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ORIGINAL ARTICLE

Influences on the uptake of a population health approach to sexual health programs in Ontario public health units: a qualitative descriptive study

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Abstract

Aim Population-level prevention initiatives are the cornerstone of public health practice. However, despite this normative practice, sexual health programming within public health has not utilized this approach to the same extent as other public health programs. Understanding requirements to put a population-level approach into practice is needed. The objective of this study was to explore the barriers and facilitators experienced by sexual health programs and services within public health when implementing a population health approach.

Subject design and methods The principles of qualitative description guided all sampling, data collection and analysis decisions. Data collection involved in-depth semi-structured interviews with 12 sexual health managers and/or supervisors from ten Ontario public health units. Directed content analysis was used to code and synthesize the data. Data collection and analysis was guided using constructs from the Consolidated Framework for Implementation Research.

Results Factors that served as either barriers and facilitators to implementing a population health approach, were mainly in the inner and outer setting domains of the Consolidated Framework for Implementation Research. Participants identified the presence of community partnerships, adequate staff training on population health, and access to data on population health served as facilitators. In comparison, barriers to implementation included a lack of resources (human, financial) and clinicians' value of and preferences for delivering services at the individual clinic level.

Conclusion Some clear barriers and facilitators influenced if staff in sexual health programs and services could implement a population health approach. Results indicate where public health resources need to be enhanced to move toward a population health approach and provide insight into what worked and should be considered by public health organizations.

Keywords Public health · Sexual health · Population health · Implementation science

Background

Addressing social determinants of health, engaging in intersectoral partnerships, and focusing on health promotion are strategies to improve the health of populations (Cohen et al. 2014; Health Canada 2001). Employing a population health approach is a cornerstone of public health practice. However, within public health units that are delivering care to individuals through clinic-based services (such as sexual health clinics), what emerges is a tension between providing individual-level care or delivering population health programming. This tension questions if both of these activities can be done. Despite the interest and promise of a population health approach, important challenges exist in how this approach can be translated into meaningful outcomes within sexual health, given the growing demand for one-on-one clinical services to address rising cases of sexually transmitted infections (Choudhri et al. 2018; Sandhu 2018; Waters 2020). Given this demand, questions remain: does public health have the financial and human resources to accommodate this approach and how would population health be prioritized among these competing priorities?

In 2018, the transformation from individual-focused services to population-based interventions was initiated within Ontario's public health sector due to the modernization of the standards that govern public health (Ministry of Health

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2019). Implementing a new approach can be challenging for an organization, with individual, external, and internal factors influencing how and if a new approach is implemented (Damschroder et al. 2009). Furthermore, contexts in which new approaches are implemented are increasingly complex, involving interactions within and outside of the organization. In 2019, a reduction from 34 to 10 public health units was proposed by the Ontario government as an attempt to decrease the costs of public health services (Izenberg 2019). How the combination of these two factors would impact sexual health programming was not known.

In Ontario, the structure of public health is complex, with 34 health units responsible for delivering health promotion and disease prevention programs and services to their local populations in diverse communities and geographies across the province (Lyons 2016). Each health unit is governed by a local Board of Health and led by a Medical Officer of Health (MOH). Health units provide and tailor services to meet identified local community needs (Lyons 2016, MOHLTC 2018). Cost-sharing occurs between the MOHLTC and health units, to ensure that programs and services mandated by the Ontario Public Health Standards (OPHS) are operationalized (Lyons 2016). Given the centrality of population health within public health practice, it would be vital to understand how public health units across Ontario are faring when implementing a population health approach within sexual health. While an emerging body of literature in public health has supplied important insights into barriers and facilitators to implementing components of a population health approach, we believe that expanding this understanding within the specific context of sexual health is an important next step (Aston et al. 2009; Brassolotto et al. 2014; Oliver et al. 2014; Sibbald et al. 2012; & Van de Goor et al. 2017). Therefore, this paper reports findings from a qualitative descriptive study that sought to understand how managers and supervisors working in Ontario public health units perceive barriers and facilitators that influence the implementation of a population health approach within sexual health programs and services. Deepening our understanding of these influences will provide a holistic view of the implementation of a population health approach in sexual health, and identify barriers that need to be overcome and enablers that can be strengthened in implementing population-level activities in sexual health.

Methods

Study design

This study employed methodological principles drawn from fundamental qualitative description (QD) (Sandelowski 2000). QD was chosen for its relevance in offering a rich description of a phenomenon, especially when little is known about a topic (Sandelowski 2000). QD offers the opportunity to gain insight and knowledge into how participants see their world, which aligns with the purpose of this study (Sandelowski 2000). Ethics approval for the study was obtained from Hamilton Integrated Research Ethics Board (HiREB # 5692). Informed consent was obtained from each study participant.

Sampling

In the first phase of the larger mixed methods study, in which this qualitative descriptive study is linked, the sexual health managers/supervisors from the 34 public health units in Ontario were invited to complete an online survey. This survey examined the extent that population health activities were implemented in sexual health programs and services within public health units across Ontario. A total of 15 managers/supervisors completed the survey. We followed up with these 15 respondents with an invitation to participate as a key informant within this qualitative study and to share their perspectives as leaders within sexual health to offer insights about individual, interpersonal, organizational, and system factors that influence implementing a population health approach. Given their role in developing or implementing policy and practice change with their health units, managers and/or supervisors could provide a detailed examination of factors that influenced implementation.

From the 15 managers/supervisors invited to participate in the qualitative study, 12 managers/supervisors accepted the invitation and consented to participate in this qualitative study. Despite sending multiple follow-up invitations, we were unable to recruit the other five managers/supervisors; their reasons for not participating are unknown. In total, 12 sexual health managers/supervisors representing 10 of 34 Ontario public health units participated in this study. In Ontario, the health units are distributed across six regions, and for this study, with these 12 participants, we had representatives from five of the six regions.

Data collection

To provide an opportunity for these sexual health leaders to share detailed descriptions of their experiences with program implementation and their perspectives on integrating population health approaches within sexual health programming, in-depth, semi-structured, one-to-one interviews were completed. Semi-structured telephone or secure online interviews were conducted between October and November 2019 and were 45–65 minutes in length. The interviews were conducted by the lead author (LF), an experienced public health nurse practitioner who has worked in a sexual health clinic in an Ontario public health unit. This experience afforded

her knowledge of how sexual health programming is structured and the impact of the modernized standards on sexual health. To ensure confidentiality, the author did not conduct any interviews with colleagues within the health unit where she is employed. Two other authors (RV, SMJ), who participated in the development of the interview guide and data analysis, have extensive (>25 years) experience in public health practice, education, and research.

The *Consolidated Framework for Implementation Research* (CFIR) was used as the framework to develop the interview guide, organize data extraction and synthesize findings. The interview guide included one overarching question for each of the five CFIR domains (Damschroder et al. 2009), with a set of prompts for each (see supplemental file 1). CFIR was chosen because it captures the complex set of factors that influence the successful implementation of new models of care (Damschroder et al. 2009; Safaeinili et al. 2020). As well, CFIR offers a comprehensive list of 39 constructs across five domains – *Intervention Characteristics; Outer Setting; Inner Setting; Characteristics of Individuals; and Process* - that allows researchers to choose constructs relevant to their study, without needing to focus on all constructs (Damschroder et al. 2009).

To promote data adequacy, several strategies were employed during the interviews, including asking a consistent set of questions to all participants about each of the included CFIR domains, extensive probing for additional details following each response, and purposefully seeking out information about variations in participants' experiences, to ensure we could provide dimensionality in our description of the implementation for each domain (Saunders et. al. 2018). Furthermore, techniques were applied during each interview to clarify, validate, and summarize the information shared by participants to promote data accuracy.

Data analysis

Interviews were digitally recorded with permission from the interviewees and transcribed verbatim. Data analysis was guided by the process of directed content analysis (Hsieh and Shannon 2005). First, each transcript was read in its entirety. Then a codebook was developed, using the constructs from each of the five CFIR domains. Using these predetermined codes, relevant passages from each transcript were assigned a code. Within each of the CFIR constructs, the coded data were reviewed to identify factors influencing implementation and narrative summaries, identified as themes, were developed. The transcripts were stored, managed, and coded within the qualitative data software NVivo 12 (QRS international 2018). Throughout the study, the first author maintained an audit trail and also engaged in reflexive journaling.

Findings

Our sample comprised 11 managers and 1 supervisor from 10 health units, with two health units having more than one individual involved in the interview. See Table 1 for participant demographics. This purposeful sample of public health leaders was well positioned to speak about barriers and facilitators in implementing a population health approach, given their extensive experience working in public health (17.5 years) and time spent in their leadership roles (4.5 years).

Themes fell under CIFR's domains – inner and outer setting – to provide a rich understanding of common barriers and facilitators that impacted implementing a population health approach. Table 2 summarizes these findings. In the following paragraphs, inner and outer setting domains will be defined and themes organized under relevant *constructs* and *sub-constructs* (italicized) within each domain will be discussed.

CFIR: Outer setting domain

Outer setting focuses on the economic, political, and social context within which an organization resides (Damschroder et al. 2009). These external considerations are necessary for establishing what influences a health unit in determining if a population health approach can be implemented. Two CFIR constructs that greatly influenced implementation in the outer setting included: *Cosmopolitism* and *External Policy & Incentives*. *Cosmopolitism* is reflected in a core requirement of the OPHS, which focuses on public health staff engaging partners from across multiple sectors, including community researchers and academic partners (MOHLTC 2018). *External Policy & Incentives* is demonstrated in policies that influence the work of public health, such as the proposed amalgamation of health units to align public health in Ontario to a regional structure, similar to the rest of Canada.

Table 1 Basic demographic information about key informants

Positions	Supervisor n (%)	Manager n (%)	
	1 (8%)	11(92%)	
Education level	**Bachelor**	**Masters**	
	5 (42%)	7 (58%)	
Years in public health	**Mean (SD)**	**Range**	**Median**
	17.5 (5.55)	3–34	18
Years in current position	**Mean (SD)**	**Range**	**Median**
	4.5 (1.91)	*2 mos-10	3

*this was a new employee who had only been in the position for 2 months

Table 2 Domains, constructs, and themes

Domain: outer setting	Construct	Theme
	Cosmopolitism	Working/collaborating with local and regional partners
		Networking with other sexual health programs
	External policy & incentives	Addressing modernized standards
		Anticipating the potential amalgamation of health units
Domain: inner setting	Construct and sub-construct	Theme
	Implementation climate	
	Sub-construct: compatibility	Valuing of clinic work over population health
	Sub-construct: learning climate	Enhancing staff's capacity to take on population health
	Readiness for implementation	
	Sub-construct: available resources	Diminishing resources available to sexual health
	Sub-construct: access to knowledge and information	Gaining access to data to inform program changes

Cosmopolitanism - theme: working and collaborating with local and regional partners

Under the construct *Cosmopolitanism*, engagement with community partners was an activity that most participants were involved in to move toward a population health approach. The type of community partners that sexual health engaged with differed among health units and was dependent upon organizations in their community. Participants explained that given the limited availability of both staff and time, engaging with community partners was a strategy that maximized opportunities, to identify and deliver population health programs. How health units engaged with community partners varied. Some utilized community partners to deliver sexual health services, while others worked with them on health promotion campaigns. One manager stated how they work with community partners: "We're working with the poverty task force, so really some population-based approaches. Within that context, we are looking at a priority population, and we talk about youth, we talk about those more vulnerable" (Participant 1).

The ability of community partners to facilitate change faster than their health unit was described as a facilitator by some participants. Community partners often had stronger relationships with groups that are marginalized (e.g., LGBTQ2S) and could move public health interventions forward easier with less political interference than public health. This allowed sexual health work to be done that might not be accomplished through public health channels: "Even some operational stuff that would take about six months to do, they can do in a week and a half" (Participant 7). However, participants' accounts of these partnerships acknowledged that engaging community partners was challenging and could be a barrier. Factors such as busy schedules and the belief that sexual health was not always a significant priority, affected what could be achieved from a population perspective:

> I think community engagement with any of our community partners; they all certainly have their own strategic priorities. My experience is that some are not necessarily that great at articulating those and getting us all aligned in the same direction (Participant 4).

Cosmopolitanism - Theme: Networking with other sexual health programs.

Additionally, under the construct *Cosmopolitanism*, many participants perceived that having a connection with sexual health programs in other health units was essential to stay up to date with what other health units were doing. Health units struggled with funding allocation and resources available for quality improvement and innovation, and participants searched for support from other health units to take advantage of the expertise and work done by them: "I know [a health unit] had done, what are the effective practices to decrease STI rates among youth, young adults. It was already done for us" (Participant 9).

Participants also identified that there is a linkage among health units through STI network meetings, organized by regions (e.g., Central West, Central East), and the provincial infectious disease managers meeting organized by MOHLTC. However, these venues were not always seen as helpful. There was reluctance on the part of health units to share what they were doing or there was not enough time to discuss sexual health issues or ask questions, as other infectious diseases dominated the conversation: "You don't get enough air time in discussion or even sharing collectively within that" (Participant 1).

External policy & incentives - theme: Addressing the modernized standards and MOHLTC accountability

In the construct *External Policy & Incentives*, most participants acknowledged that the modernized standards changed how their health unit viewed sexual health. Many pointed out

that the language in the new standard took away from sexual health and reduced the perceived value of it as a health unit program. The OPHS language shifted away from health units directly offering sexual health services to "ensuring" they are available in their communities. Participants' interpretations of this change was that sexual health was less of a priority, which diverted resources away from sexual health to other health unit programs, such as harm reduction and healthy living:

> [It] doesn't mean that we have to provide it if there's access. You know, when you don't have that anchor, it's difficult. Like you've taken the label of sexual health off in these standards you've put it into the lens of infectious disease (Participant 1).

Participants did not describe any incentives provided to them to support implementing a population health approach with the new standards. There was no strong mandate to ensure implementation and participants did not verbalize any consequence if there was no implementation.

External policy & incentives - theme: Anticipating the potential amalgamation of health units

Discussions around potential amalgamation of health units, an *External Policy*, created a barrier for health units, by putting planning on hold. Commitment to implementing a population health approach was hard to consider for managers and supervisors when they believed that the amalgamation of health units would change the structure of their health unit. Many participants pointed out that how their health unit would be amalgamated with other health units and what parts of their program would be retained created hesitancy to move forward with making population-level changes: "I think people are just waiting to see what's going on before they start investing in new directions and new things" (Participant 10).

Several participants raised the issue of uncertainty about how a population health approach could be achieved with amalgamation. Merging of health units with diverse geography (e.g., rural, urban) would result in different community needs, triggering the need to determine whose concerns and voices should be considered. Many spoke that servicing a larger geographical area with different needs would present as a potential barrier, especially for areas served by smaller health units, as their needs may be overshadowed by larger health units:

> We are a smaller health unit with a rural population, and we have seen examples of things that have become regionalized in the past. That region doesn't get served, the big people do. We're afraid that's going to happen (Participant 5).

CFIR: Inner setting domain

CFIR's inner setting is defined as the structural and cultural contexts through which the implementation process occurs (Damschroder et al. 2009). Within the inner context, *Implementation Climate* and *Readiness for Implementation* influenced the implementation of a population health approach. *Implementation Climate* reflects the organization's ability to change, along with the receptivity of involved individuals to that change (Damschroder et al. 2009). Sub-constructs under *Implementation Climate* that greatly impacted implementing a population health approach within health units were *compatibility* and *learning climate*. *Readiness for Implementation* is an indicator of the organization's decision to implement a population health approach (Damschroder et al. 2009), and there were two sub-constructs, *available resources* and *access to knowledge and information,* that influenced health units. Themes relating to these sub-constructs follow.

Implementation climate - theme: Valuing clinic work over population health

Within the construct of *Implementation Climate* and sub-construct of *compatibility*, participants voiced that sexual health programming is geared toward clinical services and not population health. They noted that at the program level, staff in sexual health valued one-on-one clinic services over population health: "So that's what you're dealing with here in the clinical area. It's people who like clinical work, and they like the one-on-one with the client" (Participant 5).

A few managers and supervisors identified that staff recognized the connection between current sexual health programming and the intention of moving toward a population health approach. However, buy-in was required by public health nurses (PHNs) and community stakeholders to be able to move this approach forward. Selling the work associated with population health meant that it needed to align with PHNs' passion and be connected to their interests. Given that sexual health has historically focused on providing clinical care, PHNs felt that population health was an active shift away from a model of care that they valued and wanted to retain:

> Would their passion lie there? Not at this point. There would have to be a lot of coaching to get to the place where it's reframing the overall work because again they don't want to let go of what they see is the important community need of clinical services (Participant 3).

In addition, a few participants mentioned that the present vision for sexual health from senior leaders in their health unit did not support a population health approach. Leaders

within their health unit wanted sexual health to remain clinic-focused, which made shifting to a population health approach difficult. There was no buy-in to an upstream investment for sexual health from those with decision-making power. Participants were unclear of the reasoning behind this way of thinking but felt they did not have a voice to challenge this decision, so they accepted and worked within those parameters:

> When I first took on this program we were looking at a much larger population health approach and looking at health promotion but as the organization has moved forward, the direction has been that we are very, very clinical and just one-on-one (Participant 2).

Implementation climate - theme: Enabling staff's capacity to take on a population health approach

In the construct *Implementation Climate* and sub-construct *learning climate*, interviewees displayed early involvement of staff by facilitating education and training on population health. The training was provided to sexual health staff to ensure they were familiar with population health as a common starting point: "We started it off with public health principles, what is population health, re-orientating everyone. It did require re-orientating everyone to the principles of population health again" (Participant 9). Providing staff training facilitated a shared understanding of what a population health approach entailed, which helped sexual health in implementing the activities associated with a population health approach.

The importance of including staff in the process right from the outset, to ensure they had a sense of ownership in the planning process, was a critical point made by participants: "I think probably the most important thing is staff engagement from the get-go. If they're not driving it then it's not going to happen. They need to be on board and they need an opportunity to provide the input" (Participant 7). Engaging staff in the process of developing a shared vision facilitated how the change was received and made it easier to operationalize the vision and assure success.

Readiness for implementation - theme: Diminishing resources available to sexual health

A dearth of available resources was the reason why there was a lack of *Readiness for Implementation* of a population health approach in sexual health. Some participants viewed the lack of resources available to sexual health as illustrative of the low priority that sexual health had in their health unit: "We were better prior to some challenges where we had funding and FTE (full-time equivalent). We now have a really limited FTE amount in the current sexual health program" (Participant 1). Public health budgets have diminished, with non-replacement of vacant positions and a shrinking sexual health program that has resulted in fragmentation and sharing of staff between programs. These factors make it challenging to put in place an effective implementation strategy for population health. Without access to resources, there was a mismatch between what was required through the OPHS and what could be implemented within health units. Having scarce resources and insufficient time, forced sexual health to choose carefully what they were able to do and be involved in.

However, some participants acknowledged that PHNs were an untapped resource within sexual health. PHNs were not utilized to their full potential, based on the PHN scope outlined in the public health core competencies. Managers and supervisors proposed that PHNs could do the work that health promoters or epidemiologists do, which could fill the gaps in the lack of human resources needed to move to a population health approach:

> I think we as a health unit really push the nurse to be much more clinical and we really allowed our health promoters to really take over the health promotion component of things. They are very skilled but I think as a result of that, we have done a disservice to our nurses. We really haven't hired or grown or provided opportunities and experiences for our nurses to build their capacity in health promotion (Participant 2).

Readiness for implementation - theme: Gaining access to data to inform program changes

Participants identified needing access to data to move toward upstream approaches. Within health units, a significant amount of data is required by programs, and access to data assisted to make the changes required to move toward population health:

> I think I need, I think we could use more staff and use more analysis of data, and we could use more epidemiologists. In this building, I think we're all struggling because you know, data is what drives. Everywhere in the standard says data, data, data, getting the data is the problem (Participant 10).

Participants pointed out that there was population-level data collected in their health unit but was not specific to sexual health. Furthermore, where there was access to data for sexual health, it was not as readily available, due to a lack of epidemiologists. This created a prioritization of data requests at most health units: "The thing is that for us is in order for us to get something done and has to go on to a project list and be prioritized" (Participant 6). This prioritization of data requests presented a barrier since there

were greater data priorities in the health unit that prevented sexual health from gaining access to data required to make decisions.

Discussion

This study has contributed new knowledge about barriers and facilitators influencing the implementation of a population health approach in sexual health within Ontario's public health units from manager and supervisor perspectives. This new perspective offered insight into how the tension between individual care and population health might be resolved. Despite promising outcomes that population-level interventions can deliver, implementation of a population health approach was hampered by external policy, lack of resources, and the valuing of individual clinic focused nature of sexual health programs. However, facilitators that assisted in moving health units toward a population health approach were external partnerships, staff training on population health, and access to data to inform programs.

Sexual health managers and supervisors identified that external policies, such as the OPHS and the potential amalgamation of health units, greatly influenced a shift to population health because the focus of health units was elsewhere. Initiatives outlined in the OPHS for sexual health requires capacity at the local level to deliver programming associated with these directives. However, these policies fail to address the organizational contexts that assist with achieving successful implementation, such as having the necessary resources (Watts et al. 2019). Fragmentation of sexual health within public health units and inadequate resources make it difficult for sexual health to respond to the programming demands, let alone move toward population health (Richardson 2012). Although there is public health reporting to the MOHLTC through Annual Services Plans (ASPs) to demonstrate OPHS implementation, information required by health units to submit on sexual health is not necessarily reflective of a population health approach (MOHLTC 2018).

Adequate resources (e.g., financial, human) are critical for sexual health to manage current demands and implement new initiatives, such as shifting to a population health approach (Brownson et al. 2012). Interviewees identified that sexual health is understaffed with limited budgets to meet sexual health program and service demands, which impacted focusing on population health. Evidence suggests that public health performance is hindered when financial and human resources are not available (Brownson et al. 2012; Guyon and Perreault 2016). In addition, when faced with limited resources, it is difficult to advocate for health units to put resources into an approach that will prevent future health issues, when there are more immediate health concerns that need to be addressed (Richardson 2012), such as rising rates of STBBIs. However, the utilization of PHNs to their fullest scope of practice can help with resource shortages. Based on the core competencies for PHNs, nurses should be able to assist with program planning, critically appraise evidence, and recognize trends in epidemiological data (Community Health Nurses of Canada 2009) - skills needed to support implementing a population health approach. However, individual-focused clinic work was valued over population health work by sexual health PHNs, which negatively influenced implementing a population health approach. This finding is consistent with recent research that identified that PHNs are more comfortable working on a one-to-one basis than at a population level (Cohen 2006; Mabhala 2015). This discomfort comes from a perceived lack of confidence and skills in population health, personal interest, and lack of competence due to inexperience in care beyond the individual (Cohen 2006; Mabhala 2015).

More training is required for nurses in population health while in undergraduate nursing programs to ensure they have the knowledge and skills to work in areas such as public health. Furthermore, at the organizational level, research suggests that senior leadership does not value population health approaches and still views the priority of public health as one-on-one care (Cohen 2006). As well, a lack of education and skills in population health among managers is not a role model for staff, furthering emphasis on individual care (Cohen 2006). However, organizational culture is a factor that positively influences a move toward population health. Having leaders who are aware of the components of a population health approach and have a sense of ownership and responsibility for leading this type of approach, act as champions, to ensure successful implementation of a population health approach (Cohen et al. 2014).

Given that sexual health has been focused on providing individual care, offering education on the principles of population health succeeded to move PHNs forward because having skilled and competent staff who understand a population health approach is essential to moving upstream (Guyon and Perreault 2016; Mabhala 2015). Providing professional development opportunities, such as community development, appraising research, and policy development will increase the success of implementing population level interventions (Mabhala 2015). If staff lacks confidence with the components of a population-health approach, then PHNs are not going to want to move in this direction (Mabhala 2015). Perhaps a blend of professionals would be ideal, such as having health promoters complement the work of PHNs, as health promoters can assist with policy development and advocacy, and building community capacity (Health Promotion Canada 2015).

A lack of epidemiologists and evaluators, or having these professionals supporting multiple programs, created

a prioritization of data requests within health units. This affected the collection of data needed to support population health in sexual health because other programs received priority. The capacity of health units to meet information demands of the different areas in their health unit influences performance (Region of Peel 2019). If health units are not able to assess population-level health problems and actions, this hinders moving forward with changes (Region of Peel 2019). In addition, the development of indicators that can track the progress of achieving population health goals is vital to show the benefit of this type of approach (Cohen et al. 2014). Inadequate support in developing population-level indicators from trained staff will affect quality improvement processes within health units (Region of Peel 2019).

As a facilitator, being networked with external organizations is critical in being able to move forward population-level changes (Region of Peel 2019). Participants demonstrated a commitment to developing and fostering inter-sectoral partnerships. These partnerships were used to help move interventions forward to deliver clinic services or collaborate on health promotion campaigns. Partnerships with external organizations are necessary for a strong public health system that can reduce health inequities (Region of Peel 2019). Community partnerships are an effective strategy for implementing interventions (e.g., health behaviours) aimed at marginalized groups, as they have closer connections with these groups (O'Mara-Eves et al. 2015; Valaitis et al. 2020). As well, research shows that public health alone is insufficient to improve population health and that partnerships ensure a coordinated effort in working toward the goal of improved health in the community (Estacio et al. 2017; Littlecott et al. 2017).

Organizational incentives to assist with implementing a population health approach in sexual health were not something that participants mentioned. This represents a missing factor, and since no one spoke about this, it is something that MOHLTC or health units may need to create to help facilitate the implementation of a population health approach.

Study strengths and limitations

A strength of this study was that we were able to gather insights about barriers and facilitators to implementing a population health approach from a purposeful sample of experienced managers/supervisors working in a range of health units serving rural, urban, and mixed populations across Ontario. Given their levels of experience and the diversity of programs, we were able to obtain a clear picture of the factors influencing the implementation of a population health approach. To promote dependability of the data, the coding structure was reviewed several times by co-authors to ensure the trustworthiness of the findings. Finally, the primary author works in sexual health programming at an Ontario public health unit, which helped to understand the context and support the interpretation of results.

Concerning study limitations, the anticipated public health unit amalgamation created a challenge for participant recruitment. These findings reflect the experiences and perspectives of 12 sexual health managers/supervisors from 10 of 34 public health units. However, the managers who participated had extensive experience in public health (e.g., mean years of experience >17 years) and thus were able to speak knowledgeably and historically about a range of program, organization, and contextual conditions that have influenced program implementation over time. Additionally, even with this small sample, there was variation in the provincial regions represented and these participants were able to provide a range of perspectives, enabling us to understand how issues of implementation are impacted by geography (e.g., health units serving rural or urban populations), health unit size. In this study, data was only collected from managers/supervisors in sexual health, in future studies we recommend exploring the perspectives of frontline staff and senior management to provided additional valuable insights. Finally, this study was conducted at one point in time, limiting our understanding of how other contextual changes such as the COVID-19 pandemic might have influenced the results.

Conclusion

As reform in sexual health programs and services happens within public health, the population health approach has a role in improving the overall health and sexual well-being of populations (Cohen et al. 2014). This study demonstrated that there are internal and external barriers and facilitators that policy-makers, decision-makers, and public health administrators need to consider if they want to move toward a population health approach in sexual health. There needs to be an investment made by both the MOHLTC and local public health units to ensure that there are adequate human resources to meet program demands. This involves having not only the right number of staff but also the staff with the right skillset and knowledge to implement a population health approach, which may mean providing professional development on the key components of a population health approach. Adequate resources are important to the success of implementing any new initiative and should be considered at the local level before any major changes are made to guarantee success. Finally, inter-sectoral partners can be leveraged as key contributors to the population health agenda and offers an opportunity to combine resources to make a bigger impact on population health.

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Declarations

Ethics approval Obtained by Hamilton Integrated Research Ethics Board.

Conflicts of interest The authors have no conflicts of interest to declare that are relevant to the content of this article.

Informed consent Informed consent was obtained from all individual participants included in the study.

References

Aston M, Meagher-Stewart D, Edwards N, Young LM (2009) Public health nurses' primary health care practice: Strategies for fostering citizen participation. J Community Health Nurs 26(1):24–34

Brassolotto J, Raphael D, Baldeo N (2014) Epistemological barriers to addressing the social determinants of health among public health professionals in Ontario, Canada: a qualitative inquiry. Crit Public Health 24(3):321–336

Brownson RC, Allen P, Duggan K, Stamatakis KA, Erwin PC (2012) Fostering more effective public health by identifying administrative evidence-based practices: a review of the literature. Am J Prev Med 43(3):309–319

Choudhri Y, Miller J, Sandhu J, Leon A, Aho J (2018) Chlamydia in Canada, 2010–2015. Can Commun Dis Rep 44(2):49–54

Cohen BE (2006) Population health as a framework for public health practice: A Canadian perspective. American Journal of Public Health 96(9):1574–1576

Cohen D, Huynh T, Sebold A, Harvey J, Neudorf C, Brown A (2014) The population health approach: a qualitative study of conceptual and operational definitions for leaders in Canadian healthcare. SAGE Open Med 2. https://doi.org/10.1177/2050312114522618

Community Health Nurses of Canada (2009) Public health nursing discipline specific Version 1.0. Retrieved from. https://phabc.org/wp-content/uploads/2015/07/CommunityHealth-Nurses-Public-Health-Core-Competencies.pdf

Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC (2009) Fostering implementation of health services research findings into practice: a Consolidated framework for advancing implementation science. Implement Sci 4(50):1–15

Estacio EV, Oliver M, Downing B, Kurth J, Protheroe J (2017) Effective partnership in community-based health promotion: lessons from the health literacy partnership. Int J Environ Res Public Health 14(12):1550

Guyon A, Perreault R (2016) Public health systems under attack in Canada: evidence on public health system performance challenges arbitrary reform. Can J Public Health 107(3):e326–e329

Health Canada (2001) The population health template: Key elements andactions that define a population health approach. Retrieved from http://www.phac-aspc.gc.ca/ph-sp/pdf/discussion-eng.pdf

Health Promotion Canada (2015) The pan-Canadian health promoter competencies and glossary. Retrieved from https://www.healthpromotioncanada.ca/wp-content/uploads/2016/07/2015-HPComp-CompletePackage3-new-logo.pdf

Hsieh HF, Shannon SE (2005) Three approaches to qualitative content analysis. Qual Health Res 15(9):1277–1288

Izenberg D (2019) Public health in Ontario: What it does, and what might change. Retrieved from. https://healthydebate.ca/2019/05/topic/public-health-in-ontario

Littlecott HJ, Fox KR, Stathi A, Thompson JL (2017) Perceptions of success of a local UK public health collaborative. Health Promot Int 32(1):102–112

Lyons J (2016) The independence of Ontario's public health units: Does governing structure matter? Healthcare Policy 12(1):71–83

Mabhala MA (2015) Public health nurse educators' conceptualisation of public health as a strategy to reduce health inequalities: a qualitative study. Int J Equity Health 14(1):14

Ministry of Health (2019) Discussion paper: Public health modernization. Retrieved from file:///M:/PhD%20Study/Qualitative%20paper/dp_public_health_modernization.pdf

Ministry of Health and Long-Term Care (2018) Ontario public health-standards: Requirements for programs, services, and accountability. Retrieved from. http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Ontario_Public_Health_Standards_2018_en.pdf

Oliver K, Innvar S, Lorenc T, Woodman J, Thomas J (2014) A systematic review of barriers and facilitators to the use of evidence by policymakers. BioMed Central Health Services Research 14(2):1–12

O'Mara-Eves A, Brunton G, Oliver S, Kavanagh J, Jamal F, Thomas J (2015) The effectiveness of community engagement in public health interventions for disadvantaged groups: a meta-analysis. BMC Public Health 15(1):129

Region of Peel (2019) Structure of public health: A literature review. Retrieved from. https://www.peelregion.ca/health/library/pdf/structure-public-health.pdf

Richardson AK (2012) Investing in public health: barriers and possible solutions. J Public Health (Oxford, England) 34(3):322–327

Sibbald S, Kothari A, Rudman D, Dobbins M, Rouse R, Edwards N, Gore D (2012) Partnerships in Public Health: Lessons from knowledge translation and program planning. Can J Nurs Res 44(1):94–119

Safaeinili N, Brown-Johnson C, Shaw JG, Mahoney M, Winget M (2020) CFIR simplified: pragmatic application of and adaptations to the consolidated framework for implementation research (CFIR) for evaluation of a patient-centered care transformation within a learning health system. Learn Health Syst 4(1):e10201

Sandhu J, Choudhri Y, Miller J, Leon A, Aho J (2018) Gonorrhea in Canada, 2010–2015. Canadian Communicable Disease Report4 4(2):37–42

Sandelowski M (2000) Combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies. Res Nurs Health 23(3):246–255

Saunders B, Sim J, Kingstone T, Baker S, Waterfield J, Bartlam B, Burroughs H, Jinks C (2018) Saturation in qualitative research: exploring its conceptualization and operationalization. Qual Quant 52(4):1893–1907

Valaitis R, Wong ST, MacDonald M, Martin-Misener R, O'Mara L, Meagher-Stewart D, Green M (2020) Addressing quadruple aims through primary care and public health collaboration: ten Canadian case studies. BMC Public Health 20:1–16

Van de Goor L, Hamalainen RM, Syed A, Juel Lau C, Sandu P, Spitters H, Eklund Karlsson L, Dulf D, Valente A, Castellani T, Aro AR (2017) Determinants of evidence use in public health policy making: Results from a study across six EU countries. Health Policy 121(3):273–281. https://doi.org/10.1016/j.healthpol.2017.01.003

Waters L (2020) Putting the rise of STIs in England into context. Evaluation 14:34

Watts M, Newell S, Putyra M (2019) Ontario introduces bill 74: The people's healthcare act. Retrieved from. https://www.osler.com/en/resources/regulations/2019/ontario-introduces-bill-74-the-people-s-health-care-act