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Developing a Profile Survey for Local Public Health Units in Urban Canada: Integrated Knowledge Translation in Practice

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The UPHN is a national organization established in 2004 which today includes the Medical Officers of Health in 24 of Canada's large urban centres. Working collaboratively and with a collective voice, the network addresses public health issues that are common to urban populations. Research operations of the UPHN are conducted in partnership with the University of Saskatchewan.

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Developing a Profile Survey for Local Public Health Units in Urban Canada: Integrated Knowledge Translation in Practice¹²³

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Abstract

The field of integrated knowledge translation (iKT) is still emerging and is “not yet widely practiced or well understood.” Nonetheless, there are increasing numbers of studies incorporating iKT strategies. Unfortunately, the iKT activities undertaken therein and the steps taken to evaluate them have been all too often poorly and incompletely described. This article provides a detailed account of an iKT process that was engaged in by the Urban Public Health Network (UPHN) to develop a preliminary “profile survey” to advance Public Health Systems and Services Research (PHSSR) in Canada.

Keywords

Integrated knowledge translation, public health systems and services research, local public health units.

Introduction

The field of integrated knowledge translation (iKT) is still emerging and is “not yet widely practiced or well understood.”^{1,pg.4} Nonetheless, there are increasing numbers of studies incorporating iKT strategies. Unfortunately, the iKT activities undertaken therein and the steps taken to evaluate them have been all too often poorly and incompletely described.^{1,2} This inconsistent reporting inhibits researchers looking to learn from past efforts and improve upon the method from identifying relationships between iKT inputs and outcomes. This issue is exacerbated by the fact that there no agreed upon approach to evaluating the effectiveness of iKT models.^{2,3} In order to begin to address these issues, researchers have begun to call on one another to fully report on their iKT activities.¹

This article provides a detailed account of an iKT process that was engaged in by the Urban Public Health Network (UPHN)⁴ to develop a preliminary “profile survey” to advance Public Health Systems and Services Research (PHSSR) in Canada.⁴ Public health researchers and UPHN members came together in an iKT Collaborative to develop the profile survey through an iterative and participatory process with frequent occurrences of various iKT activities. This paper will use the resulting survey instrument, known as the Canadian Profile of Public Health Units in Canada (CPPHU), as a case study to highlight the strengths of such a Collaborative.

From KT to iKT

Funding agencies and researchers alike are becoming increasingly interested in the practice of iKT.^{11,12} By focusing on questions that are relevant to practice and working with partners that are capable of implementing identified recommendations, iKT can effectively promote the integration and utilization of research findings.^{2,3,11-13} The Canadian Institutes of Health Research (CIHR) has distinguished between two categories of KT: integrated and end-of-grant.¹⁰ The latter is what most researchers are familiar and comfortable with, and includes distributing research findings in forms such as publications in peer-reviewed journals or conference presentations. However, when end-of-grant KT is used exclusively, there is the risk of investing resources into a research question that isn't relevant to practice. iKT strives to address this issue by inviting knowledge users (e.g., policy makers, practitioners, administrators) to collaborate on and provide input to researchers over the course of the entire research process.¹¹

Toward “Profile Survey” to advancePHSSR in Canada

In 2011, a “Think Tank” of public health researchers, practitioners and policy makers was assembled to develop a national PHSSR agenda for Canada.^{5,6} The Think Tank identified eight priority areas for PHSSR in Canada including, first, data development/public health information systems. Advancements in the other priority areas have been seriously delayed by a lack of advancement in this first area. In order to advance Canada's PHSSR agenda,^{7,8} in 2018, the UPHN elected to invest in the development of a “profile survey”⁹ that could be administered to local public health units (LPHUs) across the country and gather information on key public health systems and services variables.^{4,9} The resulting CPPHU survey instrument was trialed with the UPHN membership in 2019. The UPHN is continuing to invest in improving the instrument and developing new methods for documenting local public health systems in Canada.

⁴ The UPHN is a network of Medical Health Officers who are responsible for public health in the largest cities in each of Canada's provinces (excluding P.E.I). Collectively, this network is responsible for the population health of more than 50% of the Canadians.

Methods

Forming an iKT Collaborative Partnership

The UPHN funded a group of researchers based out of the University of Saskatchewan to develop and pilot CPPHU. Although this group was contracted by the UPHN, it operates at arms length from the network and has full independent oversight over its research process and results.⁹ This partnership provided an invaluable opportunity to put an iKT approach into practice and ensure that the development of CPPHU would meet the needs of knowledge users. The research team and UPHN calls this partnership an “iKT Collaborative.” Leads were identified for both the UPHN and the research team, with the UPHN Lead also acting as a “Knowledge Broker” (for more details, see Discussion) between the two groups. The development of the profile survey was an iterative and participatory process amongst the iKT Collaborative (Figure 1). Over the course of survey development, the knowledge users of the Collaborative were regularly consulted.

Developing the Profile Survey for Local Public Health

The research team began by working with the United States’ National Association of County and City Health Officials’ (NACCHO) National Profile of Local Health Departments (NPLHD) as a template for both structure and content for the creation of the Canadian profile survey. Relevant questions were adapted so that they were applicable to the Canadian context. Throughout this adaptation process, the research team encountered terms and questions that were not obviously applicable in Canadian public health settings, thus new content had to be developed.⁹ The research team opted to conduct a grey literature scan of Canada’s public health system to inform the development of novel terms and questions. The UPHN Lead reviewed and revised these new terms and questions and was consulted on the jurisdiction and governance of LPHUs in Canada.

One section that was particularly challenging to adapt was “Section C: Local Public Health Programs and Services.”⁹ In the NACCHO NPLHD survey,¹⁴ local health departments were asked if a list of public health programs and services were performed in their jurisdictions, and, if so, by whom. The iKT Collaborative decided not to use this section of the survey as it did not align with the scope or organization of public health practice in Canada and did not seem to be based on a recognized formal framework.⁹ To assist with the development of Section C, and in lieu of using the corresponding section in the NACCHO NPLHD, the iKT Collaborative opted to adapt the World Health Organization’s Integrated International Classification of Health Interventions (ICHI) framework.^{15,16} The iKT Collaborative met twice with members of the ICHI development team to discuss the structure of the framework and its suitability to the profile survey, and once more to report on how the framework was adapted and used.

To garner feedback, the UPHN Lead referred the research team to three UPHN-member Medical Health Officers from different provinces. The survey questions were improved based on their insights.

Consulting UPHN Members

Once the first draft of the profile survey was completed, the research team elected to pre-pilot a handful of questions from the survey. Survey Monkey, an online survey platform, was used to quickly generate a version of the some sections of the survey that could be quickly administered to the UPHN membership.⁹ A link to the survey was emailed to all UPHN members and the

participants were given two weeks to complete the survey and provide any feedback. This pre-pilot verified a number of key survey questions, also included questions that asked members about the feasibility of answering different questions, and helped to identify barriers to completion and opportunities for improvement.

The concept of and progress to-date on the project was presented at the bi-annual UPHN meeting in June 2019. The Research Lead completed a formal presentation followed by a question and answer period. Post-presentation, feedback was gathered during consultations with several UPHN members in attendance. The Research Lead was also able to informally follow-up with UPHN members to discuss the organization of their LPHUs and consult with them regarding the administration of the profile survey.

In August 2019, a second draft of the profile survey was shared with the UPHN executive for further feedback. The survey was sent via email to the four executives who reviewed the survey and shared it with their leadership staff of their local public health units. The research team conducted over-the-phone follow-up conversations with the executives to gather their feedback. Follow-up emails were also sent to ensure that revisions were implemented as intended.

Administering the Profile Survey

Upon finalizing the survey,⁹ it was administered via email to the entire UPHN membership in fall 2019. The research team opted to use REDCap, a secure online platform, to capture data and manage the survey. A link to the REDCap survey was sent to all UPHN members, who, given the length of the survey and the extent of detail required for the answers, were given one month to complete it. Feedback on the content and execution of the survey was collected from the UPHN membership. Results of CPPHU pilot were presented to the UPHN membership in November 2019. This presentation covered the development of the profile survey, preliminary results and the lessons learned. Additional verbal feedback was collected from the membership.

Results

Integrated Knowledge Translation

The Workgroup for Intervention Development and Evaluation Research (WIDER) framework was originally developed for the descriptive reporting of behavior change interventions,¹⁷ and has been modified to help assess the quality of KT interventions.¹⁸ This modification was necessary as “research documenting stakeholder engagement in the research process is emerging slowly [and] the mechanisms to ascertain and measure engagement are largely unstructured.”^{19,20,21} To address this issue, researchers have been encouraged to report in detail their engagement activities, with Gagliardi et al. (2016) recommending the WIDER checklist for describing the planning, implementing and/or evaluating of iKT activities. In Table 1, the iKT activities conducted in this case study are described using the WIDER framework.

Nine iKT activities, with 17 sub-activities, were conducted during the development and implementation of the profile survey. Each of these activities are described by their mode of delivery, their duration and/or frequency, the participants involved and the leading personnel as per the WIDER criteria. These activities usually involved meetings (n=6), in addition to rounds of phone calls (n=2), presentations (n=2), surveys (n=2) and rounds of emails (n=1), with some activities involving more than one mode. Most activities were led by the Research Lead (n=5), followed by research members (n=2) and the Knowledge Broker (n=2).

Profile Survey Instrument and Administration

Thus far, the profile survey developed by the iKT Collaborative has been pre-piloted and piloted. The pre-pilot survey was sent out to 22 UPHN members and had a completion rate of 54% (n=12). Two of the respondents partially completed the survey. The pilot survey consisted of 665 fields, with both instruction and question fields, and was administered to 20 UPHN members and had a completion rate of 45% (n=9). Of those that completed the survey, the response rate varied among survey sections, ranging from 44.4- 99.0%, dropping with survey progression. Unfortunately, as a result of technical difficulties that arose with the University of Saskatchewan implementation of REDCap and the eventual onset of the COVID-19 crisis in January 2020, not all members who committed to eventually completing the survey were able to do so later.

During the development of the profile survey, three key questions were identified that complicated its development and the UPHN members' ability to complete it. The questions include: (1) how should LPHUs be defined so as to be applicable and recognizable in every region throughout the county? (2) how can public health programs and services be classified in a standard and globally comparable fashion? and (3) how should resource allocation be operationalized toward public health programs and services? In each instance, tensions around these questions emerged as a result of the considerable diversity in organization and governance of local public health practice across Canada. The problems that these questions pose and potential avenues for robust solutions are discussed elsewhere.⁹

As a result of these and other challenges, a profile survey for PHSSR in Canada remains a work in progress. Nonetheless, the iKT Collaborative is now established and rests on a firm foundation of agreement and understanding going forward.

Discussion and Lessons Learned

This study was an opportune case study to highlight how knowledge users and researchers can collaborate in an iKT partnership. There were several strengths supporting the relationship of the iKT Collaborative. First, the research priority was identified by the UPHN members and the research question co-developed by the Collaborative. When the research question is co-developed they are often more relevant to policy and practice, and the subsequent findings are more easily disseminated and implemented.^{1,2,11,13}

Second, communication is cited as a critical factor in determining the success of an iKT partnership.^{1,2} The iKT Collaborative consisted of MOHs and university researchers, all of whom understood the basic jargon associated with research and public health. Having a shared language was a strength of the Collaborative as it promoted mutual understanding between the two groups. Furthermore, the UPHN members felt that they understood the survey and were equipped to complete it.

A third strength of the Collaborative was the frequent occurrence of various iKT activities.^{1,12} There were 9 iKT activities and 17 sub-activities, which manifested in five different modes (Table 1). This enabled continuous collaboration, which kept both parties informed and engaged.

An additional potential strength of the iKT Collaborative was the existence of a Knowledge Broker (KB). KBs are individuals who link researchers and knowledge users, facilitating the communication and understanding of evidence-based information.^{21,22} The KB of the iKT Collaborative, successfully fulfilled the role of the KB by providing project coordination, identifying stakeholders, facilitating collaboration and supporting communication.

Past iKT efforts have seen mixed results relating to the effectiveness of KBs. A recent systematic review found only two studies with sufficient methodological rigour to determine effectiveness. One observed awareness and use of KB-assessed tools when a strong research culture was present.²² The other, a randomized controlled trial, found that a KB intervention significantly increased the number of public health policies and programs when organizational research culture was low, while no change and a potential decrease was experienced in those when it was high.²³ While it was not an objective of this study to measure KB effectiveness, future research should be conducted to determine how and when KBs are effective.²²

Although the profile survey collects a breadth of information about LPHUs, the response rate for the pilot survey (45%) was lower than would have been ideal. Based on the feedback from the UPHN membership, the low response rate was likely in large part due to survey length and the time and resource constraints of UPHN members. Also, a technical error, and the impending onset of COVID-19, prevented additional follow-up.

In addition to the low overall response rate, the response rate between sections varied considerably and declined as the survey progressed. This may have occurred due to respondent fatigue, which occurs when a participant gradually tires of the survey task, becoming less attentive and motivated, with the quality of their answers deteriorating over time.²⁴ Many factors may have contributed to survey fatigue such as survey length, question topic or complexity, and frequent open-ended questions.²⁴

These two response issues combined with direct feedback from the UPHN members arising from the iKT Collaborative has led the group to reconsider the survey design and implementation strategy. Going forward, the extensive profile survey will be executed every few years rather than annually. A much shorter survey which can be completed by MOHs in one sitting is now under development by the iKT Collaborative. The plan is for this survey to be administered annually and to be supplemented by additional modules addressing more time-sensitive concerns.

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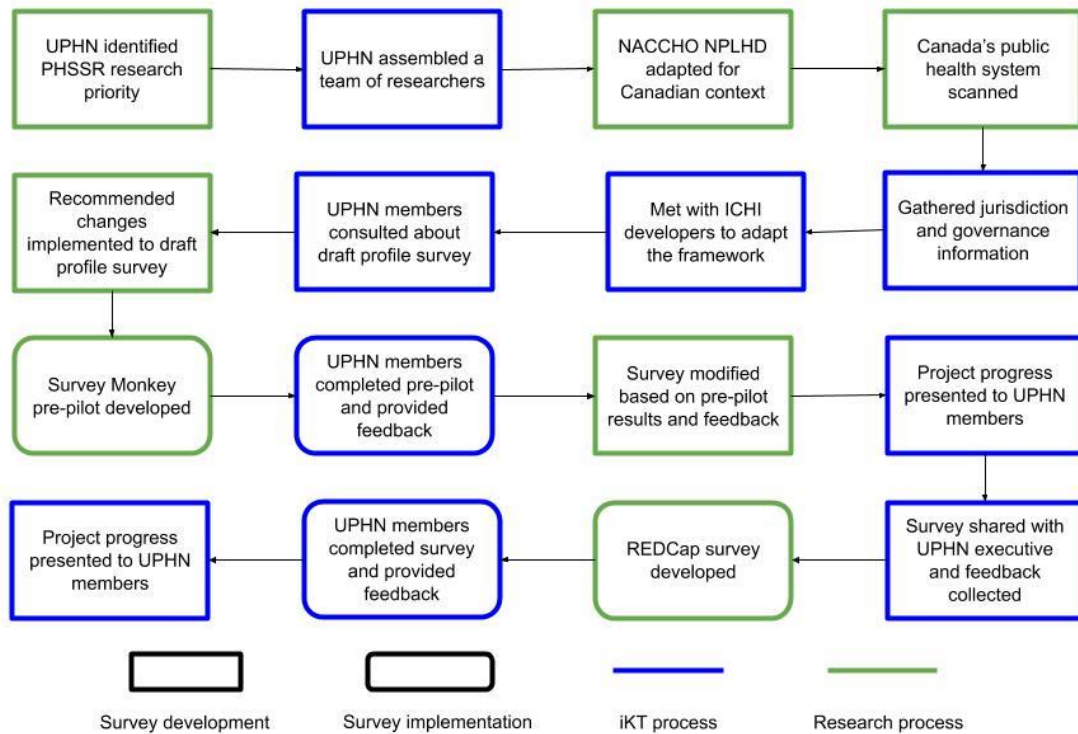


Figure 1. iKT development and implementation involved in the creation of the Profile Survey.

Note: This figure outlines the process taken to develop and implement the Profile Survey. Square and rounded boxes indicate survey and implementation processes, respectively. Blue and green lines indicate integrated knowledge translation (iKT) and research processes, respectively. Urban Public Health Network (UPHN); Public Health Systems and Services Research (PHSSR); National Association of County and City Health Officials (NACCHO); National Profile of Local Health Departments (NPLHD); Integrated International Classification of Health Interventions (ICHI); Research Electronic Data Capture (REDCap).

Table 1. Description of iKT activities undertaken according to the WIDER criteria.¹

iKT Activity	Mode of Delivery	Duration and/or Frequency	Participants	Leading Personnel
UPHN assembled a team of researchers	-Meetings	-Numerous steps, including interviewing and hiring	-Knowledge Broker -Research Lead -UPHN members	Knowledge Broker
Gathered jurisdiction and governance information	-Meeting	-One occurrence -One hour duration	-Knowledge Broker -Research member	Knowledge Broker
Met with ICHI developers to adapt the framework	-Meetings	-Three occurrences -One hour each	-Knowledge Broker -ICHI developers -Research Lead -Research members	Research Lead
UPHN members consulted about draft Profile Survey	-Meeting	-One occurrence -One hour duration	-Knowledge Broker -Research Lead	Research Lead
	-Phone calls	-Three occurrences -Half-hour each	-3 UPHN-member MOHs -Research Lead	
UPHN members completed pre-pilot and provided feedback	-Survey completed and feedback provided via Survey Monkey	-One occurrence -Two week period	-UPHN members -Research members	Research members
Project progress presented to UPHN members	-Presentation -Informal consultation meetings	-One occurrence -Three days of meetings	-Research Lead -Knowledge Broker -UPHN members	Research Lead
Survey shared with UPHN executive and feedback collected	-Feedback collected via phone calls	-Four phone conversations	-4 UPHN executives -Research Lead -Research members	Research Lead
	-Email communication	-Four email conversations		
UPHN members	-Survey	-One occurrence	-22 UPHN	Research

completed survey and provided feedback	completed and feedback provided via REDCap	-Four month period	members -Research members	members
Project progress presented to UPHN members	-Presentation -Informal consultation meetings	-One occurrence -Three days of meetings	-Research Lead -Knowledge Broker -UPHN members	Research Lead

Note: The iKT activities undertaken during the development of the Profile Survey are described by: mode of delivery (how the activity was conducted); duration and/or frequency (timing of the activity); participants (who was involved in the activity); and leading personnel (who led the activity). Integrated Knowledge Translation (iKT); Urban Public Health Network (UPHN); Minister of Health (MOH)