any difficulties or concerns with breastfeeding since we last contacted you?	Yes/No
Have you used any programs or services to help you with breastfeeding since we last contacted you?	Yes/No
How old was your baby, in days or weeks, when you stopped breastfeeding? Age in days Age in weeks	Select one, Open text
How old was your baby, in weeks or months, when you stopped breastfeeding? Age in weeks Age in months	Select one, Open text
How old was your baby, in weeks or months, the first time they were given liquids other than breastmilk or formula? Age in weeks Age in months	Select one, Open text
Would you be willing to share the reasons why you did not breastfeed or give breastmilk to your baby?	Open text
What are you currently feeding your baby? Breastmilk: Baby is breastfeeding or is receiving expressed breastmilk but NOT currently receiving any formula A combination of breastmilk and infant formula: Baby is breastfeeding or is receiving expressed breastmilk AND currently receiving formula Infant formula: Baby is receiving formula but NOT currently breastfeeding or receiving expressed breastmilk	Select one

Although Oxford County Public Health chose to contact mothers prospectively, some health units chose to collect data at six months retrospectively. These differences led to non-standardized data collection between health units and required two follow-up LDCPs to support data analysis for the key indicators of any and exclusive breastfeeding at each time point:

- In 2017, the LDCP *Infant Feeding Surveillance Knowledge Translation Project for the 6-Month Retrospective Single Time Point Questionnaire* was completed¹⁶
- In 2018, the LDCP *Infant Feeding Surveillance Knowledge Exchange Continuation Project for Prospective Multiple Time Point Questionnaires* was completed¹²

The summary calculations for any and exclusive breastfeeding presented in this report follow the recommendations from the 2018 LDCP and are based on a cross-sectional analysis at each time point.¹² These summary calculations use the responses from many of the survey questions to create an overall proportion of any breastfeeding and exclusive breastfeeding.

However, this report also presents the findings for all individual questions that were asked in the survey. All questions were analyzed by year (based on the infant's date of birth) to determine if the responses were statistically significantly different between 2015 and 2017 using chi-square tests with a p-value <0.05. If there were no differences between the years, then data was presented as combined data from 2015 to 2017. Otherwise, data was presented separately for each year. Each question was also analyzed by maternal age, parity (i.e., first-time mother or not), urban or rural residence, education, household income and HBHC risk with only statistically significant differences presented in the report. Responses that were "don't know" or "prefer not to answer" were considered missing and removed from calculations if together they made up less than 5% of the responses for that question. This assumes that the data is missing at random, which may not be the case.

Appendix B: Introduction Email to Clients

Hello,

We are conducting a survey about feeding to help improve services for mothers and babies in your area. When you first had your baby, you agreed to be contacted for our infant feeding surveys. Your first survey will be sent to you when your baby is 2 months old. Two more surveys will be sent to you when your baby is 6 months and 12 months old as well. If you complete all 3 surveys, your name will be entered into a draw to win a \$50 prepaid gift card. Draws will be done every year in June and December.

You can choose to end the survey at any time. Please be assured that refusal of any kind at any stage will not affect the care or services you will receive. Any answers you provide will be protected and your name will never be used in any reports about the results of this survey.

Southwestern Public Health offers many services to assist you with transitioning to parenthood and breastfeeding. Please click on the links below to find out more information on the programs and services we provide:

Breastfeeding - Public Health Nurses and Lactation Consultants are available to support you with breastfeeding. <http://www.oxfordcounty.ca/HealthyYou/Pregnancybabies/Breastfeeding>

Ask a Nurse - Do you have questions about your baby's health and development? Drop in to an Ask a Nurse clinic any time between 9:30 a.m. and 11:00 am at various locations across Oxford County. This is a free service for families. Partners and siblings are welcome too! For dates and times see: <http://www.oxfordcounty.ca/askanurse>

If you have any questions, please feel free to contact:

Joanne Andrews,
Program Manager,
Southwestern Public Health
1-800-922-0096 ext 3403
jandrews@swpublichealth.ca
<http://www.swpublichealth.ca>

Appendix C: Surveys

Hello,

We are conducting a survey about feeding to help improve services for mothers and babies in your area. The survey should take about 5 minutes to complete. Please click on the link below to start the survey.

If you complete all 3 surveys (2 months, 6 months and 12 months), your name will be entered into a draw to win a \$50 prepaid gift card. Draws will be done every year in June and December.

Joanne Andrews,
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Southwestern Public Health recognizes that you chose the infant feeding method that was best for your family. Please know that regardless of whether you choose to breastfeed or formula feed your baby, staff from our health unit are available to answer any questions you may have regarding infant feeding. If you complete all 3 surveys (2 months, 6 months and 12 months), your name will be entered into a draw to win a \$50 prepaid gift card. Draws will be done every year in June and December.

Two-month survey

Note: This survey can be completed from when the baby is 2 months up to 2 months 28 days. If a mother doesn't complete this survey, they are considered "skipped" but still contacted to complete the 6-month survey. The questions for each survey begin at "Q3" to correspond with the LDCP data dictionary.

3. Is your baby currently living with you?

- Yes (go to question 4)
- No (end survey)

4. Are you currently living in Oxford County?

- Yes (go to question 7)
- No (end survey)

7. In the past week, what have you fed your baby? By this, we mean what milk?

- Breastmilk: Baby is breastfeeding or receiving expressed breastmilk but NOT currently receiving any infant formula (go to question 8)
- Combination of breastmilk and formula: Baby is breastfeeding or receiving expressed breastmilk AND is currently receiving infant formula (go to question 13)
- Formula: Baby is receiving infant formula but NOT currently breastfeeding or receiving expressed breastmilk (go to question 9)

8. Since birth, including any time spent in hospital, has your baby ever been given any formula?

- Yes (go to question 13)
- No (go to question 18)
- Don't know/Can't recall (go to question 18)
- Prefer not to answer (go to question 18)

9. Since birth, have you tried to breastfeed or provide breastmilk to your baby, even if only once?

- Yes (go to question 10)
- No (go to question 12)
- Don't know/Can't recall (go to question 13)
- Prefer not to answer (go to question 13)

10. How old was your baby when you stopped breastfeeding?

- Less than 2 weeks
- 2 weeks to less than 1 month
- 1 month to less than 1.5 months
- 2 months to less than 2.5 months
- 2.5 months to less than 3 months
- Don't know/can't recall
- Prefer not to answer

11. What were the reasons you stopped breastfeeding or giving breastmilk? (check all that apply)

- Baby unable to latch/not breastfeeding well/tongue tied
- Classic galactosemia, maple syrup urine disease, PKU
- Baby hungry, fussy, colicky
- Baby not gaining weight well
- Jaundice
- Low blood sugar
- Other health issues (TEXT BOX)
- Problems with expressing or delivering breastmilk (including pumping and lactation aids)
- Not enough milk
- Health reasons (surgery, medication, ill)
- Pain (sore nipples/breasts, biting)
- Maternal lifestyle (smoking, diet, alcohol)
- Previous experience
- Convenience
- Separation
- Encouraged by family/friend/partner
- Advice of a health care professional
- Don't know/can't recall
- Prefer not to answer
- Other (TEXT BOX)

Go to question 13

12. What were the reasons why you did not breastfeed or give breastmilk to your baby? (check all that apply)

- Classic galactosemia, maple syrup urine disease, PKU
- Other health issues (TEXT BOX)
- Health reasons (surgery, medication, ill)
- Maternal lifestyle (smoking, diet, alcohol)
- Previous experience
- Convenience
- Separation
- Encouraged by family/friend/partner
- Advice of a health care professional
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer

Go to question 15

13. Was your baby given formula in the hospital?

- Yes (go to question 15)
- No (go to question 14)
- Don't know/Can't recall (go to question 14)
- Prefer not to answer (go to question 14)

14. How old was your baby when he/she was first given formula?

- Less than 0.5 months
- 0.5 months to less than 1 month
- 1 month to less than 1.5 months
- 1.5 months to less than 2 months
- 2 months to less than 2.5 months
- 2.5 months to less than 3 months
- Don't know/can't recall
- Prefer not to answer

15. Did a health care professional recommend that you give your baby formula?

- Yes (go to question 16)
- No (go to question 17)
- Don't know/Can't recall (go to question 17)
- Prefer not to answer (go to question 17)

16. What health care professional recommended that you give your baby formula? (check all that apply)

- Doctor in hospital (including obstetrician)
- Nurse in hospital
- Lactation consultant in hospital
- Midwife in hospital
- Doctor in community
- Lactation consultant in community
- Nurse practitioner in community
- Public health nurse in community
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer

17. What were the reasons your baby was first given formula? (check all that apply)

- Baby unable to latch/not breastfeeding well/tongue tied
- Classic galactosemia, maple syrup urine disease, PKU
- Baby hungry, fussy, colicky
- Baby not gaining weight well
- Jaundice
- Low blood sugar
- Other health issues
- Not enough milk
- Health reasons (surgery, medication, ill)
- Pain (sore nipples/breasts, biting)
- Maternal lifestyle (smoking, diet, alcohol)
- Previous experience
- Convenience
- Separation
- Encouraged by family/friend/partner
- Advice of a health care professional
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer

If mother is feeding breastmilk only or combo feeding (Q7) go to question 18

If mother is formula feeding only (Q7) go to question 22

18. Is returning to work or school a factor in how long you plan to breastfeed or give breastmilk?

- Yes
- No
- Don't know/Can't recall
- Prefer not to answer

20. Have you had any difficulties or concerns with feeding your baby?

- Yes (go to question 21)
- No (go to question 22)
- Don't know/Can't recall (go to question 22)
- Prefer not to answer (go to question 22)

21. What difficulties or concerns have you had with feeding your baby? (check all that apply)

- Baby unable to latch/not breastfeeding well/tongue tied
- Baby hungry, fussy, colicky
- Baby not gaining weight well
- Low blood sugar
- Other health issues (TEXT BOX)
- Problems with expressing or delivering breastmilk (including pumping and lactation aids)
- Not enough milk
- Health reasons (surgery, medication, ill)
- Pain (sore nipples/breasts, biting)
- Maternal lifestyle (smoking, diet, alcohol)
- Separation
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer

22. Did you use any programs or services to help you with feeding your baby?

- Yes (go to question 23)
- No (go to question 25)
- Don't know/Can't recall (go to question 25)
- Prefer not to answer (go to question 25)

23. Which services/programs have helped you with feeding your baby? (check all that apply)

- Public health breastfeeding clinic
- Public health home visiting
- Facebook/Peer support group
- La Leche League
- Telehealth
- Private lactation consultant
- Hospital breastfeeding clinic
- Lactation consultant in hospital
- Nurse in hospital
- Family/friend/partner
- Other
- Don't know/can't recall
- Prefer not to answer

25. Is this your first baby? (or babies in the event of multiples)

- Yes (go to question 27)
- No (go to question 26)
- Prefer not to answer (go to question 27)

26. Have you ever breastfed or tried to breastfeed before?

- Yes
- No
- Prefer not to answer

27. In the past 5 years, have you participated in a prenatal and/or breastfeeding class that included information about breastfeeding (includes in-person or online)?

- Yes (go to question 28)
- No (go to question 29)
- Don't know/Can't recall (go to question 29)
- Prefer not to answer (go to question 29)

28. Was this prenatal/breastfeeding class provided by your local health unit?

- Yes
- No
- Don't know/Can't recall
- Prefer not to answer

29. What is your marital status?

- Married
- Common law
- Divorced/Separated
- Single
- Widowed
- Other, please specify (TEXT BOX)
- Prefer not to answer

30. What is your highest level of education?

- Some high school
- High school diploma or equivalent
- Some post-secondary
- College/university
- Prefer not to answer

31. What was your total family income before taxes last year?

- Less than \$30,000
- \$30,000 - \$59,999
- \$60,000 - \$89,999
- \$90,000 - \$119,999
- \$120,000 - \$149,999
- \$150,000 or more
- Don't know/can't recall
- Prefer not to answer

32. How many people does this income support?

- Enter number of people (TEXT BOX)

33. Are you aware of your right to breastfeed in public? For more information on your rights please visit: <http://www.ohrc.on.ca/en/policy-preventing-discrimination-because-pregnancy-and-breastfeeding>

- Yes
- No
- Prefer not to answer

Six-month survey

Note: This survey can be completed from when the baby is 6 months up to 6 months 28 days. If a mother doesn't complete this survey, they are considered discontinued (or lost to follow-up) and not contacted again.

3. Is your baby currently living with you?

- Yes (go to question 4)
- No (end survey)

4. Are you currently living in Oxford County?

- Yes (go to question 7)
- No (end survey)

5. In the past week, what have you fed your baby? By this, we mean what milk?

- Breastmilk: Baby is breastfeeding or receiving expressed breastmilk but NOT currently receiving any infant formula (go to question 6)
- Combination of breastmilk and formula: Baby is breastfeeding or receiving expressed breastmilk AND is currently receiving infant formula (go to question 10)
- Formula: Baby is receiving infant formula but NOT currently breastfeeding or receiving expressed breastmilk (go to question 7)

6. Since birth, including any time spent in hospital, has your baby ever been given any formula?

- Yes (go to question 10)
- No (go to question 14)
- Don't know/Can't recall (go to question 14)
- Prefer not to answer (go to question 14)

7. Since the last time we contacted you, which was when your baby was about 2 months old, have you tried to breastfeed or provide breastmilk to your baby, even if only once?

- Yes (go to question 8)
- No (go to question 10)
- Don't know/Can't recall (go to question 11)
- Prefer not to answer (go to question 11)

8. How old was your baby when you stopped breastfeeding?

- 2 months to less than 2.5 months
- 2.5 months to less than 3 months
- 3 months to less than 3.5 months
- 3.5 months to less than 4 months
- 4 months to less than 4.5 months
- 4.5 months to less than 5 months
- 5 months to less than 5.5 months
- 5.5 months to less than 6 months
- 6 months to less than 6.5 months
- 6.5 months to less than 7 months
- Don't know/Can't recall
- Prefer not to answer

9. What were the reasons you stopped breastfeeding or giving breastmilk? (check all that apply)

- Baby unable to latch/not breastfeeding well/tongue tied
- Classic galactosemia, maple syrup urine disease, PKU
- Baby hungry, fussy, colicky
- Baby not gaining weight well
- Jaundice
- Low blood sugar
- Other health issues
- Not enough milk
- Health reasons (surgery, medication, ill)
- Pain (sore nipples/breasts, biting)
- Maternal lifestyle (smoking, diet, alcohol)
- Previous experience
- Convenience
- Separation
- Encouraged by family/friend/partner
- Advice of a health care professional
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer

10. How old was your baby when they were first given formula?

- 2 months to less than 2.5 months
- 2.5 months to less than 3 months
- 3 months to less than 3.5 months
- 3.5 months to less than 4 months
- 4 months to less than 4.5 months
- 4.5 months to less than 5 months
- 5 months to less than 5.5 months
- 5.5 months to less than 6 months
- 6 months to less than 6.5 months
- 6.5 months to less than 7 months
- Don't know/can't recall
- Prefer not to answer

11. Did a health care professional recommend that you give your baby formula?

- Yes (go to question 12)
- No (go to question 13)
- Don't know/can't recall (go to question 13)
- Prefer not to answer (go to question 13)

12. What health care professional recommended that you give your baby formula? (check all that apply)

- Doctor in hospital (including obstetrician)
- Nurse in hospital
- Lactation consultant in hospital
- Midwife in hospital
- Doctor in community
- Lactation consultant in community
- Nurse practitioner in community
- Public health nurse in community
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer

13. What were the reasons your baby was first given formula? (check all that apply)

- Baby unable to latch/not breastfeeding well/tongue tied
- Classic galactosemia, maple syrup urine disease, PKU
- Baby hungry, fussy, colicky
- Baby not gaining weight well
- Jaundice
- Low blood sugar
- Other health issues
- Not enough milk
- Health reasons (surgery, medication, ill)
- Pain (sore nipples/breasts, biting)
- Maternal lifestyle (smoking, diet, alcohol)
- Previous experience
- Convenience
- Separation
- Encouraged by family/friend/partner
- Advice of a health care professional
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer

Go to question 14 if giving breastmilk only or combo feeding

Go to question 18 if formula feeding only

14. Is returning to work or school a factor in how long you plan to breastfeed or give breastmilk?

- Yes
- No
- Don't know/can't recall
- Prefer not to answer

14a. Did you know that your employer must consider your breastfeeding needs when you return to work? For more information on your rights please visit:

<http://www.ohrc.on.ca/en/policy-preventing-discrimination-because-pregnancy-and-breastfeeding>

- Yes
- No
- Prefer not to answer

16. Since we last contacted you, have you had any difficulties or concerns with feeding your baby?

- Yes (go to question 17)
- No (go to question 18)
- Don't know/can't recall (go to question 18)
- Prefer not to answer (go to question 18)

17. What difficulties or concerns have you had with feeding your baby? (check all that apply)

- baby unable to latch/not breastfeeding well/tongue tied
- Baby hungry, fussy, colicky
- Baby not gaining weight well
- Low blood sugar
- Other health issues (TEXT BOX)
- Problems with expressing or delivering breastmilk (including pumping and lactation aids)
- Not enough milk
- Health reasons (surgery, medication, ill)
- Pain (sore nipples/breasts, biting)
- Maternal lifestyle (smoking, diet, alcohol)
- Separation
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer

18. Did you use any programs or services to help you with feeding your baby?

- Yes (go to question 19)
- No (go to question 20)
- Don't know/can't recall (go to question 20)
- Prefer not to answer (go to question 20)

19. Which services/programs have helped you with feeding your baby? (check all that apply)

- Public health breastfeeding clinic
- Public health home visiting
- Facebook/Peer support group
- La Leche League
- Telehealth
- Private Lactation Consultant
- Hospital breastfeeding clinic
- Lactation consultant in hospital
- Nurse in hospital
- Family/friend/partner
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer

20. Since the last survey, has your baby ever been given any liquids other than breastmilk or formula, such as water, sugar water or juice? Other liquids do not include vitamins or medications. If only vitamin drops or medications have been given to your baby, answer "no" to this question.

- Yes (go to question 21)
- No (go to question 23)
- Don't know/can't recall (go to question 23)

21. What liquids other than breastmilk or formula has your baby been given? (check all that apply)

- Water
- Sugar water
- Juice
- Cow's milk
- Plant-based milk (e.g. almond, soy, rice, etc.)
- Tea
- Other
- Don't know/can't recall
- Prefer not to answer

22. How old was your baby in months the first time they were given liquids other than breastmilk or formula?

- Less than 2 weeks
- 2 weeks to less than 1 month
- 1 month to less than 1.5 months
- 1.5 months to less than 2 months
- 2 months to less 2.5 months
- 2.5 months to less than 3 months
- 3 months to less than 3.5 months
- 3.5 months to less than 4 months
- 4 months to less than 4.5 months
- 4.5 months to less than 5 months
- 5 months to less than 5.5 months
- 5.5 months to less than 6 months
- 6 months to less than 6.5 months
- 6.5 months to less than 7 months
- Don't know/can't recall
- Prefer not to answer

23. Since birth, has your baby been given any solid food such as meat, cereal, vegetables or fruit?

- Yes (go to question 24)
- No (go to question 28)
- Don't know/can't recall (end survey)

24. How old was your baby the first time they were given any solid food such as meat, cereal, vegetables or fruit?

- Less than 2 weeks
- 2 weeks to less than 1 month
- 1 month to less than 1.5 months
- 1.5 months to less than 2 months
- 2 months to less 2.5 months
- 2.5 months to less than 3 months
- 3 months to less than 3.5 months
- 3.5 months to less than 4 months
- 4 months to less than 4.5 months
- 4.5 months to less than 5 months
- 5 months to less than 5.5 months
- 5.5 months to less than 6 months
- 6 months to less than 6.5 months
- 6.5 months to less than 7 months
- Don't know/can't recall
- Prefer not to answer

25. Did a healthcare professional recommend that you give your baby solids then?

- Yes
- No
- Don't know/can't recall
- Prefer not to answer

26. What were the reasons your baby was first given solids? (check all that apply)

- Baby will gain more weight
- Baby had teeth
- Baby wanted solids/baby-led weaning
- To sleep better
- Reflux
- To avoid allergies
- Felt like he/she was ready
- Previous experience
- Other
- Don't know/can't recall
- Prefer not to answer

Twelve-month survey

Note: This survey can be completed from when the baby is 12 months up to 12 months 28 days. The mother is contacted if they completed the 6-month survey, regardless of infant feeding method (i.e., breastmilk, formula or both).

3. Is your baby currently living with you?

- Yes (go to question 4)
- No (end survey)

4. Are you still living in Oxford County?

- Yes (go to question 5)
- No (end survey)

5. In the past week, have you provided breastmilk to your baby?

- Yes (end survey)
- No (go to question 6)

6. How old was your baby in months when you stopped providing breastmilk?

- 6 months to less than 6.5 months
- 6.5 months to less than 7 months
- 7 months to less than 7.5 months
- 7.5 months to less than 8 months
- 8 months to less than 8.5 months
- 8.5 months to less than 9 months
- 9 months to less than 9.5 months
- 9.5 months to less than 10 months
- 10 months to less than 10.5 months
- 10.5 months to less than 11 months
- 11 months to less than 11.5 months
- 11.5 months to less than 12 months
- 12 months to less than 12.5 months
- 12.5 months to less than 13 months
- Don't know/can't recall
- Prefer not to answer

7. What were the reasons you stopped breastfeeding or giving breastmilk? (check all that apply)

- Baby unable to latch/not breastfeeding well/tongue tied
- Classic galactosemia, maple syrup urine disease, PKU
- Baby hungry, fussy, colicky
- Baby not gaining weight well
- Jaundice
- Low blood sugar
- Other health issues
- Not enough milk
- Health reasons (surgery, medication, ill)
- Pain (sore nipples/breasts, biting)
- Maternal lifestyle (smoking, diet, alcohol)
- Previous experience
- Convenience
- Separation
- Encouraged by family/friend/partner
- Advice of a health care professional
- Other (TEXT BOX)
- Don't know/can't recall
- Prefer not to answer



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