

Breastfeeding Surveillance in Ontario



LDCP Breastfeeding Surveillance Project Team

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EXECUTIVE SUMMARY

Breastfeeding is an important determinant of health associated with many benefits for both the baby and mother. The Ontario Public Health Standards requires public health units in Ontario to monitor breastfeeding trends. The Ministry of Health and Long-Term Care, Public Health Division, Health Promotion Division also specified the Baby-Friendly Initiative (BFI) status as a Public Health Accountability Agreement Indicator for 2011-13.

Despite this, there is no province-wide standardized data collection method or tool in Ontario. The purpose of this report is to assess the literature on breastfeeding surveillance and data collection methods outside of Ontario public health units, and examine what Ontario public health units are doing currently for breastfeeding surveillance.

A scoping review was conducted using the research question: what is the nature of literature on existing breastfeeding tools and data collection methods outside of public health units in Ontario? The locally driven collaborative project (LDCP) group emailed a stakeholder's survey to all public health units in Ontario in November 2012 to be completed online. Questions included sampling method, data collection, and costs associated with breastfeeding surveys and surveillance in the past ten years.

The findings from the scoping literature review on breastfeeding surveillance and data collection identified several key themes. Data on breastfeeding have predominantly focused on factors affecting initiation, duration, and exclusivity as well as predicting breastfeeding cessation. Fewer studies have examined breastfeeding surveillance and data collection/measurement methods, such as survey design, cognitive testing of items, maternal recall, or time periods for survey administration. The literature did indicate:

- Standardized breastfeeding surveillance in Canada is limited both between and within jurisdictions, while national breastfeeding surveillance datasets from the United States lack consistency in definitions and vary depending on the scope and purpose of the survey.
- Evidence indicates that rates for the duration and exclusivity of breastfeeding are strongly associated with psychological factors, such as maternal confidence, more so than unchangeable socio-demographic characteristics (e.g., household income).
- Comprehensive breastfeeding education across the prenatal, intra-partum, and postnatal periods is important to enhance mothers' knowledge about the benefits of breastfeeding for herself and her baby. Helping to ensure she feels comfortable and adequately prepared with the knowledge and skills to choose to breastfeed as well as initiate and continue to breastfeed may improve duration and exclusivity outcomes. This may also assist mothers in becoming aware of the community resources available to them should they have any concerns or difficulties with breastfeeding, particularly in the early postpartum period.



- Maternal recall for when she initiated breastfeeding and the duration for which she breastfed has been reported as being relatively accurate for up to three years. However, the evidence shows that maternal recall becomes less accurate when mothers are asked about the introduction of water, breast milk substitutes and solid foods.
- Maternal frustration with breastfeeding has been seen to influence mothers' decisions to wean infants as early as two weeks.

The environmental scan was completed by all 36 health units in Ontario. The results indicated:

- Twenty four Ontario public health units have conducted a breastfeeding survey in the past ten years, and 18 are currently using a breastfeeding surveillance system.
- The methods used by Ontario health units to collect information about breastfeeding are similar, with a few notable differences in the large health units compared to the smaller ones.
- Despite past experience with collecting information regarding breastfeeding and all health units reporting at least preliminary BFI status, over half of Ontario public health units reported that they did not have enough breastfeeding data at the local level to achieve BFI designation.
- Over 90% of Ontario public health units expressed interest in the implementation of a standardized breastfeeding surveillance tool province wide.

The results from the scoping review and environmental scan will be used to guide the development of a standardized data collection tool and method that could potentially be used across the province, as part of a Public Health Ontario-funded locally driven collaborative project. The tool, if adopted, will enable public health units across Ontario to have accurate, standardized, and comparable breastfeeding data.



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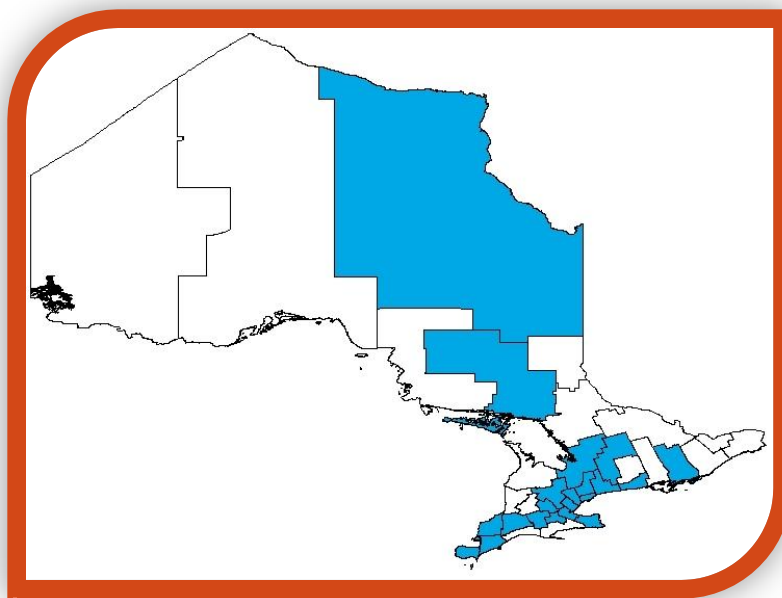


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BACKGROUND

Breastfeeding is an important determinant of health and has been associated with significant health benefits for both children and mothers. As such, the Ministry of Health and Long-Term Care, Public Health Division, Health Promotion Division has included the Baby-Friendly Initiative (BFI) status as a Public Health Accountability Agreement Indicator for 2011-13. Established in 1991, the Breastfeeding



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Committee for Canada (BCC) is the national authority for the BFI in Canada. The BCC (2012) outlines the data required on breastfeeding rates at the community level for BFI designation, including upon “entry to their service and a minimum of two additional time frames up to 6 months, and to show an increase in breastfeeding rates over time” (p. 2). In order to fulfill these numerous expectations, each public health unit in Ontario will need reliable and valid data that measure breastfeeding rates.

With national interest and support growing for breastfeeding surveillance, breastfeeding surveillance was one of six projects prioritized by Ontario public health units in 2012 as one of Public Health Ontario’s Locally Driven Collaborative Projects (LDCP). The project team is comprised of 20 local public health units working to develop a standardized breastfeeding tool and method that could be used by any public health unit in Ontario to systematically collect local data related to breastfeeding in a standardized way. The data would be used by public health units to monitor breastfeeding rates and trends and would be comparable across public health units. The project is a multi-phasic feasibility study including:

- PHASE 1 – Situational Assessment
Environmental scan of public health units across Ontario and a scoping review of the literature to determine strengths and limitations of existing methods and tools.
- PHASE 2 – Development/Adaptation
The development and initial testing of standardized methodology and data collection tool with consultation of an advisory group.
- PHASE 3 – Conduct Pilot
Pilot testing of a standardized tool and method in at least 3-6 public health units in Ontario.

- PHASE 4 – Evaluate
Evaluation and analysis of pilot testing results.
- PHASE 5 – Summarize, Recommend and Disseminate
Creation of evaluation report with project team and advisory group recommendations. This information will be disseminated in various formats including presentation, written summaries and tools to support the implementation of the resulting model by public health units.

The situational assessment conducted November 2012 – February 2013 consisted of two parts: 1) a scoping review to assess the literature on breastfeeding surveillance and data collection methods outside of Ontario public health units; 2) an environmental scan to assess the current methods of breastfeeding surveillance in Ontario which will inform the LDCP team of what Ontario public health units recommend in the development of a breastfeeding surveillance tool.

Upon completion of the LDCP Breastfeeding project in October 2014, recommendations for a standardized breastfeeding tool and method will be developed which could be used by any public health unit in Ontario, thereby allowing health units throughout the province to systematically collect and monitor local data related to breastfeeding in a comparable way.

SCOPING REVIEW

Methods:

This scoping review was conducted based on the methodological framework developed by Arksey and O'Malley (2005), which outlines five stages of performing a scoping review:

- 1) Identifying the research question;
- 2) Identifying relevant studies;
- 3) Study selection;
- 4) Charting the data, and collating; and
- 5) Summarizing and reporting the results.

Research question: What is the nature of literature on existing breastfeeding surveillance tools and data collection methods outside of Ontario public health units?

Search Strategy

As scoping reviews seek to examine the nature of a research area, the relevant studies were determined by starting with a broad search of peer-reviewed databases, including Cumulative Index to Nursing and Allied Health (CINAHL), Embase, Medline, and Pubmed. Assistance was also sought from the Public Health Ontario Hub librarians for an internet search of grey literature from: the Cochrane Database of Systematic Reviews, the Ontario Public Health Librarians Association Grey Literature Database of Public



Health Reports, Google, and custom search engines for United States Government Information, Canadian Public Health Information and Ontario public health unit websites.

Search Terms

The keywords used for both peer-reviewed and grey literature searches consisted of: breastfeeding surveillance, infant feeding surveillance, survey questionnaire, data collection tools, evaluation, and validation. These key words were also used together to create search terms including, but not limited to: breastfeeding AND validation, infant feeding AND evaluation, or infant feeding AND survey.

Study Selection

The search strategy results were limited to English language literature from the past ten years. Abstracts were reviewed to collect relevant articles and the reference lists of these selected studies were also scanned. Additional inclusion and exclusion criteria were considered during the selection of studies to be included in the scoping review to maintain consistency with the goals of the Locally Driven Collaborative Project. Studies on pre-term infants and the Special Supplemental Nutrition Program for Women, Infants and Children Program (WIC) were not selected for the review because of the variability of methodologies developed specifically to monitor breastfeeding with those identified as high-risk. Papers on hospital practices were also not included in the review because evaluation of hospital policies was considered beyond the project's focus of developing a methodology for health units "upon entry to community service". Studies from within Ontario were also excluded as an environmental scan of current breastfeeding data collection throughout Ontario public health units was conducted as part of this project.

Charting

The data collected was then charted, a process described by Arksey and O'Malley (2005) as akin to "data extraction" usually performed during a systematic review where qualitative data is organized into categories and themes. For a scoping review, however, a more broad approach is taken as the methods or "process" of each study is taken into account in order to provide context around the study.

The data collected was reviewed and the articles were sorted by information according to:

- Data collection method (surveys, surveillance, questionnaires);
- Participant groups (consumer opinion panels, hospital records, representative population);
- Scope (national, regional);
- Objectives; and
- Significant results;

Using these descriptive characteristics of the studies, several themes emerged which the literature was then categorized into, including: surveillance, recall, time points, initiation, duration, predicting cessation, and exclusivity.



Results:

Overview of Results

After performing the search strategy for both peer-reviewed databases and grey literature, a total of 9152 articles and reports were identified as potentially relevant. Through screening abstracts, 42 papers were collected for review and their reference lists were also scanned for any other relevant papers as well as key journals and websites. Upon further evaluation of the studies, 31 papers were included for charting and another three studies were identified from the reference list, key journals and web searching scan.

A total of 34 papers were included for charting and fully reviewed for the scoping review (Figure 1).

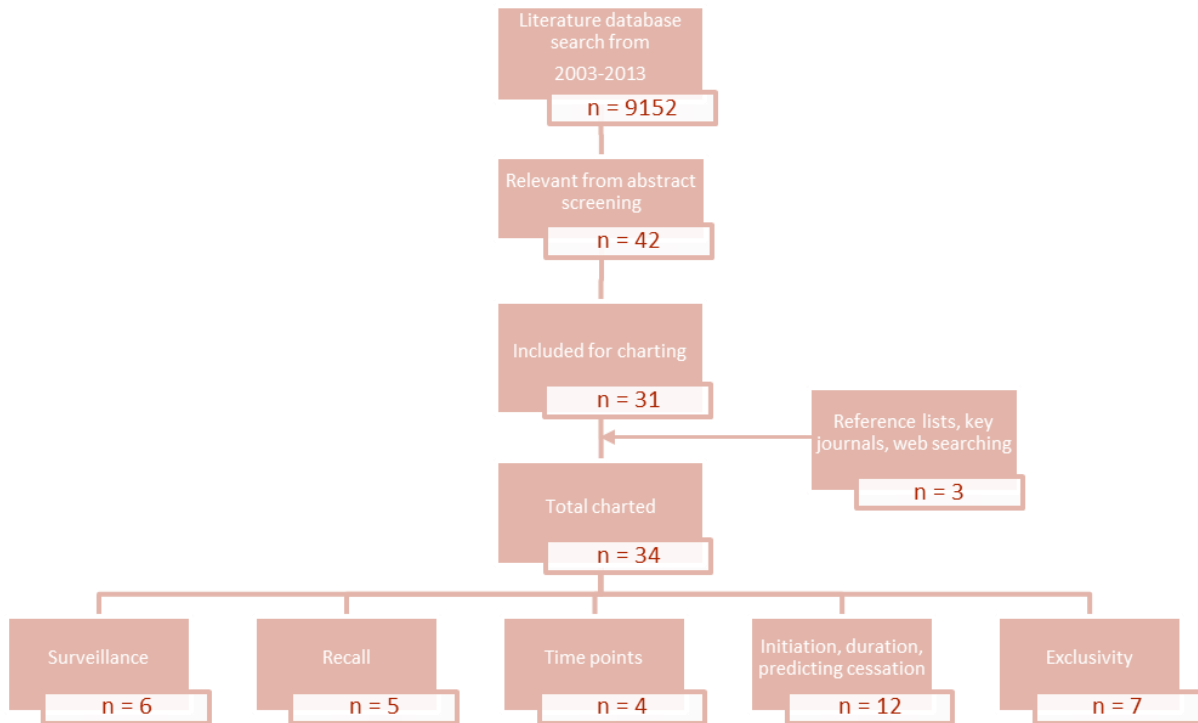


Figure 1: Information flow of scoping review search strategy

Surveillance

Canada

Information on Canadian breastfeeding surveillance systems is limited, although a project from the British Columbia Ministry of Health provided key information on jurisdictional breastfeeding data collection methods throughout the nation. The findings from this report, “Review of Breastfeeding

Practices and Programs: BC and Pan-Canadian Jurisdictional Scan” released in March 2012, drew from survey questionnaire responses. The survey was distributed to 37 stakeholders throughout British Columbia and across the country who were considered breastfeeding experts. The findings present some of the latest and most comprehensive data available on breastfeeding surveillance in Canada, or a lack thereof. Table 1 shows a summary of the breastfeeding data collection methods in each province in Canada.

Table 1: Breastfeeding surveillance data collection methods in Canada

Jurisdiction	Data Collection Methods
British Columbia	Integrated Public Health Information System (iPHIS)
Alberta	No consistent provincial system for data collection <ul style="list-style-type: none"> - Initiation rates on hospital discharge - Duration rates sometimes collected during public health clinic visits
Saskatchewan	Regional health authorities determine their own methods <ul style="list-style-type: none"> - In the process of developing one-time survey to collect provincial data on breastfeeding initiation, duration and exclusivity. To be completed in 2012.
Manitoba	Administrative data on breastfeeding indicators on hospital discharge collected by Manitoba Centre for Health Policy (MCHP) and University of Manitoba <ul style="list-style-type: none"> - Manitoba Health collects breastfeeding initiation rates on hospital discharge - Community Health Survey linked for duration rates - Some Regional Health Authorities collect information on exclusivity and duration
Ontario	Intention, initiation, and exclusivity collected at hospital discharge through Better Outcomes Registry Network (BORN) <ul style="list-style-type: none"> - Duration collected by some public health units
Quebec	Breastfeeding data collected at hospital discharge <ul style="list-style-type: none"> - 2005-06, provincial phone survey at 6 months for duration data - Since 2009, Community Health Centres have been collecting data in an automated system when seeing new mothers at first visit, immunizations, or other public health visits up to 2 years, but it is not a complete record
New Brunswick	<ul style="list-style-type: none"> - Initiation rates collected at hospital discharge - Duration and exclusivity collected at 6 weeks, 6 months, 1 year through public health units and immunization clinics - 1996 and 2006 follow-up surveys used as duration baseline
Nova Scotia	Nova Scotia Atlee Perinatal Database (NSAPD), the Health Beginnings Database and Canadian Community Health Survey data. Breastfeeding initiation data collected at hospital discharge by Nova Scotia Reproductive Care Program <ul style="list-style-type: none"> - One district plans to collect duration rates



	<ul style="list-style-type: none"> - Public health gathers breastfeeding data on first contact with mom, within 48 hours
Prince Edward Island	<p>Intention, initiation rates collected at discharge by PEI Reproductive Health Program</p> <ul style="list-style-type: none"> - Duration and exclusivity collected at some public health units and immunization clinics
Newfoundland	<p>Data entered into Newfoundland Provincial Perinatal Program (NLPP) database, which uses BCC definitions</p> <ul style="list-style-type: none"> - Data collected from hospital records, newborn screening and public health units at immunization clinics on duration
Nunavut	<p>Maternal and Child Health Surveillance System beginning to be implemented</p> <ul style="list-style-type: none"> - Collects data at birth, 6 months, 1 year, includes exclusivity

(Adapted from “Review of Breastfeeding Practice and Programs: BC and Pan-Canadian Jurisdictions Scan”, 2012)

United States

The size and scope of breastfeeding surveillance systems in the United States also varies greatly depending on the purpose of the survey used to collect breastfeeding information. The review by Chapman and Perez-Escamilla (2009), offers various recommendations to enhance the quality of national breastfeeding data. Some areas for improvement include: eliminating inconsistent breastfeeding definitions, expanding limited ethnic descriptors, collecting additional relevant variables, modifying suboptimal recall periods, and improving links between breastfeeding databases (Chapman & Perez-Escamilla, 2009). Table 2 shows the national United States federally funded breastfeeding datasets and the data collection methods used for each data set.

Table 2: National US Federally Funded Breastfeeding Datasets

Dataset	Data Collection Methods
Early Childhood Longitudinal Survey, Birth Cohort (ECLS-B)	<ul style="list-style-type: none"> - Longitudinal, cross-sectional - In-person computer, self-administered - Questions on 9 months
Infant Feeding Practices Survey II (IFPSII)	<ul style="list-style-type: none"> - Longitudinal - Telephone, mailed questionnaires - Data collected prenatally, after birth, 3 weeks, 2, 3, 4, 5, 6, 7, 9, 10, 12 months - Previously conducted in 1993-94
National Health and Nutrition Examination Survey 2007 (NHANES)	<ul style="list-style-type: none"> - Cross-sectional - Administered in-person - Asked about each child ≤ 6 years old - Biennial
National Immunization Survey 2006 (NIS)	<ul style="list-style-type: none"> - Cross-sectional - Telephone interview for parents, survey mailed to doctors - 19-35 months



	- Annual
National Survey of Children's Health 2007 (NSCH)	- Cross-sectional - Telephone interviews - ≤ 6 years - Every 4 years
National Survey of Family Growth (NSFG)	- Cross-sectional - Administered in-person - Asked for each child ≤18 years old - Annual
Pediatric Nutrition Surveillance System (PedNSS)	- Program-based surveillance - Majority WIC data - Through 24 months - Annual
Pregnancy Nutrition Surveillance System (PNSS)	- Program-based surveillance - Majority WIC data - 2-5 months - Annual
Pregnancy Risk Assessment Monitoring System (PRAMS)	- Cross-sectional - Mailed, phone follow-up of non-responders - 2-6 months - Annual

(Adapted from: Chapman and Perez-Escamilla, 2009)

Initiation, Duration, Cessation, and Exclusivity

Factors found to be associated with low breastfeeding rates

Some demographic characteristics have often been associated with lower breastfeeding rates, such as being unmarried, being under the age of 20, having a household income below the poverty line, and having less than a high school education (Hauck et al., 2010; Spark, 2007; Whalen & Cramton, 2010). Other factors exacerbating barriers to breastfeeding have also been identified, most importantly formula marketing, lack of support, lack of guidance, lack of role models, lack of timely and postpartum follow-up care, disruptive hospital maternity care practices, and an increasing number of women in the workforce (Spark, 2007).

Intra-partum breastfeeding education has been cited as an integral component of establishing initiation of breastfeeding and is a powerful predictor of duration (Spark, 2007). In a study from Ireland (Ward, 2009), surveys were administered to eligible mothers at the first postnatal visit and visits at six and fourteen weeks post-partum. Occasional bottle feeds of breast milk substitute during hospital stay, known or unknown, were found to be detrimental to improving exclusivity and significantly shortened duration of breastfeeding (Ward, 2009).

Numerous studies have observed lower breastfeeding duration rates with mothers who return to work outside of the home within three and six months after birth (Amin et al., 2011; Sasaki, 2010; Spark,



2007). With this finding and growing demographic of the population, the data points to the importance of workplace policies supportive of breastfeeding as protective for mothers who wish to continue breastfeeding their infants after returning to work. In Ontario, it is illegal to discriminate against breastfeeding women and the law protects a mother's right to breastfeed (Ontario Public Health Association, 2008). The law passed by the Ontario Human Rights Commission states that, "Employees who require breaks for breastfeeding or expressing breast milk should be given these breaks and should not be asked to forgo regular meal time breaks or be asked to work additional time" (Ontario Human Rights Commission, 2001).

Two studies from Australia focused on factors affecting breastfeeding initiation, duration, and prevalence of early cessation through the use of surveys. Forde and Miller (2010) utilized longitudinal data as well as a telephone survey at zero to 10 days, six to eight weeks, three to four months, and six months to examine protective and risk factors of breastfeeding. Hauck, Fenwick, Dhaliwal, and Butt (2010) also assessed initiation and prevalence rates, while exploring the reasons for stopping breastfeeding. Using a cross-sectional survey at nine months post-birth, data was captured for infant feeding practice during hospital stay and in the early postnatal period (Hauck et al., 2010).

Reasons most often given for ceasing breastfeeding and introducing artificial breast milk consisted of complex issues relating to both challenges faced by mothers and infant behaviours. Mothers have attributed cessation of breastfeeding to difficulties with latching, perceived low milk supply, pain and discomfort (i.e. sore nipples, mastitis, and infections), as well as emotional reasons (i.e. depression, coping with other children, too time consuming) (Forde et al., 2010; Hauck et al., 2010). In assessing "the relationship between vulnerability factors and breastfeeding outcome", Dunn, et al. (2005) analyzed cross-sectional telephone survey data collected at 1 and 6 weeks postpartum in Ottawa, Ontario, Canada. The most significant predictor they found for early weaning was a mother's low level of confidence in breastfeeding, while factors such as age and education did not demonstrate as strong of an impact on continuation of breastfeeding (Dunn et al., 2005). Dunn et al. (2005) also found that postpartum depression was an independent predictor of breastfeeding.

Infant behaviours related to mothers' decision to introduce artificial breast milk and breastfeeding cessation have been described as fussiness, poor interest, troublesome sleeping patterns, and inadequate weight gain (Forde & Miller, 2010; Hauck et al., 2010). These findings were also in line with American studies that investigated predictors of breastfeeding duration and exclusivity (Whalen and Cramton, 2010). Another study, conducted in Italy by Zobbi, et al. (2011) also showed that the use of a pacifier almost doubled the risk of breastfeeding cessation.

Factors found to be associated with high breastfeeding rates

Psychological factors, such as breastfeeding confidence, are the strongest predictors of breastfeeding duration and it has been speculated that these psychological traits may be indicative of the ability to overcome socio-demographic challenges (Dick et al., 2002; Dunn et al., 2005; Kronborg et al., 2007; Whalen & Cramton, 2010). Considering the well-documented impact of the significance of mothers' psychological attitudes, prenatal education has been cited as critical to initiating breastfeeding and enhancing mothers' knowledge about the benefits of breastfeeding and available support resources



throughout the community. The Centers for Disease Control and Prevention (CDC) (Spark, 2007) has found that, “prenatal breastfeeding education is the most effective single intervention for increasing breastfeeding initiation and short-term duration” (p. 208). A Canadian study by Dennis, et al (2012) demonstrated that exclusivity was strongly associated with an expressed intention to breastfeed through a maternal infant feeding plan or planned duration of exclusive breastfeeding at the prenatal stage. In the Australian study by Forde and Miller (2010), the strongest predictor of breastfeeding was a mother’s search for antenatal breastfeeding information. The first few hours after birth are a critical time and infants who have been put to breast within this time usually continue breastfeeding for longer than those not put to breast (Spark, 2007). Rooming-in has been proven to be valuable because of the increased opportunities to practice breastfeeding (Spark, 2007). Other positive factors associated with the initiation and continuation of breastfeeding included maternal age, education, and degree of urbanization (Lande, 2003; Forste & Hoffman, 2008; Ward, 2009; Forde & Miller, 2010; Hauck et al., 2010; Amin et al., 2011).

Design

Recall

Studies of the accuracy of maternal recall have had differing findings concerning the validity and reliability of maternal recall of breastfeeding. These differences are partially due to variability between data collection methods for breastfeeding research (Wambach et al., 2005). A review of eleven published studies from 1966 to 2003 in English was performed by Li, Scanlon, and Serdula (2005). After an evaluation of these studies, Li et al. (2005) concluded that, “maternal recall is a valid and reliable estimate of breastfeeding initiation and duration, especially when the duration of breastfeeding is recalled after a short period (≤ 3 years)” (p.103). Other articles, such as Hector’s (2011) discussion paper on “complexities and subtleties in the measurement and reporting of breastfeeding practices” have agreed with these findings as well as other maternal recall challenges in reporting breastfeeding.

Less accurate results were found for mother’s recall of “age at which foods and liquids other than breast milk were introduced” and duration of exclusive breastfeeding (Li et al., 2005). Reliability of maternal recall of breastfeeding duration also decreased as time between interviews increased (Li et al., 2005). It has been suggested that maternal recall error may be minimized through the design of the instrument or by using multiple approaches to measure breastfeeding duration (i.e. categories or ranking rather than numerical value) as well as collecting data on current breastfeeding practice (last 24 hours), as recommended by the World Health Organization (WHO) (Li et al., 2005).

In the report by Ziegler, et al. (2006) the rationale for selecting current breastfeeding practice data collection with 24-hour recall was provided. They considered a 24-hour recall period advantageous for the following reasons: provided a standardized methodology, minimal respondent burden, detailed probes on brand names, types, and quantities of foods and beverages consumed (Ziegler et al., 2006). It was also cited as, “the most widely used dietary method in population studies requiring quantitative



intake of foods and nutrients and is the primary method currently used for national nutrition monitoring” (S12.e10).

Hector (2011), however, points to some difficulties associated with collecting current breastfeeding practice, particularly that this method “misclassifies too many mothers as exclusively breastfeeding; a proportion of mothers may be providing substances other than breast milk on an irregular, not daily, basis” (p. 2) and this would therefore, not be captured by 24-hour recall. It was then discussed that the WHO additionally recommends asking mothers “if the previous 24 hours was representative of usual practice” (p. 3), although questions could also be asked of the previous seven days or since birth (Hector, 2011).

In one of the only studies found on cognitive testing of breastfeeding items, Conrey, et al. (2006) tested for the internal validity of the National Immunization Survey items through seven rounds of iterative interviewing with mothers in Atlanta, Georgia (Conrey et al., 2006). Similarly to Hector (2011), their findings also suggest that the wording of items in breastfeeding surveys play a large role in determining mothers’ understanding of the question and capturing the true nature of breastfeeding practices. Several inconsistencies with responses were found, such as underreporting of duration, formula not being considered something other than breast milk, water not being included as food, and cueing responses after a question was fully administered regarding a list of substances other than breast milk or formula (Conrey et al., 2006). Redesign of the items through adding preamble, rewording questions, adding memory cues, and introducing new items contributed greatly to improving consistency of responses (Conrey et al., 2006).

Time Points

Given the time-sensitive nature of intra-partum breastfeeding education to establishing breastfeeding, the greatest risk for early cessation of breastfeeding was found to be before six weeks, although significant cessation rates were found even within the first three weeks (Hauck et al., 2010). During this time, mothers seem to be making decisions about their milk supply before lactation is fully established (Hauck et al., 2010; Whalen & Cramton, 2010). Walker (2007) also discusses the effects of clinician support on infant feeding. Walker (2007) describes that frustration with breastfeeding without support from a healthcare professional has often resulted in weaning by two weeks.

Interpretation of questionnaire items have been demonstrated to strongly impact mothers’ responses, so consideration of wording of items has been cited as critical to developing surveys. While not directly related to time points and thresholds of breastfeeding practice, mothers’ understanding questions related to time points is heavily impacted by the wording of the items. Hector (2011) discusses some problems with currently used indicators of breastfeeding, specifically the problematic use of prepositions in wording items. Haiek et al. (2007) also touch on the differential impact of wording when reporting on rates of exclusivity “at” X months. Hector (2011) recommends reporting exclusive breastfeeding “to” six months. Haiek et al. (2011) also concede that proper reporting for exclusive breastfeeding should never be “at” X months because it will likely not capture “since-birth” feeding behaviour, but instead “for” which would be a more accurate measure. These considerations are



reflected in the current recommended time points for data collection from the BCC for BFI designation at the community level (BCC, 2012).

Discussion:

The majority of data, particularly peer-reviewed literature, on breastfeeding surveillance and data collection methods focuses on initiation, duration, and exclusivity rates, and predicting cessation. Psychological factors were demonstrated as the strongest predictors of increased duration as well as exclusivity of breastfeeding and could be enhanced with breastfeeding education at the prenatal, intra-partum, and early post-partum stages. Information on time point selection for currently used breastfeeding surveillance systems is limited. While maternal breastfeeding recall of initiation and duration has been proven to be accurate within three years, when designing surveillance questions surrounding duration and exclusivity, the terminology “to” or “for” and not “at” X months (Haiek, 2011; Hector, 2011; Dunn et al., 2009) should be considered to capture since-birth rates.

ENVIRONMENTAL SCAN

Methods:

An environmental scan of all 36 Ontario public health units was conducted November 2012- January 2013. An online survey was sent to each health unit’s family health supervisor. This survey included 53 questions relating to how the health unit has collected breastfeeding information, what information was obtained from mothers, and how frequently mothers were contacted. The survey also asked questions about the methods used to collect breastfeeding information, including the consenting process and the resources required to collect the data. Finally, the survey asked each health unit about their opinions and recommendations for the development of a breastfeeding surveillance tool. For the purposes of the environmental scan, a breastfeeding survey was defined as a one-time survey or surveys repeated periodically, that collected information on breastfeeding. Alternatively, breastfeeding surveillance was defined as a system which collected information about breastfeeding on an on-going basis. The complete survey can be found in Appendix I.

A copy of the survey was emailed to each public health unit in Ontario, along with a link to the online survey and an invite code. Stakeholders entered survey responses online into FluidSurveys and the results were imported to Stata 12.1 for analysis.

Analysis

Closed-ended questions were summarized using basic statistics, such as counts, means and ranges in Stata 12.1. Responses to open-ended questions were summarized into main themes to allow for an efficient and practical review of the responses. Following the summation, results were examined and health units were contacted by telephone for clarification where necessary. In addition, documents including consenting scripts, questionnaires, and templates of databases that were used in recent breastfeeding surveys or surveillance systems were requested from health units to assist the project team in the development of a standardized surveillance tool.



Results and Discussion:

The survey was completed by all 36 Ontario public health units. A number of individuals completed and/or contributed to the survey from each health unit, including epidemiologists, health/data analysts, managers/directors of child and family health, public health nurses and their supervisors, clinical services specialists, health promotion specialists, managers of program planning and evaluation, public health nutritionists, public health planners, lead planners for infant nutrition survey, research assistants, technology support specialists, and health promotion consultants. The breadth of professionals responding to the survey reflects that breastfeeding surveillance involves a multi-disciplinary team of individuals, and illustrates that the development of a standardized surveillance system will benefit from consultation with many different stakeholders. The LDCP Breastfeeding Surveillance project team has assembled an advisory panel to provide feedback and refinement to both the development of the proposed surveillance tool and methodology, as well as the final recommendations. The panel is comprised of multi-disciplinary stakeholders including representatives from public health units, provincial and federal public health and statistical experts, Breastfeeding Committee of Canada (BCC), Baby Friendly Initiative (BFI) Ontario, public health nutritionists, medical professionals and hospital representatives.

The environmental scan illustrated that Ontario public health units are committed to BFI regulations, as all Ontario health units have done at least preliminary work towards BFI designation. At the time of the survey, seven Ontario health units have received BFI designation and are working on maintaining their designation. In addition, 18 Ontario health units currently have a breastfeeding surveillance system in use, and 24 health units have conducted a breastfeeding survey in the past ten years. Of the 18 health units that are currently using a breastfeeding surveillance system, ten of them have also conducted a breastfeeding survey within the past ten years.

Although half of Ontario public health units are currently conducting breastfeeding surveillance, many of the local breastfeeding surveillance systems have begun in the past five years (Table 3), revealing that many health units are in the early stages of surveillance system development. In addition, it was found that a standardized breastfeeding surveillance tool in Ontario would be well received and implemented, as evidenced by more than 90% of public health units reporting that they would be interested in implementing the surveillance system resulting from this Locally Driven Collaborative Project. Over half of Ontario public health units reported that they do not have enough local breastfeeding data to meet BFI requirements, which further emphasizes the importance of creating a standardized breastfeeding surveillance tool for use in Ontario.

Table 3: Number of Ontario public health units that conduct breastfeeding surveillance by year the system was initiated.

Time period	Frequency
2000-2002	1
2003-2005	2
2006-2008	3
2009-2011	5
2012	7



Data sources

Many data sources are used to gather local breastfeeding data in Ontario, as summarized in Table 4. Two or more sources are used by 28 public health units. This demonstrates that in most cases complete breastfeeding surveillance data is not currently available from one database. Local hospital information is another source that Ontario public health units use to obtain breastfeeding data. In addition, there is little consistency in the data sources used by public health units, which lowers the accuracy when making comparisons of breastfeeding rates between and across Ontario public health units.

Table 4: Data sources commonly used by Ontario public health units to obtain local breastfeeding data.

Data Source	Number of Health Units (%)
Rapid Risk Factor Surveillance System (RRFSS)	13 (36%)
Canadian Community Health Survey (CCHS)	13 (36%)
Better Outcomes Registry and Network (BORN)	22 (61%)
The Integrated Services for Children Information System (ISCIS)	13 (36%)
Local Health Unit Breastfeeding Surveys	17 (47%)
Local Breastfeeding Surveillance System	15 (42%)
Other	2 (6%)

Sampling frame and recruitment

When conducting breastfeeding surveys, the majority of health units use the Healthy Babies Healthy Children (HBHC) postpartum contact and Parkyn screening tool (postpartum risk assessment screening tool administered in hospital) as a sampling frame to recruit participants for local breastfeeding surveillance and surveys. Recent changes to the HBHC program, including replacement of the Parkyn with a new universal HBHC screening tool have posed a challenge for health units using this program as a sampling frame. The consent on the new screening tool is worded in such a way that it does not explicitly give permission to public health units to contact clients for public health programming beyond the scope of the HBHC program. In the past, health units were able to adjust the wording of the consent on the Parkyn to include breastfeeding surveillance, but are not able to do this with the new HBHC screening tool. As a result, many health units are either revising their consenting process and adding a checkbox (or indicator) for consent to be contacted for breastfeeding surveillance directly on their local version of the HBHC screening form, or they are adding a separate consent form that will be administered concurrently to the HBHC screening form. This is a barrier for the LDCP Breastfeeding Surveillance team, as the aim of the project was to develop a standardized process across the province. The project team addressed this issue by contacting key stakeholders involved and discussing potential solutions as part of the advisory panel discussions.

In selecting participants for a breastfeeding survey, census and convenience samples are frequently used. Stratified and systematic sampling has also been reported by some health units. Any woman who completes a Parkyn or HBHC screening tool and consents for public health unit contact is recruited as a participant in breastfeeding surveillance by most public health units. The larger health units use a

stratified or random selection of mothers to be participants in the surveillance, while smaller health units attempt to contact every mother who consents (census sampling).

Data collection

Data collection for breastfeeding surveys can take many forms, and six health units have reported using more than one. Telephone interviews are used by 88% of health units and are the most common way to collect data for breastfeeding surveys, followed by in-person interviews (22%) at the hospital or at a follow-up home visit, online surveys (8%) and mail surveys (8%). Data is often collected by private survey/research companies or public health nurse/other staff/students at the health unit. When a telephone survey was used, participants were called two to 15 times before being dropped from the recruitment list. Eight health units reported more than ten call attempts, with ten health units reporting two to five call attempts. Call attempts were made as frequently as twice a day to once every five days.

Currently used breastfeeding surveillance systems in Ontario public health units often collect data through telephone, with some public health units also collecting data in person. The in-person data collection often happens at the hospital or at a follow up home visit. Fourteen health units have reported using more than one method for data collection. An online survey has also been used by one public health unit. The data is collected by public health nurses at the health unit, as well as program assistants or nursing students. When a telephone survey was used for breastfeeding surveillance, participants were called one to five times before they were dropped from the recruitment list, with most health units reporting two to three call attempts. The approximate time between call attempts was one to five days.

Electronic databases and paper forms are common ways breastfeeding data is captured for both breastfeeding surveys and surveillance. Electronic databases are based in MS Access, FluidSurveys, SPSS, SAS, MS Excel, SQL, Select Survey, EpiData, Epi Info, CATI system, or the health unit's own data system. These databases are often developed by public health unit staff, a survey research company, or an external contractor. The cost of creating these databases ranges from no direct cost, a couple hours to 750 hours of staff time, or approximately \$15,000. To maintain the databases, up to 150 hours of staff time is required.

The breastfeeding surveillance systems at most health units collect information on two or more occasions, with four health units collecting information at four or more time points for each participant. The time points that health units use include 48 hours, two to four weeks, two months, four months, six to nine months, 12 months, 18 months and 24 months postpartum. Some health units are revising their system, however, which may result in a modification of these times. Table 5 shows the number of health units that collect information at each of these time points.

Table 5: The post-partum time points of data collection for breastfeeding surveillance used by Ontario public health units and the number of Ontario public health units that collect data at each time point.

Time points	Health Units (%)
48 hours	16 (89%)
2-4 weeks	12 (67%)
2 months	4 (22%)



4 months	1 (6%)
6-9 months	11 (61%)
12 months	4 (22%)
18 months	2 (11%)
24 months	1 (6%) (may be changing due to revision of system)

Consent

The consent processes used for both the breastfeeding surveys and surveillance systems were similar across health units. The main methods of obtaining consent included at the hospital, through postpartum contact (call or home visit), or verbal consent at the time of the survey. In addition to these methods, consent was also obtained through a letter, in pre-admission and breastfeeding clinics.

Costs

The costs associated with conducting a breastfeeding survey vary between health units. When a private survey or research company was hired, a range of \$17,000- \$90,000 was required. Non-management public health staff contributed 10 to 3350 hours, with several health units estimating 500 hours for non-management staff. The contribution of management public health staff was generally lower than that of non-management staff. Management contributed three to 250 hours, with four health units reporting less than 50 hours and only two health units reporting more than 200 hours. Other resources required to conduct a breastfeeding survey include printing and postage of surveys, administration staff, students (summer, consolidation and PhD), contract writer, ethics applications and privacy officer review, stipend for volunteers, incentives for participants, and data entry and management.

The costs to collect breastfeeding data for a breastfeeding surveillance system are similar to those of conducting a breastfeeding survey. Other resources, including technical staff, administration support, program assistants to enter and manage data, as well as epidemiologists for consultation and report writing have been used. Up to \$15,000 was needed to develop the database used for collecting and managing the surveillance data. The hours of non-management public health staff varied greatly between health units, from two hours a month up to one FTE. Public health managers were reported to contribute 0- 700 hours a year; ten health units reported less than five hours from public health management staff.

Inclusion/Exclusion Criteria

The inclusion and exclusion criteria for breastfeeding surveys and surveillance can be seen in tables 6 and 7, respectively. Six health units reported no inclusion or exclusion criteria for their surveillance system, and include every mother that provides consent. Similar criteria used in the surveys and surveillance include requiring mothers to reside within the health unit region, that they consent, that they are able to speak English (and/or French), and have given birth to a healthy baby. Exclusion criteria that both surveys and surveillance systems have used are extreme illness of the infant or still-birth, the infant not being in the mother's custody or not currently being cared for by the mother, maternal illness, and the involvement of Children's Aid Society. Generally, breastfeeding surveys included more inclusion and exclusion criteria than breastfeeding surveillance, including the size of the baby when born, singleton births, and a time frame for when the baby was born.

Table 6: Inclusion and exclusion criteria used by Ontario public health units for breastfeeding surveys in the past ten years.

Inclusion Criteria	Exclusion Criteria
All ages (mothers), over 18	Severe mental retardation, severe brain injury, severe psychosis, etc.
Gave birth in hospital or at home	No consent, mothers who chose not to participate
Resided in area	Out of region
Consented	Did not speak English (or French)
Gave birth during set time period	Did not have a phone
Custody of baby	Miscarriage, infant death, stillborn
Primary caregiver	Not caring for infant
English (and/or French (depending on location)) or can be contacted with an interpreter	Apprehended by Children's Aid Society
Baby discharged home with mother	Placed for adoption at birth
Singleton	Life threatening illness (mother and/or baby)
Minimum 36/37 weeks gestation	Did not receive post-partum contact from health unit
Set number of mothers during time period	Identified stressful event surrounding birth, noted on Parkyn
Access to telephone, landline	Baby in NICU
Consent to HBHC referral	
Midwifery clients who consent to Feeding Choices Survey	
Birth weight of 1500g, at least 2500g	
Mother with babies in NICU were approached only after baby well enough to be discharged	
New mothers, any mother	
Consent/Completed Parkyn	
Babies not transferred to NICU	
Full care and access to baby	
Postpartum contact from health unit	
Live birth	
Not on reserve	
Born in area hospital	
Baby between 6-18 months old	
Live in private households	

Table 7: Inclusion and exclusion criteria used by Ontario public health units for breastfeeding surveillance in the past ten years.

Inclusion Criteria	Exclusion Criteria
All clients/babies	Still born, infant death since birth, ill baby/intensive care
Healthy, full term	Child not in custody
All ages, over 15	Moved outside of region
Speak English (or French)	Can't complete survey in English
Healthy babies =>37 weeks gestation	Unable to contact
In the region	Maternal illness, psych-social crisis
Provide consent	No longer feeding breast milk at 6 months (for 12 month contact)
Gave birth in past 6-8 months	
New mother	



Participation in 6 month questionnaire and reported still feeding breast milk at 6 month (for 12 month contact)	Premature baby Mother under 15 years old CAS involvement
All mothers receiving post-partum contact	

Response and Participation Rates

The response rates to breastfeeding surveys and surveillance can be seen in tables 8 and 9 respectively. A majority of women who are reached and asked to participate do complete breastfeeding surveys or are willing to participate in breastfeeding surveillance.

Table 8: Response details of most recent breastfeeding surveys conducted by Ontario public health units.

Participants attempted to contact	mean: 828; range: 255-2010
Participants successfully reached	mean: 743; range: 116-2323
Participants that completed the survey	mean: 507; range: 106-1208
Percent of those reached that completed the survey	mean: 79% ; range: 27-100%
Percent of those attempted to contact that completed the survey	mean: 62%; range: 20-92%
Percent of those attempted to contact that were reached	mean: 77%; range: 45-100%

Table 9: Response details of breastfeeding surveillance conducted by Ontario public health units.

Time period	Ranges from 1 month- 8 years
Participants attempted to contact*	mean: 845; range: 60-2074
Participants successfully reached*	mean: 658; range: 30-1866
Participants that are willing to participate*	mean: 617; range: 30-1736
Percent of those reached that were willing to participate	mean: 94%; range: 78-100%
Percent of those attempted to contact that were willing to participate	mean: 69%; range: 20-90%
Percent of those attempted to contact that were reached	mean: 78%; range: 46-100%

*Number of participants has been scaled by reported time period to provide comparable data for 1 year.

Strengths and Limitations

Breastfeeding surveys have many strengths and limitations. Identified strengths of breastfeeding surveys conducted by Ontario public health units include the diversity of information that was collected, relatively large sample sizes, a variety of methodologies to allow for the inclusion of many participants, good response rates, ability to follow-up at various time points, the use of external resources, a retrospective design that allowed a large time span of data to be captured in one contact, the ability to examine the relationships of influencing factors on breastfeeding, use of an efficient tool that required minimal inconvenience, the ability to add local content, timely information, and the ability to compare data with continuously collected data from a breastfeeding surveillance system.

Limitations of breastfeeding surveys conducted in Ontario by public health units include missing participants and not having a representative sample, large amount of resources required such as time,

man-power, expenses, only one point in time of data collection, and the absence of ongoing data collection or collection of information regarding factors that may influence breastfeeding outcomes. Biases including social desirability, loss to follow up, selection bias, recall bias, and the survey acting as an intervention have also been identified. In addition, there have been hurdles in sharing data externally, technical and data quality issues, the lack of a standard definition, and the inability to compare data between municipalities due to different methods and small sample sizes. There have also been concerns of the hospital's commitment to obtain consent at birth.

Strengths of current surveillance systems include frequent auditing, collection of data on initiation and supplementation, user-friendliness, meets BFI requirements, provides an opportunity for outreach to new mothers, including support and resources, time and cost effectiveness, dynamic and flexible, and the monitoring of ongoing trends in breastfeeding.

Some limitations of current breastfeeding surveillance systems used in Ontario include potential for errors in data collection, technical issues, time and resource commitment, loss to follow up, missing births, missing data, capacity issues, modification difficulty, convenience sampling, limited information, if any, about duration and/or exclusivity, and the requirement to have direct contact with the mother several times.

Local breastfeeding data

Less than half (47%) of Ontario public health units report having enough breastfeeding data at the local level to meet BFI requirements. Health units reporting that they do currently have enough data to meet BFI requirements collect data from local sources, such as from a surveillance system, an infant feeding study, post-partum public health follow-up, from existing programs including BORN and ISCIS, as well as from reviewing medical charts for infant feeding status at discharge.

The remaining 53% of health units reported that they did not have enough data to meet BFI requirements. Identified gaps in data include: the collection of data at many time points, obtaining a sufficient and representative sample, collecting information about demographics, exclusivity, and duration. This is important to consider, as all public health units in Ontario are mandated to achieve BFI status, and are generally working independently on improving local systems. The creation of a standardized breastfeeding surveillance tool may assist Ontario public health units in obtaining the data required to meet BFI requirements.

Other than meeting the requirements of BFI, only 38% of Ontario public health units reported that they have enough breastfeeding data to meet program needs. These health units obtain enough information by calling all mothers including those who formula feed, providing breastfeeding clinics, support groups, and parenting programs, maintaining records, and collecting information about breastfeeding initiation and reasons for stopping. Data that is missing include: the amount of time that is spent with clients, under-representation of some groups (i.e. First Nations), and the long-term sustainability of the system. Small sample sizes, and missing information about demographics, the reasons behind stopping or not starting breastfeeding, and the introduction of solids are also areas where there is not enough information for program planning at some Ontario public health units.



Factors to consider in development of breastfeeding surveillance

Factors that were consistently rated as “very important” include ease of use of system, data quality, cost of implementing and maintaining the system, stability and security of the system, timeliness, and workload. Only three factors were rated not important by at least one health unit, which were the ability to modify the system locally, workload, and the system’s ability to provide comparable data between health units. The factors as well as their ratings by health units can be found in table 10.

Table 10: Rating of factors for consideration in the development and implementation of breastfeeding surveillance by Ontario public health units.

Factor	Very Important	Somewhat Important	Not Very Important	Not Important	Don't Know
Ease of use of system	33	3			
Data quality	36				
Cost of Implementation	33	3			
Cost of maintaining system	32	3			1
Stability of system	33	3			
Security	35	1			
Ability to modify locally	17	16		2	
Timeliness	28	7			1
Workload	28	6		1	1
System’s ability to provide comparable data between health units	20	13		2	
System’s ability to provide comparable data between health units and the province	19	17			

*Numbers represent number of health units that responded in respective manner

Recommendations for new breastfeeding surveillance tools

Recommendations and considerations for the development of a new breastfeeding surveillance tool include making it user-friendly, efficient, informative, modifiable, and functional for both large and small health units. It was also suggested that being able to generate reports and extract data from the system is important. Using an existing database, such as BORN, and providing training were also advised. The questions asked in the new surveillance tool should follow BFI requirements and definitions, as well as be comparable to past studies on breastfeeding. Training for the new system should be provided to ensure it is standardized across the province and the system is used the way it was developed to be used.

Documents collected from Ontario public health units

Documents including consenting scripts, and questionnaires were requested from health units. Of the health units that had documents to share, approximately 90% were able to share these documents.

Consenting scripts

The consenting scripts provided by Ontario health units contained a description of the survey (e.g. time commitment, topics covered), who collected the data, and the purpose and use of the collected data. Most scripts also included a statement concerning the risks and benefits of participation and an



assurance of confidentiality. Some health units obtain verbal consent while others obtain consent through a signature.

Questionnaires

The questions asked by health units for breastfeeding surveys and surveillance are similar and usually address initiation, duration, and exclusivity. Intent to breastfeed, as well as reasons for breastfeeding or formula feeding was also included in many questionnaires. Some questionnaires also included questions about the introduction of liquids other than breast milk and formula, as well as solids. Program planning indicators were included, covering topics such as what services have been used and what services may have been beneficial to prolong breastfeeding. Comfort with breastfeeding in public places, oral health, and sources of information about infant feeding were also included in some of the questionnaires.

CONCLUSIONS

The results of this situational assessment demonstrate a large degree of variability in breastfeeding surveillance within and across jurisdictions. Some breastfeeding surveillance systems in Canada and the United States are built into larger infant feeding surveillance systems with different aims, which can also be either privately or federally funded. A lack of standardization of breastfeeding definitions between surveys has been identified as a major challenge to using and comparing these data from different stakeholders and jurisdictions (Chapman & Perez-Escamilla, 2009). Despite the need for consistent use of breastfeeding definitions, several key findings regarding initiation, duration, and exclusivity have become well-established throughout the literature. Psychological factors, such as mother's confidence level, have been found to have the greatest impact as a predictor for duration of breastfeeding (Whalen & Cramton, 2010). Furthermore, several studies have cited prenatal education as one of the most important elements for enhancing psychological factors that support breastfeeding, which can be attributed to a mother's increased knowledge and awareness of the benefits of breastfeeding and available support resources. Several key features of data collection methods and instruments between breastfeeding surveillance systems can affect the rates captured by existing surveillance systems.

The environmental scan of Ontario public health units also demonstrates a large degree of variability in breastfeeding surveillance across the province. While there were some common themes (e.g. sampling frame and types of questions asked), public health units are currently working independently on breastfeeding surveillance, with many reporting that their data is not meeting their needs for BFI designation or their program planning needs. It is the hope of this project team that our recommended surveillance system will serve to fill this gap for Ontario public health units.

Changes to the HBHC program may affect how health units are notified of births in their region, and how they connect with new mothers. As many health units currently rely on HBHC to get contact information for new mothers in their area, the changes may disrupt the effectiveness of current surveillance systems, highlighting the need for a standardized system. In addition, with the changes and the potential need to obtain information in a different way, the information collected may not be complete or comparable across health units.



A scoping review of breastfeeding methods in the literature combined with an environmental scan of the breastfeeding surveillance efforts in Ontario public health units has provided an overview of current methods of collecting breastfeeding information, as well as recommendations for the creation of a standard breastfeeding surveillance tool. A number of existing documents used for breastfeeding surveillance were also collected. The considerations for factors affecting data collection discussed in the scoping review will be critical throughout the stages of developing a standardized breastfeeding surveillance system throughout Ontario. Through the stages of selecting questionnaire items, time points and data collection methods, building consistency into each component of the surveillance system will be essential to garnering quality data. The information collected and reviewed for this report illustrates the potential value and importance of developing a provincial surveillance system that provides sound and impactful evidence of breastfeeding rates in Ontario to target programs that will be the most beneficial and effective for mothers, babies, and families in Ontario.



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Appendix I. Environmental Scan Survey Administered to Ontario Public Health Units

Pilot study of a standardized breastfeeding surveillance data collection tool and method for Ontario public health units

A Locally Driven Collaborative Project

Project Goal:

To inform the development of a breastfeeding surveillance model, this includes a standardized tool and data collection method for all health units in Ontario.

Some Definitions

Breastfeeding survey: defined as a one-time survey or surveys repeated periodically (e.g. every three years), that collects information on breastfeeding.

Breastfeeding surveillance: defined as a surveillance system which collects information about breastfeeding on an on-going basis (e.g. on a daily, weekly or monthly basis).

Infant Feeding: Some health units may use the term 'infant feeding' instead of breastfeeding, as additional information other than breastfeeding may also be collected, such as other feeding methods and information on introduction to solids. For consistency purposes, this questionnaire will use the terms 'breastfeeding survey' or 'breastfeeding surveillance system' – but is meant to be inclusive of any infant feeding survey or surveillance system.

Survey Participation

You are being asked to participate voluntarily in an environmental scan for a research project funded through the Locally-Driven Collaborative Projects funding through Public Health Ontario. The purpose of this project is to develop, pilot test and evaluate a breastfeeding surveillance model with standardized tool and methodology. The purpose of the environmental scan is to examine on how public health units collect breastfeeding data and their needs for a standardized breastfeeding surveillance model in Ontario.

Every Ontario public health unit is being asked to provide feedback via this survey. The survey should take approximately 45-60 minutes to complete. Please provide only **ONE** online response per public health unit. It may be appropriate for the Medical Officer of Health, Family and Child Health managers and staff, and/or an epidemiologist or data analyst, among others, to provide input into the public health unit response. A Word version of the survey questions has been sent to you should you wish to circulate the questions to others in your organization.

Your participation in this project is entirely voluntary and there will be no negative consequences for you if you do not wish to participate, withdraw at any time, or do not answer certain questions.

Responses will be kept confidential and will not identify individuals, only participating public health units. At the conclusion of this study, the survey data collected will be destroyed.

This survey will be open until **December 17th, 2012**.

Following the completion of the environmental scan, a summary report with the results of the environmental scan will be circulated to the participating public health units, and potentially shared at conferences and in publications.

If you have any questions about the breastfeeding surveillance pilot study project or the survey, please contact Gillian Alton at ldcpbreastfeeding@oxfordcounty.ca or 1-800-755-0394 ext 3470

Section 1: General Information

1. Which health unit do you represent?
2. Who contributed to the completion of this survey? Check all that apply.

- Medical Officer of Health (or AMOH)
- Epidemiologist(s)
- Health/Data Analyst(s)
- Manager(s) of Child and Family Health
- Public Health Nurse(s)
- Other(s), please specify:

3. According to the classification of Baby-Friendly Initiative status in the Public Health Accountability Agreement Indicators, what is the current BFI status of your health unit? (Technical document of AA indicator, page 46)

- Haven't done any work towards BFI
- Preliminary work towards BFI – has contacted the Ontario Breastfeeding Committee (OBC) and received a Certificate of Intent
- Intermediate work towards BFI – has received a Certificate of Participation from the Breastfeeding Committee of Canada (BCC)
- Advanced work towards BFI – has engaged with BCC to begin the BFI designation process and is working on the BFI pre-assessment requirements
- BFI Designation – has obtained BFI designation or Label
- Maintenance of BFI Designation – is maintaining BFI designation and planning for redesignation
- Other, please specify:

4. What are the data sources that your health unit usually uses to get local breastfeeding data? (check all that apply)

- Rapid Risk Factor Surveillance System (RRFSS)
- Canadian Community Health Survey (CCHS)
- Better Outcomes Registry and Network (BORN) (when it becomes available)
- The Integrated Services for Children Information System (ISCIS)
- Local Health Unit Breastfeeding Surveys
- Local Breastfeeding Surveillance System
- Other, please specify:

Please read the following information carefully before you answer question 5:

- **Breastfeeding survey** is defined as a one-time survey or surveys repeated periodically (e.g. every three years), that collects information on breastfeeding.

- **Breastfeeding surveillance is** defined as a surveillance system which collects information about breastfeeding on an on-going basis (e.g. on a daily, weekly or monthly basis).

5. Has your health unit conducted a breastfeeding survey in the past 10 years?

Yes. If yes, how many times has your health unit initiated a local breastfeeding survey in the past 10 years?

No (**skip to section #3 on page 7**)

Section 2: Breastfeeding survey

The following questions pertain to the **MOST RECENT** breastfeeding survey conducted at your health unit.

Sampling Strategies

6. What was your sampling frame? (i.e. how did you identify your study participants?)

- The Integrated Services for Children Information System (ISCIS)
- Healthy Babies, Healthy Children (HBHC) Postpartum contact
- The whole population in my health region
- Other, please specify:

7. In addition to the sampling method described in the last question, have you explored other ways to identify your study participants?

- Yes, please describe:
- No

8. What would be your recommendation as the ideal method to identify your study participants in order to collect breastfeeding information?

9. Please describe the sampling method of your most recent breastfeeding survey

- Census - You tried to include all mothers with newborns in your area
- Convenience sample - Participants were chosen based on ease of access, but may not be representative of the whole population. For example, surveying those mothers who come to breastfeeding clinics offered by your health unit
- Systematic Sample - You may choose every fifth eligible mother with a newborn to include in your sample.

- Simple Random Sample - all participants have an equal chance of being chosen for your survey
- Stratified Sample - Your population is divided into groups or strata, and you sample from each of those groups.
- Other, please specify:

10. If you desire, please provide further details of your sampling method:

11. What were your inclusion and exclusion criteria for your survey? (Ex. We included all ages of mothers with ≥ 37 weeks of gestation, all infants with a birth weight over 1500g, and who were not in intensive care)

12. Some Questions about your most recent survey:

(Note: if you had more than one time point in your breastfeeding survey, ex. at 2 months, 6 months, 1 year, please provide the numbers for the first time point only)

- a. How many participants did you attempt to contact?
- b. How many participants were you able to successfully reach?
- c. How many participants completed the survey?

13. Please provide a brief description regarding how and when the survey participants consented to participate in the study:

Data Collection Methods

14. How were the data collected?

- In person interview
- Telephone interview
- Online survey
- Mailed survey
- Other, please specify:

15. Who collected the data?

- Public health nurse(s) at the health unit
- Program assistant(s) at the health unit
- Private survey or Research Company
- Other, please specify:

16. What were the costs to collect the data? (Please indicate n/a where not applicable)

- a. Cost to hire a private survey or research company
- b. Approximate number of hours of non-management public health staff involved (ex. if 0.5 FTE needed for 6 months, then number of hours would be ~ 420 hours)
- c. Approximate number of hours of management public health staff
- d. Other Resources, please specify

17. If you used a telephone survey method, please indicate the following:

Number of times a participant was called before they were dropped from the recruitment list

Approximate amount of time between each call attempt (days, weeks, months)

Database

18. How were the data captured?

- On paper
- Electronic database (Ex. with computer assisted telephone interview method)
- Recorded then transcribed
- Other, please specify:

19. If using an electronic database, what was the format?(ex. access, etc.)

20. If using an electronic database, please describe who developed it.

- Public Health Unit Staff (Please indicate position):
- Survey Research Company (Please indicate which one):
- Other, please specify:

21. If using an electronic database, please describe the cost of creating and maintaining it (either in number of hours of public health unit staff or direct monetary compensation to an external company).

Evaluation

22. Was this survey evaluated?

- Yes
 No

23. If your survey wasn't formally evaluated, please quickly describe some of its strengths and limitations

Sharing of Documentation

24. If you are able to share the documentation mentioned below with us and among Ontario Health Units, please indicate this to us here. If you can share one or more of these things, we will follow-up with you.

a. Can you share your consenting script or document?

- Yes
 No
 Do not have one to share

b. Can you share your survey questionnaire?

- Yes
 No
 Do not have one to share

c. Can you share your survey evaluation?

- Yes
 No
 Do not have one to share

Please read the following information carefully before you answer question 25:

- **Breastfeeding survey is** defined as a one-time survey or surveys repeated periodically (e.g. every three years), that collects information on breastfeeding.
- **Breastfeeding surveillance is** defined as a surveillance system which collects information about breastfeeding on an on-going basis (e.g. on a daily, weekly or monthly basis).

25. Has your health unit implemented breastfeeding surveillance in the past 10 years?

- Yes
 No (skip to section #4 on page 11)

26. Are you currently using breastfeeding surveillance?

- Yes (skip to question #28)
 No

27. When did you stop your breastfeeding surveillance (approximate month and year) and why?

Section 3: Breastfeeding surveillance system

The following questions pertain to your MOST RECENT **breastfeeding surveillance system** at your health unit.

28. When was your breastfeeding surveillance system initiated? (Approximate month and year of start of data collection)

Sampling Strategies

29. What was your sampling frame? (i.e. how do you identify your participants?)

- The Integrated Services for Children Information System (ISCIS)

- Healthy Babies, Healthy Children (HBHC) Postpartum contact
- The whole population in my health region
- Directly from hospitals (Parkyn or other)
- Other, please specify:

30. In addition to the sampling method described in the last question, have you explored other ways to identify your study participants?

- No
- Yes, please describe:

31. What would be your recommendation as the ideal method to identify study participants in order to collect breastfeeding information?

32. Please describe the sampling method of your most recent breastfeeding surveillance

- Census - You tried to include all mothers with newborns in your area
- Convenience sample - Participants were chosen based on ease of access, but may not be representative of the whole population. For example, surveying those mothers who come to breastfeeding clinics offered by your health unit
- Systematic Sample - You may choose every fifth eligible mother with a newborn to include in your sample.
- Simple Random Sample - all participants have an equal chance of being chosen for your survey
- Stratified Sample - Your population is divided into groups or strata, and you sample from each of those groups.
- Other, please specify:

33. If you desire, please provide further details of your sampling method:

34. What were your inclusion and exclusion criteria for your surveillance system? (Ex. We included all ages of mothers with ≥ 37 weeks of gestation, all infants with a birth weight over 1500g, and who were not in intensive care)

35. Some Questions about your surveillance system **in the past year**:

(Note: Please indicate the time period your value represents in the time period field (e.g. 2011). If you do not have a full year of data, please just choose a natural time period (one month, 6 months, etc.)

a. Time Period

- a. How many participants did you attempt to contact?
- b. How many participants were you able to successfully reach?
- c. How many participants completed the survey?

36. Please provide a brief description regarding how and when the surveillance participants consented to participate in the study:

Data Collection Methods

37. How is the data collected?

- In person interview
- Telephone interview
- Online survey
- Mailed survey
- Other, please specify:

38. Who collects the data?

- Public health nurse(s) at the health unit
- Program assistant(s) at the health unit
- Private survey or Research Company
- Other, please specify:

39. What are approximate costs to collect the data? (Please indicate n/a where not applicable)

a. Cost to hire a private survey or research company

b. approximate number of hours of non-management public health staff involved (ex. if 0.5 FTE needed for 6 months, then number of hours would be ~ 420 hours)

c. Approximate number of hours of management public health staff

d. Other Resources, please specify

40. If you used a telephone interviewing method, please indicate the following:

Number of times a participant was called before they were dropped from the recruitment list

Approximate amount of time between each call attempt (days, weeks, months)

Database

41. How are the data captured?

- On paper
- Electronic database (Ex. with computer assisted telephone interview method)
- Recorded then transcribed
- Other, please specify:

42. If using an electronic database, what was the format? (i.e. MS Access, etc.)

43. If using an electronic database, please describe who developed it.

- Public Health Unit Staff (Please indicate position):
- Survey Research Company (Please indicate which one):
- Other, please specify:

44. If using an electronic database, please describe the cost of creating and maintaining it (either in number of hours of public health unit staff or direct monetary compensation to an external company).

Evaluation

45. Has your surveillance system ever been evaluated?

- Yes
- No

46. If your surveillance system hasn't been formally evaluated, please quickly describe some of its strengths and limitations.

Sharing of Documentation

47. If you are able to share the documentation mentioned below with us and among Ontario Health Units, please indicate this to us here. If you can share one or more of these things, we will follow-up with you.

a. Can you share your consenting script or document?

- Yes
- No
- Do not have one to share

b. Can you share a description of the data gathered by your surveillance system? (E.g. Data dictionary or questionnaire)?

- Yes
- No
- Do not have one to share

c. Can you share any evaluation(s) done on your surveillance system?

- Yes
 No
 Do not have one to share

d. Can you share a template of your surveillance database?

- Yes
 No
 Do not have one to share

Section 4: Need for a Provincial Breastfeeding Surveillance System

The following questions pertain to data gaps, receptivity and your expectations of a provincial breastfeeding surveillance system.

48. Do you have enough breastfeeding data at local level to meet BFI requirements?

- Yes - If yes, what data sources did you use for accomplishing BFI status?
 No - If no, what are the data gap(s)?

49. Other than meeting the requirements of BFI and your agency's Accountability Agreement, do you have enough breastfeeding data at the local level to meet your program needs, such as to inform program planning?

50. As part of this LDCP project, an evaluation of the pilot test will be conducted and recommendations will be made by the research team. A simple surveillance system aiming to provide accurate, standardized and comparable breastfeeding data between health units may be proposed. On the following scale, indicate how interested your Health Unit is in implementing the resulting surveillance system? (Answer will be from 0, not very interested to 10, very interested)

51. How would you rate following factors in terms of their influence on choosing a new surveillance system for collecting data on breastfeeding?

Factor	Very	Somewhat	Not Very	Not	Don't
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	Important	Important	Important	Important	Know
Ease of use of system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of Implementation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of maintaining system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stability of system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to modify locally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Workload	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System's ability to provide comparable data between health units	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System's ability to provide comparable data between health units and the province	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

52. As part of this LDCP project, a pilot provincial breastfeeding surveillance model with a standard questionnaire and method will be created and pilot tested among a few health units. Would your agency be interested in being one of the pilot sites?

- Yes
 No
 Not sure, we would need further information.

53. Do you have any recommendations or other considerations for us to develop a surveillance system that will provide accurate, standardized and comparable breastfeeding data between health units?

Thank you for your participation

Section 5: Contact Information

We would like to collect information about who to contact if we have questions about this survey response or in regard to future development of a standardized breastfeeding surveillance data tool and method.

56. May we contact you if we have questions about your responses?

- Yes
 No

57. If yes, please provide information regarding the most appropriate contact person:

Name:

Position:

Email:

Phone #: