

## 2015 Locally Driven Collaborative Projects (LDCP)

### Submission Form

#### Part 1. General Information

PROJECT INFORMATION	
<b>Project Title:</b> Measuring Food Literacy in Public Health	
<b>Lay Title:</b> Measuring Food Literacy in Public Health	
<b>Funding Stream:</b> <input checked="" type="checkbox"/> <b>One year (with eligibility for renewal)</b> [\$75,000 per year for a maximum funding of \$75,000]	
<b>Type of Project:</b> <input checked="" type="checkbox"/> <b>Applied Research Project</b> Keywords (4-6) <u>scoping review, food literacy, food skills, attributes, Delphi Technique, consensus</u>	
<b>Total Amount Requested from Public Health Ontario:</b> \$75,000	
<b>Project Start Date:</b> March 1, 2016	<b>Project End Date:</b> February 28, 2017

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## Part 2. Lay Summary (500 words maximum)

Over the last few decades, there have been significant changes in cooking and food preparation resulting in an increased use of more processed foods, which involve fewer and/or different skills than traditional cooking from “scratch”.

Home-prepared foods, which include fresh vegetables and fruit, have often been replaced by processed foods, which are higher in fat, salt and sugar. This trend has been linked to higher rates of diet-related chronic disease such as obesity, heart disease, and Type II diabetes. Improving food literacy has been shown to improve diet quality, mostly due to the greater use of vegetables and minimally-processed ingredients.

A previous Locally Driven Collaborative Project (LDCP) research project, Making Something out of Nothing: Food literacy among youth, young pregnant women and young parents who are at risk for poor health (2011), helped shed light on what food skills meant to these groups. The results from this study helped develop the definition for food literacy and a visual model of the different components of food literacy. However, a tool to measure food literacy in this population does not exist. Without a tool, public health professionals are not able to:

- Determine the extent of the problem;
- Tailor and target food literacy programming;
- Allocate resources effectively;
- Identify gaps in current programs;
- Determine impact of programs on food literacy and diet quality; and,
- Engage in advocacy efforts for more school- and community-based food literacy programs.

The proposed research project will lay the foundation to create a tool to measure food literacy and its attributes within the public health context.

In 2016, a LDCP team of public health professionals and a Research Consultant will work together to review the attributes of food literacy including food skills to develop a thorough list of all possible attributes or components of food literacy. Next, the Delphi Technique will be used, which is a well-planned consensus building method involving several rounds of questions to solicit opinion and come to a consensus on a topic. The target for the study will be public health staff in Ontario and other key informants involved in program or service delivery of food literacy including food skills. In round one, open ended questions will be sent using an online survey (e.g., fluid survey) to all participants to find out their opinions about the list of food literacy attributes and gaps in the list. Feedback about participants' opinions will be sent back to participants in rounds two and three and they will be asked to rank which attributes of food literacy, including food skills, are most important to them in their practice.

These preliminary steps will provide the essential foundation for the future development of a tool to measure food literacy in public health. Information from this year one study will be used to identify and develop key indicators that measure the attributes of food literacy including food skills. The LDCP team will apply for additional funding from Public Health Ontario to develop indicators in 2017, and then in 2018 to develop and test a measurement tool with specific priority population groups. This research will better inform public health practice to meet Ontario Public Health Standards.

## Part 3. Project Introduction (6 pages maximum)

### A. BACKGROUND AND RATIONALE

Chronic disease is greatly impacted by healthy eating. As many adults and youth do not have healthy diets, public health practitioners engaged in food skills and food literacy programming, research, and services focus primarily on nutrition and chronic disease prevention. Poor diet quality has been greatly influenced by a change in eating patterns whereby a greater proportion of foods are consumed away from home and more processed and pre-packaged foods are available in the environment. This has resulted in an increase in overall calorie consumption and a decrease in individuals' nutritional quality. Concurrent to this trend, time spent preparing food at home has declined along with a loss of domestic food preparation skills.

Food skills can be defined as a complex, interrelated set of skills including having nutrition knowledge, being able to plan and organize meals and having mechanical techniques for preparing food. Food skills is part of the broader definition of food literacy which also includes other external or environmental factors such as confidence in preparing food, a positive learning environment and access to food, money, cooking equipment and facilities. Food literacy and food skills are linked to chronic disease prevention; however, the measurement of food literacy including food skills is not known in this context as there is no sufficient, validated tool to measure the different attributes of food literacy including food skills. This research project addresses the need to first determine the key attributes of food literacy so a future measurement tool can be developed.

#### **Chronic disease prevention is impacted by healthy eating**

Chronic diseases, including cancers, cardiovascular disease, chronic respiratory disease and diabetes are the leading causes of death and disability. In 2007, nearly 60% of reported deaths in Ontario were attributed to unhealthy lifestyle behaviours such as poor diet, smoking, excessive alcohol consumption, physical inactivity, and high stress.<sup>1</sup> Diet quality has been identified as the most important risk factor for chronic disease.<sup>2</sup>

#### **Canadians, including youth, do not have healthy diets**

The eating patterns of Canadian youth and adults do not align with dietary recommendations according to Eating Well with Canada's Food Guide.<sup>3</sup> Fruit and vegetable consumption is an indicator of a healthy diet but half of adults do not consume a minimum of five servings of vegetables and fruit daily.<sup>4</sup> The adapted Healthy Eating Index assesses two aspects of diet quality: adequacy and moderation; with a score of 100 points approximating a high diet quality.<sup>5</sup> In 2004, the average score on the Canadian adaptation of the Healthy Eating Index was 58.8 for the total population aged 2 or older (and approximately 55 in the 14-to-30 years of age).<sup>5</sup>

#### **Eating patterns have changed for Canadians, including youth**

In addition to poor diet quality, there has been a change in eating patterns and the kinds of food available to Canadians to prepare and eat. Consuming pre-prepared and convenience food as in, foods that are packaged and more highly processed from their whole state, higher in fat, sugar, sodium, and/or preservatives has become normalized within the eating patterns for Canadian children of all ages and their families.<sup>6</sup> According to the Canadian Council of Food and Nutrition report, Tracking Nutrition Trends - VII (2008), a third to over half of Canadians eat a meal not prepared at home at least once a day.<sup>7</sup> Over the past 30 years, children and youth in the US have increased energy consumed away from home (23.4% to 33.9%), particularly through fast food and restaurant foods.<sup>8</sup> This is a concern as foods prepared away from home have been associated with increased energy intake and decreased nutritional quality.<sup>9-11</sup> Additionally, high consumption of processed foods is associated with poorer health

outcomes.<sup>12-15</sup> This shift in consumption has become a public health nutrition challenge, as the current food environment does not support healthy eating.

#### **A decline in time spent preparing food and domestic cooking skills**

In concert with the trend above, the amount of time spent to prepare meals has declined since the early 1900s.<sup>16,17</sup> Since 1900, there has been an eight-fold decrease (from 360 minutes per day in the 1900s to 45 minutes per day in 1985) in the average daily time spent on the task of meal preparation and cleaning up after the meal.<sup>16,17</sup> Overall, fewer people cooked in 2007-2008 compared to 1965-1966 across all income groups.<sup>18</sup> Women who cooked decreased from 92% to 68%; and those who cooked spent 112.8 minutes/day cooking in 1994-1996 compared to only 65.6 minutes/day cooking in 2007-2008.<sup>18</sup>

Although modern conveniences, such as microwaves ovens, have helped to reduce food preparation times, the predominant change in eating and meal preparation culture is due to most adults working outside the home, participation in busier lifestyles, and an increased number of hours spent at work during the week.<sup>16,17</sup> Typically, it has been shown that women (including adolescents, young adults and mothers) are primarily responsible for food preparation functions within the home; however, the time constraint placed on them through increased participation in the workforce has increased the need and reliance on convenience foods.<sup>6</sup> Traditionally, mothers passed their food skills onto their children, but because of this workforce realignment, children may be missing out on opportunities to learn cooking skills and enhance their food literacy in the process. A lack of cooking knowledge and skill decreases a person's propensity to cook; however, those who report being more involved in food purchasing and preparation or those who cook most often are more likely to meet dietary guidelines.<sup>19,20</sup>

#### **DEFINING FOOD SKILLS AND FOOD LITERACY**

Food skill development and healthy eating practices are requirements for the promotion of health and prevention of chronic disease. Specifically, health units in Ontario are required through the 2008 Ontario Public Health Standards (OPHS) to provide opportunities for skill development in the areas of food skills and healthy eating practices for priority populations.<sup>21</sup> The above evidence shows that there is a need for food skill development as eating patterns have changed and there has been a decline in domestic food skills.

There is no explicit or widely agreed upon definition for "food skills". Prior to 2011, authors used terms such as "cooking skills"<sup>22,23</sup> or "culinary skills"<sup>24</sup> while others discussed "food preparation".<sup>13,22,25,26</sup> In the Ministry of Health Promotion's Guidance Document: Healthy Eating, Physical Activity and Healthy Weights (2010), food skills is defined as a "complex, interrelated, person-centred set of skills that are necessary to provide and prepare safe, nutritious, and culturally-acceptable meals for all members of one's household".<sup>27</sup> This definition was based on a study conducted by Short (2003) with 30 domestic cooks living in England which derived a systematic framework for domestic cooking encompassing the following five general categories:<sup>28</sup>

- Knowledge (nutrition, label reading, food safety, food varieties, ingredients, substitution);
- Planning (organizing meals, budgeting, food preparation, teaching food skills to children);
- Conceptualizing food (creative thinking about leftovers, adjusting recipes);
- Mechanical techniques (preparing meals, chopping/mixing, cooking, following recipes); and
- Food perception (using your senses – texture, taste, when foods are cooked).

Beginning in 2011, the definition of food literacy emerged in the literature denoting a more comprehensive definition than the previously used "food skills". Current definitions of food literacy are broad and encompass environmental or external factors that impact the attainment of food skills at the individual level.<sup>29-33</sup> In a previous Locally Driven Collaborative Project (LDCP) eight health units in Ontario

conducted research to understand the meanings and practices of food skills among at-risk youth (teens aged 16 to 19 years, and young parents including pregnant women aged 16 to 25 years).<sup>34</sup> This research generated a definition and conceptual model of food literacy, as illustrated in Figure 1 (Appendix A), to inform public health interventions, advocacy, and program and policy development.

**For the purpose of this study, the food literacy definition from the previous LDCP will be used for this project and is defined as follows:<sup>34</sup>**

- ***Food literacy is a set of skills and attributes*** that help people sustain the daily preparation of healthy, tasty, affordable meals for themselves and their families;
- ***Food literacy*** builds resilience, because it ***includes food skills*** (techniques, knowledge and planning ability), the confidence to improvise and problem-solve, and the ability to access and share information; and,
- ***Food literacy requires external support*** with healthy food access and living conditions, broad learning opportunities, and positive socio-cultural environments.

As shown in Figure 1 (Appendix A), food literacy involves personal factors such as food and nutrition knowledge, food preparation skills and experience, organizational skills and experience (these three components constitute food skills as defined by the OPHS Guidance Document)<sup>27</sup> including psycho-social factors. As mentioned previously, food literacy includes broader environmental factors that determine an individual's capacity to prepare and cook food and include positive socio-cultural and learning environments as well as access to food and facilities, equipment, income, housing and employment. These ***personal and environmental factors*** operate synergistically to promote a culture of healthy eating and in the remainder of this proposal ***will be referred to as "attributes" of food literacy***.<sup>34</sup> These findings are supported by a number of recent studies and papers that have explored the concept of food literacy.<sup>32,35-39</sup> These studies are independent of each other and geographically dispersed, yet their results, models, and conclusions have overlapped considerably. Some have defined food literacy as more knowledge-based, such as the ability to choose healthier options from retail environments;<sup>40</sup> other studies recognize the technical, social, and psychological attributes of food literacy as being essential to healthy food preparation.<sup>38,39</sup> Additionally, food literacy attributes like food system awareness, knowledge about growing food, and network-building around food have been identified.<sup>29</sup>

In conclusion, although the term "food literacy" is not explicitly used in the OPHS Ministry of Health Promotion's Guidance Document, it does state that "regardless of the definition, all interventions undertaken to build food skills must be in line with the target population's level of access to healthy foods",<sup>27</sup> which is an example of an external factor in the food literacy definition. External or environmental factors that are referred to as attributes of food literacy (such as access to healthy foods, cooking equipment, social and economic factors, confidence, etc.) impact the attainment of cooking or food skills at an individual level that needs to be considered when planning, implementing and evaluating "food skills" programming. Since the completion of the previous LDCP project, significant knowledge exchange activities have been implemented with public health personnel to explain the recent evidence for the transition from food skills to food literacy. A "Call to Action" was developed for public health practitioners to implement the recommendations from the previous LDCP study including the use of the nomenclature food literacy rather than food skills (see Appendix B). It is also important to note that public health practitioners will be advocating that the term "food skills" be replaced with the term "food literacy" in a future revision of the 2008 OPHS.

## **RATIONALE AND SIGNIFICANCE FOR THE PROPOSED PROJECT**

**Healthy diets are influenced by many factors, one of which is postulated to be food literacy**

There is evidence that healthy eating, cooking skills, and physical and mental health are linked;<sup>41-46</sup>



however, there is limited high quality research to demonstrate causation or impact of food literacy, including food skills on chronic disease risk.<sup>24</sup> Nutrition education alone is not adequate to improve dietary intake; it is theorized that having food skills and greater overall food literacy are necessary for a quality diet. Lang and Caraher (2001) proposed that limited awareness of food, cooking skills, and knowledge about how foods are grown and harvested, leads to barriers in healthy food consumption, and ultimately the achievement and maintenance of a healthy weight.<sup>43</sup>

Numerous factors such as age, sex, social class, knowledge, and attitudes can influence food skills, affecting food choice, and consequently health.<sup>20</sup> Chu et al. (2012) found that those who cook more frequently have a better diet characterized by favourable nutrient density.<sup>47</sup> Furthermore, the foods people cook, the food preparation skills they utilize, and where they cook are influenced by social, economic, and cultural contexts that are constantly changing and speaks to the broader definition of food literacy.<sup>28,43,48</sup> Independent of preparation skills, there are several factors that drive an individual's food selection including physiology, food availability, taste, price, marketing, convenience, social norms and cues.<sup>49</sup>

Barriers to developing individual food skills have been defined and include lack of time, attitudes, cost, confidence and lack of skills.<sup>20</sup> As previously mentioned, there is a decline in domestic food preparation skills (called "deskilling") due to a lack of introduction to and opportunity for the acquisition of cooking skills from parents, grandparents, and/or school environments.<sup>22,43,44,48,50</sup> This is supported by the previous LDCP research whereby those participants who had greater food skills had learned them primarily from parents, grandparents, siblings, or relatives.<sup>34</sup> Over half of these participants also indicated that the best way for young people to learn food skills, if they did not learn at home, were cooking classes, both in school and in the community. Learning these skills at an earlier age (seven to 12 years of age) was also found to contribute to a greater confidence in food preparation in later years.<sup>34</sup>

Some evidence does exist demonstrating a relationship between decreased use of traditional or basic food preparation skills, increased consumption of pre-prepared, packaged, and convenience foods, and decreased dietary quality.<sup>6,51</sup> While adolescents report involvement in food purchasing and preparation activities, the frequency of involvement is low (only one to two times per week) with the highest level of involvement and food skills among females and those from lower socio-economic groups.<sup>6,31</sup> And while parents of younger children rate the development of food/cooking skills as very or extremely important, participation remains low.<sup>34,52</sup> Low participation in food literacy activities may be a result of other skills like school, arts and sports taking precedence over cooking skills. In addition, parents perceive kitchen safety and time as barriers to involvement.<sup>52</sup>

#### **Efficacy of food skills/literacy programs**

In the majority of food skills interventions, most indicators focus on food skills but some include broader indicators such as self-efficacy, confidence and food security.<sup>53</sup> These broader indicators more specifically reflect food literacy, even if they are not defined as such. A review of 28 studies on nutrition and food skill interventions showed beneficial changes in intake of various nutrients, food groups and specific foods after intervention.<sup>53</sup> Of note are improvements in intakes of dietary sources of fat, fibre, sugar or sodium; improved dietary intake overall and reduced blood pressure; and, reduced BMI and weight gain in children.<sup>53,54</sup>

Researchers have found that cooking education has a positive impact on behaviours and attitudes toward cooking and healthy eating, such as increased consumption of vegetables and fruit, improved food safety behaviours, higher frequency of cooking, increased nutrition knowledge, higher self-efficacy, and less money spent on food.<sup>12,25,48,50,55-61</sup> Interventions show associations between more frequent involvement in food preparation activities among emerging adulthood and better dietary quality.<sup>6,51</sup>

Additionally, key findings from the previous LDCP were that there are positive psycho-social outcomes when youth and young parents who had moderate to advanced skills in preparing foods such as to improved physical and mental well-being, connecting with others, improved response to changes and challenges, and satisfaction in preparing food for oneself and others.<sup>34</sup> With evidence demonstrating a relationship between food skills and healthy food choices and consequently a link between food literacy, diet quality and mental health, interventions aimed at improving food literacy may be an effective population health approach.

### **Gaps in measuring food literacy**

In all the studies reviewed, the indicators and their definitions were not consistent, making it difficult to generalize results. An in depth search of the literature also revealed a lack of reliable and valid tools specific to the measurement of food skills and other contextual attributes of food literacy including access to food, self-efficacy and confidence. This lack of a valid measurement tool inhibits the ability to: assess the scope of the problem; tailor and target programs; engage in advocacy efforts; allocate limited resources effectively; determine impact of programs on food literacy and diet quality; and, identify gaps in current programming. This proposed project builds on previous food literacy research in Ontario and will support evidence-informed public health initiatives to provide food literacy opportunities to priority populations.

This research proposal highlights the need to enhance the work of Ontario public health and non-public practitioners engaged in food literacy including food skills programming, advocacy and research. The connection between food literacy to chronic disease prevention is an important one; however, it is not fully understood due to the lack of public health measurement of the attributes of food literacy including food skills within this context. Background work to determine the relevant attributes is necessary such that in the future, a validated, meaningful food literacy measurement tool can be developed for use by public health practitioners and other key provincial agencies and groups.

### **PURPOSE OF STUDY AND HOW PRIORITY POPULATIONS WERE IDENTIFIED**

As previously mentioned, the Ontario Public Health Standards (2008) require health units to provide opportunities for skill development in the areas of ***food skills and healthy eating practices for priority populations***. As stated in OPHS, this may include, but is not limited to, pregnant and postpartum women, individuals of low socioeconomic status, and youth.<sup>21</sup>

The limited body of evidence related to the context of cooking skills and food literacy for priority populations provided the impetus and rationale of the previous LDCP, which explored the meaning of food skills from the perspective of two priority populations in Ontario.<sup>6,24,34</sup> The first objective of this previous research project was to identify the two priority populations.

The LDCP team used a framework for identifying priority populations and developed a selection criterion to assist team members reach consensus when selecting and finalizing the priority populations.<sup>62</sup> Selection criterion was based on team members' knowledge of priority populations identified in the 2008 OPHS; expert knowledge of planning and delivering food and healthy eating programs; and an initial review of key literature (see Appendix C for selection criterion).

Priority populations were determined after extensive consultation with key stakeholders in public health.<sup>63</sup> Youth were described as "high risk" (or at risk for poorer health outcomes) if they had lower incomes, lower literacy levels, precarious housing, unstable family structures, etc. The age described for youth ranged from 10 to 24 years. Older teens were described as 14-15, 15-18 16-21, or under 21 years of age. Older teens were also described as "transitioning teens" that who are changing schools or

leaving home. Low-income pregnant young women or mothers were also identified as a priority and descriptors from the key informants for this population group mainly included “teen”, “young”, “and low-income”. Age ranges indicated were 14-24, 16-21, 16-18 and 16-24 years. These findings were also supported by additional consultations with Ontario Society Nutrition Professionals in Public Health (OSNPPH) and the literature that was reviewed at that time.<sup>63</sup> Moreover, OSNPPH members identified low income parents and pregnant/postpartum females and/or females with children as a priority for food skills programming and two LDCP member health units identified young mothers as a priority for food skills programming.

After considering the information gathered along with the selection criterion, the following priority populations were chosen:<sup>63</sup>

1. High-school aged youth, at-risk, without kids, 16-19 years of age, male and female
2. Pregnant women or young women with children, 16-25 years of age, with at least one risk factor such as low-income or another Social Determinant of Health factor), may include newcomers or immigrants

After consulting with an academic advisor and other researchers, it was determined that the purpose of this new study would be to develop a tool to measure food literacy and its attributes within the context of public health practice with the same priority populations identified in the previous LDCP study (upon approval of renewed funding in year two and three, see research objectives below). By targeting specific population groups the requirement that opportunities for food skill development be provided to priority populations is being met. Furthermore, when a measurement tool is developed and ready to be tested, the criteria developed by the last LDCP will most likely apply again; for example, that the target populations are easily accessible through established relationships and community partnerships with public health staff, which will make the objectives for future research project specific, attainable and feasible.

## **B. RESEARCH QUESTION**

Within the context of public health practice, how can we measure food literacy and its attributes, with a focus on specific high-risk groups of youth (16 to 19 years of age), young parents (16-25 years of age) and pregnant women (16 to 25 years of age)?

## **C. RESEARCH OBJECTIVES**

### **Year 1 Funding:**

1. To identify and summarize the attributes of food literacy including food skills in the literature.
2. To determine which attributes of food literacy including food skills, are priorities for measurement and tool development.

The LDCP Team will apply for Year 2 and 3 renewed funding to accomplish the following objectives:

3. To develop key indicators that measure food literacy including food skills attributes.
4. To develop a tool with questions reflecting these indicators.
5. To test the tool with the identified target populations, considering various facets of validity (e.g., attribute, face, and content) as well as reliability, sensitivity to change, and feasibility

## Part 4. Methodology and Analysis Plan (6 pages maximum)

### A. STUDY DESIGN

#### Overview of the LDCP Study Design

The first phase of the LDCP project is to conduct a scoping review of the literature using a systematic process to find and review relevant literature, both in published and grey literature that identifies attributes of food literacy including food skills. Data extrapolated from the literature will be collated and summarized into a comprehensive list of attributes which will be used in the next phase of this LDCP project which is to implement the Delphi Technique with an expert group of public health practitioners and other key informants involved in food literacy programming and delivery, including advocacy for food literacy and research, in the province of Ontario. Opinions from this expert group will be obtained and they will have the opportunity to reach consensus about the following: which attributes of food literacy are relevant in public health practice, the terms used to describe the various attributes of food literacy and to clarify terms used, any gaps in the list of attributes provided and which attributes are considered key or most important. The final outcome is to obtain a ranked list of key attributes of food literacy which will enable the LDCP team, upon renewed funding (year 2) to develop key indicators and a food literacy measurement tool that can be tested with identified priority populations (year 3).

#### Description of Phase One: Scoping Review

A scoping review is a type of literature review that “can be used to map the key concepts underpinning a research area as well as to clarify working definitions, and/or the conceptual boundaries of a topic”.<sup>64</sup> This is an ideal method for the LDCP team to map the varying attributes of food literacy and to clarify and make sense of different terms used in the current definitions and/or conceptual models of food literacy. Also, as mentioned previously, varying definitions for food skills (i.e., food preparation, cooking skills, etc.) that may allude to or include the varying attributes of food literacy exist in the literature. This scoping review seeks to develop a “concept map” with the aim to explore how, by whom and for what purpose the term food literacy, including food skills (and/or derivatives of this term) are being used with the goal of determining how the term “food literacy” and/or “food skills” is used in the literature, what it refers to and what it encompasses (i.e., which attributes does it include).<sup>65</sup>

As described by Arksey and O’Malley,<sup>65</sup> scoping reviews are not guided by a highly focused research question (e.g., what is the effectiveness of food skills interventions) that lends itself to searching for particular study designs (as might be the case in a systematic review) but rather the scoping study method is guided by a requirement to identify all relevant literature regardless of study design. In this LDCP, ***the scoping review will build on identified key literature from the previous LDCP*** including the food literacy definition and conceptual model derived (see Appendix A), making this scoping review feasible.<sup>34</sup>

During the scoping review process, as team members become familiar with existing and new literature, search terms may be refined, other inclusion/exclusion criteria may be added making the process not linear but iterative. This type of research process requires researcher engagement at each step of the process and a flexibility and willingness to repeat steps to confirm comprehensive coverage of the evidence base.<sup>65,66</sup>

#### Research Question of the Scoping Review:

As discussed previously, a highly focused research question is not required,<sup>65,66</sup> however Levac and colleagues (2010) recommend that a research question be identified.<sup>66</sup> **For the purposes of this**

**scoping review, the research question is objective #1 of this LDCP:**

- To identify and summarize the attributes of food literacy including food skills identified in the literature.

**Data Collection and Analysis of Scoping Review**

The intention of the LDCP Team is to hire a Research Consultant who will conduct the research in collaboration with the LDCP Team and students. The step-by-step procedure to implement the scoping review is described in Table 1 (Appendix D) using the framework developed by Arskey and O'Malley and revised by Levac and colleagues.<sup>65,66</sup> The Research Consultant will commence in March 2016 once funding is approved; prior to this the literature will be selected and independently reviewed first by title and then by abstract by 2 individuals (e.g., one LDCP member and one student). Once the Research Consultant is hired, he/she will review full articles or full text literature along with one other LDCP team member independently. Individuals involved in the review of literature will be meeting to discuss approach and ensure consistency. A data extrapolation table will be developed and pilot tested by the Research Consultant and data will be extrapolated independently by the Research Consultant and one other LDCP team member (see Appendix D). The Research Consultant will conduct a qualitative thematic analysis; 1-2 LDCP team members will independently review data and thematic analysis findings for triangulation purposes. Research Consultant and LDCP members will meet and discuss findings and come to consensus regarding any disagreements. Findings will be shared and discussed with all members of the LDCP Team and a summary will result in a comprehensive list of food literacy attributes. Consultation from key stakeholders (who are also the knowledge users) will be obtained by implementing the Delphi Technique in the next phase of this study.

In addition to the review of literature, LDCP team members will be involved in the scoping review, for example:

- An Academic Advisor with expertise in scoping review process will provide consultation throughout the process;
- A designated librarian from a public health unit, will work collaboratively with the LDCP team to develop the search strategy and then search the databases and retrieve relevant articles;
- All LDCP team members will work together to develop search strategy including inclusion/exclusion criteria. As mentioned above, key articles and other literature have been identified and obtained as a result of the literature search and review that was conducted in the previous LDCP study on Food Literacy and the literature reviewed for this proposal.<sup>34</sup> The team will review the search terms and inclusion criteria that were previously used and add any new terms to ensure that all relevant published and unpublished literature has been retrieved for this scoping review. This will also add to the existing body of research/literature that already has been collected.
- Students include graduate level, undergraduate and Dietetic Interns. Many of the LDCP Team members have access to Masters level students and Dietetic Interns and supervise them on a regular basis and will have access to them for this project. Dietetic Interns are students who have completed their undergraduate degree and are currently meeting dietetic competencies through an internship to become a Registered Dietitian (RD). Typically in these placements, both the Master students and Dietetic Interns are not remunerated for their work. Students will be involved in assisting team members develop a search strategy, search terms and searching existing reference lists that have already been identified and independently reviewing selected studies/literature.

### **Description of Phase Two: Delphi Technique**

The Delphi Technique is a structured, iterative process that utilizes a series of questionnaires or rounds administered to an expert panel to gather information and opinion with the purpose of reaching consensus on a problem.<sup>67,68</sup> This technique augments the rich discussion that is discovered from the literature, in this case, from the scoping review, by making it contextualized to public health in Ontario.

The Delphi Technique is a systematic and interactive method in which a panel of experts are provided with a series of questionnaires to which they respond. Through this process, information is gathered from the experts in the panel who are given the opportunity to review and re-evaluate their previous responses, taking into consideration the perspectives of other participants. During this series of questionnaires, responses, and synthesis of information gathered, the range of responses tends to decrease and the group congregates toward consensus. In order to reach consensus, three rounds of the Delphi Technique will be completed, as recommended by Keeney, Hasson, and McKenna.<sup>68</sup> Having no more than three rounds will also decrease the truancy of participants and ensure sufficient participation throughout the study.

The Delphi Technique allows the inclusion of a large number of individuals across a wide geographic location and expertise. A key advantage of this technique is that it gives every participant an equal voice and avoids the potential for one dominant voice to overtake the process, which can often be the experience in face-to-face consensus building exercises.<sup>68</sup>

The Delphi Technique will be implemented to meet objective #2 of this study: To determine which attributes of food literacy including food skills, are priorities for measurement and tool development. A graphic overview of the Delphi Technique is provided in Figure 2 (see Appendix E).

### **Study Population for Delphi Technique:**

The Expert Group will be a purposeful sample of possible participants that are key informants with expertise or knowledge in food literacy; including food skills, program delivery, advocacy and research both at a local and provincial level. Potential participants will be recruited from two groups, front line public health staff and non-public health key provincial external informants. Potential participants from these two groups may include but are not limited to the following:

**Expert Group 1:** Public health practitioners such as Registered Dietitians; food workers; peer workers; public health nurses; and public health promoters.

**Expert Group 2:** Non-public health practitioners such as Community Health Center Dietitians; academic researchers in food skills and food literacy; key informants from non-governmental agencies with a focus on food literacy (e.g., Community Food Centers; Sustain Ontario; Ontario Home Economics Association; Toronto Food Share); and key informants from educational agencies with a focus on food literacy (e.g., the Screaming Avocado secondary school culinary program, Growing Chefs Ontario).

Expert groups 1 and 2 will be combined to formulate one large expert group. Sampling different groups of experts may ensure a mixture of practitioners with an expertise in and/or knowledge about food literacy, including food skills. This is important to ensure the entire spectrum of opinion is determined. This expert group is also the target audience for an integrated knowledge exchange plan (see part 6) which means that these key informants of public health practitioners and other provincial experts are also the knowledge users and will be engaged throughout the project. This expert group will be directly affected by the research results and as such they may be more apt to participate in most or all rounds of the Delphi Technique as described in Table 2 (Appendix F).

### **Recruitment of Study Population**

A step by step recruitment process is provided in Table 2 (Appendix F). Recruitment for both groups will occur simultaneously. Ideally, the total number of participants to secure for the Delphi Technique is 50. Attempts will be made to meet this goal by securing one person/representative per health unit for a total of 36 health unit participants to provide an aggregated response (when more than one staff person is involved in food literacy programming). LDCP team members have contact with other front line public health practitioners in their individual health units who are involved in food literacy programming and can coordinate an aggregated response for the fluid survey employed in the various rounds of the Delphi. Furthermore, two of the LDCP team members are co-leads of the larger provincial OSNPPH Food Literacy Working Group that represents 30 health units and can promote the study at bi-monthly meetings. Attempts will also be made to secure 10 to 15 external key stakeholders from Expert Group 2 above; again several of the LDCP team members do have professional relationships with several of these key stakeholders and will be the ones to personally reach out to them with a phone call and follow-up email. To assist in the recruitment of these participants a presentation of findings of the scoping review in an interactive and visually stimulating webinar for the purposes of sharing knowledge and to increase potential participants' interest, motivation, and commitment to participate in the study. Promotional posters and video will be developed to promote both the webinar and the upcoming study.

### **Data Collection Procedures and Analysis of Data:**

Prior to commencing the Delphi rounds, the Research Consultant in collaboration with the Librarian and an Academic Advisor (with expertise in Delphi Technique) will be gathering of similar Delphi questionnaires with a focus in food literacy (e.g., City of Hamilton, New Zealand Research) and potential questions will be discussed in collaboration with the LDCP team members. Once the open-ended questionnaire tool is developed, it will be pilot tested with a similar sample (e.g., public health nurses). A LDCP team member(s) can assist with recruitment of participants for the pilot and to participate in pilot test to take debriefing notes. Open-ended questions serve as a foundation for soliciting specific information about additional food literacy attributes and opinions about the attributes already identified.

Information about the process for each of the three rounds and how the data will be analyzed is provided below and has been adapted from Hsu and Sandford (2007) and Keeney and colleagues (2001).<sup>67,68</sup> Data will be analyzed qualitatively, however quantitative data such as measures of central tendency (means, median, and mode) and level of dispersion (standard deviation and inter-quartile range) may be used to present information about the collection of responses and opinions of participants. This will be determined in consultation with the Research Consultant being hired for this project who will be required to have expertise and experience in primarily qualitative research and data analysis (and hopefully some quantitative data analysis).

As suggested in the literature the goal is to ensure 70% participation in each round which will involve LDCP team members sending reminder emails (with a promotional poster and/or video clip about the study) and if needed calls will be made, to participants between rounds to ensure their participation, as described in Table 2 (Appendix F).<sup>67,68</sup>

### **Round 1**

The first round of the Delphi will commence in September 2016 as it is not feasible to begin a study during summer months. The questionnaire will be distributed online through Fluid Survey to all participants as potential participants are geographically dispersed throughout the province of Ontario. An online survey is also cost-effective and it provides anonymity of responses. Follow-up reminder emails to complete the survey will be provided weekly.

Qualitative data collected from the survey will be analyzed by the Research Consultant using a content analysis process and will involve using qualitative software (e.g., NVivo). Qualitative data collected from Round 1 will be analyzed by grouping similar items such as attributes together. When different terms are being used to describe a similar attribute, the researcher may group them together in an attempt to provide one universal description of the item. Using the classic Delphi analysis process, no item will be added during analysis and the wording used by the participants will remain verbatim. The findings will be used to develop a more structured questionnaire that will be implemented with participants in Round 2. To ensure the trustworthiness of the data being analyzed, a graduate level student will be hired to independently review and analyze the data collected and meet with the Research Consultant to discuss the process and any disagreements with the findings. Data analyzed will be shared and discussed with the LDCP team to obtain further feedback and to work collaboratively on the questions for round 2 of the Delphi. ***This process for data analysis will be similar for rounds 2 and 3 below (and roles and timing are further described in Table 2, Appendix F).***

### **Round 2**

Each participant receives a second questionnaire and is asked to review the items summarized from Round 1. Participants are asked to rate or rank attributes to establish preliminary priorities among items. Participants will be asked to provide rationale with respect to their rating priorities among the attributes selected. Areas of agreement and disagreement will be identified in Round 2.

### **Round 3 .**

Each participant receives a questionnaire that includes the ranked attributes summarized by the Research Consultant in collaboration with LDCP Team. Each participant is asked to revise his/her opinions or to provide a rationale for remaining outside the consensus. Further clarifications of both the information and opinions of the relative importance of each attribute will be made in this round with a Likert-type scale (with a rating of strongly agree to strongly disagree). Prior to implementing this round, the Research Consultant in collaboration with the LDCP team will need to discuss and come to a decision about the percentage of responses that need to fall within a prescribed or predetermined range. It suggested that 70-80% of the responses should fall within the top two points of a Likert scale.<sup>67,68</sup>

## **B. ETHICAL CONSIDERATIONS**

All ethics submission forms will be provided by Public Health Ontario (PHO) and completed for ethical approval by PHO. If required, ethical review by individual health units will also be completed. All data gathered will be kept in secured computer files with all computer data encrypted and password protected. Only the LDCP members will have access to the data. All data collected will be used only in aggregate form. An information letter including consent will be provided to all individuals participating in the Delphi process. The participants may be known to one another but their judgments and opinions will remain anonymous (cited as "quasi anonymity") and participation voluntary (all information will be provided in the letter of information, see Appendix G). The Lead Health Unit will retain data for five years after the study results have been published. Data will be destroyed at the end of this time period. All computer data will be erased and all written/paper data will be shredded.

During the data analysis process, a number of strategies will be employed to ensure the trustworthiness of the findings including member-checking, peer-debriefing, and multiple coders.<sup>69</sup> For example, during the scoping review literature will be reviewed independently by 2 individuals as well as the analyzed data from each round of the Delphi. During the independent reviews, individuals will meet to discuss the approach used to ensure consistency.



## A. FEASIBILITY CONSIDERATIONS

Several members of the LCDP team have been involved in a Locally Driven Collaborative Project in the past. As a result, team members have had significant experience in the LCDP process (e.g., hiring a Research Consultant, conducting the research, meeting deliverables in a timely fashion, completing data collection and analysis, etc.). In-kind contributions from LCDP members also make this project feasible and include the following: content expertise in the area of the food literacy; skill and expertise in conducting research; financial support from individual health units for travel and other related expenses (most); and dedicated time. Some members have indicated an interest in professional learning development and want to work collaboratively with the Research Consultant to review literature and extrapolate data independently.

In addition to the in-kind contributions from LCDP team members above, the project will involve students to assist with both the scoping review and a graduate student will be hired to provide research assistance during the Delphi. Although, a scoping review may take a significant amount of time, this project builds on the previous LCDP project in that much of the relevant literature has been identified for review as a result of an extensive literature search conducted two years ago as a result LCDP team members do not anticipate to have an overwhelming amount of new literature to review.<sup>34</sup> Finally, the project objectives are very concise and succinct making them very feasible within the one year timeframe.

## B. STUDY LIMITATIONS

There is a need to consider the potential for truancy with every round in the Delphi Technique. To mitigate the **possible challenge of low motivation/response rate**, an integrated knowledge exchange plan is being implemented, as the members of the expert group are the knowledge users (i.e., public health practitioners and other non-health unit key stakeholders) and will be inherently motivated to participate. Also, to engage participants from the beginning of the study and obtain their interest in participation, a webinar will be provided to share information about the scoping review and upcoming Delphi study and ongoing emails and calls will be sent or made prior to the start of and during the Delphi rounds. Secondly, although the selection of the study population is purposeful, **selection bias** is being mitigated by having an expert group of key informants that include both public health and non-public health participants. Additionally, each response from agencies engaging in this process is encouraged to be a collective response to elicit the opinions and perspectives from a variety of individuals rather than just from one. Thirdly, **subject bias** may occur because the participants will know the group's responses and may change their opinions to come align with what other participants' opinions; however the Delphi process provides the opportunity for participants to consider opinions they may not have thought of before and knowing others' responses may lead to consensus more easily. Finally, the **time required to conduct the Delphi Technique** can be time consuming and laborious. Because the Delphi Technique is iterative and sequential, it is necessary to dedicate a sufficient amount of time to share information, solicit participant feedback, analyze the feedback, and share the information back for subsequent rounds. To mitigate the limitation of time, LCDP team members will be responsible for all the recruitment and a graduate level student will be hired to provide assistance to the Research Consultant. A reasonable amount of time is being built, for example, five weeks have been allotted for each of the first two rounds and the final round has more flexibility for time (8 weeks but this could be extended).

## Part 6. Knowledge Exchange Plan (1 page maximum)

\* Letters of Support are needed for each listed knowledge user and/or advisor (See Section 9)

KNOWLEDGE USER(S) & ADVISORS*	
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<b>Organization:</b> Peterborough County-City Health Unit	<b>Individual Name:</b> Carolyn Doris <b>Email Address:</b> cdoris@pcchu.ca
<b>Address:</b> 10 Hospital Drive Peterborough, ON K9J 8M1	<b>Individual Name:</b> <b>Email Address:</b>
<b>Organization:</b> Oxford County Public Health	<b>Individual Name:</b> Kelly Ferguson <b>Email Address:</b> <u>kferguson@oxfordcounty.ca</u>
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<b>Organization:</b> Hastings Prince Edward Public Health	<b>Individual Name:</b> Elizabeth Finlan <b>Email Address:</b> efinlan@hpeph.ca
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<b>Address:</b> 100 Constellation Cres. Ottawa, ON K2G 6J8	<b>Individual Name:</b> <b>Email Address:</b>
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<b>Address:</b> 999 Balmoral Street Thunder Bay, ON P7B 6E7	<b>Individual Name:</b> Kim McGibbon <b>Email Address:</b> kim.mcgibbon@tbdhu.com
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<b>Address:</b> 101 - 17th Street East Owen Sound, ON N4K 0A5	<b>Individual Name:</b> <b>Email Address:</b>
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<b>Address:</b> 44 Victoria St #502, Toronto, ON M5C 1Y2	<b>Individual Name:</b> <b>Email Address:</b>

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As already mentioned in this proposal, this LDCP project is implementing an integrated knowledge exchange plan whereby the expert group of participants in the Delphi Technique are the end users of the information and knowledge obtained in which the final outcome is a ranked list of key attributes of food literacy that will be used to develop key indicators and a measurement tool. Furthermore, the members of the LDCP team are also knowledge users as explained below.

#### **TARGET AUDIENCE OR KNOWLEDGE USERS**

1. The expert group of potential participants for the Delphi Technique phase of this project that have expertise and/or knowledge in food literacy or are involved in food literacy, including food skills, program delivery, research and/or advocacy. Members of this expert group, who are also knowledge users, include the following:

- **Front line public health practitioners** such as Registered Dietitians, food workers, peer workers, public health nurses and public health promoters who are involved in food skills and/or food literacy programming planning and delivery including advocacy efforts to provide local programming.
- **Non-public health practitioners** such as Community Health Center Dietitians; academic researchers in food skills and food literacy; key stakeholders from non-governmental agencies with a focus on food literacy (e.g., Community Food Centers; Sustain Ontario; Ontario Home Economics Association; Toronto Food Share); and key stakeholders from educational agencies with a focus on food literacy (e.g., the Screaming Avocado secondary school culinary program, Growing Chefs Ontario)

2. Members of the LDCP team are also the knowledge users. Most of the members are front line public health practitioners assigned to food skills and/or food literacy programming and three members are involved in research and evaluation.

#### **OBJECTIVES OF THE INTEGRATED KNOWLEDGE EXCHANGE PLAN:**

1. To engage knowledge users throughout the project
2. To share findings from the scoping review and increase knowledge about the attributes of food literacy, including food skills found in the literature
3. To recruit knowledge users to participate in the Delphi Technique
4. To consult with knowledge users and gather their opinion about the list of food literacy attributes and reach consensus about the most important attributes

#### **INTEGRATED KNOWLEDGE EXCHANGE APPROACH**

- **To engage knowledge users throughout the project:** LDCP members have are engaged in the project from beginning to end for example, preparing this proposal, leading or supporting the implementation of the activities and providing consultation. In participating in this project, LDCP team members will increase their professional knowledge about attributes of food literacy in the literature and what is ranked as most important. Other public health practitioners and non-public

health practitioners will be invited to participate in a webinar and in the Delphi process.

- **To share findings from the scoping review and increase knowledge about the attributes of food literacy & to recruit knowledge users to participate in the Delphi process:** All knowledge users identified above will be invited to participate in a webinar; the webinar will also be a strategy to recruit knowledge users to participate in the Delphi process. Several members of the LDCP have a professional relationship with non-public health key stakeholders and can contact them personally as a recruiting strategy. LDCP members also have contact with other front line public health practitioners in their individual health units who are involved in food literacy programming and can recruit them to participate in the webinar and coordinate an aggregated response for the fluid survey employed in the various rounds of the Delphi.
- **To consult with knowledge users and gather their opinion about the list of food literacy attributes and reach consensus about the most important attributes:** The above knowledge users will be invited to participate in the Delphi Technique to gather their feedback about which attributes of food literacy are relevant in public health practice, the terms used to describe the various attributes of food literacy and to clarify terms used, any gaps in the list of attributes provided and which attributes are considered key or most important.

## Part 7. Research Results (2 pages maximum)

### A. EXPECTED OUTCOMES

After the completion of the scoping review a summarized comprehensive list of attributes of food literacy including food skills will be produced that will be used to obtain opinion from public health and non-public health practitioners of food literacy programming and/or service delivery, including advocacy and research, in Ontario. The outcome from implementing the Delphi Technique is a final ranking of key or priority attributes of food literacy reached by consensus of these experts who are also the end knowledge users of the information. Ranked list will be used to develop key indicators and measurement tool that can be tested with identified priority populations (year 2 and 3 of renewed funding).

### B. TIMELINE

<b>Milestone or Deliverable:</b> RFP and other tools to hire a research consultant prepared
<b>Description of Activity:</b> Create RFP, revise screening tool/matrix to score RFPs (from last LDCP on Food Skills), develop interview questions for potential candidates.
<b>Duration in Weeks:</b> 6 weeks (starting Dec 2015)
<b>Completion Date:</b> Jan 4, 2016
<b>Milestone or Deliverable:</b> 2 Research Consultants recruited and hired (one the scoping review and one for the Delphi Technique)
<b>Description of Activity:</b> Disseminate 2 RFPs, recruit and interview potential candidates. Research Consultant to conduct a scoping review could also be a PhD or post doctorate student that could be hired as a Research Consultant; to start mid-March. Research Consultant to conduct the Delphi to start beginning of Aug 2016.
<b>Duration in Weeks:</b> 8-10 weeks (starting Jan 2016)
<b>Completion Date:</b> By End of March, 2016
<b>Milestone or Deliverable:</b> Consultation with a survey research unit/survey methodologist regarding the Delphi completed
<b>Description of Activity:</b> To source out a survey research unit and get a consultation regarding RFP for the Research Consultant, secondly to get input about the potential formats and uses for a measurement tool and a recommendation the purpose of the tool; and finally to get input about the methodology and data analysis for the Delphi.
<b>Duration in Weeks:</b> 10 weeks (starting Jan 2016)
<b>Completion Date:</b> End of March, 2016
<b>Milestone or Deliverable:</b> Ethics Submission Form(s) submitted to PHO and Health Units
<b>Description of Activity:</b> Prepare ethics submission form and other information for ethics review such as revised sample letter of information and questionnaire for Delphi participants.
<b>Duration in Weeks:</b> 10 weeks (starting Jan 2016)
<b>Completion Date:</b> End of March, 2016
<b>Milestone or Deliverable:</b> Promotional material for recruitment and KE event developed
<b>Description of Activity:</b> Small working group to work with a graphic designer and videographer (in-kind from HKPRDHU) to develop promotional poster and video for webinar and Delphi study and template slides for webinar

<b>Duration in Weeks:</b> 12 weeks (starting Jan 2016)	<b>Completion Date:</b> Apr 1, 2016
<b>Milestone or Deliverable:</b> Relevant literature identified and selected for scoping review.	
<b>Description of Activity:</b> LDCP team (and students) and Librarian develop search strategy, search terms and inclusion/exclusion criteria. Relevant literature is retrieved for review.	
<b>Duration in Weeks:</b> 4-6 weeks (starting Jan, 2016)	<b>Completion Date:</b> End of Feb, 2016
<b>Milestone or Deliverable:</b> Screening of selected studies and literature by title and abstract.	
<b>Description of Activity:</b> 2 LDCP team members (or one LDCP team member and one student) will act as the two independent screeners who are trained and given clear inclusion/exclusion criteria– they concurrently screen titles and abstracts. A few pilots (e.g., the first of 20 then the next 40 and then after a 100 articles/literature) are conducted to check for consistency by discussing approach between screeners and coming to consensus and resolution about any difficulties and disagreements. Two screeners meet throughout the process with a third experienced person verifying the screening.	
<b>Duration in Weeks:</b> 3 weeks (starting Feb, 2016)	<b>Completion Date:</b> Mid-Mar, 2016
<b>Milestone or Deliverable:</b> Data extrapolation table developed and pilot tested	
<b>Description of Activity:</b> In collaboration with the LDCP team, the Research Consultant will develop an extrapolation table with specific variables or data (to be determined for inclusion) and pilot tested with a few articles.	
<b>Duration in Weeks:</b> 6-8 weeks (starting in Mar, 2016)	<b>Completion Date:</b> End of April, 2016
<b>Milestone or Deliverable:</b> Review of full text articles/literature selected after first screening	
<b>Description of Activity:</b> 2 LDCP team members concurrently screen the full text of that article/literature that passed the first screen above. Screeners will meet throughout the process with a third experienced person to verify the screening and ensure consistency (e.g., the LDCP Academic Advisor experienced in scoping reviews or the Research Consultant if he/she has experience).	
<b>Duration in Weeks:</b> 4-6 weeks (starting in Mar, 2016)	<b>Completion Date:</b> End April, 2016
<b>Milestone or Deliverable:</b> Data from selected articles and/or literature is extrapolated	
<b>Description of Activity:</b> The final pools of selected articles/literature are divided between the Research Consultant and one LDCP team member who independently extrapolate data and populate the extrapolation table. This process occurs concurrently whereby both people extract data at the same time. Much verification and checking will occur throughout this process by a third experienced person (or more members of the LDCP team, TBD) to ensure the approach used is consistent and that the research question is being addressed by the literature selected for inclusion in the data extraction table.	
<b>Duration in Weeks:</b> 4-6 weeks (starting in Apr, 2016)	<b>Completion Date:</b> End of May, 2016
<b>Milestone or Deliverable:</b> Thematic analysis completed and a comprehensive list of food	

<p><b>literacy attributes developed</b></p> <p><b>Description of Activity:</b> Research Consultant to complete a thematic analysis of the extrapolated data and to discuss findings with the LDCP team.</p> <p><b>Duration in Weeks:</b> 4-6 weeks (starting in May, 2016)      <b>Completion Date:</b> End of June, 2016</p>
<p><b>Milestone or Deliverable: Study participants recruited</b></p> <p><b>Description of Activity:</b> Recruiting public health practitioners at monthly OSNPPH Food Literacy Working Group starting in April and at the May Nutrition Exchange Conference by promoting June webinar and follow-up with reminder emails and promotional poster and video clip for webinar. Concurrently, LDCP team members to recruit external key informants (non- public health unit staff) by email and follow-up phone calls and provide promotional poster and video clip for webinar in June.</p> <p><b>Duration in Weeks:</b> 12 weeks (starting in Apr, 2016)      <b>Completion Date:</b> End of June, 2016</p>
<p><b>Milestone or Deliverable: KE webinar developed, hosted and recorded</b></p> <p><b>Description of Activity:</b> Research Consultant to provide findings from the scoping review to the webinar template and deliver webinar to all potential participants. Webinar participants (who are also knowledge users) will be invited to participate in the Delphi Process. Provide link to recorded webinar to those potential participants who cannot participate in the webinar at the end of June to view recording at their convenience between July-Sept 2016.</p> <p><b>Duration in Weeks:</b> 2-3 weeks (starting in June, 2016)      <b>Completion Date:</b> Last week of June, 2016</p>
<p><b>Milestone or Deliverable: Develop a summary report of the scoping review</b></p> <p><b>Description of Activity:</b> Research Consultant produces a summary report describing research methodology and key findings including list of food literacy attributes. Research Consultant and/or Student works collaboratively with the LDCP team to provide drafts for review and make edits as required.</p> <p><b>Duration in Weeks:</b> 6-7 weeks (starting end of June)      <b>Completion Date:</b> Mid-August, 2016</p>
<p><b>Milestone or Deliverable: Data analysis plan for data collected from the Delphi rounds</b></p> <p><b>Description of Activity:</b> Develop and a data analysis plan describing any quantitative data measures that need to be conducted, measure of agreement between the different definitions of the food literacy attributes and how post grad/master student will be employed to assist with increasing the trustworthiness of the qualitative data analyzed</p> <p><b>Duration in Weeks:</b> 4 weeks (starting in Aug)      <b>Completion Date:</b> End of August, 2016</p>
<p><b>Milestone or Deliverable: Masters/Post Grad student to assist with qualitative data collection and analysis hired</b></p> <p><b>Description of Activity:</b> Disseminate RFP, recruit and interview potential candidates.</p> <p><b>Duration in Weeks:</b> 20 weeks (starting in April, 2016)      <b>Completion Date:</b> End of August, 2016</p>
<p><b>Milestone or Deliverable: Delphi questionnaire developed and pilot tested for round 1</b></p> <p><b>Description of Activity:</b> Develop and pilot test open ended question for round 1 of Delphi with a similar group of health professionals (e.g., public health nurses not part of the study)</p>



<b>Duration in Weeks: 4 weeks</b> (starting in Aug, 2016) <b>Completion Date: September 9th, 2016</b>	
<b>Milestone or Deliverable: Study participants confirmed and letter of information provided</b>	
<b>Description of Activity:</b> Follow-up with webinar participants and other health unit practitioners and external experts that did not participate in the webinar. Send out promotional material for the study each week after the webinar (and potential video clip). Confirm list of participants for the study and provide link to webinar and letter of information/ consent. Send out reminder email about study at the beginning of September.	
<b>Duration in Weeks: 10 weeks</b> (starting in June) <b>Completion Date: September 9, 2016</b>	
<b>Milestone or Deliverable: Round 1 of Delphi data collection and analysis completed</b>	
<b>Description of Activity:</b> Disseminate questionnaire via fluid survey starting Sept 12, sending out reminder emails prior to implementing round 1 and a weekly email after dissemination of questionnaire. Research Consultant in to analyze data and in collaboration with the LDCP team prepare feedback & revised questionnaire for round 2.	
<b>Duration in Weeks: 5 weeks</b> (starting in Sept, 2016) <b>Completion Date: October 14th, 2016</b>	
<b>Milestone or Deliverable: Round 2 of Delphi data collection and analysis completed</b>	
<b>Description of Activity:</b> Disseminate questionnaire via fluid survey starting Oct 17th, sending out reminder emails prior to implementing round 2 and a weekly email after dissemination of questionnaire. Research Consultant to analyze data and in collaboration with the LDCP team prepare feedback & revised questionnaire for round 3.	
<b>Duration in Weeks: 5 weeks</b> (starting in Oct, 2016) <b>Completion Date: Nov 18<sup>th</sup>, 2016</b>	
<b>Milestone or Deliverable: Round 3 of Delphi data collection and analysis completed</b>	
<b>Description of Activity:</b> Disseminate questionnaire via fluid survey starting Nov 21st, sending out reminder emails prior to implementing round 3 and a weekly email after dissemination of questionnaire. Research Consultant in to analyze data with the assistance of a student and to discuss findings with LDCP Team.	
<b>Duration in Weeks: 6 weeks</b> (starting in Nov, 2016) <b>Completion Date: End of December, 2016</b>	
<b>Milestone or Deliverable: Ranked list of food literacy attributes completed</b>	
<b>Description of Activity:</b> Research Consultant completes final thematic analysis and derives a list of ranked key attributes.	
<b>Duration in Weeks: 8 weeks</b> (starting in Nov, 2016) <b>Completion Date: Mid-January, 2017</b>	
<b>Milestone or Deliverable: Summary Report completed</b>	
<b>Description of Activity:</b> Research Consultant produces a summary report describing research methodology and key findings including list of ranked key attributes and works collaboratively with the LDCP team to provide several drafts for review and make edits as required.	
<b>Duration in Weeks: 8 weeks</b> (starting in Jan, 2017) <b>Completion Date: Feb 29, 2017</b>	
<b>Milestone or Deliverable: KE products developed and KE events attended</b>	
<b>Description of Activity:</b> Research Consultant in collaboration with LDCP team will write	

abstracts for KE events that target end knowledge users and work collaboratively with the LDCP team on the development of other KT products, e.g., peer reviewed journal article(s), info graphic, etc.

**Duration in Weeks: 6 months** (starting in Jan, **Completion Date: June, 2017**  
2017)

## Part 8. Core Project Team (1 page maximum)

This LDCP research team comes to the table with an extensive background in food literacy. Every member in the core team has food skills and/or food literacy as a key portfolio component in their work in public health. Moreover, several core team members participated in the previously funding LDCP Food Literacy project. This team is well resourced with key members of the core team having significant graduate level education (both Masters' degrees and one member has her PhD). As such, this team utilizes a research focus and critical thinking when approaching research projects for the public health context. The two co-leads for this project (Elsie Azevedo Perry and Heather Thomas) have received permission to have a significant amount of dedicated time to this specific project. As such, there is confidence that the deliverables are accomplished in a timely fashion and the entire team is kept on schedule. Details about each core team member's role on the project are below:

<p><b>Elsie Azevedo Perry (Financial &amp; Project Lead)</b></p> <ul style="list-style-type: none"> <li>Leads the day-to-day activities of project implementation</li> <li>Administers and effectively manages project funds</li> <li>Submits interim and final activity and financial reports to PHO</li> <li>Ensures all milestones are met</li> <li>Serves as the signatory to the transfer payment agreement</li> <li>Lead for the previous LDCP</li> <li>Involved in the Study Design Working Group, Budget and overall review</li> </ul> <p><b>Heather Thomas (co-lead)</b></p> <ul style="list-style-type: none"> <li>Member of Healthy Eating Core Team</li> <li>Involved in Study Design Working Group and Literature Review Working Group</li> <li>Liaise with OSNPPH Food Literacy Working Group (and past Chair of OSNPPH)</li> <li>Provide assisting in managing the project implementation</li> </ul> <p><b>Rebecca Davids (core)</b></p> <ul style="list-style-type: none"> <li>Member of Healthy Eating Core Team</li> <li>Member of Literature Review working group and past Chair of OSNPPH</li> </ul> <p><b>Lyndsay Davidson (core)</b></p> <ul style="list-style-type: none"> <li>Member of the Healthy Eating Core Team</li> </ul>	<p><b>Jessica Love (core)</b></p> <ul style="list-style-type: none"> <li>Member of the Healthy Eating core team and OSNPPH Food Literacy working group</li> <li>Involved in Knowledge Exchange Working Group</li> </ul> <p><b>Ruby Samra (core)</b></p> <ul style="list-style-type: none"> <li>Member of the Healthy Eating Core Team</li> <li>Has expertise in budgeting and experience with conducting the Delphi Technique</li> <li>Co-chair the Ontario Society of Nutrition Professionals in Public Health Food Literacy Working Group (along with Elsie Azevedo Perry).</li> </ul> <p><b>Julie Slack (core)</b></p> <ul style="list-style-type: none"> <li>Member of the Healthy Eating Core Team</li> <li>Involved in the Literature Review Working Group</li> </ul> <p><b>Amy Faulkner (knowledge user)</b></p> <ul style="list-style-type: none"> <li>Lead librarian on the project</li> <li>Will contact the librarians from the other health units involved in the project for support</li> </ul> <p><b>Lynn Roblin (knowledge user)</b></p> <ul style="list-style-type: none"> <li>Representative of the Nutrition Resource Center, OPHA</li> <li>Focus on knowledge exchange and capacity building related to healthy eating</li> </ul>
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<ul style="list-style-type: none"> <li>Involved in the Study Design Working Group</li> <li>Co-chair of the Food Security Workgroup for OSNPPH</li> </ul> <p><b>Shannon Edmonstone (core)</b></p> <ul style="list-style-type: none"> <li>Member of the Healthy Eating Core Team</li> <li>Involved in the Study Design Working Group</li> </ul> <p><b>Jessica Hambleton (core)</b></p> <ul style="list-style-type: none"> <li>Member of the Healthy Eating Core Team and OSNPPH Food Literacy working group</li> <li>Involved in the development of the research question and the objectives</li> <li>Member of Literature Review working group</li> </ul>	<p>nutrition policies and programs at the local and provincial level</p> <ul style="list-style-type: none"> <li>Areas of work include food systems, food environment, food literacy, and healthy children</li> </ul> <p><b>Sharon Kirkpatrick (academic advisor)</b></p> <ul style="list-style-type: none"> <li>Expertise and knowledge in scoping reviews and conducting research</li> <li>Member of the Study Design Working Group</li> </ul>
<p><b>Other Knowledge Users:</b></p> <ul style="list-style-type: none"> <li><b>Kelly Ferguson</b> provided consultation regarding study design</li> <li><b>Carolyn Doris</b> has extensive experience in advocating for and implementing food literacy programming (health unit has peer workers)</li> <li><b>Catherine Schwartz, Karen Bellemore, Elizabeth Finlan and Alexander Lacarte</b> are supporting the project by providing consultation and review of work being completed. Also, Catherine works with Kim McGibbon, RD who has experience in developing a validated tool (i.e., NutriStep) and can liaise with her colleague to get more input and information.</li> <li><b>Sonia Jean Phillippe</b> has research experience and is interested in being involved in the providing input and consultation regarding implementing the scoping review and Delphi and reviewing data</li> </ul>	

## Part 9. Attachments

Please indicate whether you have attached the following items:

**Budget (REQUIRED):** see attached

**Letters of Support (REQUIRED – please list):** By Oct 26th

**Tables and Figures (optional – please list if included):**

Appendix A –Figure 1: What determines food literacy?

Appendix B- Food Literacy: A Call to Action

Appendix C- Selection Criterion for Priority Populations

Appendix D- Table 1: Scoping Review Procedure

Appendix E- Figure 2: Overview of the Delphi Process

Appendix F- Table 2: Delphi Technique Procedure

Appendix G- Sample Information Letter

**Other (e.g., references, questionnaires, consent forms - please list if included):**

See Appendix G for Sample Information Letter

## Part 10. Signatures

### LEAD HEALTH UNIT - AUTHORIZED REPRESENTATIVE

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team. I acknowledge that as the lead health unit, my organization has the intention to enter into a Transfer Payment Agreement with Public Health Ontario that reflects the roles and responsibilities of the lead health unit as described by the Locally Driven Collaborative Projects (LDCP) and the Cycle 3 LDCP Participation Guidelines.

**Lead-Applicant Name: Elsie Azevedo Perry**

**Title: Public Health Nutritionist**

**Signature of Lead Health Unit- Official Representative:**

**Date:**

**Name:**

**Title:**

### SUPPORTING HEALTH UNIT - AUTHORIZED REPRESENTATIVE

(include additional signature boxes, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

**Co-Applicant Name: Dr. Heather Thomas**

**Title: Public Health Dietitian**

**Signature of Supporting Health Unit Official Representative:**

**Date:**

**Name:**

**Title:**

### **CO-APPLICANT HEALTH UNIT - AUTHORIZED REPRESENTATIVE**

(include additional signature boxes, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

<b>Co-Applicant Name:</b>	<b>Signature of Co-Applicant Health Unit Official Representative:</b>
<b>Title:</b>	<b>Date:</b>
	<b>Name:</b>
	<b>Title:</b>

### **CO-APPLICANT ACADEMIC OR COMMUNITY ORGANIZATION - AUTHORIZED REPRESENTATIVE**

(include additional rows, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

<b>Co-Applicant Name:</b>	<b>Signature of Co-Applicant Academic or Community Organization Official Representative:</b>
<b>Title:</b>	<b>Date:</b>
	<b>Name:</b>
	<b>Title:</b>

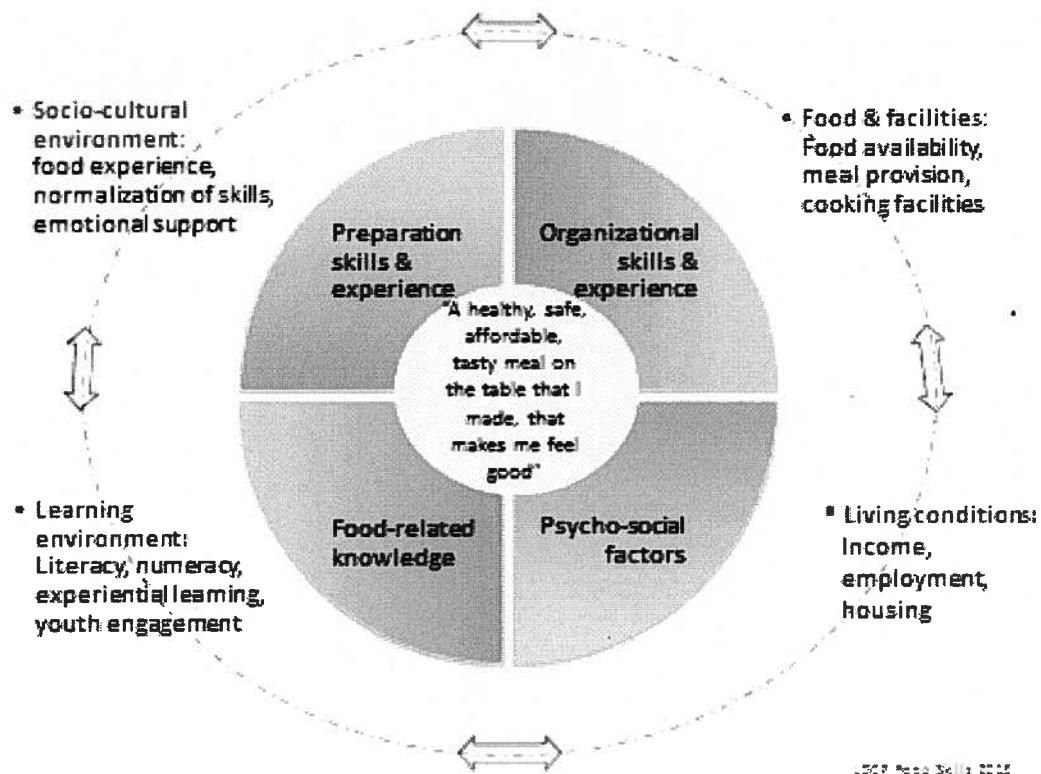
### **DEADLINE**

The LDCP Submission Form is due to Public Health Ontario on **October 30<sup>th</sup>, 2015 at 4:00 pm EDT**. Please send **ONE** email with all of the submission documents to: [LDCP@oahpp.ca](mailto:LDCP@oahpp.ca)

**-APPENDIX A-**

**Figure 1: What Determines Food Literacy?**

**(Desjardins et al. 2013)**



## **APPENDIX B- Food Literacy: A Call to Action**

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### ***“Food Skills” – A requirement for Ontario Public Health Units***

Food skill development and healthy eating practices are requirements for the promotion of health and prevention of chronic disease in the 2008 Ontario Public Health Standards (OPHS) (1). Specifically, health units in Ontario are required to provide opportunities for skill development in the areas of food skills and healthy eating practices for priority populations (1).

In the Ministry of Health Promotion’s Guidance Document: *Healthy Eating, Physical Activity and Healthy Weights* (2), food skills is defined as a “complex, interrelated, person-centred set of skills that are necessary to provide and prepare safe, nutritious, and culturally-acceptable meals for all members of one’s household” (3). This definition was based on Short’s qualitative study with 30 domestic cooks living in England which derived a systematic framework for domestic cooking. According to Short (3), food skills encompass the following five general categories:

- Knowledge (nutrition, label reading, food safety, food varieties, ingredients, substitution);
- Planning (organizing meals, budgeting, food preparation, teaching food skills to children);
- Conceptualizing food (creative thinking about leftovers, adjusting recipes);
- Mechanical techniques (preparing meals, chopping/mixing, cooking, following recipes); and,
- Food perception (using your senses – texture, taste, when foods are cooked).

### ***The importance of food skills***

Food skills have been cited in the literature to be important for several reasons with respect to health including knowledge, empowerment, engagement, culture, food security and fun (4-7). There is some evidence that healthy eating, cooking skills, and health are linked (4-7), however, the assumption is often made that increased or enhanced food skills and greater food preparation from raw ingredients can lead to improved health outcomes. To date, there is limited high quality research to demonstrate this direct cause and effect (8). Nutrition education alone is likely not adequate to improve dietary intake, in fact, In 2010, Health Canada reported that “food skills interventions may be a useful starting point for initiating dietary change” (9)

### ***The decline in food skills or “deskilling”***

In North America, cooking skills are eroding, or at the very least, are in transition. That is, the foods people cook, the food preparation skills they use, and where they cook are influenced by social, economic, and cultural contexts (5, 6, 11), which are constantly changing. The reported decline in food skills in North America (12) could be attributed to several factors including but not limited to: an increase of and normalization of pre-prepared, packaged and convenience foods (9), as well as a high consumption of processed foods (e.g., foods that are packaged and more highly processed than their whole state and as a result are higher in fat, sugar, sodium, and/or preservatives) that are generally associated with poorer health outcomes (13, 14-16).



Eating away from home has replaced cooking in the home as Canadians are reporting eating in restaurants or take-out two to three times weekly (17, 18). In addition, the amount of time spent to prepare meals has been declining significantly since the early 1900s (19, 20) as an eight-fold decrease (from six hours to 45 minutes) has been observed in the average daily time spent on meal preparation (19, 20). Although modern conveniences, such as microwaves ovens, have helped to reduce food preparation times, the predominant change in eating patterns and meal preparation culture can be attributed to other factors. The main influencers of the erosion of food skills include the majority of adults working outside of the home, a general increase in work-week hours, busier lifestyles, and a change in social norms, values, and attitudes (19, 20).

As well, some researchers contend that a decline in domestic food preparation skills has resulted in a “deskilling”, due to a lack of introduction and opportunity to acquire cooking skills from parents, grandparents, or school environments (3, 5, 11, 21). This is supported by the recent research conducted in Ontario with youth and young parents whereby participants who had greater food skills had learned them primarily from parents, grandparents, siblings, or relatives (22). Learning these skills at an earlier age (seven to 12 years of age) was also found to contribute to a greater confidence in food preparation in later years (22). Over half of the participants in a study by Desjardins and colleagues (22) also indicated that the best way for young people to learn food skills if they did not learn at home were cooking classes, both in school and in the community.

Some experts also theorize that other factors such as changes in the physical environment, food system, and types of food available have an impact on perceived food skills (5). A few studies have examined food skills and/or literacy knowledge in the context of local farms and farmers’ markets including how the local food context facilitated the ability to select, prepare, cook, store, and enjoy foods prepared from raw ingredients or from ‘scratch’ (i.e., fresh ingredients that are not pre-packaged or prepared by a food manufacturer) (23, 24, 25).

### ***From food skills to food literacy***

In the Guidance Document: Healthy Eating, Physical Activity and Healthy Weights (2), the focus of food skills is on skill development and education, yet in reference to the food skills, it does state that “regardless of the definition, all interventions undertaken to build food skills must be in line with the target population’s level of access to healthy foods (2).” While describing cooking skills, Short contends that it is “incorporating more than just practical, technical ability” but rather a complex interrelationship among cooking practices and abilities, skills, approaches to cooking and that cooking equipment plays a role (3). Furthermore, a food skill is multidimensional and demands special attention when applied to unique populations such as youth, low-income, and pregnant or post-partum women (3). Though the term “food literacy” is not used, cooking is referred to as a complex interrelationship between cooking skills and approaches. Reference is being made to a broader context that needs to be considered in this field. Previous literature also cites that there are various personal, social, and economic factors, including attitudes, beliefs, and confidence, that impact food choice and preparation (8).

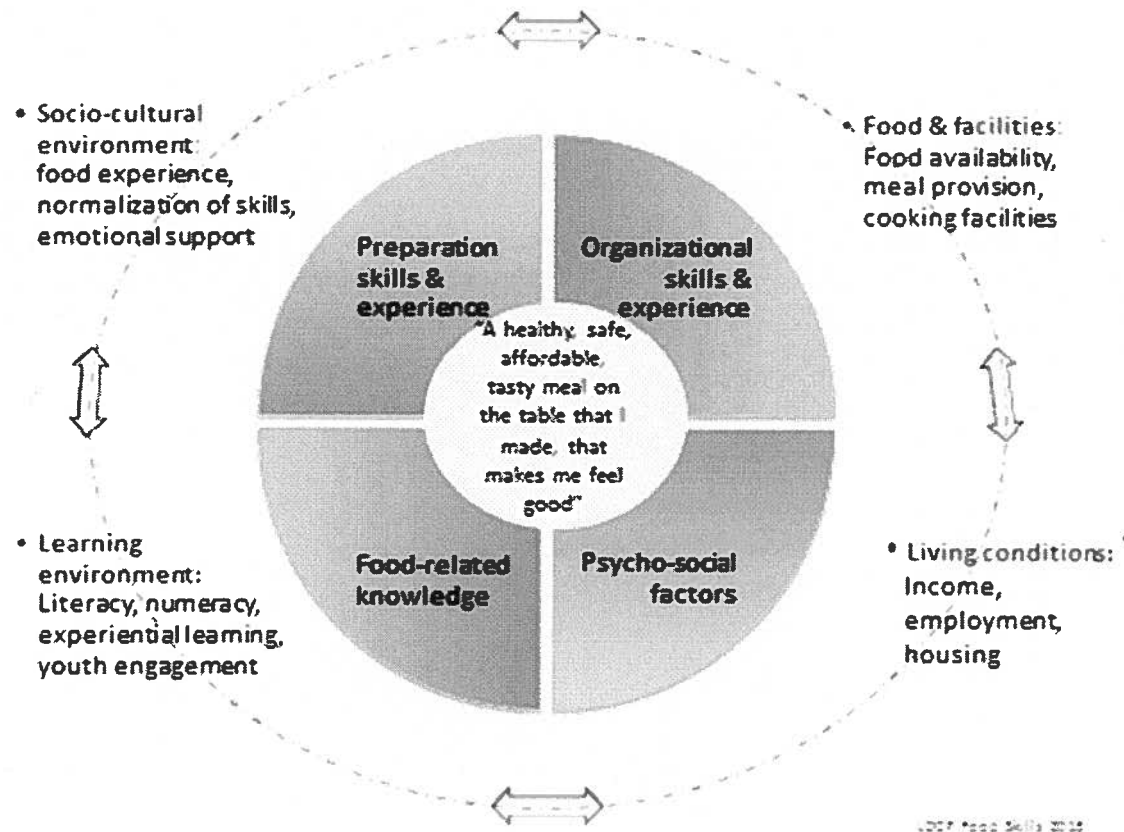
The information above illustrates two things. First, that there is no explicit or widely agreed upon definition for the concept of “food skills” or an expanded concept like food literacy. Authors in most of the literature prior to 2011 use terms such as “cooking skills” (3, 11) or “culinary skills” (8), and others discuss “food preparation” (3, 13, 26, 27) or “food skills” (2, 9). Secondly, although the term “food literacy” is not used explicitly *in the previous cited literature, there is some hint or tendency towards the concept of food literacy* because there is the mention of other external or environmental factors (e.g., access to healthy foods, cooking equipment, social and economic factors, confidence, etc.) that impact cooking or food skills at an individual level and that needs to be considered.

The word ‘**literacy**’ is more than the ability to read or interpret the written word. In the health context, it is being redefined to include *a broader set of attributes* that enable people to understand, navigate and function within various environments in a health-enhancing way. A systematic review of definitions and models of health literacy found that “enhancing health literacy can allow for great autonomy and empowerment, leading towards greater quality of life” (28). Health literacy builds on the idea that both health and literacy are critical resources for everyday living and that our level of health literacy directly affects our ability to not only to act on health information but also to take more control of our health as individuals, families and communities.

The term “food literacy” has emerged in the literature and from practice based research mostly since 2011 as a relatively new concept. A Locally Driven Collaborative Research Project (LDCP) with eight health units in Ontario was conducted with at-risk youth (teens aged 16 to 19 years, and young parents including pregnant women aged 16 to 25 years) to understand the meanings and practices of food skills (22). The findings generated a definition and a conceptual model of “food literacy” that can inform both policy development and public health as well as school-based and community programming (Figure 1). The definition of food literacy proposed by the LDCP research team is as follows (22):

- Food literacy is a set of skills and attributes that help people sustain the daily preparation of healthy, tasty, affordable meals for themselves and their families;
- It builds resilience, because it includes food skills (techniques, knowledge and planning ability), the confidence to improvise and problem-solve, and the ability to access and share information; and,
- It requires external support with healthy food access and living conditions, broad learning opportunities, and positive socio-cultural environments.

**Figure 1: What Determines Food Literacy?**



The aforementioned systematic review on health literacy showed an overlap between health systems and the individual's food capacity skills (28), suggesting that the broader environment may impact on people's ability to prepare and cook food. As depicted in the above model, food literacy involves both personal factors such as nutrition knowledge, organizational, and mechanical skills but also broader environmental factors which determine if individuals are able to prepare and cook healthy, safe, affordable tasty food for themselves and others.

These findings are supported by a number of recent studies and papers that have explored the concept of food literacy (24, 25, 29-32). These studies have been geographically dispersed and independent of each other, yet their results, models, and conclusions have overlapped considerably. Some have defined food literacy as more knowledge-based, such as the ability to choose healthier options from retail environments (34), but observations based on interviews with non-industry, community-based groups additionally have recognized the technical, social, and psychological elements of food literacy that are essential to healthy food preparation (24, 32). Other organizations have identified food literacy components like food system awareness, knowledge about growing food, and network-building around

food (35). Overall, the recent research on food literacy supports several personal and environmental dimensions that operate synergistically to promote a culture of healthy eating. A summary of current definitions of food literacy from various groups worldwide are listed in Table 1 (Appendix A).

### ***Food Literacy: A Call to Action***

As identified here, food skills are part of the broader definition of food literacy and fall within the mandate of Public Health, therefore, it is essential that health units in Ontario respond to this identified need to enhance food literacy for all Ontarians. There is an important role for the ***Food Literacy Workgroup*** of the **Ontario Society of Nutrition Professionals in Public Health** to support Ontario Public Health units to implement food literacy programs and services in their respective jurisdictions. To achieve this, **Public Health must advocate for:**

- Age-appropriate programs and classes at elementary, alternatives, and high schools, as well as after-school and community programs that enhance food literacy and align with the curriculum topics;
- Programs to be practical, experiential, confidence-building, skill-related, and learning-level-related;
- Adequate funds to cover expenses for equipment, facilities, leaders' wages, and food;
- Funding for safe, approved kitchens for community use – e.g., in schools universities, community venues, shelters and community food hubs or community food centres;
- Additional and newly developed affordable housing with functional kitchens;
- Affordable public transportation, healthy corner stores, Good Food Box, mobile markets, community gardens; and,
- Living wages and an adequate food allowance for social assistance.

#### **Public Health can work with partners to:**

- Create/nurture strong social networks to share food skills and use the Youth Engagement Principles to promote peer-led food skill programs;
- Include food literacy as part of resiliency skill building activities in Public Health programs focused on youth;
- Promote eating and cooking together and healthy food prep as a normal life skill for all in school and community food programs;
- Train teachers and food skills facilitators to combine food literacy programs with self-esteem building, body weight acceptance, and referral for counseling if necessary;
- Provide training and support for facilitators re food skills, youth engagement training, sensitivity training (e.g., for teachers, public health Registered Dietitians, public health nurses, Healthy Babies Healthy Children home visitors, peers workers, and community workers);
- Provide Registered Dietitian-led grocery store tours with priority groups;
- Implement the Community Food Advisor program or similar programs across Ontario, targeted specifically to youth;
- Ensure that community programs are offered in rural areas;
- Provide resources that aid food skill development such as slow cookers, Basic Shelf Cookbooks (37), spice kits, grocery hampers with ingredients, "meals in a bag" including kitchen implements;
- Create programs that build job skills, e.g. incubator kitchens, culinary training, food service, catering, food handler courses;

- Assist with establishing free or low cost community kitchen programs ; and,
- Help with establishing meal programs at hostels & shelters for youth who are homeless, in transition, upgrading, or finishing high school.

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## Appendix A: Definitions of food skills and food literacy

Source	Definition and components
Ontario Ministry of Health Promotion (2010) <i>Healthy Eating, Physical Activity &amp; Healthy Weights Guidance Document</i> (Short, F., 2003a and Vanderkooy, 2009)	<b>Food Skills:</b> <i>Knowledge</i> (nutrition, label reading, food safety, food varieties, ingredients, substitution); <i>Planning</i> (organizing meals, budgeting, food preparation, teaching food skills to children); <i>Conceptualizing food</i> (creative thinking about leftovers, adjusting recipes); <i>Mechanical techniques</i> (preparing meals, chopping/mixing, cooking, following recipes); <i>Food perception</i> (using your senses – texture, taste, when foods are cooked).
Short, F. (2006) <i>Kitchen Secrets: The Meaning of Cooking in Everyday Life</i> (Berg, Oxford)	The types of skills involved in today's cooking are mechanical, technical, perceptual, conceptual, organizational and academic. "Rather than our technical skills, it is our <i>approach</i> to cooking that influences what and how we cook", i.e. "the attitudes and beliefs about cooking that we share with others, our personal identifications as people who cook and our confidence in cooking and the degree to which we find it an effort, arising in part from our tacit, unseen skills and academic knowledge"
City of Hamilton Expert Panel – Delphi process	<b>Food skills</b> comprise: 1. <b>Food and nutrition knowledge:</b> Canada's Food Guide, label reading, nutrient-rich healthy choices, where food comes from; 2. <b>Planning:</b> Meal planning, budgeting, grocery list, meal organization per family size; 3. <b>Preparation including mechanical and cooking techniques:</b> Cutting, washing, measuring, cooking, following recipes, use of leftovers, time management, safe knife practices, use of utensils, ingredient substitution, cooking times; 4. <b>Food safety and storage:</b> cross contamination, shelf life, expiry dates, sanitizing measures, safe cooking and storage temperatures, waste management; 5. <b>Self-Efficacy:</b> Confidence in the kitchen, recognizing areas of improvement/skill enhancement opportunities, how to seek assistance, ability to teach cooking skills, food perceptions.
Vanderkooy (April 2011) TOPHC conference presentation	<b>Food skills:</b> "A complex, interrelated, person-centred set of skills necessary to provide and prepare safe, nutritious, culturally acceptable meals for all members of one's household"
Vidgen & Gallegos (2011) <i>What is Food Literacy and Does It influence What We Eat: A Study of Australian Experts</i>	<b>Food literacy:</b> "the relative ability to basically understand the nature of food and how it is important to you, and how able you are to gain information about food, process it, analyse it and act upon it"
Vidgen & Gallegos (2012) <i>Defining Food Literacy, Its Components, Development and Relationship to Food Intake: A Case Study of Young</i>	<b>Food literacy:</b> "A collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat foods to meet needs and determine food intake."  "Food literacy is the scaffolding that empowers individuals,



Appendix A: Definitions of food skills and food literacy	
Source	Definition and components
<i>People and Disadvantage (Australia)</i>	households, communities or nations to protect diet quality through change and support dietary resilience over time".
Sustain Ontario Backgrounder (2012), 4 pages	<b>Food literacy</b> means "understanding where food comes from, the impacts of food on health, the environment and the economy, and how to grow, prepare, and prefer healthy, safe and nutritious food". It is "a valuable tool in reducing the incidence of childhood obesity and other diet-related illnesses in their future".
Topley,A. (2013) <i>At the Table: A Case for Food Literacy Coordination</i> , Victoria, BC,36 pages	The term ' <b>Food Literacy</b> ' captures 3 ideas: 1. <b>Food Confidence</b> -- an individual's knowledge, skills, ability and belief to be food self-reliant; 2. <b>Food Savvy</b> -- the applicability and importance of food from personal, community and environmental perspectives; 3. <b>Food Connections</b> -- the appreciation that food serves social, community and cultural needs.
European Commission <a href="http://www.food-literacy.org">www.food-literacy.org</a>	<b>Food Literacy</b> is the ability to organize one's everyday nutrition in a self-determined, responsible and enjoyable way.

## Appendix B: Recommended Interventions& Supports for the Health Unit Level

Determinant Area 1	Barriers to food literacy	Interventions/supports to overcome challenges to food literacy
Social and psychological environment	<p>Social isolation</p> <p>Lack of role models for healthy food preparation</p> <p>Weight concerns, depression, stress, lack of self-esteem</p>	<ul style="list-style-type: none"> <li>♦ Promote strong social networks to share food skills</li> <li>♦ Use the <i>Youth Engagement Principle</i> to promote peer-led food skill programs (e.g. cooking, gardening)</li> <li>♦ Include food literacy as part of resiliency skill building activities in Public Health programs focused on youth</li> <li>♦ In school and community food programs, promote eating and cooking together and healthy food prep as a normal life skill for all</li> <li>♦ Train teachers and food skills facilitators to combine food literacy programs with self-esteem building, body weight acceptance, and referral to counseling if necessary.</li> </ul>
Determinant Area 2	Barriers to food literacy	Interventions/supports to overcome challenges to food literacy
Learning environment	<p>Low literacy, numeracy</p> <p>Food classes are absent, are poorly taught, or are not geared to needs or interests</p>	<ul style="list-style-type: none"> <li>♦ Advocate for programs and classes (at school and in the community) that <ul style="list-style-type: none"> <li>• enhance food literacy</li> <li>• are practical, experiential, confidence-building, skill-related, learning-level-related.</li> <li>• align with curriculum topics</li> </ul> </li> <li>♦ Provide training and support for facilitators re food skills, youth engagement training, sensitivity training (e.g. for teachers, PH RDs, PHNs, HBHC home visitors, peers, community workers)</li> <li>♦ Provide Registered Dietitian-led grocery store tours with priority groups</li> <li>♦ Implement the <i>Community Food Advisor</i> program across Ontario</li> <li>♦ Ensure that community programs are offered in rural areas.</li> </ul>
Determinant Area 3	Barriers to food skills	Interventions/supports to overcome challenges to food literacy
Food, food preparation facilities and	<p>Poor housing with limited cooking and food storage facilities</p> <p>Lack of implements &amp; ingredients for</p>	<p><b>Engage with community partners to:</b></p> <ul style="list-style-type: none"> <li>♦ advocate for funding for kitchens for community use – e.g. in schools, universities, community venues, shelters, and community food hubs or centres</li> <li>♦ provide resources that aid food skill development such as:</li> </ul>



### **-APPENDIX C-**

For the first LDCP (Desjardins et al., 2013), the priority populations had to reflect the following:

- be a priority population for each of the eight participating LDCP Team Members;
- be populations applicable in terms of being deemed a “priority” to many, if not all, public health units throughout Ontario;
- be populations accessible through established health unit programs (e.g., Healthy Babies, Healthy Children, Canadian Prenatal Nutrition Program, Smile Ontario, food skills groups, etc.);
- be populations accessible through established working relationships and rapport with health unit staff and community partners; and
- be individuals at higher risk for health disparities and outcomes.

(Source: Azevedo E, Davidson L, Dunbar J, Samra R, MacDonald A, Thomas H, et al. Summary report: How two priority populations were identified? A locally driven collaborative project on food skills. Toronto, ON: Public Health Ontario; 2014)

## APPENDIX D-Scoping Review Procedure

**Table 1: Systematic steps in the scoping review, using the framework developed by Arskey and O'Malley, 2005 (65) and revised by Levac and colleagues, 2010 (66)**

Step in Scoping Review	Description of Scoping Review Implementation Process	Role(s)	Date (2016)
1. Identifying the research question.	What are the attributes of food literacy including food skills identified in the literature?	LDCP Team	Oct 2015
2. Identifying relevant studies.	<b>Develop a search strategy</b> to identify any new and relevant studies, including reviewing previous search terms used and adding new search terms.	All LDCP Team members, including Librarian & Academic Advisor	Jan 2016
	<b>Develop inclusion/exclusion criteria, for example:</b> <ul style="list-style-type: none"> <li>• peer reviewed and grey literature</li> <li>• all literature in English</li> <li>• time span more to be discussed and determined</li> </ul>	↓	↓
	<b>Retrieve relevant literature</b> , specifically, search will include: <ul style="list-style-type: none"> <li>• Electronic databases (e.g., MEDline, PubMed, etc.)</li> <li>• Reference lists identified in the previous LDCP study Desjardins et al. 2013).</li> <li>• Hand-search key journals (e.g., International Journal of Home Economics; Canadian Journal of Dietetic Practice and Research; Health Behaviours and Health Education; Journal of Human Nutrition and Dietetics; Appetite; Journal of Nutrition Education and Behaviour)</li> <li>• Select reports and literature from existing networks, relevant organizations, and conferences (e.g., Ontario Society of Nutrition Professionals in Public Health, Ontario Public Health Association, Nutrition Resource Centre, and Canadian Public Health Association).</li> </ul>	Librarian Student (s)	Jan 2016
		Student(s)	↓
		Student (s) & LDCP team members	↓

Step in Scoping Review	Description of Scoping Review Implementation Process	Role(s)	Date (2016)
3. Study selection.	<b>Select studies/literature based on the inclusion/exclusion criteria</b> for study selection.	Librarian LDCP team members (and their student or students) LDCP team member (s) (and their student or students)	Jan 2016
	<b>Independent review of titles, then <u>abstracts</u> for inclusion</b> (LDCP Team member will meeting with students at several points during the process to discuss approach for the review and to ensure it is consistent among the reviewers (i.e., students) by discussing challenges and uncertainties related to the study selection and review, to come to consensus and resolution about any disagreements and if needed to further refine the search strategy.	1-2 LDCP team member (may include 1 -2 students)	Feb 2016
	<b>Independent review of <u>full</u> articles and/or literature (e.g., reports) selected</b> Same process as above– 1 LDCP team member and 1 student working together (TBD) plus one other LDCP member who is independently reviewing. Along the way meeting with the Research Consultant to ensure discuss review, ensure consistency and resolve any disagreements	Research Consultant, 1 LDCP team member (may include a student)	March 2016
4. Charting the data.	<b>Develop data extrapolation form/table</b> –in collaboration with the LDCP team with specific variables or data <b>to be determined for inclusion</b> in the chart (e.g., authors, year of publication, location of study, if food literacy definition is included, if specific attributes of food literacy are described, description of specific attributes listed or provided, etc.)	Researcher Consultant LDCP team members	March -April 2016
	<b>Pilot test the data extraction form/table with a few articles selected</b>	Research Consultant	

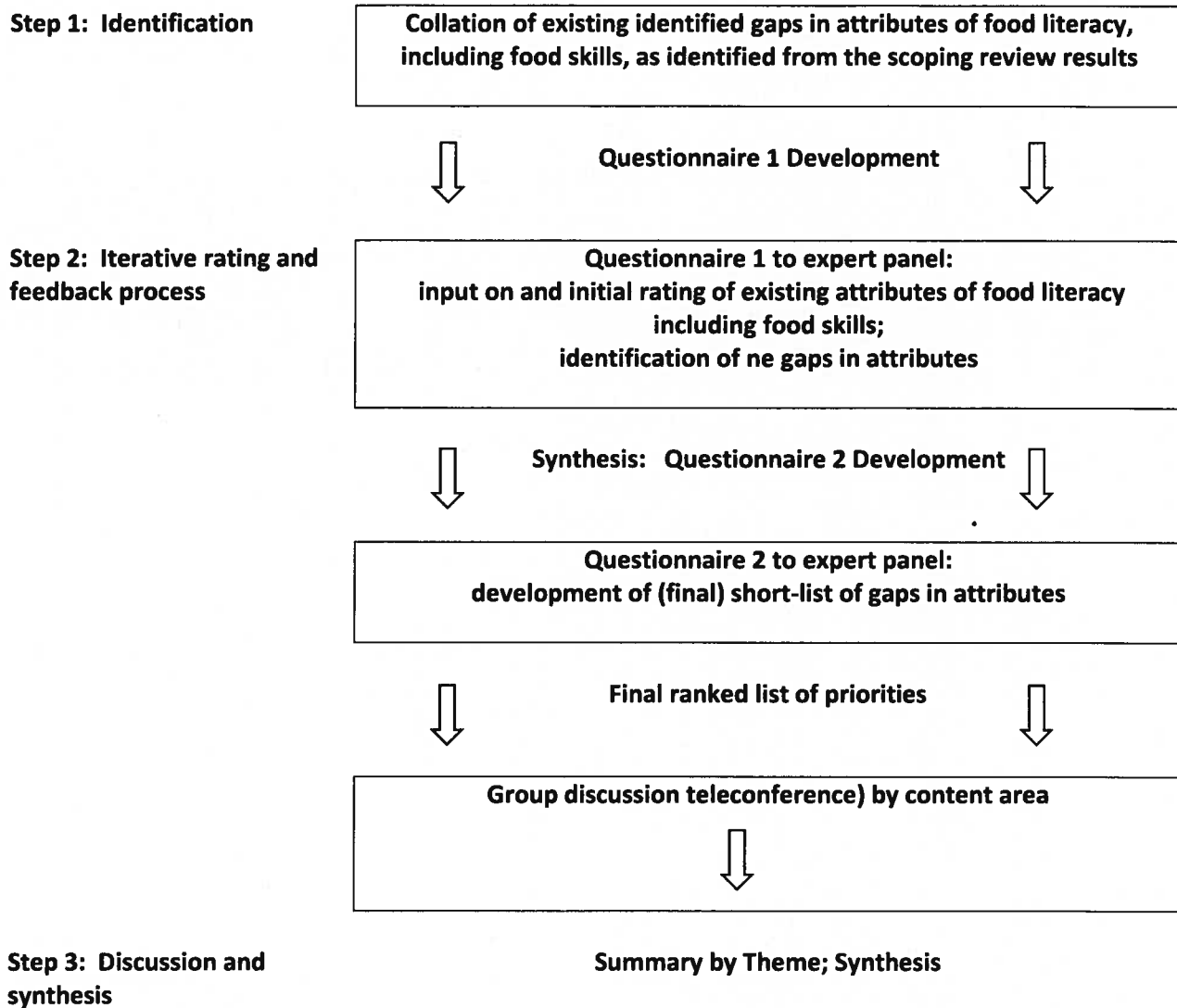
Step in Scoping Review	Description of Scoping Review Implementation Process	Role(s)	Date (2016)
	<p><b>Extract the data</b> from the first few studies selected for full review using the data extraction form; two individuals will independently work simultaneously</p> <p><b>Individuals meet to discuss data extraction process-</b> i.e., the approach they are using for data extraction to ensure the approach used is consistent and that the research question is being addressed by the literature selected for inclusion in the data extraction tool.</p>	<p>Research Consultant One LDCP member</p> <p>Research Consultant and LDCP Team member</p>	
5. Collating, summarizing, and reporting results. (Data Analysis)	<p><b>Conduct a qualitative thematic analysis of data extracted.</b></p> <p><b>Independently review thematic analysis by specific LDCP team members</b> for triangulation purposes.</p> <p><b>Meet to discuss findings and disagreements.</b></p> <p><b>Share and discuss analysis with the LDCP Team</b> making additional revisions to the thematic analysis.</p> <p><b>Summarize findings and produce a comprehensive list of food literacy attributes.</b></p>	<p>Research Consultant</p> <p>1-2 LDCP Team members Research Consultant</p> <p>1-2 LDCP Team members Research Consultant</p> <p>Research Consultant and LDCP Team</p> <p>Research Consultant</p>	<p>April - May 2016</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>May-June 2016</p>
6. Consultation	<p><b>Develop a webinar to share findings from scope of literature.</b></p> <p><b>Plan and implement the Delphi Technique</b></p>	<p>Key stakeholder s/ knowledge users</p> <p>Expert</p>	<p>May-June &amp;</p> <p>Sept-</p>

Step in Scoping Review	Description of Scoping Review Implementation Process	Role(s)	Date (2016)
	<i>(SEE objective #2– Delphi Technique below)</i> -to obtain input from expert group who are also the knowledge exchange users regarding the list of attributes, gaps in the information, opinion about terms used to describe attributes and which attributes are relevant to public health practice and which ones are most important to measure.	Group who are the key stakeholders and knowledge users identified to participate in the Delphi Technique	Dec 2016



**-APPENDIX E-**

**Figure 2: Overview of the Delphi Process as suggested by Wathen et al, 2012**



Source: Wathen DN, MacGregor JCD, Hammerton J, Coben JH, Herrman H, Stewart DE, & MacMillan HL. (2012). Priorities for research in child maltreatment, intimate partner violence and resilience to violence exposures: results of an international Delphi consensus development process. BMC Public Health; 12: 684.

## APPENDIX F-Delphi Technique Procedure

**Table 2: Steps in the Delphi Technique, using a modified framework as suggested by Keeney, Hasson, & McKenna, 2001**

Step in Delphi Technique	Description	Role (s)	Timeline
Identification of Study Population	<p><b><i>LDCP team members to work collaboratively to identify and purposely select key stakeholders and knowledge users to be a part of the Expert Group.</i></b></p> <p>(see potential participants for Expert Group 1 and 2 above)</p> <p><b>Note:</b> Once the total number of experts is determined from both groups, they will be referred to “participants” in the Delphi Technique.</p>	LDCP Team Research Consultant	Mar-April 2016
Recruitment of Study Sample	<p><b>Recruitment Step 1:</b></p> <p><b><i>To recruit participants for Expert Group 1,</i></b> the Co-Chairs of the OSNPPH Food Literacy Working Group will promote the study at a regularly scheduled meeting and upcoming webinar to share scoping review findings.</p> <p><b><i>To recruit participants for Expert Group 2:</i></b> LDCP Team members who identify potential Expert Group 2 members or who have a professional connection/relationship will reach out in a personal phone call to explain the study, provide a letter of information, and invite them to participate in the upcoming webinar and study.</p> <p><b><i>Additional snowball sampling during recruitment to add potential participants</i></b> using publicly available contact information will be employed.</p> <p><b>Recruitment Step 2:</b> After the initial introduction to the study is made, the co-chairs of the OSNPPH Working Group will send out a reminder email and promotional PDF poster for the webinar</p>	<p>2 LDCP Team members</p> <p>LDCP team members</p> <p>↓</p> <p>LDCP Team members</p>	<p>April 2016</p> <p>↓</p> <p>↓</p> <p>April-May 2016</p>

Step in Delphi Technique	Description	Role (s)	Timeline
	<p>to members on this working group to invite them to participate in the webinar and the Delphi Technique in the Fall. A reminder email will also be sent to potential participants of Expert Group 2.</p> <p><b>Recruitment Step 3:</b> Two weeks following the email reminder, follow-up phone calls will be made to members of the OSNPPH Working Group and to potential participants of Group 2 who have not responded.</p> <p><b>Recruitment Step 4:</b> Develop and implement a webinar to share findings of scoping review and recruit participants for the Delphi.</p> <p><b>Recruitment Step 5:</b> Follow up emails to potential participants in each group will be sent out approximately 1 week after the webinar initial contact with them to confirm or deny participation in the study. Information letter about study will be sent to those who have confirmed participation.</p> <p><b>Recruitment Step 6:</b> Confirm participation in the study and send out any necessary details (contact information, dates, etc.)</p>	<p>LDCP Team members</p> <p>Research Consultant LDCP Team Student(s)</p> <p>LDCP Team Members</p> <p>LDCP Team Members</p>	<p>April -May 2016</p> <p>May-June 2016 (Webinar in beginning of June)</p> <p>June 2016</p> <p>June-July &amp; again in early Sept 2016</p>
<b>Delphi Collection Process</b>	<b><i>Develop and pilot test questionnaire</i></b> – Before the first round of the Delphi Process similar Delphi questionnaires about food literacy will be reviewed and gathered; potential questions will be discussed in collaboration with the LDCP team and pilot testing of an open-ended questionnaire with a similar sample (e.g., public health nurses).	Research Consultant, Academic Advisor, Librarian LDCP team	June-July 2016
<b>Round 1</b>	<p><b><i>Distribution of online questionnaire</i></b></p> <p><b><i>Analyze pen ended questions using qualitatively (some quantitative analysis)</i></b></p>	<p>LDCP Team</p> <p>Research Consultant; Grad student</p>	

Step in Delphi Technique	Description	Role (s)	Timeline
	<i>Discuss and share analysis with LDCP &amp; work collaboratively to develop questionnaire for round 2</i>	Research Consultant; Grad student LDCP Team	
Round 2	<i>Email or call participants reminding them of round #2</i>  <i>Distribution of online questionnaire</i>  <i>Analyze pen ended questions using qualitatively (some quantitative analysis)</i>  <i>Discuss and share analysis with LDCP &amp; work collaboratively to develop questionnaire for round 2</i>	LDCP Team  LDCP Team  Research Consultant; Grad student  Research Consultant; Grad student LDCP Team	
Round 3	See round 2 above	See round 2 above	
		LDCP Team  Delphi Participants	December 2016
Collate, summarize and report results	Research Consultant to prepare a summary report that will be shared with and reviewed by the LDCP  Prepare brief summaries of the research in collaboration with LDCP Team members	Research Consultant LDCP Team  Student LDCP Team	Jan-Feb 2017  Dec '16-Feb 2017

## **APPENDIX G-Sample Information Letter with Consent**

### **LDCP Food Literacy Measurement Study: Letter of Information**

#### **Background:**

A previous Locally Driven Collaborative Project (LDCP) research project, Making Something out of Nothing: Food literacy among youth, young pregnant women and young parents who are at risk for poor health (2011) (available at...), helped shed light on the meaning of food skills among youth, young pregnant women and young parents.

The results from this study helped to develop the definition for food literacy and a visual model of the different attributes of food literacy (see enclosed resource that defines both food skills and food literacy). This year, a LDCP research team of public health professionals and a Research Consultant conducted a scoping review to develop a comprehensive list of food literacy attributes found in the literature. This list will be shared with key informants to get their opinions.

#### **What will happen in this study?**

In this study, the Delphi Technique, a well-recognized consensus building method, will be used to determine what key informants consider to be the most important food literacy attributes and what possible gaps there may be in attributes describing food literacy. The technique will involve three rounds of questions to solicit opinion and come to a consensus on a topic. The target for the study will be public health staff in Ontario and other key stakeholders involved in program or service delivery of food literacy programming including food skills. In round one, open ended questions will be sent using an online survey (e.g., fluid survey) to all participants to learn their opinions on the list of food literacy attributes including potential gaps. Feedback will be collected in aggregate form and summarized then sent back for further input in October and in November for refining and ranking those attributes of food literacy most important to their practice.

#### **Possible benefits and risks to you for participating in the study:**

As a study participant, there are no known risks to you. . Possible benefits for you include the opportunity to help us develop key indicators and questions that measure the refined list of food literacy attributes. The LDCP team will be eligible to apply for additional funding from Public Health Ontario to develop indicators in 2017, and then in 2018 to develop and test a measurement tool with specific priority population groups. This final measurement tool can be used to assess, evaluate, report on and advocate for food literacy programming in public health and community nutrition practice throughout Ontario.

#### **Alternatives and your right to withdraw from the study:**

Your participation in this study is voluntary. That means you may refuse to participate, refuse to answer any questions or withdraw from the study at any time. Your decision will not influence your current or future access to or involvement in community programs or services.

**Confidentiality:**

We will keep all information confidential and secure. Your name will not appear on any written or other information generated during the course of this study. The Haliburton, Kawartha, Pine Ridge District Health Unit as the lead health unit of this study will keep all data safe and secure for five years after the study results have been published at which time all computer data will be erased and all written/paper data and notes will be securely shredded.

**Publication of the results:**

When the results of the study are published, your name will not be used. If you would like to receive a copy of the overall results of the study, please give your contact information to those listed below. We may present the results at conferences, on webinars and/or in professional journals. Your name will never appear in any of these knowledge exchange activities. .

**Contact persons should you have any further questions about the study:*****Researcher (TBD)***

Elsie Azevedo Perry, M.Sc., RD  
Haliburton, Kawartha, Pine Ridge District Health Unit  
1-866- 888- 4577 or (905) 885-9100 ext. 218  
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Heather Thomas, PhD, RD  
Middlesex-London Health Unit  
519-663-5317 ext. 2222  
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\* If you have any questions about your rights as a research participant or the conduct of the study you may contact the Public Health Ontario Ethics at .....or by email at .....

**This letter is for you to keep.**

By agreeing to participate in this Delphi Study you consent to participate in the study.

---

I have read the Letter of Information, (have had the nature of the study explained to me) and I agree to participate. All questions have been answered to my satisfaction.

_____ Date	_____ Participant's name (please print)	_____ Participant's signature
_____ Date	_____ Name of person responsible for obtaining informed consent (please print)	_____ Signature

**Co-Applicants of the study:**

Lyndsay Davidson, RD, Chatham-Kent Public Health Unit  
Jessica Hambleton, RD, Toronto Public Health  
Jessica Love, RD, North Bay Parry Sound District Health Unit  
Ruby Samra, RD, City of Hamilton Public Health Services  
Shannon Edmonstone, RD, Perth District Health Unit  
Magda Wasilewska, Program Evaluator, Toronto Public Health  
Rebecca Davids, RD, York Region Community and Health Services

**Knowledge Users of the study:**

Karen Bellemore, RD, Windsor-Essex County Health Unit  
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**Academic Advisor:** Sharon Kirkpatrick, University of Waterloo

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## Part 10. Signatures

### LEAD HEALTH UNIT - AUTHORIZED REPRESENTATIVE

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team. I acknowledge that as the lead health unit, my organization has the intention to enter into a Transfer Payment Agreement with Public Health Ontario that reflects the roles and responsibilities of the lead health unit as described by the Locally Driven Collaborative Projects (LDCP) and the Cycle 3 LDCP Participation Guidelines.

Lead-Applicant Name: Elsie Azevedo Perry

Title: Public Health Nutritionist

Signature of Lead Health Unit- Official Representative:

Date: Oct. 28, 2015

Name: Mary Catherine Masciangelo

Title: Director, Administration and Human Resources

### SUPPORTING HEALTH UNIT - AUTHORIZED REPRESENTATIVE

(Include additional signature boxes, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

Co-Applicant Name: Dr. Heather Thomas

Title: Public Health Dietitian

Signature of Supporting Health Unit Official Representative:

Date:

Name:

Title:

## Part 10. Signatures

### LEAD HEALTH UNIT - AUTHORIZED REPRESENTATIVE

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team. I acknowledge that as the lead health unit, my organization has the intention to enter into a Transfer Payment Agreement with Public Health Ontario that reflects the roles and responsibilities of the lead health unit as described by the Locally Driven Collaborative Projects (LDCP) and the Cycle 3 LDCP Participation Guidelines.

**Lead Applicant Name:** Elsie Azevedo Perry

**Title:** Public Health Nutritionist

**Signature of Lead Health Unit-  
Official Representative:**

**Date:**

**Name:**

**Title:**

### CO-LEAD APPLICANT HEALTH UNIT - AUTHORIZED REPRESENTATIVE

(include additional signature boxes, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

**Co-Lead Applicant Name:** Dr. Heather Thomas

**Title:** Public Health Dietitian

**Signature of Co-Lead Health Unit –  
Official Representative:**



**Date:** October 16, 2015

**Name:** Dr. Christopher Mackie

**Title:** Medical Officer of Health and CEO

**CO-APPLICANT HEALTH UNIT - AUTHORIZED REPRESENTATIVE**

(Include additional signature boxes, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

**Co-Applicant Name:** Lyndsay Davidson

**Title:** Public Health Dietitian

**Signature of Co-Applicant Health Unit Official Representative:**



**Date:** Monday, October 26, 2015

**Name:** Teresa Bendo

**Title:** Director, Chatham-Kent Public Health Unit

**CO-APPLICANT ACADEMIC OR COMMUNITY ORGANIZATION - AUTHORIZED REPRESENTATIVE**

(Include additional rows, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

**Co-Applicant Name:**

**Title:**

**Signature of Co-Applicant Academic or Community Organization Official Representative:**

**Date:**

**Name:**

**Title:**

**DEADLINE**

The LDCP Submission Form is due to Public Health Ontario on October 30<sup>th</sup>, 2015 at 4:00 pm EDT. Please send **ONE** email with all of the submission documents to: [LDCP@pahpp.ca](mailto:LDCP@pahpp.ca)



**CO-APPLICANT HEALTH UNIT - AUTHORIZED REPRESENTATIVE**

(Include additional signature boxes, if required)

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<b>Co-Applicant Name:</b> H. Ruby Samra	<b>Signature of Co-Applicant Health Unit Official Representative:</b>
<b>Title:</b> Public Health Dietitian	<b>Date:</b> Oct 26, 2015
	<b>Name:</b> Doctor Ninh Tran
	<b>Title:</b> Associate Medical Officer of Health

**CO-APPLICANT ACADEMIC OR COMMUNITY ORGANIZATION - AUTHORIZED REPRESENTATIVE**

(Include additional rows, if required)

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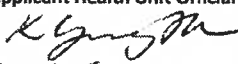
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	<b>Name:</b>
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I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

Co-Applicant Name: DR. KIT YOUNG HOON	Signature of Co-Applicant Health Unit Official Representative: 
Title: MOH	Date: Oct. 19, 2015
	Name: KIT YOUNG HOON
	Title: MOH

**CO-APPLICANT ACADEMIC OR COMMUNITY ORGANIZATION - AUTHORIZED REPRESENTATIVE**  
(include additional rows, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

Co-Applicant Name:	Signature of Co-Applicant Academic or Community Organization Official Representative:
Title:	
	Date:
	Name:
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I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

<b>Co-Applicant Name:</b> Shannon Edmonstone	<b>Signature of Co-Applicant Health Unit Official Representative:</b> 
<b>Title:</b> Public Health Nutritionist, Perth District Health Unit	<b>Date:</b> October 22, 2015
	<b>Name:</b> Tracy Allan-Koester
	<b>Title:</b> Director of Community Health, Perth District Health Unit

### CO-APPLICANT ACADEMIC OR COMMUNITY ORGANIZATION - AUTHORIZED REPRESENTATIVE

(include additional rows, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

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<b>Title:</b>	<b>Date:</b>
	<b>Name:</b>
	<b>Title:</b>

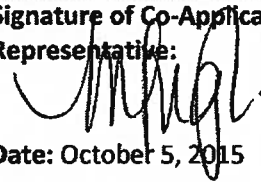
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I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

<b>Co-Applicant Name:</b> Jessica Love	<b>Signature of Co-Applicant Health Unit Official Representative:</b> 
<b>Title:</b> Registered Dietitian	<b>Date:</b> October 5, 2015
	<b>Name:</b> Monique Lugli
	<b>Title:</b> Executive Director of Community Services

### CO-APPLICANT ACADEMIC OR COMMUNITY ORGANIZATION - AUTHORIZED REPRESENTATIVE

(include additional rows, if required)

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**Co-Applicant Name:** Jessica Hambleton

**Title:** Nutrition Promotion Consultant  
Chronic Disease and Injury Prevention  
Toronto Public Health

**Signature of Co-Applicant Health Unit Official Representative:**



**Date:** October 19<sup>th</sup>, 2015

**Name:** Anne Birks

**Title:** Acting Associate Director

### CO-APPLICANT ACADEMIC OR COMMUNITY ORGANIZATION - AUTHORIZED REPRESENTATIVE

(include additional rows, if required)

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**Co-Applicant Name:**

**Title:**

**Signature of Co-Applicant Academic or Community Organization Official Representative:**

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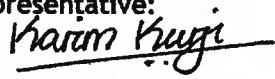
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<b>Title:</b>	<b>Date:</b>
	<b>Name:</b>
	<b>Title:</b>

**CO-APPLICANT ACADEMIC OR COMMUNITY ORGANIZATION - AUTHORIZED  
REPRESENTATIVE**  
(include additional rows, if required)

I warrant that the information in this submission form is complete and accurate to the best of my knowledge and that it reflects the collective intentions of the collaborative team.

<b>Co-Applicant Name:</b> Rebecca Davids	<b>Signature of Co-Applicant Academic or Community Organization Official Representative:</b> 
<b>Title:</b> Public Health Nutritionist	<b>Date:</b> October 20, 2015
	<b>Name:</b> Dr. Karim Kurji
	<b>Title:</b> Medical Officer of Health

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