Western Public Health Casebook 2021

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Cases from the Schulich Interfaculty Program in Public Health

Editors

Regna Darnell, PhD
Distinguished University Professor
Department of Anthropology
Schulich Interfaculty Program in Public Health
Western University
London, Canada

Shannon L. Sibbald, PhD
Associate Professor
School of Health Studies
Department of Family Medicine
Schulich Interfaculty Program in Public Health
Western University
London, Canada

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Photos on front cover are graduates from MPH Class of 2020.

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PREFACE

INTRODUCTION

The Master of Public Health Program (MPH) at Western University is a 12-month full-time program that incorporates a 12-week practicum. The MPH Program curriculum includes innovations such as case-method learning, Brown Bag seminars, Integrative Workshops, field trips and career counselling. The Brown Bag seminars allow the students to hear from, interact and network with practitioners from the field. The faculty of the MPH Program are drawn from various Faculties across campus, and represent a broad range of disciplines pertinent to public health.

TEACHING CASES

Western's MPH Program relies extensively on the case based/experiential method of learning. The Program aims to deliver 60% of pedagogic material using the case-based approach – a unique feature not found in other MPH Programs worldwide. The case method of learning is not about the traditional lecture-style classroom setting, but is about the student being an active part of the learning experience, which means learning by doing. It introduces complex and often ambiguous real-world scenarios into the classroom, forcing students to think and make decisions sometimes with incomplete and inaccurate data.

The case method is a three-stage process that builds on each subsequent step. It starts with individual case preparation, followed by a small group discussion, concluding with a large group discussion (in the classroom) so that the learning objectives are met. To facilitate this process, all students are placed in a learning team of 5-6 members from Day 1 of their journey in the Program. The learning team forms the 'home' of the student for the academic year, and is the basis for peer-support, group and case work.

We view the case method as a vehicle to develop transformational learning, along with the students' leadership skills, teamwork ability, critical thinking capacity, and knowledge of disciplinary perspectives. However, case-based pedagogy has been predominantly focused on business cases, which are often not directly suitable for a public health curriculum. In addition, existing health related cases often do not reflect the reality of Canadian and international health systems. While case repositories have a growing number of teaching cases that can be used by programs such as ours, there remains an opportunity for Western's faculty and practitioner colleagues to develop de novo cases by building on their research and practice experiences.

Along with faculty developed cases, Western has adopted an innovative model of building a catalogue of teaching cases in public health authored by students. As part of the MPH Program's Integrative Learning Experience (capstone course), the overall final deliverable for students is a teaching case and teaching note that is based on their Applied Practice Experience (practicum). Faculty members select the best cases, and work with the students to publish them in the annual ***Western Public Health Casebook***. Our faculty have actively incorporated these student cases in the curriculum, and we often involve the students (now alumni) in co-teaching these cases.

WESTERN PUBLIC HEALTH CASEBOOK 2021

The 2021 Western Public Health Casebook reflects the diversity in, and challenges of public health practice in the COVID era. Each case offers a unique take on a complex public health issue in these trying times Readers are encouraged to 'step into the shoes' of the protagonist

and think critically about the complexity and nuances inherent in public health practice. There are no right or wrong answers to each case. In fact, we believe it is the best cases that leave you with more questions than answers. We hope these cases make you think about challenges and better yet, allow you the opportunity to brainstorm meaningful solutions to today's most challenging issues.

We welcome feedback and comments on these cases. To do this, please be in touch via the program's email: publichealth@schulich.uwo.ca.

–Dr. Amardeep Thind, Director
Schulich Interfaculty Program in Public Health

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The cases that appear in this book are the hard work and dedication of a team we are so proud to be a part of. In particular, thank you to our case authors: you are supporting the pedagogy of public health and providing essential material to help the next generation of public health leaders grow. The final polished look of this book would not be possible without our copy editors and the careful eye of Courtney Hambides, Diana Lee, and Nellie Oliveira. As editors, it is our privilege to provide this book as a tool to further the learning, the thinking and the progress of helping the world's population recognize the goals of public health.

We would also like to express our gratitude to the following organizations (and the preceptors/supervisors) who supported the training of our students and the development of the cases in this Casebook: ETIO Public Health Consultants, HEALaboratory at Western, Health Equity Action Research Team (HEART) at Western, Middlesex-London Health Unit, Moyo Health Community Services, Princess Margaret Cancer Centre, Public Health Agency of Canada, and Sunnybrook Health Sciences Centre.

– Regna Darnell and Shannon Sibbald

INTRODUCTION
TO THE CASEBOOK

Case teaching when case counts are rising: Teaching online using cases during a global pandemic

Regna Darnell, PhD (Professor, Western University)
Shannon Sibbald, PhD (Associate Professor, Western University)

Teaching can be challenging at the best of times. Teaching during a pandemic brought new pedagogical challenges to even the most seasoned professors. Modes of delivery, methods of engagement, inequitable access to Internet, and even terminology for these methods were a few early challenges. Our language expanded rapidly, parallel to the swift pivot from in-person classroom learning to virtual online learning. There are several terms used to describe online learning, with nuanced differences often depending on the educational context. An important distinction exists between the situation where online education is the intended method of delivery for learning from the outset (perhaps labeled remote learning or distance education), versus the situation many educational institutions found themselves in during the pandemic: having to teach material intended to be delivered in the classroom in an online environment. The latter situation was labeled differently across regions and institutions, and terms changed throughout the pandemic to try to accurately describe the current state. For example, when COVID-19 first required universities to shutter classrooms, the learning was labeled 'emergency online learning'. In response to the continuing pandemic, many universities took a 'blended approach' with students physically present for course components, such as labs or tutorials, and other components (often lectures) took place remotely. Other universities decided to stay online as the pandemic evolved the following year.

'Synchronous learning' is now commonly used to describe a learning context where the student and the professor are both present in the same shared space, be it in-person or online. During the pandemic, this type of 'real-time' teaching was often carried out through live classes conducted on various online platforms, allowing peers to interact while the instructor simultaneously provided guidance and support. 'Asynchronous learning' describes an alternative approach that permits learning to occur at the student's convenience, where the material available to students (often pre-recorded presentations or pre-assigned resources) can be completed at their own pace (Finol, 2020). Both forms of learning (synchronous and asynchronous) can be facilitated online. Regardless of its label, whether planned or reactionary, online learning in a pandemic posed many challenges for students, instructors, administrators, and others. Strategies for teaching and learning that had proved successful for years were not easily transferable to the online setting. Therefore, instructors were faced with implementing novel and innovative teaching methods to meet the demands of the rapidly changing environment while also ensuring that the quality of education remained high. The lessons learned from teaching online during the COVID-19 pandemic will undoubtedly impact the future of education across all levels.

Ontario, Canada's most populous province, is home to 23 universities, 24 public colleges, 3,967 elementary schools and 877 secondary schools (Ministry of Education, 2021; Ontario Government, 2021). On March 14, 2020, due to the rapidly rising prevalence of COVID-19 cases in the province, Ontario implemented a province-wide school closure following the

traditional one-week mid-term 'March Break' for elementary and secondary schools (Council of Minister of Education, Canada, n.d.; Gallagher et al., 2021). Although most post-secondary schools have a reading week during February, these school also followed the province-wide school closure during March as well (Council of Minister of Education, Canada, n.d.; Gallagher et al., 2021). The province declared and maintained a state of emergency on March 17, 2020 (Office of the Premier, 2020). School closures continued for over 20 weeks, disrupting elementary, secondary, and post-secondary schools. When the Ministry of Education announced that schools would not return to in-person learning for the remainder of the 2020 school year, policies were quickly developed and implemented to ensure that students were provided with consistent remote learning education. This included the implementation of effective and accessible online learning opportunities as well as ensured regular reporting of progress and any challenges faculty or staff faced in implementation (Ministry of Education, 2020). Post-secondary institutions were not required to follow the mandates from the Ministry of Education, however, many followed suit taking a similar approach to closures and online learning.

Western University, one of Ontario's largest universities, is home to the Schulich School of Medicine and Dentistry's (SSMD) 12-month Master of Public Health (MPH) program. The program follows a case-based teaching method in which complex real-life scenarios, often times with incomplete data, are presented to students to promote innovative decision-making and active listening. The use of an interdisciplinary approach encourages students to think critically from multiple perspectives and equips them with skills to analyze and aggregate information in order to deduce solutions to many complex public health problems. With cohorts of students from diverse academic backgrounds, students are able to interact with their peers to practice flexible thinking and develop team-based learning skills. Students also work within smaller groups, in what are called learning teams, where they engage in thoughtful discussions to complete assignments and develop leadership skills. Larger discussions take place in a classroom with horseshoe-shaped seating where professors stimulate dynamic, conversation-based learning. Additional opportunities, such as practicum placements and integrative workshops, facilitate application of knowledge obtained in the classroom and allow students to collaborate and build partnerships with various public health professionals, allowing for increased knowledge of the field (Schulich School of Medicine & Dentistry, n.d.). Practicum placements are typically 'off-site' (not on campus) where students, immersed in a public health context, experience public health practice in action by working with an organization.

Western University responded quickly to the COVID-19 pandemic, cancelling classes from March 12 to March 17, 2020. Classes then transitioned online for the remainder of the Winter term with a commitment to maintain a high-quality learning experience (Western University, 2020). Alongside most educational institutions, Western University adapted a hybrid model for the 2020-2021 school year. With the majority of classes continuing online synchronously or asynchronously, a few exceptions were made for labs and clinical and graduate programs to be delivered in-person (Western University, 2020). Campus facilities – such as libraries, the campus recreation centre and most other indoor spaces – were also closed, and only services determined as essential remained open (Brenk, 2020). Individuals with exceptions to return on campus were required to practice physical distancing, comply with mask mandates, and complete the 'Return to Campus' questionnaire, which screened for COVID-19 symptoms or exposure, before each visit to campus (Western University, 2020). Practicum placements for the MPH program meant to start May 11, 2020, just 6 weeks after the pandemic was declared, required swift adaptations. Along with the program, learners from the 2020 MPH graduating class were forced to adapt quickly. With the support of the Career Development Coordinator

and faculty, placements shifted online (where possible), and new placements were created with more focus on research.

There were many challenges experienced across different classroom settings and levels of education. In this chapter, we share the challenges and lessons of the SSMD MPH Program in delivering the case-based method online. While these challenges are not necessarily unique to the case-based classroom, they are ones we found ourselves grappling with longer or simply requiring swift action in order to achieve success in our teaching.

I. Challenges of Remote Teaching

With the closure of many university classrooms and labs, teaching and learning was moved to remote settings; education drastically changed. Professors faced numerous pedagogical and technological challenges as they grappled to find the best way to transition teaching techniques and materials to a fully online format without compromising pedagogical integrity or the students' learning experience. Many teachers and professors, inexperienced with various technological platforms, were challenged to translate their lectures into online materials that remained aligned with the learning objectives and goals of the curriculum (Ali, 2020). The push for inclusion of multimedia materials to maintain creativity in lectures further challenged educators. More importantly, with the uncertainty of the duration of the school closures, educators were forced to adapt regarding course delivery, which resulted in tight timelines and many logistical constraints. Under pressure to transform their lecture delivery, there were many lessons to be learned from the shift to remote learning, some of which led to positive outcomes.

1) Information Technology

a) Faculty

Many educational institutions invested resources into hiring information technology (IT) specialist supports, developing appropriate IT infrastructure to maintain online learning, providing their lecturers with access to educational platforms, as well as educating members on how to access and effectively integrate these educational platforms in their teaching (Ali, 2020). The MPH program received dedicated IT support from SSMD to translate materials online and to support faculty wanting to try innovative platforms and tools for online engagement.

Lecture delivery was further complicated by technological issues such as variable network connectivity and security of online meetings. Even minor technological setbacks such as screen sharing, problems with clear audio, and lags or freezes during teaching sessions took time and effort to resolve and resulted in increased frustration and decreased teaching time (Mishra et al., 2020). Security for platforms improved both from the provider's side and the university's side. Passwords were required to join meetings, and students were required to join meetings via their provided institutional log-in.

b) Students

Factors such as differences in socioeconomic status and income meant students experienced a 'digital divide' created by inequitable access to technology (Lake & Makori, 2020). Those in rural areas faced additional challenges with power outages and obtaining reliable Internet connections (Lake & Makori, 2020). The assumption that most students would have access to technology was hugely inequitable. Challenges surfaced immediately including lack of access to a computer, or only shared access; inadequate Internet service; outdated programs or services; and unaffordability of broadband Internet service, among others. Many students were also unable to access district-provided laptops or communal computers in libraries, Internet cafes, etc. (Lake & Makori,

2020; Rapanta et al., 2020). The financial challenges of lockdown and job loss lead to additional stress on students and educators. In some ways, accessibility was increased for students who may not have been able to come to the usual in-person classes as they were now able to access educational materials in the same way as their peers. In these instances, students were able to direct their learning, having the freedom to re-watch lectures and study at their own pace (Ali, 2020).

c) Solutions

Having support staff who fully understood both the learning objectives and teaching points of each session, along with being well-versed with technology and educational platforms, contributed to a smooth and effective online learning session (Bao, 2020). Faculty had access to administrative support to help with coordination and setting up "Zoom meetings," as well as access to IT support to help move lecture material online. The design of online sessions is important, therefore having a professional background environment can minimize distractions and support clear audio and video. These solutions resolved the faculty challenges only, it is unknown whether students who had IT difficulties had their challenges addressed by the university or if they had to seek external resources.

2) "Class – Course – Program"

a) Platforms

The MPH program used the platform Zoom which allowed for pre-assigned as well as random breakout rooms. These breakout rooms worked to facilitate engagement by providing an opportunity for students to discuss course content in smaller groups. Breakout rooms could be used at multiple time points during a lecture and allowed the faculty to visit each breakout room independently. Another cased-based online instructional strategy that allows for a combination of synchronous and asynchronous learning is that of monitoring communication platforms. The use of teaching assistants, colleagues, and the students themselves can be beneficial in monitoring platforms such as the online chat and direct messaging to support student questions.

b) Logistics

MPH faculty and staff met frequently to support this change. Program level decisions were made and supported by program staff (for example: all classes used the Zoom platform, and breakout rooms would be pre-assigned to align with the Program's existing learning team approach). Faculty meetings had dedicated time to share learnings and discuss ways to continue the case-based pedagogy online.

We found that it was helpful in the case-based method to use both online and offline teaching material in lessons. Rapanta et al. (2020) emphasized the inclusion of all asynchronous, synchronous, online, and offline components of learning in successful course design and delivery. The co-presence of students and instructors through synchronous sessions can enhance student engagement in case-based discussions, encourage collaboration amongst peers or learning teams and provide a channel for live student-instructor communication. Having an awareness of the various practicalities that exist around online components – for example, issues with the Internet or inaccessibility to printing and scanning services – is important on the part of the instructor and encourages the inclusion of offline learning components (Rapanta et al., 2020). A fully offline course design can prevent opportunities for applying class concepts to meaningful and interactive discussions and can decrease student engagement.

3) Being Present

a) Students

With decreased levels of student engagement and increased stress and anxiety due to the pandemic, engagement was further impacted through students keeping their cameras off. Especially in the case that the students' cameras were turned off, instructors could find it more difficult to judge the students' mood and tone as well as interactions with and understanding of material (Mishra et al., 2020). The MPH program implemented a "Camera on Policy" to decrease presenteeism, increase engagement, and enhance active participation. With face-to-face teaching, understanding physical cues or gestures and body language comes more easily. With online learning, voice tone and volume are the main source of information for students and faculty; body language (e.g., hand gestures, posture, and movement) and eye contact are much less apparent on camera. Therefore, emphasis of certain words, pauses in speaking, and avoidance of a monotone voice can make remote learning a better experience (Mahmood, 2020). Many students reported a lack of attentiveness when participating in online classes, with major distractions (such as video games and televisions) and competing demands (Mishra et al., 2020). With increased time at home, some students reported having to complete more household chores and assist with daily errands, preventing them from spending sufficient time on their education (Mishra et al., 2020).

b) Faculty

Many educators taught from home, with competing demands for their focus (e.g., children who were also studying from home, or family members and pets who required assistance). One concern that appeared in the Fall 2020 semester was a lack of professor office hours; however this was greatly improved in the Winter 2021 semester after receiving this feedback from students. There was also a large increase in the level of satisfaction with the availability of faculty for consultation – from 40% neutral, 40% satisfied and 20% very satisfied in the Fall semester to 20% neutral, 40% satisfied and 40% very satisfied in the Winter semester. A key component of the MPH program is that professors serve as academic advisors to the learning teams. Once again, there was marked improvement in satisfaction with respect to the academic advising received from faculty and staff from the Fall 2020 semester (with 10% unsatisfied, 30% neutral, 40% satisfied, and 20% very satisfied) to the Winter 2021 semester (with 20% neutral and 80% satisfied).

4) Integrated Learning

Opportunities for experiential learning were severely limited, further disadvantaging learners. Many students missed professional networking opportunities. While literature has pointed to the fact that some students, especially those in the caring professions, may have learned from their personal experiences caring for family while learning online, other learners simply missed out (Hueston & Petty, 2020). Careers Day became entirely online, which worked well for the panel session and roundtables (using breakout rooms), but the lunch and networking opportunities were lost.

II. Case-based Online Instructional Strategies

A defining feature of a case-based classroom is interactive dialogue. The transition to online case-based learning presented several challenges. Active student participation in class discussion became more difficult to facilitate and monitor in a virtual setting. In order to maintain case-based pedagogical practices, classes within the MPH program resumed synchronously with an aim to maintain the integration of critical thinking as well as analytical and communication skills.

Material that promotes participation can foster communication with the instructor and with peers (Hollander, 2002; Park & Howell, 2015). Activities that challenged critical thinking, such as enhancing students' opportunities to apply the content they have learned, can lead to more impactful learning (Murawski, 2014). Having classes run in real-time also meant students could directly engage with the course content in real-time. Students themselves were creative with their background – for example, when teams presented work, all team members shared a common background scene or colour.

With reflection on the pillars of the MPH program and through much trial and error, faculty in the MPH program developed diverse strategies to suit a dynamic case-based learning approach: (1) bite-size content; (2) blended flexible learning opportunities; (3) balance of control; and (4) streamline platforms.

1. Bite-size Content

Using smaller chunks of content helps to deliver material effectively. While sessions (lectures) ran between 60-80 minutes, faculty broke up material and gave students regular breaks (active and passive). Bao (2020) recommends sessions of 20-25 minutes to maintain students' attention and ensure that they are developing a clear understanding of the material. Other instructional strategies included recording online lectures as well as dividing larger lecture material into smaller chunks, which aids in keeping students attentive in class and allows students flexibility in when they complete lecture-based course components (Mahmood, 2020).

2. Blended Flexible Learning Opportunities

A blended learning design protects the instructor and students from burnout, providing asynchronous opportunities for students to engage in self-paced work with consultation of the instructor for questions or feedback (Rapanta et al., 2020). In the MPH program, blended learning was achieved through the use of both synchronous and asynchronous approaches. While most classes were done 'in real-time', live with the faculty, some classes were designated as asynchronous to support learners in different time zones as well as to promote different levels of engagement.

With the added stress of the pandemic, flexibility with due dates and extensions is recommended. Similarly, requests for academic accommodation, if reasonable, should be considered with a new lens which considers many inequities and challenges students have faced due to COVID-19.

3. Balance of Control

A learner-controlled environment allows students to identify effective studying strategies (Ali, 2020). In some cases, interactions in online settings can be more efficient using electronic breakout rooms; group work can take less time to set up and conduct, allowing for increased time for teaching and further discussions. This was not always the case, such as when technological challenges or low technology literacy slowed the learning process and caused greater frustration. Accessibility in terms of asking for help increased as well; students could ask for help in subtle ways (e.g., using the chat feature) as compared to having to raise their hand in front of peers in a classroom setting, and peers could respond and support one another more freely (Dwivedi et al., 2020). The MPH program made use of breakout rooms, chat "reactions" and other now standard online teaching functions.

Dwivedi et al. (2020) encourage opportunities for sociability during online lectures through opportunities for students to talk informally amongst themselves to establish a more comfortable relationship. This should be accompanied by an emphasis on the key expectations, rules of

engagement and etiquette for online chats/forums for students participating in online sessions. Creating a visual presence through encouraging students to have their cameras on can also foster a sense of community and support for students (Dwivedi et al., 2020).

4. Streamline Platforms

While the implementation of various communication platforms (e.g., Zoom, Microsoft Teams) can allow students to engage more fully with course content and enable interaction with other students, teaching assistants, or professors about the content, it can also be a barrier to learning. This can happen when multiple platforms are being used in different ways or across different courses. An example of this is when an instructor may want to use Gradescope for assignments and quizzes, Microsoft Teams for live lectures, Perusall for reading material, and VoiceThread for participation activities. This can easily become overwhelming for students as they are then required to constantly check multiple platforms for important announcements and to complete course requirements. Having a standard set of platforms may be beneficial from the outset, as it can allow students to better track their progress in the course. This would also save students and faculty the time that would otherwise be spent learning how to use new platforms, as each one has its own nuances. That said, platforms develop and change rapidly, and it is inevitable that new platforms may need to be incorporated to enhance the learning experience. In the case that multiple platforms are being used, faculty members are encouraged to have one main platform with links to the rest that would make it easier for students to navigate.

Going Forward

The pandemic required increased flexibility in course delivery and the lessons learned from the changes are transferable to teaching back in the classroom. Future course design, using online, in-person or even blended format, can benefit from the challenges identified with online education during the pandemic. From a global survey conducted by the International Association of Universities on the impact of COVID-19 on higher education, Marinoni et al. (2020) share how the pandemic has pushed educators to try novel platforms and new teaching styles for their content delivery. Some educators may continue offering online or blended format courses and integrate both synchronous and asynchronous learning strategies into their material. Small pedagogical decisions can transform learning into the digitalized world we operate in today and provide accessible opportunities for students who may not otherwise be able to participate in learning (Marinoni et al., 2020). Lack of participation in learning throughout the COVID-19 pandemic could have been due to multiple factors including, but not limited to: time zone differences, social determinants, and the continuing stressors from the pandemic (including but not limited to uncertainty and anxieties surrounding potential COVID-19 exposure, provincial mandates, closures etc.). Other factors could be related to the various social determinants including socioeconomic status, access, and equity with regard to the ability to attend virtual classes. This highlights a bigger issue which needs consideration around entry into a program. Having online learning can simultaneously open opportunities for some and exclude others. While it may be more flexible and convenient for some, it could lead to the exclusion of certain demographics of students who, due to economic and accessibility issues (such as insufficient Internet connection), would be unable to attend the MPH program. This highlights rampant inequities exacerbated through the pandemic. Students studying from home may have competing priorities, for example, taking care of family members or children or other domestic duties, which may limit study opportunities.

As is standard for the MPH program, ongoing surveys were conducted throughout the year to gather reflections, comments, and concerns from students. During the 2020-21 online year, students appreciated the various teaching methods used over Zoom (including flipped classrooms [Where the students teach the class], breakout rooms, and larger class

discussions). Overall, students indicated that the MPH faculty and staff's flexibility, accommodation, and compassion during this period of online learning during the pandemic was to be commended.

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CASES

CASE 1

Artificial Intelligence in Primary Care: Implementing New Technology into Existing Systems

Ravninder Bahniwal, BSc (Hon), MPH (Class of 2020)
Amanda Terry, PhD (Associate Professor, Western University)
Daniel J. Lizotte, PhD (Associate Professor, Western University)

"We'll be in touch soon," Noor Grewal says as she exits her last virtual meeting of the day. She takes her red pen and circles next Friday's date on her agenda. Noor is a public health liaison officer with a background in public health and health informatics at the province's Digital Health Bureau (see Exhibit 1). She is currently working on a project to increase the capacity of electronic medical records (EMRs) to address public health concerns. Her last meeting was with Damon Miller, the Director of Strategy and Planning in the Department of Health Analytics. He just informed Noor that she has one week to recommend which artificial intelligence tool will be integrated into the Digital Health Bureau's certified EMRs, with the goal of improving existing systems with new technologies that can rapidly begin combatting public health challenges in primary care. He was eager to hear which company the team would be contacting to begin the integration process. Unfortunately, Noor does not yet have an answer for him. She is hoping her upcoming meetings with industry representatives will bring her closer to a decision. In the meantime, she takes a deep breath as she starts going through her pile of notes for this project.

BACKGROUND

On May 18, 2020, the province announced funding to help several health organizations develop projects focused on improving telemedicine. This increase in funding was in response to the COVID-19 pandemic that has wreaked havoc on global health systems. With an increased focus on COVID-19, the province is worried about the lack of attention on health promotion and chronic disease prevention and how this might have negative and long-term effects on population health outcomes. The province recognizes the opportunity to improve health outcomes through better collaboration between primary care and public health. Primary care is the health care system's gatekeeper and is an effective system for understanding community needs in an effort to prevent diseases and protect the well-being of the provincial population. However, because people have been limiting nonessential trips outside their home for the past few months to prevent community spread of COVID-19, the way primary care is being delivered has changed, and more people are opting to use telemedicine instead.

Telemedicine can be described as the use of information technology to assist in the delivery of health care across geographical, time, and social barriers (Perednia & Allen, 1995). Although it is better than having no access to care, telemedicine cannot completely replace in-person visits. Many health care services, from physical examinations that require direct patient contact to routine immunizations, must be provided in person. However, because the threat of COVID-19 continues and hesitancy to be in public places persists, the use of telemedicine will likely remain important and if successful, continue to be an integral part of primary care post-pandemic. As a

result, the province is investing in increasing the capacity of telemedicine to support primary care public health functions.

The Digital Health Bureau is one of the many organizations to have received funding because its employees are experts in EMRs and digital health tools. The group is accustomed to making the most of its limited resources, and the sudden influx of funding has led to a sense of urgency and excitement within the organization. To decide how to use the funds, a series of internal meetings were held with department directors. In the end, the Digital Health Bureau has assigned its Department of Health Analytics the authority to carry out the project to incorporate artificial intelligence tools into certified EMRs because of its experience in analyzing EMR data and using them to improve existing technologies. To discuss the project further, Damon called for a meeting with his department.

Digital Health Bureau

Health care providers and organizations independently obtain health information systems from EMR vendors and other information technology companies. Not all health care workers and management teams are experienced users of information technology, and the Digital Health Bureau addresses this deficiency to ensure the best available technology is used in the province's health systems. The Digital Health Bureau supports health care providers and hospitals in adopting EMRs and other digital health solutions to support their practices. The organization has established a strong reputation with provincial stakeholders through its list of certified EMRs and digital health tools to guarantee patient safety and provider satisfaction. Consultations are offered to health care providers who need training and resources and have not adequately adopted virtual care and digital health tools into their practice. With the additional funding provided by the province during the COVID-19 pandemic, the Digital Health Bureau can commit to promoting the use of technology by health care providers so that they can effectively support their patients during the pandemic.

COVID-19 and Telemedicine

On March 11, 2020, the World Health Organization declared the outbreak of COVID-19, a coronavirus-associated acute respiratory disease, a pandemic (Portnoy et al., 2020). This is the third spillover of an animal coronavirus to humans that has caused a major pandemic in the past 20 years, after severe acute respiratory syndrome and Middle East respiratory syndrome (Gates, 2020). The declaration of a pandemic by the World Health Organization led to immediate changes by the world's health care systems to prevent overburdening hospitals with COVID-19 patients. Strategies included early diagnosis, isolating positive cases, and quarantining all positive case contacts (Ohannessian et al., 2020). The pandemic also caused a disruption in routine primary care for the general public, leading to a shift toward telemedicine (Ohannessian et al., 2020). This shift was intended to decrease unnecessary travel to clinics and hospitals for minor health concerns and to limit the spread of disease to health care workers and to patients in waiting rooms (Ohannessian et al., 2020). Essentially, telemedicine proved to be an effective tool for people with low-risk diseases or concerns about COVID-19 to receive health support and care, while minimizing their exposure to seriously ill patients (Portnoy et al., 2020). Less than two months after the COVID-19 pandemic began, Canadian clinicians transformed primary care, with 94% of clinicians using telephone-based care and 49% reporting greater use of video and email consultations (Wong, 2020).

Public Health Concerns in Primary Care

Starfield (1998, p. 8–9) defined primary care at the health service system level as care "that provides entry into the system for all new needs and problems, provides person-focused (not disease-oriented) care over time, provides care for all but very uncommon to unusual

conditions, and coordinates or integrates care provided elsewhere or by others." Primary care can contribute to public health through its continuity of care and through patient-provider relationships that create opportunities for disease prevention and early detection (Harris, 2016). However, COVID-19 created a backlog of care needs in Canada; at the beginning of the pandemic, 85% of chronic care and 92% of wellness checks and preventive care appointments were limited because of the pandemic (Wong, 2020). This created a significant challenge for primary care providers in addressing chronic disease management and providing preventive care services. In addition, primary care providers had to continue to provide sexual health services that were time sensitive, such as contraception, abortions, and testing for sexually transmitted diseases. During the COVID-19 pandemic, immunization requirements were not enforced by public health officials, which may have created a surge in vaccine-preventable illnesses such as measles and whooping cough (Zafar, 2020). Physicians and public health officials were concerned about a loss of herd immunity due to delayed and missed vaccinations, and this could have had deadly consequences globally (Zafar, 2020).

DEPARTMENT OF HEALTH ANALYTICS MEETING

Damon met with his department to explain the funding from the province and the reasons why they were chosen to carry out the project. The province communicated the need to have a tangible solution to support public health functions in primary care, and the Department of Health Analytics team has experience in integrating new digital health tools into existing EMRs. The Department of Health Analytics is a strong advocate for the future of technology-driven health and has been busy promoting the use of artificial intelligence in health care. The availability of large amounts of structured and unstructured health data, further accelerated by the increasing use of EMRs, is promising for the use of artificial intelligence in primary care. Large volumes of data can be processed using algorithms to obtain insights for assisting primary care providers with diagnoses, risk assessments, and administrative tasks, etc. (Jiang et al., 2017). The adoption of EMRs has been increasing in Canada, with 86% of primary care physicians using EMRs in 2019 compared with 73% in 2015 (Canadian Institute for Health Information, 2020). Canadian primary care physicians who use multiple EMR functions also reported greater satisfaction than their colleagues who did not use additional digital tools (Canadian Institute for Health Information, 2020).

Damon let his team know that this project provides an opportunity to incorporate artificial intelligence tools into their organization's certified EMRs. Electronic medical record integration is decided to be a fast route to deliver change but achieving this will involve many steps. First, the team must determine the public health-associated challenges faced by primary care providers using telemedicine. Then, they must determine whether there are existing artificial intelligence tools that can help mitigate the challenges identified by primary care providers. Finally, the team must choose the best available tool and begin integrating it into the certified EMRs for immediate use by primary care providers. As the public health liaison officer for the department, Noor is tasked with serving as the bridge between the artificial intelligence industry and the Digital Health Bureau and must report her recommendation about the best tool available.

FOCUS GROUP TO DETERMINE THE CHALLENGES

First on Noor's list was to determine the pressing public health challenges in primary care. She started by conducting a preliminary literature search to determine which problems had been discussed in detail. She found that the greatest concerns involved issues such as vaccine hesitancy, the high prevalence of chronic conditions, and the increase in emerging infectious diseases. She soon realized the scope of this search was too broad and that few articles were published on these issues because the COVID-19 pandemic had emerged so recently. She

decided a focus group would help meet her immediate goal of determining the public health challenges present during the pandemic. It would also contextualize the information she was finding in the literature. Using videoconferencing technology, Noor was able to host a focus group with primary care providers who work in a variety of solo practice and family health team settings across the province, making sure to include both rural and urban providers and those who ranged in experience and age. After receiving the transcript and completing her analysis of the focus group discussion, she was able to narrow the public health challenges down to two major issues.

Challenge One: Tracking Delays in Preventive Care Delivery

At the start of the pandemic, most primary care clinics were only open for urgent health concerns and procedures that required an in-person visit. Regular physical examinations and wellness visits were postponed until further notice. As a result, patients were not receiving their routine vaccinations and preventive screenings. Some physicians mentioned more patients had inquired about their vaccination records, possibly because of the increased focus on vaccinations in the media. Thus, primary care physicians expressed concerns about the backlog of preventive care services that would have to be addressed as the demand for care surged when clinics reopened. Primary care physicians would have to optimize clinical workflow as they identified which patients were due for preventive care visits. This required tracking which services were delayed in order to guarantee patients were followed up in a timely manner. Survey data at the start of the pandemic supported the focus group findings as 17% of practices were predicting staff layoffs and 23% of clinicians had been missing work because of illness and/or self-quarantine (Wong, 2020). Another 13% of clinicians reported burnout in their practice was at its highest level and 32% reported that financial stress in their practice was at its highest level (Wong, 2020). This indicated the importance of optimizing workflow because financial and health constraints were impacting everyday functioning in medical clinics. As the pandemic went on, physicians continued to be overwhelmed by telemedicine consultations and urgent clinic visits and did not have additional time to manually check which preventive care services each patient was missing. However, clinicians needed to prioritize patients who were most in need of vaccinations and screenings when scheduling appointments. It was important to ensure that infectious disease herd immunity was maintained and that no new outbreaks of vaccine-preventable diseases emerged. For example, a child needing a measles vaccine would be considered a high priority patient, whereas a healthy, low-risk patient requiring routine cancer screening would be placed further down the priority list.

Challenge Two: Reduced Quality in Monitoring Chronic Diseases

During regular in-office visits, primary care physicians check patient vital signs such as pulse rate, respiratory rate, blood pressure, and body temperature (Harries et al., 2009). These measures are an integral component of patient management because they provide an immediate sense of underlying pathology, they indicate how a patient responds to treatment through regular monitoring, and they permit tracking changes in a patient's condition (Harries et al., 2009). With the increase in virtual visits during the pandemic, physicians were unable to accurately assess their patients' vital signs. This created challenges for monitoring changes in patient health, particularly for chronic disease management, early disease detection, and new chronic disease prevention. Physicians were worried that missing important health changes in their patients would allow diseases to progress and would increase hospitalization risks, both of which would add stress to the already overwhelmed acute care system. Some patients were able to remotely provide their own vital signs using their own machines or devices, but it was hard for clinicians to assess the margin of error of these devices and whether patients were using them correctly. The variability in the methods of vital sign measurement added a margin of

error that could not be easily determined, making the data in patient progress charts and case files unreliable for monitoring long-term changes in patient health.

SEARCH FOR ARTIFICIAL INTELLIGENCE TOOLS

Now that Noor has narrowed down the focus group findings to the two main issues faced by primary care providers during the pandemic, it was time to find out whether there were any artificial intelligence tools that could help mitigate those problems. Noor conducted an environmental scan to identify such tools with uses in primary care. She was surprised to see the large number of tools that were created to help primary care providers reduce burnout and increase direct time with their patients. Many virtual assistants and tools focused on providing administrative help to primary care providers; however, for this project, she had to focus on tools that could directly solve the challenges she had identified. Noor was able to find two tools with this capability so she conducted a web-based search to find more information about them. She summarized the information from her online searches:

Tool 1: Prioritize AI Inc. for Optimal Preventive Service Delivery
Description: Prioritize AI Inc. analyzes data within EMRs to identify and prioritize which patients are high risk and due for preventive services such as cancer screening and routine vaccinations. The tool helps determine which health-related events, such as the community spread of communicable diseases, pose the greatest risk to population health. This helps primary care physicians and their staff book in-clinic appointments based on these risks.

How it works: This is an automated system that utilizes natural language processing to extract relevant data from patient medical files and also uses deep neural networks to generate predictions regarding the risk of communicable and chronic diseases. Priority lists are then built to rank patients most at risk for developing communicable diseases (i.e., measles), followed by chronic conditions (i.e., cancer). Highest ranking patients from each list are analyzed to build a final priority list for use during appointment booking.

Algorithm development: To develop the algorithm, risk factors for each disease were assessed by gathering health data from patients and using statistical methods to compare disease-specific epidemiological data to determine which diseases had the higher incidence rate of posing a greater risk to population health. Patient health data included demographics, lifestyle factors (exercise, smoking, alcohol use), physiological data (weight, height, glucose level, cholesterol level, blood pressure), and personal and family medical history (Magnuson & Fu, 2014). Epidemiological data and research studies were then used to estimate the probabilities of patients developing different communicable and chronic diseases. An epidemiologist was consulted throughout the algorithm development and all other development phases were completed by information technology experts in the company.

Privacy policy: The company states personal information is used for continual tool improvement and development. Information may be accessed by foreign government agencies under applicable laws because Prioritize AI Inc. collaborates with global information technology companies to develop the tool. All data are stored using a cloud-based service and appropriate security measures are in place to ensure patient confidentiality.

Tool 2: Video Vitals Inc. for Vital Sign Monitoring
Description: Video Vitals Inc. can transform video camera-equipped devices such as laptops and smartphones into vital sign measurement tools. Video Vitals Inc. technology can be used to measure heart rate, blood pressure, and respiratory rate by scanning a 10 s video of a person's

face. Physicians benefit from this tool during their video consultations with patients because it allows them to acquire accurate vital sign measurements, which leads to improved monitoring for changes in health conditions.

How it works: When starting a video consultation, patients are instructed to sit still and breathe normally for 10 s. The tool outlines the facial area and counts down from 3 s to tell the patient when the recording will begin. This technology uses the light reflecting from the patient's face to measure their vital signs. After 2 min, the patient's vital signs are recorded and filed and the physician can then view and discuss the results during the video consultation.

Algorithm development: The company uses a patent-pending technology called VidCor, which combines signal processing with deep neural networks to measure a patient's heart rate, blood pressure, and respiratory rate. The system was initially tested at a family medicine clinic in New Jersey on 100 volunteers who agreed to have their vital signs measured to help develop the tool. The patients were Caucasian, aged 18 to 85, and equally split between men and women. After the doctor measured the patient's vital signs using office instruments such as a stethoscope and blood pressure cuff, a data scientist hired by Video Vitals Inc. entered the room and recorded a 10 s video of the patient's face. The measurements from the video were compared with the doctor's measurements and the margins of error recorded. Once the margin of error of the three vital signs was consistently below 2%, the algorithm was finalized.

Privacy policy: The company uses its advanced encryption processes to protect personal health information from unauthorized disclosure and access. When information sharing with third parties is required to improve the technology, it is disclosed in aggregate and only if patients consent to share this information. Before a physician uses this tool with a patient for the first time, the patient is offered an opportunity to opt out of sharing any personal health information. The company also says it protects patient privacy by only using facial detection capabilities and not any facial recognition software.

LOOKING THROUGH A HEALTH EQUITY LENS

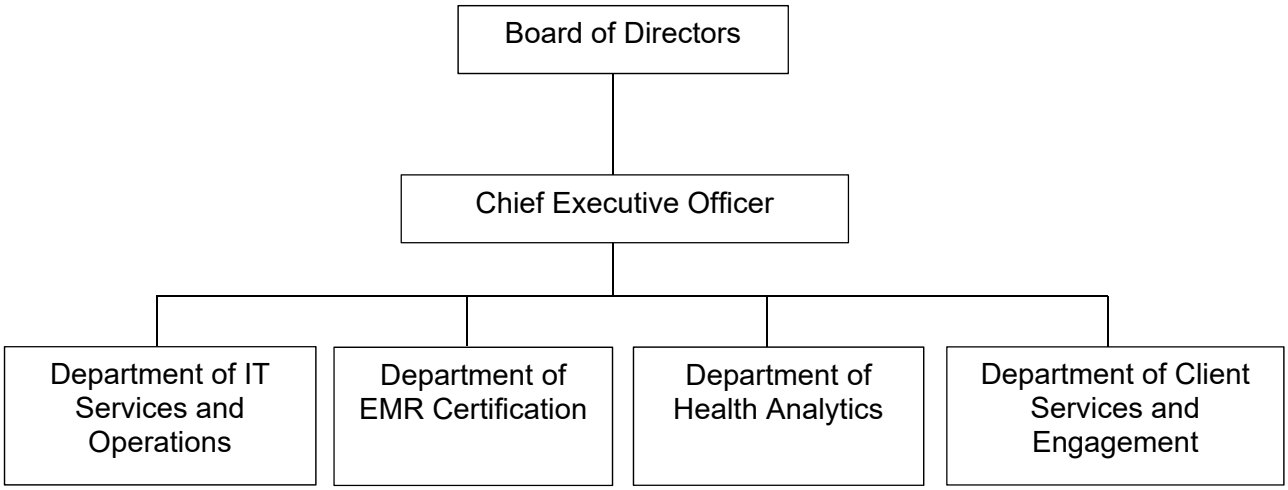
During her break, Noor scrolls through her Twitter timeline and notices posts from companies describing their commitment to anti-Black racism. The demonstrations sparked by the killing of George Floyd in Minneapolis inspired a global dialogue about racism, and the medical community was also called upon to take action in addressing systemic racism and its link to health disparities among Black people (Keshavan, 2020). Seeing this, Noor realizes she must consider how the artificial intelligence tools will address ethical and health equity issues arising from their use in primary care. To examine these applications through a critical lens, Noor truly needs to leverage her background in public health and health informatics. Noor understands she needs to learn more about the tools, so she books meetings with representatives from Prioritize AI Inc. and Video Vitals Inc. Before attending the meetings, Noor must first create a list of criteria that are important to consider during the decision-making process and then use these criteria to create a list of questions for the company representatives.

MAKING A DECISION

Noor watches an online webinar while she is sitting on her couch drinking her morning coffee. One of the speakers, a health equity researcher, mentions that "big data technologies can cause societal harms beyond damages to privacy" (Barocas & Selbst, 2016), leading Noor to think about the recommendations she has to make by the end of the day. After critically evaluating the results of her environmental scan and the findings from the meetings with the company representatives, Noor has made a decision regarding the best available tool for EMR integration. She knows Damon and the team are excited to finally implement an artificial

intelligence tool into the province's EMR systems, and she wonders whether they will be happy with her recommendation.

EXHIBIT 1
Digital Health Bureau Organizational Chart



Source: Author created.

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INSTRUCTOR GUIDANCE

Artificial Intelligence in Primary Care: Implementing New Technology into Existing Systems

Ravninder Bahniwal, BSc (Hon), MPH (Class of 2020)
Amanda Terry, PhD (Associate Professor, Western University)
Daniel J. Lizotte, PhD (Associate Professor, Western University)

BACKGROUND

The Digital Health Bureau has received funding from the province to develop projects focused on improving telemedicine. The Department of Health Analytics has been instructed by the Digital Health Bureau to use the funding to improve the use of electronic medical records in response to the COVID-19 pandemic. Noor Grewal, a public health liaison officer, has been tasked with determining the best option for electronic medical record integration to address key public health needs in primary care. Currently, the Department of Health Analytics is focused on advocating for the use of artificial intelligence in health care and wants to use this funding opportunity to integrate an artificial intelligence-enabled tool into the province's certified electronic medical record systems. Noor has narrowed down the top concerns in primary care and searched for artificial intelligence tools that have the potential to solve the identified problems. She has a meeting to provide her recommendations to Damon Miller, the Director of Strategy and Planning, in one week. This case highlights the importance of setting decision-making criteria and critically evaluating all evidence before making a decision that has the potential to impact the health of the entire population of the province.

OBJECTIVES

1. Recognize the potential to promote public health in primary care settings.
2. Propose a list of questions and criteria that would be important in facilitating the decision-making process.
3. Practice making decisions under time constraints and with incomplete information.
4. Apply a systems-thinking approach to discuss the challenges associated with implementing new technologies.

DISCUSSION QUESTIONS

1. What are the advantages of using artificial intelligence in primary care?
2. What criteria would be important to consider from a health equity lens before integrating artificial intelligence tools into electronic medical records?
3. In what cases would personal health information be used for purposes outside of a patient's immediate care and treatment?
4. What are Noor's responsibilities as a public health practitioner in making the decision after meeting with company representatives?

KEYWORDS

Artificial intelligence; decision-making criteria; electronic medical records; information technology; preventive care

CASE 2

The Silent Epidemic of Gender Inequality in Rwandan Refugee Camps

Maame Takyiwa Barnes, BSc, MBChB, MPH (Class of 2020)
Josephine Aimee Utuza, BSc, MPH (Supervisor, Rwanda Health Equity Action Research Team)
Lloy Wylie, PhD (Associate Professor, Western University)
Amardeep Thind, PhD (Professor, Western University)

It was another sunny and humid Tuesday morning at Mahama Refugee camp in Rwanda, the newest refugee camp to be established in the country (Exhibit 1). As Ramat Morrison trudged along the narrow footpath leading to Mbeki clinic, she began to dread her busy schedule for the upcoming week and month. Mbeki clinic is the sexual and reproductive health care unit responsible for the sexual health needs of refugees at Mahama. Amanda, Ramat's colleague suddenly interrupted her thoughts as she approached the entrance of the clinic. She was reminding Ramat about the impending deadline for the camp's quarterly community assessment report.

Ramat is a public health nurse in charge of the Family Planning Division of the clinic. She also serves as a community volunteer responsible for providing community-level reproductive health services specifically to refugees in Mahama. The engagement activities at this level include regular visits to the various refugee households at Mahama Camp to provide reproductive health counselling and postnatal care to refugee women and children. The staff at the clinic are required to submit quarterly reports to the Government of Rwanda's Ministry of Emergency Management about the activities of each health care division. The report must outline the different sexual and reproductive health conditions of the refugees in the camp over the past three months and the clinical management protocols that were used. The report also includes a summary of the community-based sexual and reproductive health programs that were organized and the number of refugees who participated in them.

Ramat is unhappy about the inability of the clinic to effectively engage refugee youth, especially female youth, in the clinic's sexual and reproductive health interventions. This has led to a low uptake and involvement of these youth in the sexual health programs organized by the unit. This low uptake has persisted since the clinic was established in 2015 and has been noted as a concern by the United Nations High Commissioner for Refugees (UNHCR) at the quarterly review meetings of Rwanda's refugee camp management activities. Therefore, Ramat decides to glance through previous quarterly reports to analyze the participation trends and to brainstorm about how to improve program uptake.

BACKGROUND

In 2015, the Government of Rwanda's Ministry of Health established the Mbeki clinic in collaboration with the UNHCR and other nonprofit organizations. The clinic was built a few months after Mahama was opened to cater to the sexual and reproductive health needs of the refugees. The clinic is located about 100 m from the camp and serves more than 58,552 Burundian refugees who have fled to Rwanda since April 2015. Burundi became politically

unsafe after a failed coup attempt erupted into violence in 2015 (UNHCR, 2017). The majority of the citizens of Burundi fled to neighboring countries such as Tanzania, Rwanda, Uganda, and the Democratic Republic of the Congo to seek protection and shelter. The Government of Rwanda hosted most of the refugees from Burundi in the newly developed Mahama refugee camp (UNHCR, 2017). Furthermore, the government has been successful at integrating the refugees into Rwanda's educational and health care sectors (UNHCR, 2017).

The Government of Rwanda partners with the United Nations and local and international nongovernmental organizations to provide refugee protection to families from Burundi and other countries (UNHCR, 2017). A multisectoral approach is necessary to respond to the urgent needs of vulnerable populations such as refugees. The nongovernmental organizations support the Rwandan government to improve camp coordination and camp management, deliver cash and food assistance, and improve the educational status and general well-being of the refugees (UNHCR, 2017). Some of the organizations involved in supporting the refugee integration and aid efforts in Rwanda include the UNHCR, United Nations Children's Fund (UNICEF), the World Food Programme, and the Adventist Development and Relief Agency (ADRA) (Prickett, Moya, Muhorakeye, Canavera, & Stark, 2013).

Ramat's thoughts kept drifting back to the conversation she had had the previous day with Jennifer, a 15-year-old female refugee from Burundi. Since the establishment of the camp, Ramat's health care unit has been confronted with a surge in the incidence of unintended pregnancies. This has prompted the health unit, together with a team of community health workers, to organize weekly community-level engagement visits to counsel refugee youth, females especially, and offer them family planning services. Despite the introduction of the program two years ago, the rising incidence of unintended pregnancies continues to be a major sexual health challenge in the camp.

Ramat had met Jennifer just the day before on one of her regular community engagement visits to the camp. Jennifer had arrived in Rwanda with her grandmother a year ago after fleeing from political conflict and unrest in her home country. She had lost her parents to the war, making her grandmother her only caregiver. Jennifer is currently six months pregnant with her first child and does not intend to return to school after delivering the baby. Ramat inquired further about the reasons for her decision and Jennifer tearfully responded, saying "my grandmother wouldn't be able to take care of my baby if I return to school because she is old."

Jennifer became pregnant while she was still attending secondary school. Due to her grandmother's low socioeconomic status, Jennifer had to resort to having sex with her 24-year-old boyfriend in order to meet her basic needs. Unfortunately, some female refugee youth have to engage in unwanted sexual activity in exchange for basic necessities, which is known as transactional sex (Prickett et al., 2013; UNHCR, 2017). Transactional sex has been observed to be an emergency coping measure to help refugee families survive (UNHCR, 2017). Jennifer's grandmother noticed that Jennifer was pregnant during her second year in school. She dropped out of school because of the stigma associated with adolescent pregnancy in Rwanda. Unfortunately, Ramat's unit's initiative to organize community-based counselling and family planning services for refugee youth in an effort to tackle the challenge of unintended pregnancies is not yielding its intended results. The participation rates of refugee youth are low, and Ramat is desperate for immediate short-term interventions to address this issue.

The phone rang. It was Ramat's colleague, Josephine. Josephine is the Senior Project Manager for the Training, Support, and Access Model (TSAM) for Maternal, Newborn, and Child Health project in Rwanda. The TSAM is a health profession education project comprising maternal and

child health experts from Canada and Rwanda. It is led by a research team from Western University, London, Ontario. Josephine is interested in the current best practices Ramat's unit uses to provide antenatal and postnatal care. This information will help Josephine's team update the TSAM preliminary report recommendations for maternal and child health. Josephine forwards the preliminary report to Ramat for review. After assessing the recommendations on TSAM's gender equality strategy, Ramat notices a significant omission—the absence of a comprehensive sexual and reproductive health services initiative to address gender-based violence in different contexts in Rwanda. TSAM established a working committee, Maternal and Mental Health Action Team, that comprised members from participating district hospitals in Rwanda and the University of Rwanda College of Medical and Health Sciences. The team was responsible for the design and delivery of maternal mental health training and mentoring strategies, coordination of daily activities of the project including monitoring, reporting and decision-making as well as the review of the gender equality strategy to identify gaps in its implementation. The TSAM's initial gender equality strategy was to develop a reproductive health module for young women who experience gender-based violence and eventually become pregnant. However, the TSAM project coordinators were uncertain about the overall approaches or initial steps to use to address gender equity, equality, and gender-based violence (Philip Cox & Susan Smith, personal communication, 2018). Therefore, although gender-related issues were a priority, the TSAM group had no concrete approach regarding youth-specific sexual health interventions. Ramat is disappointed because she was looking forward to adopting the proposed TSAM sexual and reproductive health module.

In addition to the sexual and reproductive health challenges the refugee youth encounter, Ramat has also observed that most of the health care workers at the Mbeki Clinic lack adequate training to meet the sexual health needs of the youth. She is convinced that a multisector collaboration among Mbeki Clinic, the Rwandan Government, the UNHCR, UNICEF, ADRA, and other relevant international organizations is necessary to improve the sexual health outcomes of refugee youth, especially females.

The United Nations High Commissioner for Refugees

The UNHCR is an international organization established in 1951 by the United Nations General Assembly. Its core mandate is to provide international protection to refugees in accordance with the 1951conventions of the status of refugees and its 1967 Protocol. This international protection consists of several rights, including the right not to be expelled, the right to work, the right to public relief and assistance, and the right to freedom of movement within the territory (UNHCR, 2011).

The UNHCR is headquartered in Geneva and has 30 branches across strategic locations worldwide. The main function of these branches is to coordinate international action for refugees and establish liaisons with governments, United Nations specialized agencies, and intergovernmental and nongovernmental organizations. The UNHCR also assists refugees to become self-supporting by giving emergency aid and providing rural settlement projects to Africa and certain parts of Asia (Office of the UNHCR, 2021).

United Nations Children's Fund

UNICEF is an international agency responsible for promoting the rights and well-being of every child across the world. UNICEF works with partners in 190 countries and territories to provide support to the most vulnerable and excluded children. UNICEF was created with the mandate of collaborating with other organizations to address limitations children encounter because of poverty, violence, disease, and discrimination.

Other UNICEF initiatives include the promotion of female education, childhood immunization, the prevention of the spread of HIV/AIDS among youth, and the creation of protective environments for children that are free from violence, abuse, or exploitation. UNICEF upholds the *Convention on the Rights of the Child* (UNICEF, 2021) and strives for equality to prevent discrimination against girls and women (UNICEF, n.d.).

Adventist Development and Relief Agency
The Adventist Development and Relief Agency (ADRA) is a global humanitarian arm of the Seventh-day Adventist Church (ADRA, n.d.). The agency is the largest worldwide integrated health care and education network, delivering relief and development assistance to people in more than 118 countries. They also partner with local communities, organizations, and national governments to deliver culturally relevant programs and build community capacity for sustainable change (ADRA, n.d.).

Associazione Voluntari Per Il Servizio Internazionale
Associazione Volontari per il Servizio Internazionale (AVSI) is a nonprofit organization that supports humanitarian aid projects through public and private donors. The core mission of the organization is to implement collaborative projects that increase educational reforms. The organization's vision is to promote the value and dignity of people through individual and community capacity building. The foundation functions via 34 networks of organizations and has more than a thousand partners globally (AVSI, 2019).

HISTORY OF REFUGEE CAMPS IN RWANDA

The Government of Rwanda has housed refugees for more than two decades, starting in 1996 with refugees from the Democratic Republic of the Congo. As of December 31, 2018, Rwanda had almost 75,740 refugees from the Republic, and most of them (74,567) live in five refugee camps: Gihembe, Kigeme, Kiziba, Mugombwa, and Nyabiheke (UNHCR, n.d.). The remaining 1,173 refugees live in urban areas in Rwanda (Exhibit 2). Females comprise 51% of the refugee population and males comprise 49%, with children (anyone younger than 18 years of age) comprising half the refugee population (UNHCR, n.d.). Since April 2015, Rwanda has also hosted more than 69,423 Burundian refugees who have been fleeing political unrest and insecurity. However, the influx of new refugees from Burundi has decreased since June 2015. Most of these refugees live in Mahama refugee camp, with 12,481 of them (18%) living in urban areas, mainly Kigali and Huye (UNHCR, n.d.). There are also 49 other refugees from other countries of origin (ten African countries and one Caribbean country) (UNHCR, n.d.).

The UNHCR supervises the Government of Rwanda's activities and efforts to establish and manage refugee camps, and to provide land and security to refugees. Because of the continuous influx of refugees fleeing Burundi, the Rwandan Ministry of Emergency Management is working with other partners to develop a multisector, interagency response to ensure an effective approach to tackling the needs of the refugees (UNHCR, n.d.).

TRAINING, SUPPORT, AND ACCESS MODEL FOR MATERNAL, NEWBORN, AND CHILD HEALTH

The four-year TSAM project started in Rwanda in February 2016 and ended in March 2020 with the goal of promoting maternal, newborn, and child health through local partnerships to improve health service access and delivery. The initial planning and implementation phase of the TSAM was supposed to commence in Rwanda and expand to Burundi during its second year. However, the Burundian Government could not meet all the requirements to secure the necessary funding for the project within this time frame.

The project was established to address the increased mortality from maternal, perinatal, and acute childhood emergencies for mothers, newborns, and children under five years of age in East Africa. The main objective was to establish a sustainable, cost-effective model for delivering training, providing continuous mentoring, and providing coaching and outreach for continuing professional development in emergency care and access in maternal, newborn, and child health. The $10.5 million initiative was funded by Global Affairs Canada in partnership with the Rwanda Medical and Dental Council, the National Council of Nursing and Midwifery, the Centre for Public Health and Development, and the College of Medicine and Health Sciences at the University of Rwanda. Furthermore, consultations were made with the following partner organizations: Ministry of Health in Rwanda and Burundi, Rwandan Pediatric Association, Rwandan Obstetrics and Gynecological Association, Rwanda Ministry of Education, Directors of the District Hospitals in Eastern Province of Rwanda, Rwanda Ministry of Education, Rwanda Family Health Project, Jhpiego in Rwanda and International Medical Corps in Rwanda and Burundi. At the end of the project, the TSAM initiative was expected to provide most health care providers in Rwanda with the knowledge, skills, and training to deliver improved emergency care to pregnant women, newborns, and mothers of infants.

The model was developed with three intersecting themes: gender, ethics, and interprofessional collaboration, with a high priority placed on gender equality in multiple areas. These priority areas encompassed three broad steps—the design and use of a gender-sensitive curriculum for training health professionals, the selection of participants for teaching and training, and the introduction of concepts emphasizing maternal mental health and gender-based violence. A mapping exercise conducted by the project management team concluded that sensitive, gender-based violence issues are usually addressed broadly. There is less emphasis on the aspects of gender-based violence related to maternal health and morbidity. Based on these findings, the Rwandan Ministry of Health and partners from the various health sectors recommended incorporating maternal health gender-based violence interventions into the overall TSAM model (Philip Cox &. Susan Smith; personal communication, 2018). Consequently, the TSAM Maternal and Mental Health Action Team believed that the gender-based violence strategy would lead to the capacity building of health practitioners, community health workers, and other related gender-based violence fields to screen, assess, identify, and refer at-risk mothers in need of adequate treatment and services (D. Cechetto; personal communication, 2018).

BARRIERS TO GENDER EQUALITY IN REFUGEE CAMPS

Ramat is aware that gender equality cannot be achieved without the empowerment of girls and women. Additionally, she has observed firsthand how female refugee youth are denied equal access to education, income, and health services because of the social constructs of gender. Ramat is optimistic that the introduction of youth-specific sexual health services will be pivotal in providing female refugee youth with the ability to lead healthy lives and to freely participate in the social, economic, and political frameworks of life, devoid of all forms of violence.

According to UNHCR (2017), certain factors have been identified as limitations to the achievement of gender equality among refugee women. These include outmoded traditional gender norms, fewer educational and employment opportunities, disparities in income levels of women, a decreased understanding of gender equality initiatives among relevant stakeholders and unequal attention from the humanitarian sector in enhancing gender equality efforts (UNHCR, 2017). Poverty is the critical social determinant that hinders girls and women from reaching their full potential and it has serious negative outcomes on the sexual and reproductive health of females (IPPF, 2015). Poverty perpetuates the vicious cycle of gender inequality and poor sexual health and makes female refugee youth more vulnerable to sexual and gender-

based violence (IPPF, 2015). Poverty has been recognized as one of the most significant reasons that many female refugee youths do not have their basic needs met. Low income often forces female refugee youth into early sexual activity and sex in exchange for basic necessities, which often results in unintended pregnancies. In some refugee households, families force their daughters to get pregnant to increase the aid they receive in the form of food rations or cash assistance (UNHCR, 2017). Generally, migrant and immigrant women have fewer employment opportunities in the formal sector. Thus, they are forced to do informal jobs that are poorly regulated. The unregulated informal sector makes migrant women susceptible to low wages, workplace discrimination, sexual assault, and inadequate access to health care (IPPF, 2015). Providing equal decision-making and economic opportunities will give women and girls the freedom to make informed choices about their sexual and reproductive health free from violence, coercion, and discrimination (IPPF, 2015)

Teenage pregnancy has been found to be a major health challenge for youth from refugee backgrounds residing in refugee camps (McMichael, 2008; UNHCR, 2017). According to Prickett et al. (2013), early pregnancy has been ranked among the top four harms refugee children in Rwanda face. Unintended pregnancies among female refugee youth increase the rate of school dropouts, which consequently leads to unequal social, economic, and political opportunities (IPPF, 2015). Isimbi et al. (2019) showed that adolescent pregnancy is one of the main reasons female refugee youth in Rwanda cannot continue their education. The Rwandan Ministry of Education in collaboration with UNHCR provides free education to children in the refugee camps from elementary school until the first three years of secondary school (Prickett et al., 2013). Subsequently, after the completion of the third year in secondary school, parents of refugee youth are often unable to pay for their children to complete the final year of secondary school education (Prickett et al., 2013). This is a result of the low-income status of refugee parents and their limited alternative sources of income (UNHCR, 2017). Dropping out of school after the third year predisposes female refugee youth to prostitution and unintended pregnancies (Prickett et al., 2013). Gender equality cannot be achieved in the absence of equal opportunities for women and girls to exercise full control over their sexual and reproductive health rights (IPPF, 2015).

Female refugee youth are at an increased risk of sexual- and gender-based violence (Isimbi et al., 2019; UNHCR, 2017; Prickett et al., 2013). The recognizable risk factors for this type of violence include economic insecurity, resource constraints, and unsafe camp communities (UNHCR, 2017; Prickett et al., 2013). Female refugee youth sometimes have to walk unaccompanied for long distances to gather firewood, fetch water and access public places of convenience. The poor living conditions of refugee camps, which are overcrowded and have inadequate lighting and security, promote an environment in which perpetrators can take advantage of innocent adolescent girls (UNHCR, 2017). Males who commit sex- and gender-based violent crimes are usually exempt from punishment because female refugee youth are reluctant to disclose the identity of their attacker (Isimbi et al., 2019; Prickett et al., 2013). Moreover, most refugee families prefer to settle sex- and gender-based violence cases out of court (Isimbi et al., 2019). The inability to prosecute violent offenders who commit these crimes perpetuates the vicious cycle of poor sexual and reproductive health and widening gender inequality.

A lack of culturally sensitive sexual and reproductive health services has also been identified as a challenge in achieving gender equality in refugee camps. In a qualitative study by Munyaneza and Mhlongo (2019), refugee women in Durban, South Africa discussed the barriers they encounter when accessing reproductive health services from public health care facilities. Some of the concerns raised include medical xenophobia, language barriers, unprofessional health

care worker attitudes, failure to obtain consent, and a lack of confidentiality. A study by Laurie and Petchesky (2008) showed that inadequate implementation of reproductive health and HIV/AIDS services leads to gender disparity among women and girls in displaced populations. The presence of viable political, economic, and health infrastructures, including sexual and reproductive health services, in refugee camps results in the safety, dignity, and empowerment of refugee women and girls (Laurie & Petchesky, 2008). Moreover, youth-specific programs that help adolescents realize their full potential, build national capacity, and increase accountability of governments to young people are significant gaps that exist in humanitarian programs for refugee youth (Maguire, 2012).

Research conducted by the UNHCR in Rwandan refugee camps identified several reasons why the majority of refugee youth do not solicit sexual and reproductive health services in health centres. The critical issues identified by both sexes were the fear and stigma associated with accessing reproductive health services (UNHCR, 2017). The UNHCR report also identified poor service quality, inadequate privacy, inconvenient opening hours for female refugees, and the unprofessional attitude of doctors and nurses in managing refugee sexual and reproductive health challenges as barriers to youth seeking sexual and reproductive health care (UNHCR, 2017). Rwandan and Burundian cultures do not favour the use of contraceptives in promoting the sexual health of youth. These cultures uphold the idea of abstinence from sex until marriage as a value every single youth should adopt (UNHCR, 2017). Furthermore, the topic of sex is taboo in many households, which prevents refugee youth from discussing reproductive health needs with their parents for fear of being stigmatized (UNHCR, 2017).

ALTERNATIVE SOLUTIONS

Ramat now has a dilemma and must work with her team to identify and engage relevant stakeholders in proposing solutions to improve refugee use of sexual and reproductive health programs. In view of the rising incidence of sexual and reproductive health challenges in refugee camps, the Government of Rwanda has partnered with national and international civil society organizations as well as NGOs to implement measures to address the situation. These measures include integrating comprehensive sexual and reproductive health education into the school curriculum, behaviour change communication initiatives through peer educators, and gender awareness initiatives by the UNHCR in refugee communities. Despite these measures, the rate of unintended pregnancies and sexually transmitted infections continues to increase in these communities.

The UNHCR in Rwanda conducts bimonthly training programs for all health care workers assigned to health units in Rwandan refugee camps. Ramat recently participated in a mandatory modular training program on effective stakeholder engagement and its relevance in community-based interventions. After undertaking the training, she is now convinced that her team will have to strategize and adopt a different approach to solving the current challenge. The elements of inclusion, participation, and collaboration will have to be employed to engage all relevant stakeholders.

Ramat anticipates she will face several challenges to addressing the gaps existing in stakeholder engagement and consultation for youth-specific sexual and reproductive health services. She needs to come up with a feasible strategy to increase the participation of refugee youth in community initiatives designed by her unit. This will involve including all stakeholders. The Rwandan arm of the UNHCR will be interested in how the Mbeki Clinic navigates this complex terrain.

The most immediate stakeholder engagement approaches available to Ramat and her team at the clinic are:

- Encouraging the parents of refugee youth to get involved in the community initiatives to make it more acceptable for their children to participate in these initiatives. This could be achieved by assigning parents some responsibility in discussing certain aspects of sexual health topics with refugee youth. Some of these topics could include discussing the cultural relevance of abstinence and addressing the myths surrounding sex. This will also improve communication between refugee youth and their families regarding their sexual health needs.

- Organizing community initiatives such as youth-friendly anti-gender-based violence clubs that integrate male refugee youth. This will help male refugee youth understand the prevailing and often inaccurate attitudes about gender equality so they can participate in developing positive solutions. Having adolescent boys actively participate in gender inequality issues and discussions promotes inclusivity, which ultimately helps them become more responsible and accountable in matters that relate to gender equality and their partner's sexual health.

- Conducting a focus group for refugee youth so they can discuss the barriers they face when participating in community-based sexual and reproductive health initiatives. These discussions will help Ramat's team gain more insight into the current challenges faced by these youth. It will also help improve the quality of the proposed solutions and help the team identify practical ways to implement the recommended measures. Finally, the youth will be able to participate in decision-making processes that will improve their sexual health.

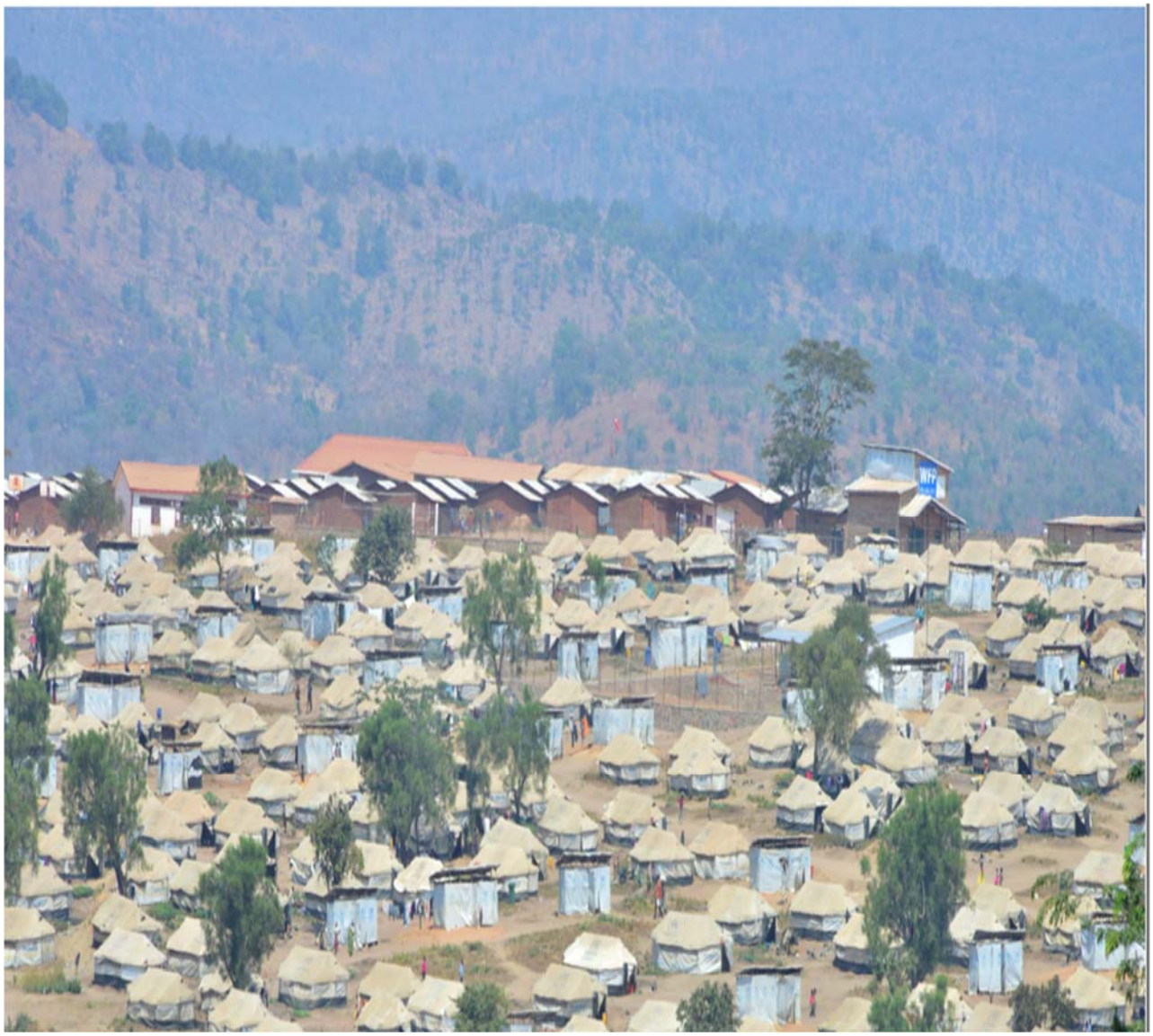
- Partnering with heads of schools to organize monthly sexual and reproductive health symposiums. These symposiums could be used to assemble parents, teachers, refugee youth, and international organizations such as AVSI and ADRA to raise awareness about sexual- and gender-based violence. The different stakeholders can also suggest ways of incorporating vocational training and life skills into the school curriculum. The inclusion of life skills modules will empower the youth with opportunities that will improve their socioeconomic status after they finish school. The vocational and life skills training will eventually assist female refugee youth with diverse incoming generating activities critical in reducing the vicious cycle of poverty, gender inequality and poor sexual health

Ramat wonders which of these options will increase the uptake of the community-based sexual and reproductive health initiatives by the Rwandan refugee youth in the interim? How will these initiatives directly affect the surge in unintended pregnancies in the camp? Will they ultimately be able to address the silent epidemic of gender inequality? These questions and many more remain unanswered as Ramat prepares to submit her unit's quarterly report.

CONCLUSION

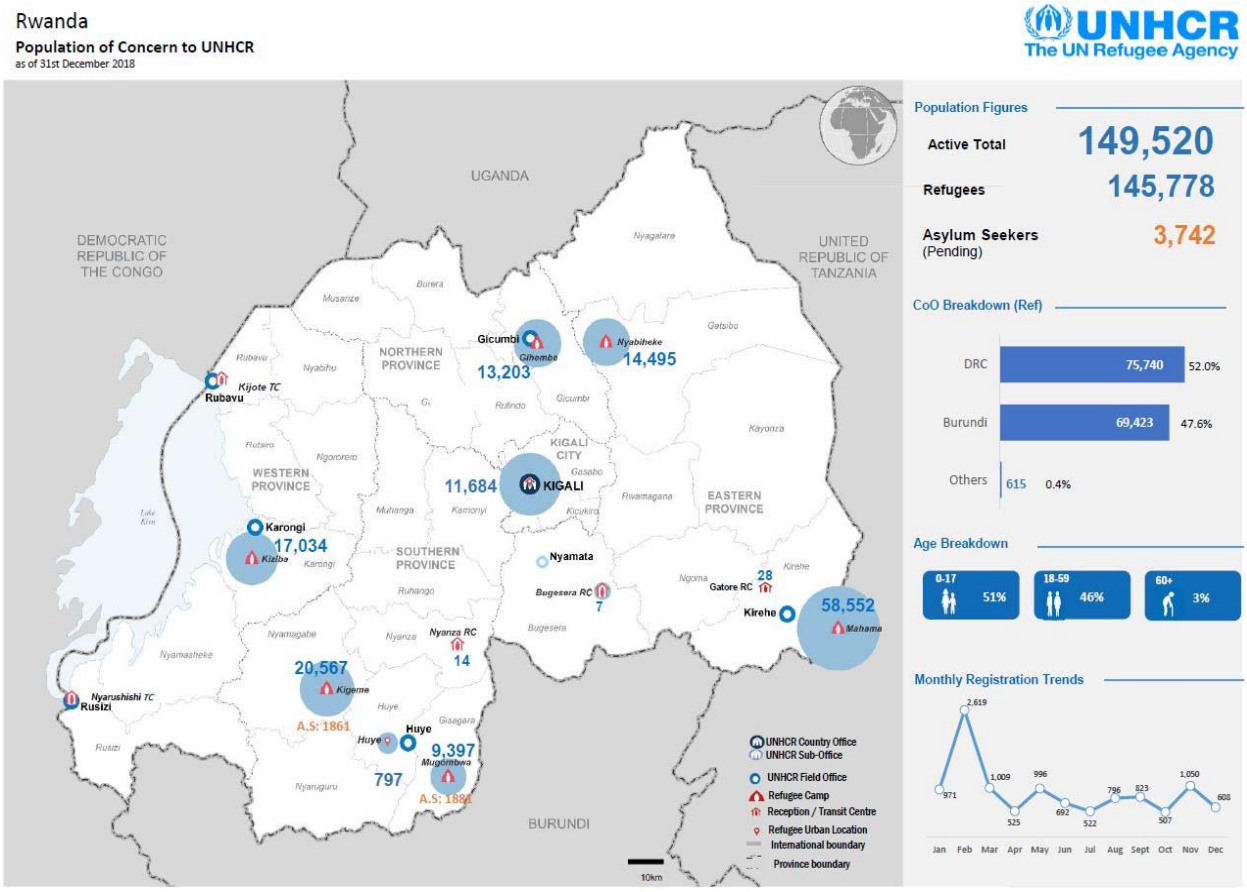
Ramat believes an enhanced stakeholder engagement and consultation approach is necessary to achieve increased uptake of community-based sexual and reproductive health programs among refugee youth. She is optimistic that this approach will improve the current sexual and reproductive challenges female refugee youth face in Mahama refugee camp. This will also ultimately improve the UNHCR's gender equality initiatives in many refugee communities. Ramat must determine which option to choose before her unit's quarterly report meeting with the Ministry of Emergency Management and the UNHCR in Rwanda in two weeks. She cannot afford to present another report about the low uptake of community initiatives among refugee youth at the Mbeki clinic without suggesting some practical interventions to mitigate this.

EXHIBIT 1
Mahama Refugee Camp in Rwanda



Source: United Nations High Commissioner for Refugees, 2017.

EXHIBIT 2
Rwandan Refugee Demographics and Camp Locations



Source: United Nations High Commissioner for Refugees, (n.d.).

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INSTRUCTOR GUIDANCE

The Silent Epidemic of Gender Inequality in Rwandan Refugee Camps

Maame Takyiwa Barnes, BSc, MBChB, MPH (Class of 2020)
Josephine Aimee Utuza, BSc, MPH (Supervisor, Rwanda Health Equity Action Research Team)
Lloy Wylie, PhD (Associate Professor, Western University)
Amardeep Thind, PhD (Western University)

BACKGROUND

Ramat Morrison, a public health nurse at Mbeki clinic situated near Rwanda's Mahama refugee camp, is worried about the rising incidence of unintended pregnancies and sexually transmitted infections among female refugee youth. A community-based program designed to address these widespread sexual and reproductive health challenges has had a low uptake rate by refugee youth since its inception. Ramat now faces a dilemma of which multisectoral approach to adopt to enhance this uptake rate. She has several options she can implement to precipitate change. The role of partnership and collaboration with other refugee organizations and stakeholders is now paramount in reducing the epidemic of gender inequality in Rwandan refugee camps.

The goal of the case is to identify the relevant stakeholders required to address the sexual and reproductive health challenges faced by refugee youth in Rwanda's Mahama Refugee Camp. Additionally, the case provides students with the opportunity to describe the connection between the overall health of marginalized populations such as refugees and the social determinants of health such as gender, culture, and income. Finally, readers are able to explore how cultural values and practices affect the implementation of public health programs.

OBJECTIVES

1. Demonstrate the relationship between gender, culture, education, housing, food insecurity and income on the sexual and reproductive health outcomes of refugees in Rwanda.
2. Understand the role of youth-specific sexual and reproductive health programs in narrowing gender disparities among female refugee youth in refugee camps in Rwanda.
3. Explore the effectiveness of stakeholder negotiation and consultation in tackling the sexual and reproductive health challenges of refugee youth in Rwanda.
4. Identify and address barriers to accessing youth-friendly sexual and reproductive health services in Rwandan refugee camps.

DISCUSSION QUESTIONS

1. Why do the sexual and reproductive health challenges faced by female refugee youth increase gender inequality among refugees?
2. Who are the relevant stakeholders required in tackling the sexual and reproductive health challenges of female refugee youth in Rwandan refugee camps? Which methods can be used to increase stakeholder collaboration and participation to improve sexual and reproductive health issues in these camps?

3. What are the barriers faced by female refugee youth to accessing sexual and reproductive health services and how can this be addressed?
4. How can male refugee youth be engaged in discussions concerning the sexual and reproductive health rights of females and how can this affect gender equality in refugee camps in Rwanda?
5. How does migration affect the social determinants of health of refugees?

KEYWORDS
Gender equality; Gender-based violence; unintended pregnancy; sexually transmitted infections; refugee youth; Rwanda; sexual and reproductive health; sociocultural determinants of health; stakeholder engagement and collaboration

CASE 3

Melcom and the COVID-19 Pandemic: Working Toward a Resilient Food Business Industry[1]

Ama Owusu Boamah, BHSc, MPH (Class of 2020)
Jason Gilliland, PhD (Director, Human Environments Analysis Laboratory)
Alexander Wray, MA (PhD Candidate, Western University)
Shannon L. Sibbald, PhD (Associate Professor, Western University)

The weather is transitioning from winter into spring and the snow is melting under the influences of rain and sunshine. A combination of different weather elements is a usual occurrence in West Nia, Ontario, especially at this time of year. However, the typical spring day is filled with an unusual silence. As Anastasia Asare looks out the window of her 18th-floor office, she sighs. It was early April and West Nia, like other parts of Canada and the world, is in the midst of the COVID-19 pandemic, with everyone doing their best to protect themselves from it. It has been about a month since businesses started closing down in West Nia. Some businesses have had to shut down entirely, whereas others have closed and then reopened in line with local health unit guidance and regulations. Even with their reopening, many of Melcom's partners are struggling to stay afloat.

Anastasia is the executive director of crisis management and social responsibility at Melcom, one of the world's largest grocery store chains. She was surprised at the quick transition of COVID-19 into a global pandemic. She realizes that some of her ideas concerning business management in emergencies could be implemented now. Because Anastasia had had the foresight to conduct scenario and contingency planning, Melcom has developed a company guidebook for dealing with such emergencies. Nevertheless, it was still shocking to Anastasia to see that much of the grocery sector is struggling amid the pandemic. Although many grocery stores are experiencing unprecedented shortages in hand sanitizers, meat, canned goods, bottled water and toilet paper because consumers are panic buying these items, Melcom has shelves full of groceries. This capacity to still meet demand is all a result of Anastasia's crisis management expertise, which had involved anticipating this type of situation and developing a plan five years ago to address it. Although this scenario planning was previously hypothetical, early-stage planning is helping Melcom stay ahead of the game.

[1] *This case note is a dramatized narrative of research activities associated with the Food Retail Environment Study for Health and Economic Resiliency (FRESHER), a COVID-19 Rapid Recovery project funded by the Government of Ontario and Western University (fresher.theheal.ca). The project is led by Dr. Jason Gilliland and coordinated by Alexander Wray of the Human Environments Analysis Lab at Western University. In addition, Rebecca Clarke, Alexander Morgenthaler, Carmen Ng, Lindsey Soon, and Marcello Vecchio provide staff support and research assistance to the project. The purpose of FRESHER is to track the impacts of the COVID-19 pandemic on the food retail and hospitality sector in Ontario through mapping, surveys, and interviews. A composite person (Anastasia) and grocery chain (Melcom) was created by Ama Boamah to represent the diverse range of participants and partners involved in the project. While a fictitious representation of a potential FRESHER partner and their relationship with the study team, this case note describes in aggregate real observations and situations encountered throughout the research process.*

Melcom's board of directors quickly discerned that things might start going awry, but found the rest of the sector did not take early precautions, so grocery stores are running low on stock. As such, Melcom took early action and limited some supplies once West Nia Health Unit started announcing business closures and limits on the indoor capacities for grocery stores. Melcom and all its retail outlets in different parts of the world were able to adopt this strategy to the best of their ability and make sure it fit each store's geographic location. This, however, could not be said for Melcom's partners in the food service industries, such as many restaurants and cafes in West Nia. Melcom operates at a retail and wholesale level, and many of its customers, such as restaurants, smaller grocery marts, cafés, bakeries, bars, and small independent stores, are struggling. Although many of these businesses, along with Melcom, are starting to receive government subsidies and follow public health instructions to take precautions, such as installing barriers and implementing physical distancing between customers, not every policy fit everyone. Therefore, some of Melcom's long-term partners were making few profits and were not sure whether they could stay open. Anastasia stood by her desk and started looking at the task report left for her.

The task left for Anastasia was to start researching what could be done to help Melcom's partners in the short- and long-term, particularly in terms of how much involvement was needed from Melcom. Anastasia was not sure whether this meant she needed to create a research group in collaboration with a university research team, or whether the chain merely needed to hold regular meetings and advise its partners on the way forward based on the research and information they gathered.

BACKGROUND

Starting as a small discount retail store in Balamory, Ontario, and keeping with the adopted policy of "low prices and high volumes," Melcom's market share in the food retail business has grown steadily. With 30 years of experience, Melcom is now one of the fastest-growing grocery store chains globally, employing more than 5 million associates.

Melcom is located in many communities worldwide and does its best to support these communities through local charities, group events, associations, and scholarships, etc. This involvement is all in an effort to bring communities together and improve the livelihoods of the people living in each store's catchment area.

A significant portion of Melcom's business is retail, although they are also highly involved in semi wholesale and wholesale distribution. Several contributing factors have made Melcom the household name it is today. The chain is committed to providing:

- Great service with a smile
- Smart and unmatched savings
- Quality merchandise

By sourcing products from all over the world, Melcom is able to offer shoppers a wide variety of affordable goods. Melcom prides itself on customer satisfaction by offering an exceptional shopping experience with the help of staff who are committed and connected to the communities they live in. Melcom continues to be a leader in sustainability, corporate philanthropy, and career opportunity.

The COVID-19 Pandemic

In December 2019, a contagious virus swept through Wuhan, China, killing many people in its wake. It quickly spread around the world, making its way to Canada in January 2020. This novel virus, a type of coronavirus, was later termed SARS-CoV-2 and is the cause of the disease known as COVID-19. The emergence of the virus caused a worldwide pandemic, placing many countries around the world in lockdown. As of March 14, 2021, Canada had a total of 906,201 cases of COVID-19, with 31,224 active cases, 852,543 recovered cases, and 22,434 deaths (Public Health Agency of Canada, 2021). Initially, most cases came from travellers returning from abroad, and this subsequently caused localized community spread (Statistics Canada, 2020). However, although infected people were coming into Canada in January 2020, the Canadian government did not take any strict precautions until after the first Canadian death caused by the disease on March 9, 2020. With the severity of this outbreak, the World Health Organization declared COVID-19 a global pandemic on March 11, 2020 (World Health Organization, 2020). The Public Health Agency of Canada (PHAC) has focused on containing and delaying the virus's spread, particularly in indoor spaces and locations such as grocery stores that receive a lot of foot traffic as well as congregant living settings like nursing homes. To reduce disease spread, the agency has encouraged public health measures such as physical/social distancing, good hand hygiene, and mask wearing (PHAC, 2020). PHAC has advised businesses to help customers maintain a 2 m distance from others by using strategies such as visual representation to demarcate distances and by using physical barriers between customers and employees during checkout. All of these measures aim to reduce the transmission of SARS-CoV-2 that can occur in enclosed spaces.

Steps Taken by Melcom Against the COVID-19 Pandemic

Melcom, like other grocery stores that have been deemed essential, has followed local public health guidelines set by the West Nia Health Unit. The store has erected floor signs to show distances, installed plexiglass in front of checkout employees, and placed automated hand sanitizer stations in different areas of the store. Overall, Melcom has been doing a great job with all of this. However, being in a pandemic does not mean Melcom will simply meet the minimum public health safety recommendations. The board of directors has asked Anastasia and her team to continue with their public relations work and ensure that Melcom's community projects persist. Additionally, Melcom is redoubling its efforts to help its struggling partners. However, there is only so much Melcom can do. After all, Melcom is also a business, and it does not make sense to commit to helping people without re-evaluating this commitment when no one knows when the pandemic will end. This is the situation that Anastasia is faced with now.

Corporate Social Responsibility

Melcom, like many other companies, has a corporate social responsibility mandate, and enacting this mandate is part of Anastasia's job. Corporate social responsibility pertains to the economic and socially accountable contributions corporate organizations make to help their local citizens and communities. Many food business corporations such as Melcom are not only interested in making profits, but they are also interested in educating consumers about various issues within the scope of the food industry and establishing positive and ethical partnerships with local community charities and organizations. Examples of such activities are back-to-school drives and university scholarships for students from low-income neighbourhoods. With the pandemic underway, a thought occurs to Anastasia. Although Melcom is doing its best to help its partners, such as businesses that buy their wholesale products or are involved in joint community initiatives, this type of help is not enough, and it is only short term. There needs to be a better way to help out.

In West Nia, food insecurity has become a growing problem, with some neighbourhoods classified by the health unit as food swamps or food deserts. Ideally, people experiencing food insecurity should be able to apply for government subsidies or access food banks. However, the pandemic has led to many job losses and a halt of some community services, making it difficult for people living in these neighbourhoods to acquire the food they need due to difficulty in travelling long distances to acquire food needed. This has in turn increased demands for assistance in these neighbourhoods. Additionally, the smaller shops in these neighbourhoods are also struggling to make ends meet—even though they provide for these communities, the pandemic has hit them hard as well. Although food insecurity is not a new issue, it is a growing one of significant concern, and it seems to have become more prevalent with the crisis at hand.

Anastasia's discussions with her partners have revealed that some seem to be doing okay switching from dine-in services to delivery and takeout only; however, other partners seem to be struggling. This shows that not all pandemic-related government benefits and policies are beneficial to everyone. Because Anastasia had been instrumental in Melcom's scenario planning, thereby keeping Melcom relatively financially stable during the pandemic, she wonders how she can do the same for her partners in the food industry. Anastasia thinks it would be helpful to listen to opinions and solicit ideas from other food retailers to help influence current government policymaking and hopefully generate ideas that could be considered later if another pandemic occurred. Even if these ideas did not immediately influence policy decisions, it was an excellent opportunity to determine what else the government could do because the pandemic did not look like it was ending soon. Although Melcom does not usually actively participate in government policymaking decisions, the chain hoped to contact the industry's essential stakeholders and help find alternative ways of influencing government policy.

PARTNERSHIPS AND COLLABORATIONS

Anastasia has been slowly rising up the ranks of Melcom's corporate ladder. Ever since she joined Melcom 10 years ago, most of her initiatives have been instrumental in raising Melcom's image and increasing profits. Her opinion is highly valued within the organization. As long as she could show why a project was useful and how it could help Melcom serve its customers and its communities better, the project would be approved. However, Anastasia needed to do a little research first to understand fully the help provided from the government to people and businesses struggling because of the pandemic.

Government Response

Below is key information Anastasia and her team found about COVID-19-related government programs:

1. After speaking with her partners in the food industry, Anastasia realized some of them were able to access the Canada Emergency Response Benefit (CERB). However, the only people eligible for CERB were those who were compelled to stop working because of COVID-19-related reasons or those who had exhausted their regular Employment Insurance benefits. The benefit did not take into account people who had quit their jobs voluntarily because extenuating COVID-19-related circumstances, such as virus susceptibility or even increased or decreased workloads, made it challenging for them to work (Service Canada, 2020). The CERB also left out individuals/businesses who were self-employed with an annual income of less than $5,000. Many smaller independent stores and start-up grocery stores were in this category.

   Although the CERB was an individual benefit, it helped offset some of the losses business owners had experienced when closures of certain parts of their business, such as indoor

dining, had eliminated some of their customers. However, CERB only worked for small businesses, community partners, and employees who had been laid off as a result of the pandemic.

2. Restaurants and other businesses such as bars, cafés, and bakeries are entitled to wage subsidies, Employment Insurance, and other employer benefits such as the Extended Work-Sharing program and the Supplemental Unemployment Benefit program.

   Employment Insurance provides a regular benefit for workers and is similar to the CERB. For most people this program means receiving 55% of their average weekly insurable benefits (Canadian Federation of Independent Business, 2020).

3. Another program small businesses are entitled to is the Canadian Emergency Wage Subsidy. This applies to employers who have seen a drop in revenue since the pandemic started. It is meant to reduce job losses by allowing employers to rehire employees to payroll and return to normal operating conditions. Employers who qualify receive a percentage of their employees' pay, which is subsidized based on the business revenue lost (Canadian Federation of Independent Business, 2020).

   This program seems promising, but the maximum top-up subsidy is only 10% of earnings which, according to Melcom's partners, barely covers their operating costs and payroll. Various Canadian business federations are working on increasing this percentage because the current subsidy is simply not enough. Additionally, businesses whose revenue loss is less than 30% cannot qualify for this subsidy (Canadian Federation of Independent Business, 2020).

4. The government also established the Work-Sharing program, which was designed to provide income support to employees to help employers avoid layoffs when there is a temporary reduction in business activity. To qualify, employers must develop a plan to reduce their employees' work by 10% to 60% to share their workload (Restaurants Canada, 2020). Additionally, as of March 2020, the eligibility criteria for businesses was changed from two years of operations to one year of operation. It further allows employers to top up the earnings of employees who are already receiving Employment Insurance. Furthermore, there are wage subsidies, which cover 10% of an employer's remuneration costs for a period of three months (Restaurants Canada, 2020).

   This program is partially suitable for small employers, which includes corporations eligible for the small business deduction (Restaurants Canada, 2020). The program essentially allows employers to keep experienced workers and avoid layoffs, while employees get to keep their jobs and maintain their skills (Canadian Federation of Independent Business, 2020).

Many employers and employees in the food industry are receiving these benefits, but this does not change the fact that some people are not eligible for them or are struggling to access them because of "red-tape" in the application process. Moreover, some of Melcom's partners who have received these benefits said they still could not cover all their overhead costs because the loss of customers and the reduction or elimination of dine-in services has led to extensive income loss.

Anastasia's Next Steps

Anastasia realizes if she wants to help or undertake any work related to this problem, she needed to conduct more research. The plan she presented to the board of directors was that

they work with a research group to develop solutions to help their partners in the food business industry. These solutions did not have to be conclusive, but they could at least define additional areas of support that were previously overlooked by the government. Through her network, Anastasia learned a research team at Western University had received a grant from the government to study the effects of the COVID-19 pandemic on the food business industry. This group had already submitted their grant application and received their funding, so Anastasia was worried it might be too late for them to partner with Melcom. Regardless, she was excited that this group was researching this area. With a preliminary plan in mind, Anastasia decided to contact the lab. She knew it was imperative to have them as a significant stakeholder in her plan. They would be essential in gathering the information needed to help her partners and inform the plans and policies that Melcom could incorporate to help themselves and their food industry partners.

HEALab at Western

HEALab at Western was established to support the development of evidence related to building healthy and thriving communities in the context of geography and urban planning. The principal supervisor of the lab is Dr. Jason Gilliland who, along with the primary project manager/supervisor Alexander “AJ” Wray, was in active discussions about how to more specifically allocate new funds. Although they had received their money already, the amount was insufficient to pay for the human resources and online tools they needed for their research. Although most of this research would have to be conducted virtually because of the pandemic, they still needed additional funds to accomplish various tasks and the grant money did not cover these costs. Therefore, they had to select only some of the possible topics they wanted to research. The lab had initially planned to focus on both the food industry and agri-food sectors, but now it seemed that they would have to choose between the two for the project to start. As the two researchers were contemplating what needed to be done next, Anastasia contacted them with her proposal. Her program was similar to theirs, but she wanted to focus solely on the food service industry.

Anastasia’s main aim was to find policy issues the government had overlooked. She wanted to address these issues using evidence-based data to help Melcom’s partners and then present this evidence to the government to guide long-term policy planning and decision-making. She hoped this type of research would help the government be more informed about food industry-related policies. However, she was also looking to conduct further research on food insecurity in the neighbourhoods in West Nia that had been severely affected by the pandemic because certain food items were hard to find and people often had to travel long distances to get groceries, as well as the job losses and loss of community services due to the pandemic.

Jason and AJ thought about her proposal. They had some concerns about working with Melcom because, in the past, they had found that some corporations who helped researchers had a different agenda or research plan. Although this was not always the case, it did happen, and this made Jason and AJ wary. However, after several meetings with Anastasia, they were able to come to a consensus—they would be happy to collaborate and work on a project that would focus on the food service industry. Because it seemed that Melcom had genuine and clear intentions, Jason and AJ wanted to help their counterparts in the food industry obtain more information about food-related issues during pandemics and other emergencies.

The researchers at the HEALab wanted to do their part in researching how the pandemic had affected this industry. After observing the number of stores that had closed and still not reopened even for takeout and delivery, it was clear that many food service businesses had been hit hard by the pandemic. The HEALab wanted to take this opportunity to inform the public

and the government about what was happening and provide evidence for setting future policies relevant to the industry. Although the group has reached a consensus about the project, Jason and AJ pointed out that it may not be possible to explore food insecurity as in-depth as Melcom had hoped, but it could still be an underlying theme in the project.

The Food Retail Environment Study for Health and Economic Resiliency, FRESHER Project

With the government grant and support from Melcom, Anastasia, Jason, and AJ form the Food Retail Environment Study for Health and Economic Resiliency (FRESH-RES) project. FRESHER comprises of two parts: a survey of current and former employees and employers in the food retail industry; and interviews with the owners and senior managers of these businesses. The researchers will study the effects of COVID-19 on the food business environment across urban, suburban, and rural contexts. This evidence gathering will be useful to help policymakers assess the impacts of COVID-19 financial support programs on business survival and then help adjust these policies and programs to ensure Ontario's food security during future pandemics and emergencies. The researchers hope to identify the struggles faced by business owners and operators, and their current and former employees, and identify the various strategies they have used to survive financially and/or keep their businesses from closing. The researchers will identify how governments, Business Improvement Areas, and other organizations have responded to the COVID-19 crisis and will explore how these policies and programs have contributed to the resiliency of food retail businesses (FRESHER, 2020).

Anastasia, Jason, and AJ settled on the essence and scope of the study and decided that AJ would be the point of contact for the project.

MOVING FORWARD

Stakeholder Analysis

Now that the project was formed, Anastasia had to plan her next steps and then assemble the relevant stakeholders. Different stakeholders have different interests, so she did not expect everyone involved to have the same level of engagement. Stakeholders would fall into four categories: high power–high interest; high power–low interest; low power–high interest; or low power–low interest (Project Management & Yaman Bdaiwi, 2017). Making sure these stakeholders could contribute was a vital aspect Anastasia needed to consider when she decided what to do next.

Planning Stage

To plan her work and identify the steps she needs to take, Anastasia decides to use a six-step model developed by Public Health Ontario. The *Planning Health Promotion Programs: Introductory Workbook* (Ontario Agency for Health Protection and Promotion [Public Health Ontario], 2015) outlines the following six steps:

1. **Manage the planning process:** For this step, Anastasia would need to tackle the stakeholder roles in this project. She must determine the timeline, budget, and resources needed, and who needs to be consulted during each step. She also needs to determine what data will be gathered, who will gather and analyze these data, and how they will do it. Anastasia realized that, of all the steps, this first step would be the determining factor in what happens next. Although the other five steps were general enough to be changed along the way, the first step could determine how much investment Melcom has in this project and how far Melcom is willing to take this investment.

2. **Conduct a situational assessment:** This step would involve Anastasia and her team developing a data-gathering method and analyzing and synthesizing data about the community and the food industry, which would then inform the team about how to proceed with the rest of the planning. A SWOT analysis (evaluation of Strengths, Weaknesses, Opportunities, and Threats for businesses) would be used for organizing, synthesizing, and summarizing the information.

3. **Set goals and audiences, and outcome objectives:** This goal, Anastasia thought, would be most important after step 1. It was all about deciding how to apply the information they found and deciding which strategies would be best to reach the goals set based on the resources available. It would involve determining the audience and reconsidering the goals, objectives, and activities to make sure they flowed well together. For Anastasia, this would mean deciding whether the results of this project would be applied only to Melcom's community partners in West Nia or also be sent to the government, or even whether she would involve the government as a minor or major stakeholder.

4. **Choose strategies and activities and assign resources:** The goal of this step is to help Melcom reach the change it is looking for. It is centered around activities and strategies that will lead to the desired outcome, as well as assigning resources and writing project objectives which are in line with the desired outcome.

5. **Develop indicators:** This step requires identifying the indicators that would prove this change.

6. **Review the plan:** This step would involve reviewing the planning model Anastasia has constructed thus far. In this step, Anastasia and her team would set up a logic model to assess whether the plan is complete and whether everything collectively makes sense. The logic model would also allow Anastasia's team to see whether everything aligns with the initial situational assessment conducted in step 2.

Anastasia realized this was only just the beginning. The first thing to do would be to complete step 1 of the planning model because this would decide how far Melcom would go with this project.

Considering the Stakeholders

First and foremost is the HEALab, which has already been identified as a key stakeholder and is on board with the plan. The next stakeholder is the West Nia Health Unit. With their help, FRESHER researchers will be able to access the unit's food inspection database so they can call or email pertinent businesses and let them know about the study. The contact person in charge of this database is Dr. Abena Fah, and she is interested in the project. She let Anastasia know that, normally, most of her work at the unit pertained to food inspection. However, because of the pandemic, many food service businesses had permanently or temporarily closed, and she was finding it difficult to do much for them. All Abena could do for the restaurants, bars, cafés, bakeries, and grocery marts that were still open was provide advice on sanitization processes and how to make a strategic plan to keep employees and customers safe. Anastasia thought of other stakeholders, such as the Ontario Chamber of Commerce, who may not be as interested in the project but might have additional useful information to contribute. The participation of these types of stakeholders would allow the team to get business information from multiple sources and not just one source.

Additionally, because this is a collaborative effort to help the food industry, some of Melcom's partners could be considered stakeholders and could provide advice on the survey and what needed to take place. Anastasia thought of two businesses—Esmeralda's Bakery Café and Ameralia's Pizza—who could serve in this role and represent the local and/or independent stores and chain stores. Furthermore, Anastasia thought about whether the provincial government needed to be considered a stakeholder at this stage. It could be helpful to have a government policy maker attend the meetings, especially someone who helped set policy for the food and agri-food industry. Even with these stakeholders in mind, the list was not complete, and Anastasia was unsure whether these stakeholders were the ideal ones to start with. However, the list could be used as a starting point and then expanded as they identified other relevant stakeholders who would be interested and could assist Anastasia and her team.

The end goal is to help Melcom's partners have a better understanding of the situation they were facing and offer alternative and helpful strategies that had not yet been explored by them or the government. Anastasia hoped that the information obtained from this project could help government agencies understand more about the challenges faced by the food service industry during the pandemic and then use this information to formulate additional policies that benefited everyone. This is a long-term plan, Anastasia thought. The main issue at hand is the stakeholder analysis and engagement that needs to be conducted to move forward—everything else could wait.

Alternative Strategies

Anastasia is now unsure about what to do with her stakeholder analysis. She wonders whether there are alternatives to this and whether Melcom should continue investing in projects like these after this one. Maybe there are other options aside from working with stakeholders and continuing with the HEALab plan that could yield the same objective in terms of Melcom helping its community partners. Anastasia and her team have come up with three additional options to help Melcom move forward now that the initial planning and stakeholder process is done. The team needs to consider:

1. Whether the Ontario government should play a more involved role in this project. This would mean the results of the study would be structured on acquiring government approval for some of the interventions being implemented before the information was disseminated to the public.

2. Whether Melcom should seek other major chain stores as funding partners. Although Melcom is funding this project in conjunction with the grant-funded HEALab, the organization needs to consider how much money is enough and whether investing less and involving other major corporations would help Melcom's ultimate goal or simply be an obstacle.

3. Whether Melcom instead focuses its efforts on helping its community partners change operations. This means Melcom would guide its partners on how to effectively shift their operations to online and/or phone orders for pick-up or delivery. Although this has worked to a point, an analysis of the system in place might yield new strategies to increase profits as it would be with indoor dining. This would help Melcom's community partners and would serve the intended purpose and final goal of the project.

Anastasia needs to decide whether she should incorporate these other strategies into her plan or move forward without them. Even partially adopting these alternatives could positively affect the project.

CONCLUSION

Anastasia feels this project will bring numerous benefits to Melcom and its community partners. She understands that the stakeholder analysis/engagement and situational assessment will help bring the project to new levels by incorporating different perspectives from different industries. Although it might be challenging to work with varying stakeholders, the project should progress well as long as they all have a similar goal. Anastasia is of the view that regardless of Melcom's intentions, this project is ultimately good for the community, particularly in the context of the pandemic. With this in mind, Anastasia sighs once again as she looks at all the possible stakeholders and the scope of the information about the project. She then calls in her team to start the meeting and says, "It's going to be a long meeting; maybe we should order a snack before dinner."

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INSTRUCTOR GUIDANCE

Melcom and the COVID-19 Pandemic: Working Toward a Resilient Food Business Industry

Ama Owusu Boamah, BHSc, MPH (Class of 2020)
Jason Gilliland, PhD (Director, Human Environments Analysis Laboratory)
Alexander Wray, MA (PhD Candidate, Western University)
Shannon L. Sibbald, PhD (Associate Professor, Western University)

BACKGROUND

The COVID-19 pandemic has had devastating effects on all aspects of life, with everything from the business sector to schools having been affected by it. It has given the world a chance to realize new and emerging diseases that can cause pandemics are a constant threat. Additionally, the pandemic has shown with greater clarity how much people rely on food as a daily necessity, and how easily food access can be threatened. The pandemic has left many grocery stores, supermarkets, restaurants, bars, bakeries, cafés, and coffee shops in the food retail and food service industry struggling to survive even though food is so essential. With many people staying home because they are fearful of contracting the virus and they are heeding public health advice, food service businesses have fewer customers. Although many people are still getting food delivered and ordering takeout, the pandemic has simply resulted in fewer customers overall. This drop in orders, coupled with periodic government restrictions on dine-in options, has led to reduced overall food retail business profitability. Although the government has helped by introducing some financial COVID-19 benefits and services, these programs have restricted eligibility requirements that have not worked for every business. As a major grocery chain, Melcom has taken this opportunity to make an impact on the communities it serves by enhancing its corporate social responsibility (CSR) efforts. Melcom has always engaged in socially responsible community projects such as back-to-school food drives and university scholarships for children from low-income neighbourhoods. Due to the impact of the COVID-19 pandemic on the food industry, Melcom decided to partner with HEALab to expand their corporate social responsibility to affected businesses. This new project would entail conducting research into the food business industry and researching what measures could be taken to help Melcom's partners and possible research into communities facing food insecurity during the pandemic. This case uses Melcom as an example of a grocery store chain that has engaged in new corporate social responsibility initiatives because of the pandemic. By examining this case, information can be drawn about how local, provincial, federal governments, local partners/stakeholders and corporate partners can support food business industry during a public health emergency.

OBJECTIVES

1. Discuss how situational assessments and logic models help in the planning and implementation aspect of any project.
2. Discuss how public health emergencies such as pandemics affect food businesses.
3. Understand the importance of stakeholder analysis in terms of CSR.
4. Discuss the relevance of CSR amid crises such as pandemics.
5. Understand the importance of effective partnerships in crisis interventions.

DISCUSSION QUESTIONS

1. What do you think CSR is? What do you think of when you hear about CSR in the business/corporate world? How does your definition apply to this particular case?
2. What methods of information gathering can be used when conducting a situational assessment?
3. Give an example of CSR and why you think it is CSR.
4. Identify the stakeholders in the case. Are there other stakeholders you can think of?
5. What are their roles, interests (low, mid, high), and power (low, mid, high, in terms of influence) based on your readings?
6. What is your understanding of the term situational assessment?
7. What are the facilitators of effective partnerships in crisis situations such as pandemics?

KEYWORDS

Corporate social responsibility; community; COVID-19; food insecurity; food business industry; pandemic; partnerships; program planning; resiliency; service industry; situational assessment; stakeholder analysis/engagement

CASE 4

Journeying Together—Unlearning is the New Learning

Annette Chrzaniecki, B.ASc, MPH (Class of 2020)
Yoshith Perera, MBBS, MPH (Manager, Moyo Health and Community Services)
Shannon L. Sibbald, PhD (Associate Professor, Western University)

Please be aware that the text below may be triggering to some, and includes various forms of trauma including violence, physical and sexual abuse.

Ellie Domen pulled away from the table, trying to compose herself before speaking. She had been sitting in a stakeholder committee meeting for the past 40 minutes discussing ways to restructure a research project being developed by her organization, Trinity HIV/AIDS Society (THAS). The project has been in the development stage for the past three months and this was her third meeting reviewing Ellie's suggested curriculum.

Ellie has been working for her organization, THAS, for three years and was recently promoted from her previous position as a Women's Health Program Coordinator to working as the Newcomer Program Coordinator. The THAS is an ethnospecific AIDS organization that serves priority populations such as African, Caribbean, Black (ACB), and 2SLGBTQ+ communities, people using substances, and people who have chronic comorbidities including HIV/AIDS. Trinity HIV/AIDS Society is the only ethnospecific AIDS organization serving ACB communities in Trinity's urban centre, providing services to community members who experience increased vulnerability to HIV because of intersecting stigma and discrimination, and because of social and structural barriers such as a lack of access to adequate housing, financial, and social support. The organization serves members of the ACB community who have HIV/AIDS, although services are not limited to HIV status.

Ellie's responsibilities, among others, involve overseeing the development and implementation of the Newcomer Photovoice Project for which THAS recently received funding. Photovoice is a participatory action research method that employs photography and group dialogue as a means to gain a better understanding of a community issue or concern (Neighbourhood Action Strategy and Public Health Services, 2014). The purpose of the Newcomer Photovoice Project is to help communities understand the lived experiences of newcomers that are often placed into positions of marginalization, and to strengthen participants' sense of belonging to the Trinity region. Ellie's education in social work and experience in newcomer resettlement have positioned her well to apply her skills, social work concepts, perspectives, and knowledge about social determinants of health into practice. This new project allows Ellie to draw on her professional experience and apply it to a new context, where she is working with newcomers within her community.

Although the stakeholders agreed that Ellie's curriculum was strong, they felt it lacked in its ability to accurately represent and address the needs of Trinity's newcomer community. The rest of the meeting was filled with conversations on how to best navigate restructuring the project's curriculum to ensure it reflects the literacy skills, education, and cultural needs of newcomers in the region. Most of the stakeholders at the meeting were representatives from

organizations focused on Canadian immigrants and newcomer health, ACB community health, women's health, and intersectoral HIV/AIDS services.

Ellie looked across the table to her manager, whose presence signaled support for her project. Ellie could not help but feel defeated because her efforts designing the curriculum were now being tossed away. Her immediate thoughts shifted as she looked up to see an anti-Islamophobia poster on the boardroom door. She was reminded of the purpose of the project and its capacity to amplify the voices of newcomers and their diverse experiences adjusting to life in Canada. Ellie was confident in the curriculum she developed, however through the many stakeholder consultations in which she has been involved, she also recognized it could be stronger in application. Ellie realized there are many complex elements to consider when putting together the curriculum. In addition to ensuring the curriculum helps build social and community connections, she is now tasked with building a curriculum that promotes equity needs, is culturally responsive, inclusive, antiracist and anti-oppressive, and meets individual language, literacy, and learning abilities.

BACKGROUND

Immigration has strongly influenced Canada's current ethnic and cultural makeup. Canada is known as a multicultural country with a public emphasis on the social importance of immigration (Brosseau & Dewing, 2009). Immigration plays an integral part in the development of multiculturalism within Canada, with the majority of immigrants representing visible minority communities. A visible minority is a person who belongs to a visible minority group; The Employment Equity Act defines visible minorities as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour" (Government of Canada, 2015). Visible minorities are commonly also referred to as "racialized communities". It is estimated that one in four Canadians are foreign-born, which represents more than one fifth of Canada's total population (Government of Canada, 2017). The increasing number of immigrants has contributed to the growth of the visible minority population in Canada. In 2016, data revealed that approximately seven million people (22.3%) of Canada's population identified as a visible minority (Government of Canada, 2017).

In North America, the terms newcomer and immigrant are broad terms that include various categories of immigrants from a wide range of ethnicities and cultures. Although ACB, South Asian, Latinx, and other communities are commonly bundled together, they differ in their culture, traditions, and language. As a result, it is necessary to understand and distinguish these terms in order to appropriately engage with stakeholders and mobilize and sustain grassroots activism. Canada defines foreign-born populations or immigrant populations as people who are, or who have been, landed immigrants or permanent residents in Canada (Government of Canada, 2017). The foreign-born population excludes nonpermanent residents (i.e., people in Canada who have a work or study permit, or who are refugee claimants), whereas the terms recent immigrant or newcomer refer to landed immigrants who came to Canada up to five years prior to a given census year (Government of Canada, 2008).

The *Immigration and Refugee Protection Act* (2010) defines three basic classes of permanent residents immigrating to Canada (Citizenship and Immigration Canada, 2010). These classes are:

Economic class immigrants. These immigrants are selected for their skills and ability to contribute to Canada's economy. The majority of immigrants in this category are skilled workers.

Family class immigrants. This class includes immigrants sponsored by a Canadian citizen or permanent resident living in Canada, such as spouses, partners, parents, grandparents, or other qualifying relatives.

Refugees or protected persons. This class includes immigrants who are accepted as permanent residents under Canada's Refugee and Humanitarian Resettlement Program. There are three categories of refugees:

- **Government-assisted refugees.** Immigrants who are selected abroad for resettlement to Canada and receive initial resettlement assistance from the federal government.

- **Privately sponsored refugees.** Immigrants selected abroad for resettlement to Canada and are privately sponsored by organizations, individuals, or groups of individuals.

- **Refugees landed in Canada.** Immigrants who have had their refugee claims accepted and who subsequently applied for, and were granted, permanent resident status in Canada.

Immigrants living without status in Canada, also known as undocumented immigrants, are not captured in immigration statistics. However, anecdotal evidence from service providers and intersectoral organizations working with non-status immigrants suggests that there are between 200,000 and 500,000 people in Canada who are living without status (Toronto Public Health and Access Alliance Multicultural Health and Community Services, 2011).

Many different languages are spoken in Canada. Census data from 2016 showed that 81.2% of recent immigrants who settled in Toronto, Ontario reported a language other than English or French as their mother tongue, up from 2011 (Statistics Canada, 2019). During this same period, 74.2% of established immigrants reported a language other than English as their mother tongue. It was also found that an increasing proportion of recent immigrants could not conduct a conversation in either English or French (Statistics Canada, 2019). The top mother tongue languages for recent immigrants arriving in the City of Toronto were Mandarin, Urdu, Russian, Arabic, Tagalog, Spanish, Farsi, Gujarati, Punjabi, Bengali, Korean, Chinese, Tamil, and Hindi (Statistics Canada, 2019).

RACISM AND HEALTH OF NEWCOMERS

There is a growing awareness of the role discrimination and racism play in the provision of health care and services to newcomers. Racism can take many forms at a variety of levels, from conscious and unconscious interactions between people to deeply engrained practices occurring at the systemic level (Pollock et al., 2011). Discrimination and racism can be conceived of as any practice, judgement, or action that creates and reinforces oppressive relations or conditions that marginalize, exclude, and/or restrain the lives of those encountering discrimination (Pollock et al., 2011). The concept of racialization refers to the social processes through which categorization takes place (Hyman, 2009). This concept is particularly useful when highlighting the ways in which certain groups face discrimination and are continuously subjected to differential treatment and access to resources that contribute to their individual social determinants of health.

Discrimination and racism experienced by newcomer communities inhibit their educational and occupational achievements while compromising living conditions, reducing health status, and impeding access to various health care services (Pollock et al., 2011). This inequality creates a form of systemic subordination and oppression for newcomer communities. Discrimination and

racism are considered to be key determinants of health (Pollock et al., 2011). In Canada, newcomer, immigrant, and refugee populations encounter multiple and intersecting forms of discrimination. Discriminating practices impact the quality of different types of care received across various settings, notably within hospital and health care service settings. Evidence suggests that discriminatory practices and encounters in Canada are likely subtle, elusive, or systemic relative to traditionally overt forms (e.g., verbal and physical abuse) (Pollock et al., 2011).

It is likely that Westernized cultural theories of health, and Westernized beliefs and values surrounding health and how health and illness are perceived, experienced, and communicated, may be driving unconscious discrimination. Health care systems within Canada are generally homogenous, reflecting Westernized perceptions, values, and priorities, despite the diversity in populations (Pollock et al., 2011). Common barriers to accessing health services among racialized groups in Canada are the lack of culturally competent care among service providers and the lack of respect for alternative health values and practices (Pollock et al., 2011).

LAYERS OF STIGMA

The Joint United Nations Programme on HIV/AIDS (2011) defines stigma as:

> A dynamic process of devaluation that significantly discredits an individual in the eyes of others, such as when certain attributes are seized upon within particular cultures or settings and defined as discreditable or unworthy. When stigma is acted upon, the result is discrimination. Discrimination refers to any form of arbitrary distinction, exclusion, or restriction affecting a person, usually (but not only) because of an inherent personal characteristic of perceived membership of a particular group.

Stigma can lead to harmful outcomes for people, particularly for vulnerable populations such as newcomers to Canada, 2SLGBTQ+ people, and people using substances. By identifying the different layers of stigma, and the many levels of stigma that people experience, work can be undertaken to address stigma better. It is important to consider the different layers of stigma because stigma is often worsened by health promotion or public health interventions that emphasize “at-risk” populations (Canadian Public Health Association, 2017). This can perpetuate negative attitudes that are based on sexual orientation, gender identity, race, and class, etc.

Different Types of Stigma

According to the Canadian Public Health Association (2017), there are five different types of stigma, shown as overlapping circles (see Exhibit 1). The overlapping circles highlight their interconnectedness. These are encircled by intersecting sources of stigma, including racism, gender inequality, heteronormativity, cisnormativity, classism, colonization, ableism, etc. The diagram further highlights the socioecological levels at which individuals experience stigma and at which organizations can introduce stigma-reducing actions and interventions.

1. **Perceived stigma**. This refers to awareness of negative societal attitudes, fear of discrimination, and feelings of shame. For example, when clients visit THAS, they often worry about other people in the waiting room overhearing their reason for their visit and perhaps judging them. When clients enter the clinic, they may notice posters targeted at groups of people who look like them, which may make them feel singled out and more anxious.

2. **Internalized stigma**. This refers to an individual's acceptance of negative beliefs, views, and feelings toward themselves and the stigmatized group to which they belong. For example, when newcomers enter THAS they are asked to complete medical and confidentiality forms. They may feel nervous about filling out these forms because of their precarious immigration status and/or health coverage. They are nervous and ashamed about asking for financial aid or services that support uninsured immigrants.

3. **Enacted stigma**. This encompasses acts of discrimination such as exclusion or acts of physical or emotional abuse, perhaps toward an individual's real or perceived identity or membership in a stigmatized group. For example, after a conversation with their service provider, someone may feel they acquired a sexually transmitted blood-borne infection because of their "risky" behaviour, or that they deserve the infection because of their personal choices and identity.

4. **Layered or compounded stigma**. This type of stigma refers to a person having more than one stigmatized identity (e.g., HIV positive serostatus, sexual orientation, race, or ethnicity). For example, a newcomer to Canada may feel unwelcome visiting THAS because of their ethnicity, and they may also feel unwelcome at their local immigration service organization because of their HIV status.

5. **Institutional or structural stigma.** This refers to stigmatization of a group of people through the implementation of policies and procedures. For example, because THAS is located at the west end of town, clients often find it difficult to reach the site by bus or by other modes of public transportation. The clinic is open every day from 9 a.m. to 5 p.m., but clients are often unable to visit during the day because the clinic hours conflict with their work or life schedules.

TRAUMA-INFORMED CARE

Trauma is recognized as an experience or experiences that overwhelm a person's capacity to cope (BC Provincial Mental Health and Substance Use Planning Council, 2013). Trauma that occurs early in life, including child abuse, neglect, witnessing violence, and disrupted attachment, as well as other traumatic experiences such as enduring violence, accidents, or war, can be outside one's control and can be devastating. Trauma is a continuum and differs in magnitude, complexity, frequency, and duration, and whether it results from an interpersonal or external source (BC Provincial Mental Health and Substance Use Planning Council, 2013).

Different Types of Trauma

To respond appropriately, it is important for people who work in health care settings, emergency departments, or social services to recognize the different types of trauma. The British Columbia Provincial Mental Health and Substance Use Planning Council (2013) lists five different types of trauma:

Please be aware that the text below may be triggering to some, and includes various forms of trauma including violence, physical and sexual abuse.

1. **Single-incident trauma.** This type of trauma is related to an unexpected and overwhelming event such as an accident, natural disaster, a single episode of abuse or assault, sudden loss, or witnessing violence.

   Photovoice Participant Story, Lidia. Lidia experienced a severe Traumatic Brain Injury (TBI) following a collision between a car and her bicycle while on a leisure ride in Norval, Ontario.

In a comatose state, Lidia was airlifted to the nearest major trauma centre whereupon a neurosurgeon operated to relieve the pressure building up from a blood clot on her brain. Lidia spent eight weeks in a specialist rehabilitation centre, before being discharged to home. Lidia was incapable of doing anything other than get through each day during the first nine months. Lidia is still working toward being completely healthy so she can begin to live her life fully, be independent, and work at full capacity. She still faces numerous limitations as a consequence of the TBI, but chooses to focus on the positives.

2. **Complex or repetitive trauma.** This trauma relates to the ongoing abuse, domestic violence, war, or ongoing betrayal that often involves being trapped emotionally and/or physically.

   Photovoice Participant Story, Fiona. Having been diagnosed with post-traumatic stress disorder (PTSD) at age 35, Fiona knows there is not one aspect of her life that has gone untouched by this mental illness. Fiona's PTSD was triggered by several traumas, including a childhood full of physical, mental, and sexual abuse, and a knifepoint attack that left her thinking she would die. Fiona knew she would never be the same after that attack. For her, there was no safe place in the world, not even her home. Fiona endures ongoing challenges because of PTSD; however, she is taking medication and undergoing behavioural therapy to help her regain control of her life.

3. **Developmental trauma.** This form of trauma results from exposure to early, ongoing, or repetitive trauma received as an adolescent, during infancy, or childhood. It involves neglect, abandonment, physical abuse or assault, sexual abuse or assault, emotional abuse, witnessing violence or death, and/or coercion or betrayal. This often occurs within the child's caregiving system and interferes with healthy attachment and development.

   Photovoice Participant Story, Julian. Julian was separated from his mother, Leah, at the United States border after an arduous two-week journey from Central America that included a boat ride, extensive walking, and bus travel. Julian was three years old when he arrived in May 2018 at the Rio Grande City, Texas port of entry. Leah and Julian were seeking asylum because they feared the wrath of the MS-13 crime gang. Four days after their arrival, immigration officials made Leah place Julian in a truck. Leah could only watch as he cried and scrambled to get back to them as the vehicle drove away. After spending about six weeks in a detention facility in Texas, 2,500 kilometres away from Julian, Leah was able to reclaim her son from an immigrant children's shelter in New York. They later resettled in Canada. Julian was afraid to be away from Leah for more than a few minutes, and it took almost a year for him to fully trust her again.

4. **Intergenerational trauma.** This refers to the psychological or emotional effects that can be experienced by people who live with trauma survivors. Coping and adaptation patterns developed in response to trauma can be passed from one generation to the next.

   Photovoice Participant Story, Lindsey. Lindsey's mother, Jacky, had escaped the Rwandan genocide in 1994, fleeing soldiers with only the clothes on her back and her eight young children. Four of Jacky's brothers and sisters didn't make it to safety. After many years, Jacky was able to immigrate to the United States as a refugee, resettling in Nampa, Idaho, where Lindsey was born. Lindsey experiences feelings of unsafety, and struggles with her own mental health, depression, anxiety, and hypervigilance. Although Lindsey had not experienced her mother's trauma firsthand, and she describes her mother as kind and

caring, Lindsey still exhibits the effects of PTSD from transgenerational transmission of trauma.

5. **Historical trauma.** Historical trauma is a cumulative emotional and psychological wounding over the lifespan and across generations stemming from massive group trauma. These collective traumas are inflicted by a subjugating, dominant population.

   Photovoice Participant Story, Claudine. Claudine and her parents arrived in Ottawa in 2001 after surviving the Rwandan genocide, enduring countless acts of violence, and losing several family members. They had fled to the Democratic Republic of the Congo, then to Kenya, and then to Cameroon before being resettled in Ottawa by Catholic charities. Claudine's parents did not have family in Ottawa, but they quickly became close to people within the community who also shared Congolese roots and had had many of the same experiences before arriving in Canada. Her parents came to Canada without any English language skills and suffering from trauma and other scars of war. During Claudine's time in Canada, she was diagnosed and treated for numerous mental illnesses, including PTSD.

Trauma-informed services are built to consider an understanding of trauma in all aspects of service delivery and to place priority on the individual's safety, choices, and control. An important feature of trauma-informed services is to develop an environment that feels safe, where service users can make decisions about their treatment needs and not experience further traumatization or retraumatization.

INTERSECTIONS BETWEEN TRAUMA AND STIGMA

Some populations are subjected to disproportionate burdens of trauma and stigma as a result of deeply entrenched structural violence. Experiences of stigma within health and/or social service settings can be retraumatizing, whereas ongoing experiences of structural stigma (racism, cisnormativity, heteronormativity) can be traumatic (BC Provincial Mental Health and Substance Use Planning Council, 2013). Integrating trauma- and violence-informed care into practice requires understanding the role of stigma in trauma, and multilayered intersection between different types of trauma and the various layers of stigma.

INTEGRATING TRAUMA- AND VIOLENCE-INFORMED CARE

Trauma- and violence-informed care approaches recognize the connection between violence and trauma, and negative health outcomes and behaviours (Public Health Agency of Canada, 2018). The combined approach expands on the concept of trauma-informed care approaches to consider the broader systemic inequities that influence and contribute to interpersonal experiences of trauma and violence. Trauma- and violence-informed care acknowledges the intersection between trauma and many social and health issues. Therefore, it works toward removing some of the stigma attached to HIV/AIDS status, sexuality, and substance use (Public Health Ontario, 2019). This approach encourages the disruption of power imbalances within health and social settings. This is particularly important in the context of newcomers because, historically, these communities are disempowered and marginalized due to real and/or perceived membership within a stigmatized group.

PHOTOVOICE

Photovoice is a participatory action research method developed by Caroline C. Wang and Mary Ann Burris in the early 1990s (Wang & Burris, 1997). Participants of a photovoice project are often provided with a camera and encouraged to consider various photography techniques such as photo composition, lighting and contrast to best capture their perspectives and lived experiences. Upon photo completion, participants are asked to create a short caption for each

photo to reflect the moment. The purpose of photovoice is to provide an opportunity for communities to express their experiences and stories through photography, to connect with others in the community, and to advocate for change (Neighbourhood Action Strategy and Public Health Services, 2014). Photovoice allows communities and individuals to express their issues or concerns about topics that are most important and relevant to them. It is a powerful tool to help others understand and connect with issues because "a picture is worth a thousand words."

SPECIFIC AREA OF INTEREST

Building a Project Curriculum

Ellie had just finished presenting the findings from a literature review and community consultation she had been working on over the past few weeks. Ellie's manager summarized the project and said, "Now, we just need to find some way to fit this all into a 10-week curriculum."

The findings provided a foundation of evidence and research to support the curriculum for the Newcomer Photovoice project. With a focus on building social relationships and community connections, the curriculum included different strategies of engagement, while also addressing the different social and cultural determinants of health.

Ellie brainstormed ways to promote inclusion within the curriculum. She thought of various activities and icebreakers the participants could engage in to help build social connections. This included photography activities, a food-sharing session where participants were invited to share and cook their favourite food, an employment networking session, and a field trip to learn and understand how to navigate and access different services within the community.

Ellie also listened to newcomer community members to better understand what they wished the project included and what activities would be helpful to build social connections. Some participants mentioned it would be nice if they were able to graduate together at the end of the project, whereas others mentioned that an outing to a social space such as a beach or park would be fun.

By using a model known as DACUM, or Developing a Curriculum (Canadian Vocational Association, 2013) Ellie was able to arrange the curriculum sessions and corresponding activities. Ellie also developed a logic model with her colleagues to organize the different inputs, outputs, and anticipated outcomes of the project.

STAKEHOLDER ENGAGEMENT

Several stakeholders, including Patrolinx and Trinity Council Serving Immigrants (TCSI), were involved in providing input, advice, and support for the Newcomer Photovoice Project.

Patrolinx

Patrolinx, a local community newcomer service provider, agreed to support Ellie with the employment section of the curriculum. Patrolinx is a not-for-profit organization focused on providing newcomer services such as job search workshops, employment and legal assistance, and English language training. During Ellie's conversation with Steve Potrovski, the Manager of Family Services at Patrolinx, several important issues were identified. Steve mentioned that newcomers often struggle identifying with Western social norms more so than having the proper attire or well-structured resume. These norms included verbal and nonverbal communication

such as making eye contact and shaking hands. He further mentioned the importance for newcomers to understand their rights pertaining to employment.

“It’s also crucial that you use a newcomer lens in a way that fosters an inclusive environment and meets newcomers’ individual learning needs when delivering project material.” Steve went on to mention that newcomers who have been established within Canada for one year, compared with those who have been established in Canada for three years, have varying degrees of language literacy.

Newcomers can access language classes through Language Instruction for Newcomers to Canada (LINC), an English proficiency program offered nationally and funded by Immigration, Refugees, and Citizenship Canada.

“There are a set of levels that correspond to each LINC class offered. LINC level one refers to ‘low beginner’, whereas LINC level eight is ‘high intermediate’. Users need to be mindful of the newcomers they are engaging with and their individual abilities.”

TCSI (Trinity Council Serving Immigrants)
TCSI, a provincial council serving immigrants, supports Ellie’s organization, particularly in terms of providing knowledge mobilization and expert opinions on the curriculum topics. Ravnit Patel, a program coordinator at TCSI, suggested using a “storytelling” method to help facilitate conversations during the curriculum.

“Navigating differences in literacy skills and abilities is still something we are trying to figure out. But what I’ve noticed from my own practice is that storytelling can really help to facilitate conversations and break the ice. It also allows participants to tell a story in their own way, whether that be through song, art, or writing—you know what I mean?”

SPECIFIC PROBLEM OF DECISION

Ellie must now build a new curriculum that better reflects and meets the needs of newcomers within her community. She must consider the different types of stigma, trauma, and systemic racism these communities face and incorporate anti-oppressive and anti-racial practices within her new curriculum. Ellie must also work towards ensuring the new curriculum strengthens participants’ sense of belonging to the community through exploring the various social and cultural determinants of health.

CONCLUSION

Through consistent engagement with newcomer communities, and in using an antiracism and anti-oppression framework, a trauma- and violence-informed care approach, and an intersectional and newcomer lens, Ellie is able to develop a living process through which the curriculum can contribute to a culture of learning and community well-being. Ellie reflects on the potential drivers of stigma within her project, and highlights factors that could contribute to stigma, including individual, interpersonal, community, institutional, and policy factors. She works to ensure that her curriculum is delivered in a respectful way by reflecting on her own attitudes, values, and beliefs to increase awareness about the impact her personal biases and/or assumptions may have.

Ellie ensures the curriculum facilitates conversations that are inclusive and consider individual, community, and systemic factors such as oppression, literacy levels, language barriers, transience due to economic migration, sexual health messaging, geographic location of curriculum sessions, etc. Furthermore, she identifies barriers that may prevent newcomers from accessing the photovoice project. These barriers include confidentiality and privacy issues, lack

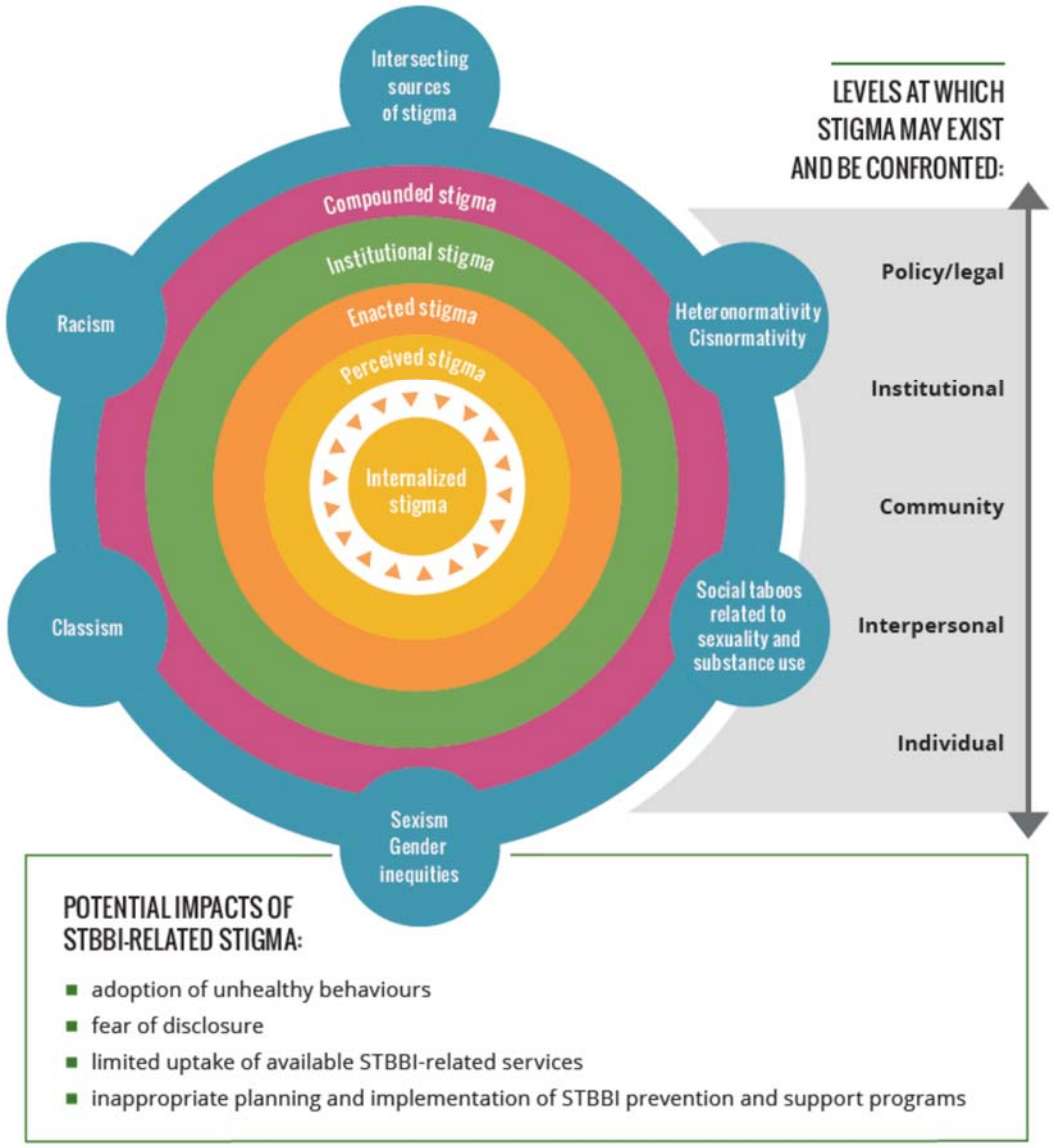
of physical space or visual cues to indicate safety and inclusion, lack of project facilitators who have diverse lived experiences, or the presence of project facilitators who have dismissive attitudes or use body-language that portrays judgement.

Ellie uses three principles—see, hear, and feel—to ensure her curriculum is inclusive and safe, and reduces organizational stigma (CPHA, 2017).
See. Ellie imagines what project attendees first see when they walk into THAS, what their first impressions are, and whether the promotional campaigns on the walls focus on specific populations who are seen as most at risk of contracting sexually transmitted and blood-borne infections (STBBIs). After reflecting, Ellie decides to mount several posters that promote diversity, and she ensures that the facilitators have diverse backgrounds and reflect newcomer communities. She adds a confidentiality component at the beginning of the curriculum to reaffirm to clients that their information will be protected. Ellie also works to ensure that the session rooms are accessible to people who have disabilities and other accessibility needs.

Hear. Ellie considers the type of language spoken by project facilitators and used on the curriculum materials and forms that need to be signed. She looks specifically at pronoun usage and whether there are questions about gender identity. She ensures the language used throughout the project is gender neutral and inclusive, and will promote and normalize conversations about sexuality, HIV/AIDS, immigration status, etc.

Feel. Ellie brainstorms ideas to ensure her curriculum creates a space that fosters a safe feeling among project attendees so they feel comfortable sharing personal experiences, beliefs, and identities. She decides to have a feedback opportunity toward the end of each session to ensure the curriculum reflects the abilities and learning styles of project attendees. She also ensures that all facilitators are culturally competent and trained to deliver material in a culturally responsive manner.

EXHIBIT 1
Stigma Defined



Source: Canadian Public Health Association, 2017.

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INSTRUCTOR GUIDANCE

Journeying Together—Unlearning is the New Learning

Annette Chrzaniecki, B.ASc, MPH (Class of 2020)
Yoshith Perera, MBBS, MPH (Manager, Moyo Health and Community Services)
Shannon L. Sibbald, PhD (Associate Professor, Western University)

BACKGROUND

Immigration plays an integral part in the development of multiculturalism within Canada, with the majority of immigrants representing visible minority communities. Research shows Canada's newest settlers are more likely to experience health disparities and inequalities compared to non-indigenous and Canadian-born residents. Research further indicates that the access and quality of health services is commonly compromised when health care and/or service providers do not respond appropriately to language and cultural factors impacting newcomer health. Communities vary in culture, traditions, and language, however, are often grouped together. One approach will not fit all with the cultural and ethnic differences within these communities. Ellie is faced with the challenging task to develop a project curriculum that promotes newcomers' sense of belonging to the community. This teaching case highlights the importance of intersectionality, addresses stigma, and discusses the need for providers to apply anti-oppressive and antiracist practices when working with diverse communities. The case introduces strategies that can be employed as living processes by which newcomers may contribute as active stakeholders to the overall culture of learning and community well-being.

OBJECTIVES

1. Explore and reflect how personal biases, assumptions, prejudices, and privileges can lead to conscious or unconscious forms of discrimination and oppression.
2. Identify different approaches to designing a public health program that is culturally responsive, anti-oppressive, antiracist, and acknowledges stigma and trauma.
3. Apply different lenses (transferable knowledge) when working with diverse populations, including intersectional, newcomer, and social determinants of health lenses.
4. Explore how to use trauma- and violence-informed care when working with vulnerable populations, and how to address the different types of stigma.

DISCUSSION QUESTIONS

1. Everyone has, at some point, contributed to stigma without knowing it or meaning to. Can you share or think of a time where you spoke or acted in a way that could have caused stigma or discrimination? If so, what can you learn from this experience?
2. Unlearning our own attitudes, values and beliefs is a key theme throughout this case. What are some negative attitudes, values, and beliefs that are prevalent in society?
3. How do you think service providers can be more sensitive to the challenge's newcomers face, and how can they better support newcomers to navigating health services?

KEYWORDS

Cultural competent care; transferable knowledge; un-learning; intersectionality; stigma; oppression; racism; social and cultural determinants of health; trauma; trauma- and violence-informed care.

CASE 5

A Stakeholder Analysis: Developing an Indigenous-Specific Intercultural Competency Training Module (Part A)[1]

Andrea Dafel, MPH (Class of 2020)
Mark Speechley, PhD (Professor, Western University)
Nitin Mohan, MD, MPH (Assistant Professor, Western University)
Danielle Alcock, PhD (Assistant Professor, Western University)

It is a hot summer day in London, Ontario. As Nia Singh leans back in her chair and takes a big sip of water, she reflects on her extensive time working at the Southwestern Ontario Intercultural Education Centre (SOIEC). After working at the organization as an intercultural education specialist for several years Nia has recently developed a renewed passion for her work and she is looking to expand her project portfolio and take on a new project— redesigning the Intercultural Education Programs pre-existing Indigenous intercultural competency training module. Specifically, Nia determines the objective of the new training module will be to educate health care workers about the importance of intercultural competency within health care organizations. As Nia puts down her glass of water, she recalls the Indigenous-specific intercultural competency training module that had been developed at the Centre before she first started working there in 2014. Now more than ever, Nia believes there is a need for this type of module and is inspired by the prospect of a potential new project. As Nia begins to flip through old documents pertaining to the development of the Indigenous intercultural competency training module, she begins to realize that, unfortunately, much of the literature and evidence used to develop the original module is significantly outdated. As she continues reading, Nia also realizes the scope of updating this training module may be much larger than she originally anticipated, and she will likely require assistance. She decides to request help from Steven Miller, an experienced colleague who is well suited for the job and who she has worked with extensively on previous projects. Nia contacts Steven and he immediately expresses interest in helping update the training module. Nia and Steven schedule an initial meeting to begin brainstorming the necessary steps that need to take place throughout the module planning and development phases. They recognize that conducting a stakeholder analysis and formulating a stakeholder engagement plan will be the two most important steps in developing an Indigenous-specific intercultural competency training module. As they start finalizing their plans, Nia and Steven look at each other with nervous excitement—they know they have their work cut out for them.

BACKGROUND

Over the past decade, cultural competence has emerged as one strategy to address health disparities between populations of different racial and ethnic backgrounds. Cultural competency can be viewed as a broad framework that aims to improve the accessibility and effectiveness of

[1] *This case was written to accompany the Implementation Research: A Strategy for Developing Indigenous-Specific Intercultural Competency Training Programs (Part B) case. For the full continuity of the case please complete both Part A and Part B.*

health care services for marginalized populations (Truong et al., 2014). The concept of using cultural competence to improve health care emerged in the 1980s to address linguistic barriers between health care workers and clients (McCalman et al., 2017). Initially, cultural competence was defined as a "set of congruent behaviours, attitudes, and policies that come together in a health care system, agency, or among professionals that enable that system, agency, or professions to work effectively in cross-cultural situations" (Cross et al., 1989). It was understood that health care workers needed to be able to engage effectively in a cross-cultural context, and this required them to develop an awareness of cultural differences (McCalman et al., 2017). Since its conception, the theory and praxis of cultural competence has evolved significantly. More recently, the United States National Quality Forum defined cultural competence as the "ongoing capacity of health care systems, organizations, and professions to provide for diverse client populations high quality care that is safe, client- and family-centered, evidence-based, and equitable" (McCalman et al., 2017). Because of the significant importance of cultural competence, its scope has expanded beyond practitioner–client relationships to integrating cultural competence within multidimensional health care systems. To this end, a systems approach to cultural competence requires the integration of structure, attitudes, practices, and policies at all levels to ensure health care organizations and professionals work effectively within a culturally diverse environment. The ultimate goal is to ensure that every person has access to safe, high quality health care.

Through her work as an intercultural education specialist and head of the Intercultural Education Program, Nia aims to develop and implement intercultural competency modules for potential clients such as settlement agencies, universities, local public health units, and other not-for-profit organizations. To achieve this, Nia provides customized training that focuses on three main areas: introducing the concepts of intercultural competency, promoting effective communication within culturally diverse work environments, and understanding how intercultural competency concepts can be effectively integrated into an organization's work environment. The training modules she delivers are based on extensive qualitative and quantitative evidence conducted by various researchers from highly regarded academic and professional institutions. Ultimately, the Intercultural Education Program is conducted to recognize cultural diversity as an asset and to effectively educate people about intercultural competency concepts in order to improve organizational working environments.

Although Nia believes her work has merit, she is aware of the challenges associated with developing culturally competent training modules. From her experience working at the SOIEC, she has learned that cultural competence is a one-sided approach to understanding another culture that may require a specific set of skills or knowledge. This can be unattainable because no one individual can be fully competent of another culture or heritage. Likewise, a cultural competency model can result in a lack of knowledge of the context and variables that influence health and healthcare of diverse patients and communities negatively impacting their health outcomes (Fleckman et al., 2015). Instead, learning about other cultures should be an iterative process aimed at achieving equity for all individuals. Therefore, Nia is moving toward incorporating the concept of intercultural competence, which refers to the dual-sided learning of cultures rather than the adoption of a one-sided approach requiring people to substantially know another culture (Fleckman et al., 2015). An intercultural competency approach also allows for a greater understanding of others' worldviews and relies on an individual's ability to communicate and behave appropriately and effectively in new intercultural situations based on one's knowledge, skills, and motivations (Fleckman et al., 2015). Nia intends to use an intercultural competency framework when she develops training modules because she believes the

framework is geared toward a continuous learning process and a reciprocal understanding of culture.

After starting her position at the SOIEC, Nia realized the organization had previously developed a training module focused on Indigenous intercultural competence. As a result of her extensive experience researching and working with Indigenous communities, Nia believes the module should be modified and updated before it is used. Although Nia had always wanted to redesign the pre-existing training module, it was not until the winter of 2020 that she had adequate resources, including securing a government grant to undertake the project. At this time, Nia began to brainstorm all the necessary steps that had to be taken to develop a comprehensive training module. She believes the key objective of the training module should be to educate health care workers about the importance of cultural competency within health care organizations—with a specific focus on the Indigenous populations in Middlesex-London and surrounding areas—so these workers can better meet the health care needs of the local Indigenous people. Nia knows that to develop a training module that will be widely embraced, a variety of crucial steps need to be taken in the planning phase, with an emphasis on conducting a comprehensive stakeholder analysis. She appreciates that the results from this analysis will facilitate a better understanding of the individuals, groups, and organizations that will be most invested in this type of project and will help her better manage their engagement level so the project is successful. At the top of Nia's priority list are the Indigenous community members and Indigenous organizations that must be included in the stakeholder analysis and involved throughout the module development phase. Nia knows that because the SOIEC is not an Indigenous organization, it is especially imperative they develop an impactful Indigenous intercultural training module by consulting and partnering with Indigenous communities. Consequently, she will need to thoroughly research the best practice guidelines on collaborating with these communities so she can effectively form relationships with them as the module is developed.

At their meeting, Nia and Steven begin outlining the first step in the redesign process, which is to complete a literature review. To develop a training module based on current evidence and best practice guidelines, Nia knows they need to search the recent literature about the effectiveness of Indigenous intercultural competency training modules and the systemic barriers Indigenous people face when accessing health care services. Conducting this secondary research will be essential for gathering the background information they need for developing the appropriate context for the training module. The second step in the development process will be to synthesize and analyze the findings from the literature review to extract key themes. These key themes will then be used in later phases of the project that focus on developing interview guides for various stakeholders. Nia tells Steven the third and arguably the most important step in this process is to conduct a stakeholder analysis. As Steven sits in their meeting wondering about this type of analysis, Nia explains that engaging key stakeholders early in the project development process is important for its overall success. She emphasizes that actively engaging stakeholders significantly increases the likelihood that a project will meet its intended objectives. Nia expands on this and explains that a stakeholder analysis is a useful approach that helps elucidate the behaviours, motivations, interests, and investments of the relevant individuals, groups, or organizations. She says that this insightful information provides a better understanding about each stakeholder's power and influence and helps effectively manage their expectations throughout the process. Steven appreciates this explanation because it clarifies the need for this step.

Although conducting the stakeholder analysis will be one of the most critical steps in the development process, Nia tells Steven that to provide a complete project plan they also need to outline the other significant steps in the process. She explains that after the analysis is finished, they need to conduct key informant interviews with stakeholders such as Indigenous community members, different health care workers (e.g., nurses, physicians, occupational therapists, etc.), and academic professionals who research topics related to the project. Nia says that completing key informant interviews is necessary for gathering a variety of perspectives related to the efficacy of intercultural competency training modules, the barriers faced by Indigenous people accessing health care services, and the barriers faced by health care workers who treat Indigenous patients. Nia emphasizes it is especially important to hear from Indigenous communities because the content of the module focuses on Indigenous populations. Nia mentions that they should consider partnering with Indigenous organizations during the development process to ensure the content of the training module aligns with traditional Indigenous knowledge and practices. Nia knows that in the final stages of the project she and Steven will need to spend an extensive amount of time analyzing the results from the literature review and key informant interviews and then incorporate their findings into the comprehensive training module.

SPECIFIC AREA OF INTEREST

To develop the Indigenous intercultural competency training module, Nia and Steven begin by completing a literature review. They focus the review on three areas—the effectiveness of cultural competency training in health care settings, the health discrepancies between Indigenous and non-Indigenous people, and the barriers Indigenous people face when accessing health care services. The findings from the review will provide them with the appropriate context and background information for developing a well-informed training module.

Cultural Competency Training

Nia and Steven begin the literature review by researching the effectiveness of cultural competency training modules within health care organizations. Nia finds the first piece of important evidence—research by Beach et al. (2005)—which states that cultural competency training is a promising strategy to improve the knowledge, attitudes, and skills of health care professionals. Nia notes this article also presents strong evidence that cultural competency training impacts patient satisfaction. Nia and Steven also analyze the findings from an article by Truong et al. (2014), which concludes that interventions focused on improving cultural competency can improve patient/client health outcomes. Moreover, a randomized controlled trial conducted by Majumdar et al. (2004) assessed the effects of cultural sensitivity training on health care professionals and subsequently examined the satisfaction and health outcomes of patients from minority groups who had received care from sensitivity-trained health care workers. The results from their study highlighted that cultural sensitivity training resulted in increased open-mindedness and cultural awareness, and resulted in an improved understanding of multiculturalism and an improved ability to communicate with minority patients such as elderly patients, patients living in long-term care facilities and patients who primarily speak French (Majumdar et al., 2004). Overall, the study concluded that a cultural sensitivity training program can improve the knowledge, skills, and attitudes of health care workers, leading to improved health outcomes for minority patients (Majumdar et al., 2004). Nia and Steven found these results to be very promising, motivating them even more to develop the best training module possible.

Indigenous Health Disparities and Barriers to Accessing Health Care

In light of the literature related to cultural competency training modules, Nia and Steven believe they should continue their research by looking into the current health status of Indigenous people in Canada, making sure to research the barriers they face when accessing health care services. As Nia and Steven immerse themselves in the research process, they begin to acknowledge the extensive health disparities that exist between Indigenous and non-Indigenous populations. Indigenous Canadians self-report poorer health outcomes compared with non-Indigenous Canadians (Lafontaine, 2018). Research suggests that these poorer health outcomes are related to social inequalities, which may stem from a variety of factors including socioeconomic status, lack of connectivity with community, colonization, globalization, migration, loss of culture and language, and disconnection from the land (King et al., 2009). Epidemiological data reiterate these health inequalities and show that life expectancy for Indigenous people is as much as 15 years less than that for non-Indigenous people. These data also show that, compared with non-Indigenous populations, diabetes rates are almost four times higher for Indigenous people who live on reserve, tuberculosis rates are 270 times higher in Inuit populations, and opioid-related deaths are up to three times higher for Indigenous populations in British Columbia and Alberta (Indigenous Services Canada, 2018). This research aligns with Nia's knowledge base from previously working with Indigenous communities, that the poorer health outcomes Indigenous Canadians experience are a result of colonization and social inequalities.

Having previously conducted research related to this topic, Nia is aware that Indigenous people face a multitude of systemic barriers when accessing health care services. While completing the literature review and searching for articles about these barriers, Nia and Steven notice several themes emerge. The first key theme relates to cultural discrepancies between Indigenous people and non-Indigenous health care workers. For example, Wright et al. (2019) note that Indigenous mothers expressed concern that acute health care professionals did not acknowledge the need for their infants to receive holistic care. The article states that although the physical needs of the babies were met, the spiritual, emotional, and mental aspects of care were overlooked by attending health care professionals (Wright et al., 2019). Another article stated that physicians sometimes outwardly displayed their religious values in the examination room, which resulted in Indigenous patients feeling uncomfortable and discouraged about sharing their own values and beliefs (Jacklin et al., 2017). Another prevalent theme Nia and Steven found in the literature was the racism and discrimination Indigenous people face when accessing health care services. Notably, Indigenous people reported mistrust toward the health care system as a result of prior negative racist and discriminatory experiences, typically in the form of insensitive comments and behaviours (Nelson & Wilson, 2018). These discriminatory behaviours included health care providers preventing patients from conducting traditional ceremonies or providers withholding prescription pain medication because of a preconceived assumption that Indigenous patients would abuse this medication (Jacklin et al., 2017; McConkey, 2017). Another major literature review theme that Nia and Steven believe is important is the issue of appointment wait times and the duration of patient consultations with health care providers. Indigenous patients felt physicians did not spend enough time discussing their concerns and were unwilling to discuss multiple concerns during a single visit, which forced these patients to book multiple appointments (Jacklin et al., 2017). Nia and Steven were both alarmed by these findings but agreed this information would be very useful for helping them develop the training module. After reading these articles, they believe a training module for health care workers could help bridge the gap between Indigenous patients and these professionals. Satisfied with the evidence from their literature review, they decide they are ready

to complete the stakeholder analysis phase of the development process— Nia and Steven are both anxious and thrilled to take on this new challenge.

INDIGENOUS PARTNERSHIP

After gathering extensive information about Indigenous health inequities, Nia feels that before continuing with the stakeholder analysis they should research potential Indigenous organizations to partner with. Nia and Steven talked more about why Indigenous voices and perspectives needed to be included in this process. Nia noted, as non-Indigenous people working at a non-Indigenous organization, it is vital that they work with Indigenous people who can help inform the content that will be included in the training module. Research by Smylie et al. (2009) reveals that interventions aimed at helping Indigenous populations are often not successful because they lack an Indigenous holistic wellness perspective. The researchers found that federal, provincial, and regional public health interventions often fail to assist Indigenous communities because the strategies they use are externally imposed on these communities and do not consider local Indigenous understandings of health, illness, and traditional ways of sharing knowledge (Smylie et al., 2009). This evidence reiterates to Nia the importance of seeking a partnership with local Indigenous organizations.

Nia and Steven talk further about the issue of non-Indigenous people conducting research on Indigenous communities. The literature shows there are often contradictions between researchers' perspectives in addressing community health issues and an Indigenous community's specific priorities and goals (Lines & Jardine, 2018). Because most Indigenous health researchers and practitioners are not Indigenous, socioeconomic and power imbalances can be perpetuated and the effects of a colonial history can be propagated even more (Lines & Jardine, 2018). Additionally, non-Indigenous researchers often collect their data and essentially "use" the Indigenous community without helping the same community bring about any positive change or reap the benefits associated with the research. The lack of Indigenous representation in health research is detrimental to Indigenous peoples' well-being and can only be mitigated through genuine collaboration with Indigenous communities and by creating spaces for Indigenous voices on systems, values, and traditional knowledge (Lines & Jardine, 2018). To this end, Nia and Steven recognize that to use this training module to reduce negative health outcomes, they need to go beyond simply hearing Indigenous perspectives and must form a collaborative partnership with Indigenous communities. With this in mind, Nia and Steven begin to discuss potential Indigenous organizations they could partner with. They believe that establishing this collaborative partnership is the best strategy for ensuring the training module includes the most appropriate Indigenous content and does not propagate negative Indigenous stereotypes or systemic issues associated with Canada's colonial history.

SPECIFIC PROBLEM OF DECISION

Stakeholder Analysis

After researching local Indigenous organizations, Nia and Steven identify several that would be a good fit for the project and email them to inquire about collaborating on the project. From her previous experience developing and implementing other cultural competency and mental health awareness programs, Nia knows buy-in from relevant stakeholders is directly related to the overall success of a project. The most appropriate next step in developing the training module is to conduct the stakeholder analysis and then outline the stakeholder engagement plan. Accordingly, Nia reviews the necessary stages of a stakeholder analysis to ensure that she is sufficiently prepared. Nia believes that to compile a comprehensive list of stakeholders, they should also hold a brainstorming session with several other SOIEC colleagues. Nia knows this will be a valuable exercise because they will have the opportunity to hear multiple perspectives

related to the training module. In agreement, Nia and Steven send out an email requesting the help of their colleagues.

On Tuesday of the next week, Nia and Steven prepare for the meeting with their colleagues. They have come up with a list of potential stakeholders; however, they are excited to hear from their co-workers on the matter. Nia begins the meeting by introducing herself and Steven and then explains the purpose and focus of the training module. She discusses the objective of the meeting and why they have requested help. Standing at the front of the room, Nia states the aim of the session is to brainstorm a list of potential key stakeholders that should be involved in developing the Indigenous-specific intercultural competency training module. She tells her colleagues the ultimate goal of the module is to educate health care professionals about the importance of providing culturally competent care to Indigenous populations in order to improve the quality of care for these populations in Southwestern Ontario, particularly in Middlesex-London. Nia says, “Steven and I value your opinions and perspectives and we believe that hearing from you today will help us develop a diverse and comprehensive list of stakeholders. Thank you for taking the time to join us in this inaugural stage of developing this training module.” After Nia takes her seat, her colleagues immerse themselves in the brainstorming process. By the end of the meeting, the group identifies 10 key stakeholders they believe are the most critical in developing the training module. Steven and Nia debrief after the meeting and Steven says he now really understands the value of engaging other colleagues when completing a stakeholder analysis. Before heading home, Nia and Steven plan steps two, three, and four of the stakeholder analysis, which will take place the next day.

The next morning, Nia and Steven enter the office feeling rejuvenated and ready to complete the final steps of the analysis. According to Nia’s extensive research, the second step of a stakeholder analysis is to prioritize the stakeholders. To accomplish this, Nia and Steven discuss the importance of prioritizing stakeholders who may oppose the training module along with those who will most likely support it. The information Nia read in the Middlesex-London Health Unit’s *Engage Stakeholders Concept Guide* will help balance the various stakeholder perspectives while also helping identify the potential risks or challenges that may arise throughout the development process (Middlesex-London Health Unit [MLHU], n.d.). In addition, defining the role of each stakeholder in the project can help prioritize them properly. Nia and Steven write down the four different categories that stakeholders fall into according to the Tamarack Institute (2017): core stakeholder, involved stakeholder, supportive stakeholder, and peripheral stakeholder. To facilitate the process, Steven writes a brief description about each type of stakeholder under each category. He emphasizes a core stakeholder is someone who will be actively involved in developing the training module and may suggest ideas or potential modifications for it. An involved stakeholder is someone who will be consulted frequently throughout the development process and will be given the opportunity to provide in-depth feedback and suggestions (Tamarack Institute, 2017). These stakeholders will continue to be consulted on a regular basis throughout the development process. A supportive stakeholder is someone who is not directly involved in the development process but provides some form of support or input (Tamarack Institute, 2017). Finally, a peripheral stakeholder is someone who will be kept informed as the training module is developed but will be less involved in providing their feedback and ideas (Tamarack Institute, 2017). With a clear idea now about the various types of stakeholders, Nia and Steven are ready to categorize them accordingly.

After reviewing the 10 stakeholders they had discussed the day before, Nia and Steven place them into one of the four specified categories. To complete this task more efficiently, Nia and Steven decide to use a stakeholder wheel as a visual aid (Exhibit 1) (Ontario Agency for Health

Protection and Promotion (Public Health Ontario), Snelling & Meserve, 2016). To accurately prioritize each stakeholder, Nia and Steven systematically review the list of stakeholders and discuss where they believe each stakeholder should be placed on the wheel. After deliberating the priority of each stakeholder and placing them accordingly, Steven and Nia prepare to move to the third phase of the stakeholder analysis.

During this phase, Nia and Steven focus on the level of engagement required by each stakeholder. They transition into a discussion about how different stakeholders require different levels of engagement according to their priority level. For example, top priority stakeholders are considered core stakeholders that require more extensive levels of engagement than peripheral stakeholders. Nia and Steven apply criteria developed by the Department of Education and Early Childhood Development (2011) to identify four levels of engagement that can be used: inform, consult, collaborate, and empower. Next, Nia and Steven construct different engagement strategies for the different stakeholders according to their level of priority. For example, Nia says the Indigenous organizations they partner with will be a core stakeholder and will, therefore, fall into the fourth level of engagement: empowerment.

Before finalizing the engagement strategies for each stakeholder, Steven suggests plotting each stakeholder on a power–influence matrix (Exhibit 2) (Smith, 2000). Steven had come across this strategy when he was conducting his own preliminary research to understand the stakeholder analysis better. Steven explains to Nia they can use the matrix to place stakeholders into one of four different categories or quadrants: low interest/low power, low interest/high power, high interest/low power, or high interest/high power. Steven explains that plotting each stakeholder into the different quadrants will provide a visual aid to illustrate how different stakeholders may interact with one another, and that this will also help define the most influential and powerful stakeholders. Steven goes on to say that using the matrix will also help determine how to effectively manage and work with each stakeholder based on their level of power so that the training module is successful. After hearing this explanation, Nia thinks it is a useful framework and suggests they move on to that task immediately. Because Nia and Steven had already prioritized the stakeholders it was easy to plot each of them on the matrix already drawn on the whiteboard in Nia's office. They agree that completing this task is informative and will promote the overall success of the module. After plotting each stakeholder on the power–influence matrix they had a greater sense about how to engage each stakeholder.

Finally, Nia and Steven move on to the last phase of the process, which is to develop a stakeholder engagement plan. Nia reminds Steven that before engaging the stakeholders it is important that they have a clear project vision and purpose. To ensure they are on the same page, Nia reiterates that the purpose of the training module is to educate health care professionals on the importance of cultural competency so they can better provide safe and effective care to Indigenous patients. Referring back to the stakeholder engagement plan, Nia notes that different strategies will be used for different stakeholders based on their level of investment and priority. One of the most important engagement strategies will be with the priority populations (i.e., core stakeholders), which in this case are the Indigenous communities and health care workers. Therefore, Nia and Steven must take the time to build strong, trusting relationships with both populations. One engagement strategy that could be used is to conduct in-depth focus groups or key informant interviews with these two stakeholder groups. Nia and Steven believe this may be a good approach because it will provide health care workers and Indigenous community members with the space to openly voice their opinions, thoughts, concerns, and ideas about the training module. Nia emphasizes that hearing from these two populations is most important because they are the ones who will be the most significantly

impacted by the training module. Nia says that the engagement strategies for supportive or peripheral stakeholders may be less intense and could include completing questionnaires, surveys, or brief email/phone call interviews. After finalizing the engagement strategies, Nia and Steven both let out a deep sigh as they realize their stakeholder analysis is almost complete.

After a long day, Nia puts away the files on her desk and takes a minute to relax and reflect. She goes over the process of conducting a stakeholder analysis and thinks to herself that it was a very useful exercise. Now that it is complete, Nia has a clear vision about which steps need to be taken to develop the training module. Nia knows the next step will be to finalize which Indigenous organizations to partner with. She will contact the key stakeholders tomorrow and arrange focus groups/key informant interviews in order to accurately receive feedback about the training module. The experiences and stories the stakeholders share will be fundamental in building a sustainable training module that can be implemented successfully.

The next day, Nia contacts different Indigenous organizations and other stakeholders to begin building relationships with them and determine whether they are interested in collaborating on the project. After exchanging several emails with various Indigenous groups to explain the objective of the project and arrange some in-person meetings, Nia and Steven have determined which organizations they will partner with. The organizations are excited about joining the development team and providing their expertise in creating an Indigenous-specific intercultural competency training module.

Next, Nia begins reaching out to other key stakeholders to determine whether they want to participate in an interview pertaining to developing the module. Fortunately, the Indigenous organizations are also able to provide Nia and Steven with a list of pertinent contacts. Luckily, after sending out many emails, Nia receives several responses from different stakeholders offering to participate in key informant interviews. Nia, Steven, and members from the Indigenous organizations immediately get to work developing interview guides. Nia explains to the development team that the purpose of these interviews is to hear perspectives from Indigenous people and health care workers related to their experiences accessing health care services and treating Indigenous patients, respectively. The secondary objective is to listen to their thoughts and opinions about whether the intercultural competency training module can help bridge the practitioner–patient gap between health care workers and Indigenous communities.

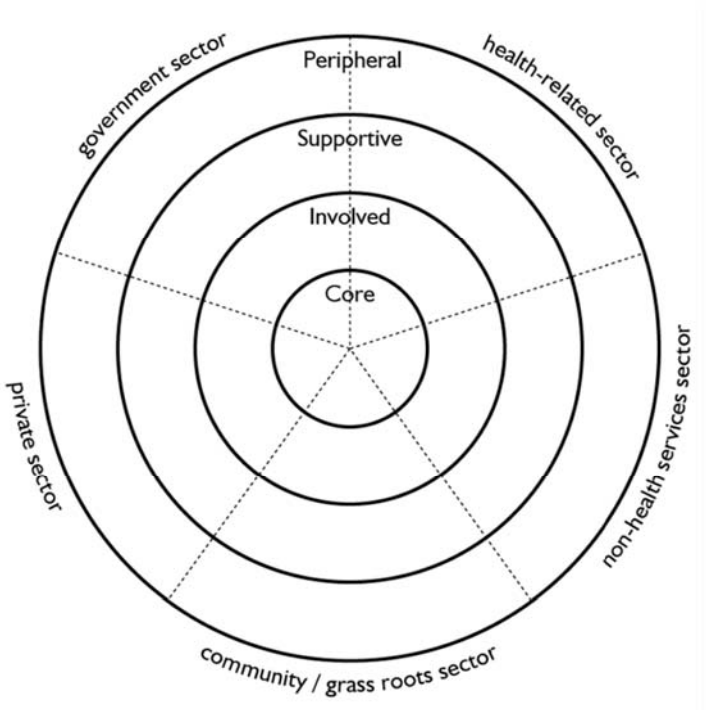
After completing several interviews and gathering many perspectives, Nia, Steven, and members from the Indigenous organizations develop a pilot version of the training module that will first be implemented on a small scale and then revised and implemented on a larger scale. Nia and Steven are extremely excited about this new module and are ready to take all the necessary steps to ensure the implementation process is sustainable and successful.

CONCLUSION

Nia knows that time is of the essence for finalizing the development of the training module. After spending an extensive amount of time planning it, she recognizes the hardest part is yet to come and that she needs to devise an effective implementation strategy. Although she has a few ideas, she still needs to review each option and finalize the process. Nia realizes the main challenge will be buy-in from health care workers and health care management teams. Consequently, her communication campaign must effectively market the training module and must demonstrate the need for the program. However, before she gets ahead of herself, she

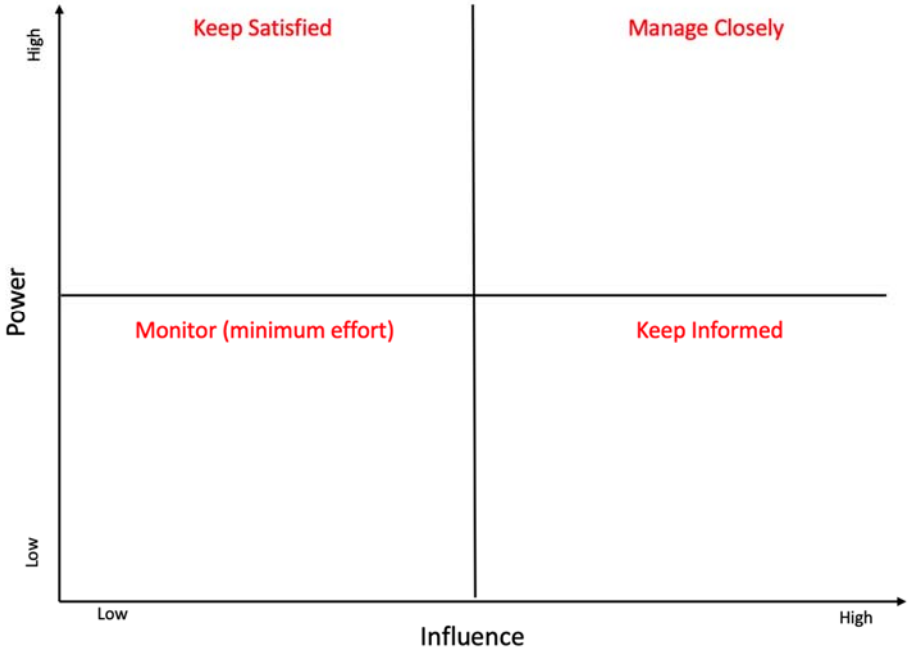
must determine the most effective implementation strategy to use, and she plans to do this when she returns to work tomorrow.

EXHIBIT 1
Stakeholder Wheel



Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Snelling & Meserve (2016).

EXHIBIT 2
Power/Influence Matrix for Stakeholder Prioritization



Source: Author created from Smith, 2000.

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INSTRUCTOR GUIDANCE

A Stakeholder Analysis: Developing an Indigenous-Specific Intercultural Competency Training Module (Part A)

Andrea Dafel, MPH (Class of 2019)
Mark Speechley, PhD (Professor, Western University)
Nitin Mohan, MD, MPH (Assistant Professor, Western University)
Danielle Alcock, PhD (Assistant Professor, Western University)

BACKGROUND

The case focuses on developing an Indigenous-specific intercultural competency training module and outlines the steps needed to achieve this, with particular emphasis on the importance of conducting a stakeholder analysis and developing a stakeholder engagement plan. The protagonist of the case, Nia Singh, heads up the Intercultural Education Program at the Southwestern Ontario Intercultural Education Centre. After working at the organization as an intercultural education specialist for several years, Nia is looking to expand her project portfolio by redesigning the Intercultural Education Program's pre-existing Indigenous intercultural competency training module. Nia determines the objective of the new training module will be to educate health care workers about the importance of intercultural competency within health care organizations. Specifically, the module will focus on Indigenous populations and will aim to improve the quality of care they receive so their long-term health outcomes ultimately improve. Nia works with her colleague, Steven Miller, to complete a stakeholder analysis and engagement plan, and they use four different steps to accomplish this: 1) brainstorming all possible stakeholders who have a vested interest in the training module; 2) prioritizing and categorizing each stakeholder as a core stakeholder, involved stakeholder, supportive stakeholder, or peripheral stakeholder; 3) determining the level of engagement required for each stakeholder; and 4) determining which engagement strategies to use for each stakeholder. After completing the stakeholder analysis and engagement plan, Nia and Steven arrange to interview the key stakeholders in order to gather additional opinions, ideas, and perspectives related to developing the training module. These stakeholders include health care workers, Indigenous community members, and other relevant informants. Once the interview process is complete, Nia and Steven develop a pilot version of the training module that is ready to be implemented on a small scale. However, Nia and Steven know they still have their work cut out for them in terms of identifying an effective implementation strategy.

This case is intended to be a skills practice case with the primary objective of having students learn about conducting a stakeholder analysis and then learn about stakeholder engagement. By examining this case and completing the learning team activity, students will be able to understand the importance of stakeholder analysis and stakeholder engagement as they relate to developing an Indigenous-specific intercultural competency training module. Once students have acquired this knowledge, they will be able to apply stakeholder analyses and engagement strategies to developing a variety of public health programs. However, given that the training module focuses on Indigenous populations, the case will focus on concepts related to health equity and the barriers faced by Indigenous people when they access health care services. A

secondary learning objective is for students to acquire knowledge pertaining to intercultural competency, particularly in terms of its significance within the field of public health and how it can be used as a strategy for reducing health disparities for other marginalized populations.

OBJECTIVES

1. List and explain the steps required to complete a stakeholder analysis and engagement plan.
2. Apply knowledge garnered from conducting a stakeholder analysis to develop public health interventions.
3. Define intercultural competency and explain its importance in developing public health programs.
4. Discuss the importance of establishing Indigenous partnerships when non-Indigenous people and/or organizations are developing programs.

DISCUSSION QUESTIONS

1. What is intercultural competency and what is the benefit of using an intercultural competency approach rather than a cultural competency framework?
2. When developing an intercultural competency training module, who are the key stakeholders that should be included throughout the development process?
3. Why did you choose these stakeholders and why do you think they will be invested in the project? What knowledge/experiences/resources do you think they will provide that will be beneficial in developing the module?
4. What level of engagement do you think each stakeholder requires? Describe the potential engagement strategies (i.e., minimal engagement to extensive engagement).
5. Why do you think it is important to complete a stakeholder analysis when developing public health interventions/programs?

KEYWORDS

Health equity; marginalized populations; intercultural competency; health care worker education; stakeholder analysis and engagement.

CASE 6

A Rapid Risk Assessment Tool: Determining the Risk of New/Emerging/Re-Emerging Infectious Diseases in Canada[1]

Christina Di Carlo, BScH, MPH (Class of 2020)
Rukshanda Ahmad, MBBS, MHA (Medical Advisor, Public Health Agency of Canada)
Julie Thériault, RN, BScN, MScPH (Nurse Consultant, Public Health Agency of Canada)
Regna Darnell, PhD (Professor, Western University)

It is an early Monday morning in January, and Dr. Anna Moreno is preparing to lead the monthly meeting for the Public Health Risk Sciences Department at the Public Health Agency of Canada (PHAC). Her role as the Department Manager includes managing weekly meetings and advising colleagues and upper management when to use a Rapid Risk Assessment (RRA) tool to respond to any emerging infectious diseases that are relevant to Canadians both domestically and abroad. Not much has been reported at recent meetings regarding new, emerging, or re-emerging infectious diseases posing an urgent or immediate threat to Canadians. Anna decides to open her email one last time before the meeting to check her news feed and gasps when she reads the first headline. In response to outbreaks of severe respiratory and gastrointestinal symptoms within the Americas, and the more than 100 associated deaths over the past month, the World Health Organization (WHO) has declared an unknown infectious disease a Public Health Emergency of International Concern (PHEIC).

Statement from the WHO: On January 6, 2020, the Director-General of the WHO, on the advice of the International Health Regulation Emergency Committee, declared an unknown emerging infectious respiratory and/or gastrointestinal disease a Public Health Emergency of International Concern (PHEIC). The Emergency Committee has made the recommendation to declare a PHEIC due to significant increases in morbidity and mortality related to respiratory and/or gastrointestinal distress in certain regions of the Americas over a one-month period, with evidence of high person-to-person transmission. The Director-General advises surrounding countries to begin surveillance of respiratory and gastrointestinal symptoms and subsequently implement emergency preparedness responses (see Exhibit 1 for a detailed infectious disease description).

BACKGROUND

The PHAC is responsible for promoting and protecting the health of Canadians through leadership, partnership, innovation, and action in public health. The Public Health Risk Sciences Department focuses specifically on new, emerging, and re-emerging infectious diseases. As Department Manager, Anna is tasked with responding to global cases of disease emergence relevant to Canadians and developing an evidence-informed public health response, while being mindful of available resources, time constraints, and research knowledge gaps. To minimize the impact of time and resource constraints, it is essential to proactively evaluate and analyze the risk an infectious disease may pose to society, systems, and individuals. To evaluate this risk,

[1] *This case uses fictitious identities, department names, and case information.*

the Public Health Risk Sciences Department has created an RRA tool that describes risk in terms of likelihood and impact. This tool is currently in the preliminary stages of development and is being tested and refined; however, it is used internally to assess disease risk. This tool helps estimate risk, reveal the risk drivers, and identify knowledge or data gaps, and it provides a scientific basis for discussion to help its users gain a shared understanding of the issue. With the recent PHEIC declaration, it will be Anna's responsibility to recruit an RRA working group from her department to contribute to the PHAC's public health response to the outbreak.

In addition to managing the Public Health Risk Sciences Department at the PHAC, Anna is the lead of the RRA working group. She is an epidemiologist with experience in infectious disease management and emergency preparedness. Anna played a large role in the initial development of the RRA tool over 5 years ago and has since been refining and adapting the tool as necessary. The RRA working group meets monthly to discuss and monitor new, emerging, or re-emerging infectious diseases that potentially pose a risk to Canadians. The overall goal of the working group is to practise a consistent approach to using standardized public health RRA tools for assessing infectious disease events. The working group functions at the federal level; therefore, the scope of the project includes infectious diseases relevant to all Canadians domestically and abroad. The working group aims to produce two possible risk measurements: the risk to Canadians travelling to countries that have an infectious disease event, and the risk within Canada after an infectious disease is introduced.

Anna read the WHO statement over and over again. She was aware there had been unusual increases in respiratory and gastrointestinal illness within the Americas; however, the magnitude of disease spread and high mortality rate were unexpected. The update included recommendations to Canada and surrounding countries to increase surveillance and implement or prepare an appropriate public health response. Anna's meeting with the working group is in the next hour, and she will need to have a plan ready to assign tasks and present background research on the likelihood and impact of such an infectious disease outbreak in Canada. She will then have to communicate these findings to upper management and the public.

RISK ASSESSMENT

The prevalence of emerging infectious diseases continues to increase with time, remaining a significant public health challenge exacerbated by changing environmental factors, most notably by globalization and the climate crisis (Ogden et al., 2017). This upward trend emphasizes the importance of building our capacity to recognize and respond to identified pathogens to successfully manage disease occurrence. In the case of an outbreak, time sensitivity makes it essential to effectively manage and assess this constant influx of information and assess case reports of infectious diseases that may pose a larger threat to other species (Morgan et al., 2009).

The European Centre for Disease Prevention and Control defines risk as a combination of the consequences (impact) of an event or incident (hazard/threat) and the associated likelihood (probability) of a harmful effect to individuals or populations (European Centre for Disease Prevention and Control, 2011). There are three main steps to analyzing a risk: hazard identification, risk assessment, and risk management. These steps are undertaken while maintaining risk communication throughout the process. Firstly, hazard identification involves determining the capacity of an agent to cause increases in morbidity and mortality. The second step—risk assessment—can determine how prepared a region will be for risk management, emphasizing why it is important to conduct this step promptly and effectively. Lastly, risk management refers to the decision-making process at the political, social, and economic levels.

The PHAC defines public health risk assessment more specifically as “the systematic process of evaluating the potential risk associated with a particular event or issue of health concern, and the factors that influence it” (Ahmad et al., 2019). This public health risk assessment includes two main elements: exposure assessment and hazard characterization. Exposure assessment is designed to quantify the likelihood component of a risk assessment, estimating the chances of the event occurring within Canada. Hazard characterization is designed to quantify the severity component of risk assessment, estimating the impact of an event when it occurs. These outcomes are collectively integrated to arrive at a risk characterization that considers both the likelihood and severity of the infectious disease in question.

A standard, comprehensive risk assessment can take years to complete. These types of risk assessments are typically heavily based on existing research and typically completed externally by academic institutions. A challenge that arises from a standard public health risk assessment is that the unknown or under-researched diseases will not be assessed in a situation of limited or low-quality evidence; therefore, the potential risk of new or emerging diseases will not be captured. Adding the “rapid” component is extremely significant when implementing an RRA and determining how this risk assessment will function to support and inform public health decisions and responses.

THE RAPID RISK ASSESSMENT TOOL

The RRA is a core public health function, critical to emergency preparedness and evidence-informed decision-making within the early stages of an infectious disease event. The RRA tool serves to estimate the likelihood that an infectious disease will be introduced to Canada and to estimate the potential impact of this introduction to domestic and travelling Canadians. How rapid does a rapid risk assessment need to be? Typically, this RRA is conducted in the first 24 to 48 hours of a domestic or international public health event (Ahmad et al., 2019). The outcome of the RRA can help determine whether a response is indicated, the urgency and magnitude of this response, and the design of critical measures. Finally, it can help inform further approaches to managing the event. This ultimately helps reveal the risk drivers, identify public health priorities, and inform appropriate control measures. There are some clear limitations with any RRA, including the rapid turnover of evidence and evolving circumstances that may cause the assessment to become quickly outdated. Additionally, although the RRA commonly captures re-emergences of infectious diseases, it may also identify novel diseases that are widely unknown to science, which introduces difficultly when scientific knowledge is limited. In the case of limited existing research, the PHAC’s RRA tool relies heavily on obtainable observational data and/or expert knowledge.

The RRA tool separates risk into international traveller risk and domestic risk, as well as assesses the likelihood and impact criteria for defining risk within these categories. Below is a short description of the categories used to assess risk; however, a more detailed version of the algorithm used is referenced in Exhibits 2 and 3 (Ahmad et al., 2019).

Canadian Traveller Risk (Exhibit 2)

- Likelihood: is exposure abroad likely and are travellers susceptible?
- Impact: is there significant potential for the disease to become severe and widespread among travellers?

Domestic Canadian Risk (Exhibit 3)

- Likelihood: is introduction into Canada likely and do conditions exist to support transmission in Canada?
- Impact: is there significant potential for the disease to become severe and widespread among Canadians?

Once the RRA is completed by Anna's team, the Public Health Risk Sciences Department will communicate the findings to upper management, who will be responsible for disseminating the information to the public. In this stage of risk communication, it is crucial that public health representatives minimize panic within the public but also ensure the safety of Canadians.

CASE STUDY: ZIKA VIRUS

This case study is based on real world events.

The need to refine and adapt the RRA was revealed at the PHAC after the re-emergence of Zika virus disease in Canada in 2016. Zika virus disease was first identified in 1947 when scientists in Uganda isolated the virus in samples taken from a sentinel rhesus monkey during routine surveillance for yellow fever in the Zika forest (WHO, 2019). The first human cases were detected in Uganda and Tanzania five years later; however, the virus was not considered a significant threat to human health.

Infectious Agent

Zika virus disease is a mosquito-associated flaviviral disease caused by Zika virus. It is related to other *Flaviviridae* viruses, including those that cause Japanese encephalitis, West Nile fever, yellow fever, St. Louis encephalitis, and dengue fever. *Aedes aegypti* mosquitoes are the primary vectors of Zika virus; however, they are largely restricted to tropical and subtropical regions (PHAC, 2019b). Although other *Aedes* species, specifically *Ae. albopictus*, are capable of transmitting Zika virus, these mosquito species do not live in Canada (Infection Prevention and Control Canada, 2020).

Clinical Presentation

Many people infected with Zika virus are asymptomatic, and severe disease and case fatality rates are low. Common symptoms of a mild infection are fever, rash, arthralgia, and conjunctivitis. Cases of Guillain-Barré syndrome, a rare neurological autoimmune disorder that may lead to nerve damage, have been reported in patients after Zika virus infection. Additionally, Zika virus is a confirmed cause of microcephaly (having a small head with abnormal brain development) and other severe fetal neurological complications (PHAC, 2019b).

Outbreaks

Sporadic cases of Zika virus disease in Africa persisted until the first large outbreak was reported on Yap Island in 2007, with four other islands in the Pacific also reporting disease outbreaks in 2013 and 2014 (WHO, 2019). Until this time, only 14 cases of Zika virus disease were documented worldwide, whereas now there are thousands of cases. In 2015, the Pan American Health Organization (PAHO) published an epidemiological update titled "Neurological Syndrome, Congenital Malformations, and Zika Virus Infection" that highlighted recent increases in Guillain-Barré syndrome in several countries of the Americas (PAHO/WHO, 2015). Canada began surveillance for Zika virus disease in 2015 but only reported 19 cases that year. As of January 21, 2016, Brazil had reported 3,893 microcephaly cases and 49 deaths associated with the virus (Kindhauser, et al, 2016). Zika virus disease was declared a PHEIC in February 2016 in response to the significant increase in neurological disorders reported in Brazil, which was mirroring the

previous outbreak in the Pacific Islands (PAHO/WHO, 2016). In 2016, Canadian cases spiked to 468, compared with the 19 cases reported in 2015. Because pregnancy outcomes are not reported to public health authorities in Canada, pregnancy and fetal outcomes of Zika-infected mothers linked to this outbreak are not generally known (PHAC, 2019b).

Transmission

In addition to vector-borne transmission, vertical disease transmission from mother to baby was established as a route for virus passage after cases of children with microcephaly were born to Zika-infected mothers in the Americas. There have been no reported cases of transmission. A new form of transmission was identified in a laboratory-confirmed case in the United States shortly after Zika virus disease was declared a PHEIC. Zika virus disease was diagnosed in someone who had no history of travel to regions with Zika virus circulation and who lived in a region where meteorological conditions could not support such mosquito activity (PAHO/WHO, 2016). This case was confirmed to be sexually transmitted. By the middle of 2016, locally acquired cases were confirmed by more than 20 countries in the Americas (PAHO/WHO, 2016).

The Rapid Risk Assessment

Given the rapidly evolving Zika virus epidemic, it was clear the efficacy of the RRA needed to be re-evaluated for future use. When first used for Zika, the tool indicated that the risk to Canadians was low. However, with an apparent rise in cases in Canada in 2016 and information regarding sexual transmission, it was clear the risk assessment needed to be repeated. This case depicts the importance of conducting several RRAs over the course of an epidemic when information and public health circumstances are evolving rapidly. When comparing the outcomes of the RRA for Zika virus disease in 2015 with the outcomes in 2016, it is clear how research discovery and evolving worldwide epidemics can influence the potential risk of emerging diseases to Canadians. Exposure likelihood and disease impacts must also be reconsidered and re-evaluated over time. For example, during the Summer Olympic Games in Brazil in 2016, the number of Canadian travellers visiting regions with Zika virus circulation were predicted to be much higher compared with the same period in 2015, thereby increasing risk exposure. It is clear that changing environments, evolving circumstances, and novel research are all dynamic components that will impact the risk of infectious diseases to Canadians and alter the outcome of risk assessments. This case study emphasizes the importance of completing multiple risk assessments after the initial RRA to capture the complexities of evolving information and circumstances.

THE MEETING

Anna spends the remainder of her morning researching the unknown disease, finding limited academic evidence and few literature reports about it. With this scarcity of scientific information, she understands she will need to defer to the expert knowledge of her team members. She worries that the results of conducting the RRA will mirror the performance of the tool's assessment of the Zika virus, which did not indicate a high disease risk to Canadians before the outbreak in 2016. The working group consists of two epidemiologists, one medical doctor, one nurse, and one zoonotic disease specialist. Anna notes that when deferring to expert knowledge, she may encounter difficulties with potential biases associated with their expert opinions. Anna knows she will have to facilitate a seamless meeting while filtering out the biases and balancing the perspectives of the experts at the table. With the information currently available on this unknown emerging infectious disease, how will Anna prioritize expert opinions on the missing information? Once the assessment is complete, how will Anna communicate these findings to upper management? How will Anna then advise upper management about disseminating the findings to the public, given that they are working with limited evidence?

CONCLUSION

Despite the past performance of the algorithm and current knowledge gaps about the disease of interest, Anna and the RRA working group know they have limited time to begin the assessment of the new outbreak. The next 24 to 48 hours will be crucial to setting the landscape of PHAC's response to the PHEIC and will further contribute to shaping public risk perceptions about an unknown emerging infectious disease.

NEXT STEPS

Based on the case information, complete the domestic and international risk assessment tools in Exhibits 2 and 3, using Exhibit 1 for guidance. If information is missing, use the internet to source scientific evidence to fill the knowledge gaps. Draft a statement that you will communicate to the public regarding your RRA findings.

EXHIBIT 1
Unknown Emerging Infectious Disease Profile

Statement from the WHO: On January 6, 2020, the Director-General of the WHO, on the advice of the International Health Regulation Emergency Committee, declared an unknown emerging infectious respiratory and/or gastrointestinal disease a Public Health Emergency of International Concern (PHEIC). The Emergency Committee has made the recommendation to declare a PHEIC because of significant increases in morbidity and mortality related to respiratory and/or gastrointestinal distress in certain regions of the Americas over a one-month period, with evidence of high person-to-person transmission. The Director-General advises surrounding countries to begin surveillance of respiratory and gastrointestinal symptoms and subsequently implement emergency preparedness responses

Case Information in the Americas

- The first case was reported in Brazil on November 30, 2019. A middle-aged woman reported severe influenza-like symptoms and respiratory distress. In the past seven days, she ate at the local mall and visited a friend who had two illegal pet birds in her home.
- As of January 6, 2020:
    - Case count: 687
    - Deaths: 117

Infectious Agent
The infectious agent is thought to be an avian influenza subtype A virus. Although avian viruses do not normally infect humans, subtypes such as H5N1, H9N2, and H5N6 have caused serious illnesses in people. The origin of this virus is not known; however, the outbreak began in Brazil in a person who had been in the house of a friend who had two illegally adopted pet birds.

Transmission Modes

1. Vector-borne: Although the primary vector has not been identified, other avian influenza viruses have been transmitted from unprotected contact with infected birds or contaminated surfaces.
2. Airborne/droplet: Human infections with bird flu viruses may occur if the virus enters the eyes, nose, mouth, or airway. This can commonly occur through droplet transmission.
3. Person-to-person: The person-to-person spread of avian influenza viruses has been rare. The current cases in Brazil are located within the same region, and a number of cases have been linked to a potential exposure from an infected member of the same household.

Clinical Presentation
So far, reported illnesses have ranged from mild to severe. Insufficient testing has been done to identify asymptomatic cases because the infective agent is speculated to be an avian virus but has yet to be confirmed. Almost all affected people have experienced at least one influenza-like or respiratory symptom. Symptoms include influenza-like illness (e.g., fever, cough, sore throat, muscle aches) that is sometimes accompanied by nausea, abdominal pain, diarrhea, vomiting, and/or severe respiratory illness (e.g., shortness of breath, difficulty breathing, pneumonia, acute respiratory distress, viral pneumonia, respiratory failure), neurological changes (altered mental status, seizures), and the involvement of other organ systems (Centers for Disease Control and Prevention, 2017). Some people fully recover without severe or long-lasting complications; however, others have long-term respiratory complications or die. Approximately

40% of cases have been categorized as severe and 60% categorized as mild. Severe and fatal cases are more common in people aged 60 or older or in people who have underlying health conditions.

Prevention
The best way to prevent infection with avian influenza A viruses is to avoid sources of exposure, such as direct or close contact with infected poultry or surfaces that may be contaminated. Antiviral drugs may be able to reduce the severity and length of illness, if taken early enough. To prevent being exposed to any avian influenza virus, the PHAC (2019a) recommends:

- Avoiding contact with birds (alive or dead), including chickens, ducks, and wild birds, and avoiding high-risk areas such as poultry farms and live animal markets, including areas where poultry may be slaughtered, when you are travelling to an area where avian influenza is a concern.
- Using alcohol-based hand sanitizer and washing your hands frequently with soap and warm water for at least 20 seconds.
- Practising proper cough and sneeze etiquette, such as covering your mouth and nose.
- Monitoring your health regularly; if you develop influenza-like symptoms and you may have come into contact with the avian virus while travelling, tell border services or a quarantine officer.

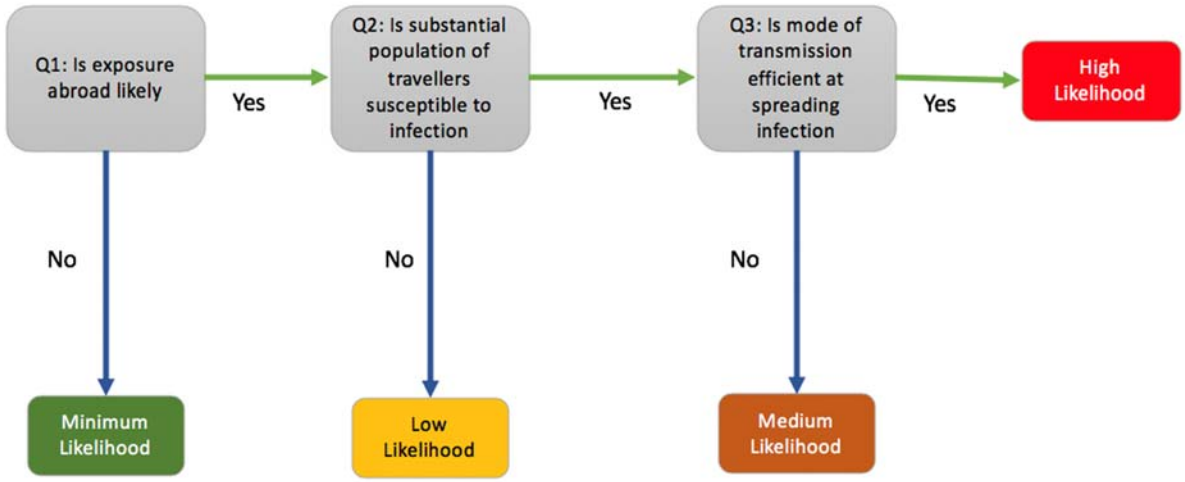
Treatment
Broad spectrum antiviral drugs and supportive therapies have been the gold standard treatment method so far in Brazil.

Travel
Travel volumes to the Americas are high—Canadians make an estimated 7.3 million annual visits to the Caribbean, Mexico, and Central and South America. The average age of travellers is estimated to be between 50 and 60 years of age.

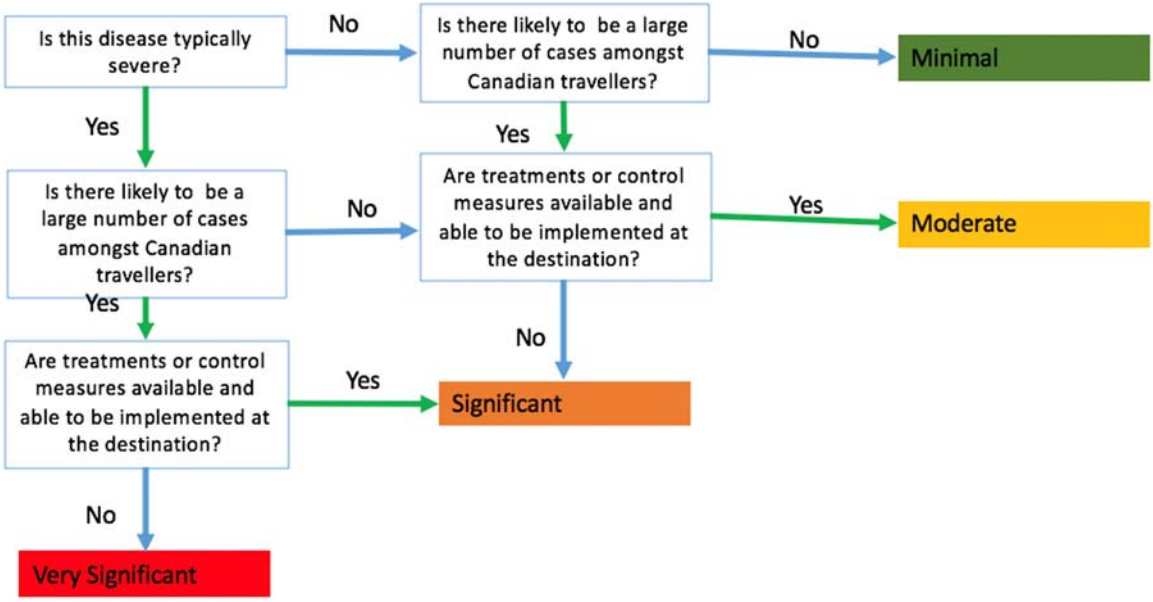
Source: author created

EXHIBIT 2
Rapid Risk Assessment Tool: Travellers

Algorithm 1: Likelihood of transmission abroad.



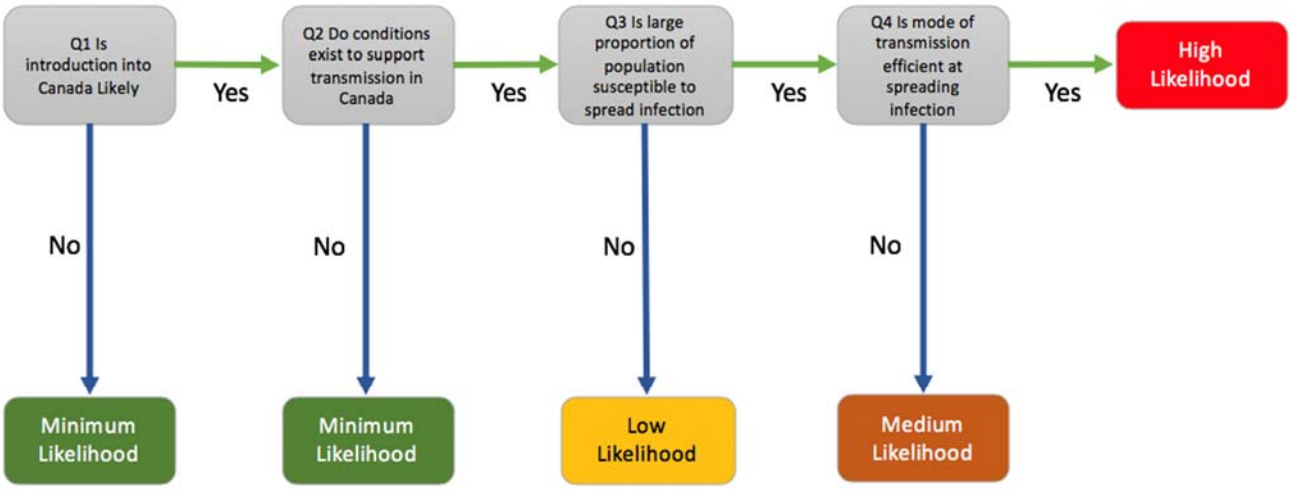
Algorithm 2: Impact for Canadian travellers.



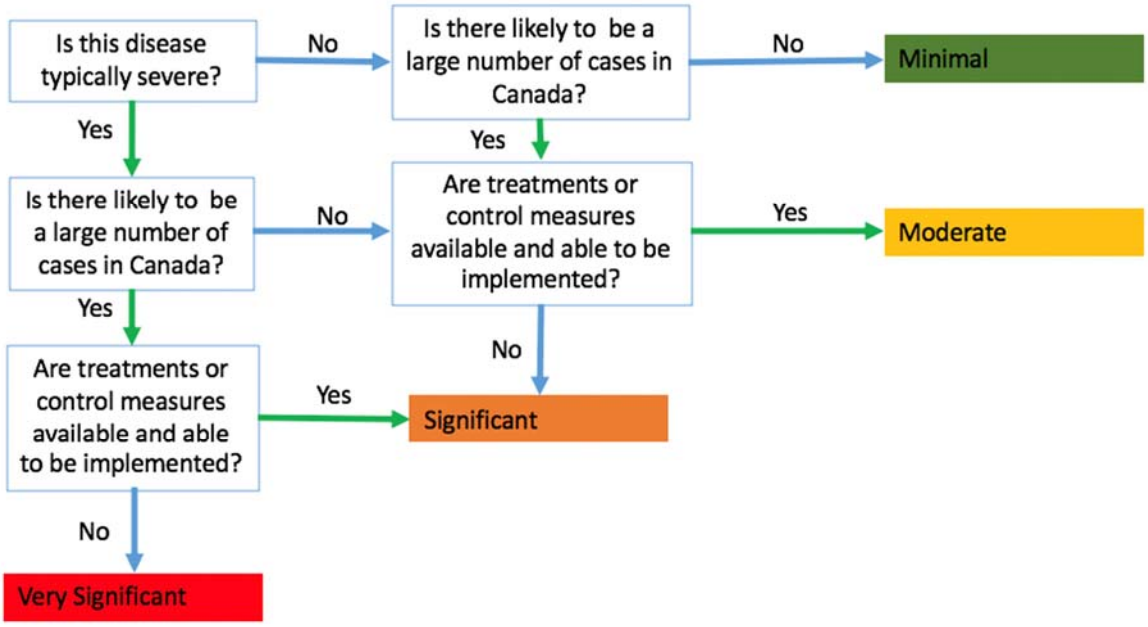
These algorithms are in the preliminary stages of development and continue to be revised because they are currently only used internally at the Public Health Agency of Canada (Vrbova, 2020).

EXHIBIT 3
Rapid Risk Assessment Tool: Domestic

Algorithm 1: Likelihood of transmission in Canada.



Algorithm 2: Impact for Canadian populations and subgroups.



These algorithms are in the preliminary stages of development and continue to be revised because they are currently only used internally at the Public Health Agency of Canada (Vrbova, 2020.)

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Schulich MEDICINE & DENTISTRY

INSTRUCTOR GUIDANCE

A Rapid Risk Assessment Tool: Determining the Risk of New/Emerging/Re-Emerging Infectious Diseases in Canada

Christina Di Carlo, BScH, MPH (Class of 2020)
Rukshanda Ahmad, MBBS, MHA (Medical Advisor, Public Health Agency of Canada)
Julie Thériault, RN, BScN, MScPH (Nurse Consultant, Public Health Agency of Canada)
Regna Darnell, PhD (Professor, Western University)

BACKGROUND

The protagonist, Dr. Anna Moreno, is an epidemiologist at the Public Health Agency of Canada (PHAC), where she manages the Public Health Risk Sciences Department. Her role includes managing monthly meetings and advising when it is necessary to use the Rapid Risk Assessment (RRA) tool to conduct an analysis of any emerging infectious disease relevant to Canada. The case presents a fictitious situation in which a series of outbreaks of an influenza-like infectious disease have occurred in certain regions of the Americas. In response to outbreaks of severe respiratory and influenza-like symptoms within the Americas and the more than 100 associated deaths over the past month, the World Health Organization has declared the unknown infectious disease a Public Health Emergency of International Concern (PHEIC). Anna has a meeting that morning, and she will need to prepare an approach to create a working group responsible for conducting an RRA for this unknown disease. Challenges arise because the existing scientific evidence and literature about the disease is limited and Anna will need to defer to the expert knowledge of her team while minimizing expert opinion bias. Given the general standards of RRAs, the assessment should be conducted within the next 24 to 48 hours. Knowing that the outcomes of the risk assessment will set the landscape for the PHAC's response to the PHEIC, Anna and her team will need to ensure the assessment is conducted in a timely and efficient manner. The results of the RRA will be presented to upper management before being disseminated to the general public. Finally, the case includes a case study, based on true events, of the initial application of the tool to the 2015 Zika virus disease outbreak. Although the initial assessment led to the conclusion that Canadians were at minimal risk, unexpected subsequent Zika outbreaks in 2016 revealed the need to refine and adapt the RRA tool. This case study emphasizes the importance of completing a risk assessment at multiple time points throughout the course of a disease to capture the complexities of evolving information and circumstances.

The pedagogical value of presenting this case is rooted in presenting a real-world situation and exposing students to the complexities of translating foundational public health practices to social contexts that do not allow for typical solutions. Although it is necessary to learn concrete knowledge in a classroom environment, this information serves as a foundation to build on through experience within the public health field. Being immersed in real-world situations is imperative for enabling students to visualize how this knowledge may not translate perfectly during a public health event. This case will complement the focus on emergency preparedness and monitoring and managerial control mechanisms emphasized in the course MPH 9010-Managing Health Services. This level of public health response provides direction and

Western

recommendations for all sectors in the face of urgent events, such as infectious disease outbreaks.

OBJECTIVES

Primary Objectives

After reading the case, students should be able to:

1. Explain the need and importance of a rapid risk assessment.
2. Discuss the evolution of infectious disease outbreaks and the impact of research development on rapid risk assessment.
3. Understand how tools are used to estimate the likelihood of a disease being introduced to Canada and the potential impact it might have on Canadians.

Secondary Objectives

1. Apply the outcomes of the risk assessment to inform future public health strategies and risk communication.
2. Develop the ability to suggest improvements for the rapid risk assessment tool and reflect on challenges faced during its utilization.

DISCUSSION QUESTIONS

Before Class

1. In what situations are rapid risk assessments, compared with standard risk assessments, most important?
2. What is the main purpose of a rapid risk assessment?
3. What are some limitations to rapid risk assessments?
4. What are some factors that may impact the outcomes of a rapid risk assessment over time?

During Class

1. Review of the Case Study: Zika Virus Disease
   - Discuss and brainstorm external factors that are likely to affect risk assessment over time. An example spider map is provided in the teaching note.

2. Future Challenges for Anna
   - Create a bullet point list to outline the challenges and a strategy to overcome them. An example list is also provided in the teaching note.

3. Risk Communication Class Activity
   - Assign one representative from each learning team to present the findings from the rapid risk assessment and make a statement to the Canadian public who has been waiting to hear from public health.

4. Debrief/Wrap-Up
   - Were there any challenges faced when using the tool?
   - Were there any weaknesses to the algorithms?
   - Is there anything not included in the algorithm that you believe should be considered?

KEYWORDS

Emergency preparedness; infectious disease; outbreak management; rapid risk assessment; risk assessment; rapid risk assessment tools; risk communication; Zika virus disease

CASE 7

Implementation Research: A Strategy for Developing Indigenous-Specific Intercultural Competency Training Programs (Part B)[1]

Eshana Ghuman, MPH (Class of 2020)
Mark Speechley, PhD (Professor, Western University)
Nitin Mohan, MD, MPH (Assistant Professor, Western University)
Danielle Alcock, PhD (Assistant Professor, Western University)

Nia Singh is head of the Intercultural Safety Training Program (ISTP) at the Southwestern Ontario Intercultural Education Centre (SOIEC). She is looking to expand the ISTP's impact to include an Indigenous-specific intercultural competency training program to help health care workers and Public Health professionals provide better and culturally safe care to their Indigenous patients. She has just looked over a final draft of the training module that she has been creating with her team over the past few months. After undertaking extensive research to determine the content of the module, she is eager to implement some of the recommendations made by her development team. Nia thinks about the valuable discussions she has had with the project's stakeholders and wonders how she can best ensure the training module will be implemented properly. Nia has worked at the SOIEC as an intercultural education specialist providing intercultural competence training to a wide range of clients such as settlement agencies, universities, police services, local Public Health units, hospitals, clinics, medical trainees and other not-for-profit organizations. Now, she has been tasked with implementing her Indigenous-specific training program and she is reminded of the challenges she has faced in the past when conducting training sessions for other clients. An important aspect of the training program will be to ensure the continued collaboration and engagement with Indigenous partners and ensure the program is delivered with the help of a trained facilitator who has an Indigenous perspective. With this in mind, she goes over the notes from her meeting the previous afternoon with Lea Spence, an Indigenous training coordinator from a local medical school, who reiterated the importance of continually evaluating these types of training programs. Reading her notes, Nia wonders whether she would benefit from a similar approach and she starts formulating a plan to monitor and evaluate her training program. Pondering this, she makes a quick note on her calendar to read helpful resources that will facilitate this goal. It is nearing the end of the summer and she realizes she will have to make important and timely decisions to set the next phase of her plan in motion.

BACKGROUND

Nia has been working at the SOIEC since 2014 and, as an intercultural education specialist, she has had the opportunity to provide intercultural competency training to numerous organizations to build intercultural competence in increasingly diverse workplaces. Part of her job also involves working with other researchers in the field. Through all of this, Nia has learned about the gaps in care provided to Indigenous patients. She believes her work will not be complete if

[1]*Part B follows Part A, titled, A Stakeholder Analysis: Developing an Indigenous-Specific Intercultural Competency Training Module. Part A describes the process undertaken by the protagonist to develop the training module, while Part B's focus is on the implementation of the training module.*

she does not address these gaps, especially because it is known that a lack of culturally relevant care leads to poor health outcomes for Indigenous patients (Harfield et al., 2018). Moreover, Indigenous patients face racism and discrimination in health care settings both at the systemic and at the interpersonal level, which creates significant and complex barriers to receiving high quality care and has direct negative consequences on their health outcomes (Durey & Thompson, 2012; Horrill et al., 2018). Therefore, Nia has decided to use the resources and tools available to her at the SOIEC to develop a comprehensive training module that addresses these barriers. For the better part of the summer, she has left no stone unturned while creating a research plan. She has conducted in-depth research and organized interviews with various key stakeholders to help develop the training module. Through these interviews, Nia has gathered valuable input from Indigenous community members, health care organizations, health care practitioners, and other key informants.

After extensive consultation with these stakeholders, Nia developed the following training module recommendations:

1. Training sessions should be led by a trained facilitator who has an Indigenous perspective.
2. Training should be approached as a continual process.
3. Close partnerships should be created with Indigenous organizations, community members, and health care workers when developing, implementing, and evaluating the training module.
4. Decolonization and antiracist approaches should be applied to module content and training facilitation.

Additional content recommendations were made and applied to the development of the training module, including:

1. Cultural knowledge such as local Indigenous languages, history and cultural ceremonies so healthcare practitioners can gain more familiarity with their patients and their culture.
2. Knowledge about the history and effects of colonization, racism, and discrimination. This aims to help the training participants address their own biases and help understand the unique challenges that their Indigenous patients might face while accessing healthcare.
3. Effective practices for communicating with patients, such as active listening and embracing ethical concepts including informed consent.
4. Knowledge on how health care practitioners can advocate for their Indigenous patients through organizational and policy-related changes and knowledge of how Indigenous health is incorporated into the federal and provincial health systems.
5. Information on Indigenous-specific resources available in the community for healthcare practitioners to better aid their patients in navigating the healthcare system.

Nia found these recommendations very valuable as she developed the training module and she also hoped to incorporate them effectively into her implementation plan.

The Intercultural Safety Training Program

The SOIEC is a not-for-profit organization that provides workplaces with the training and tools to succeed in culturally diverse environments. The Centre's services range from translation and interpreter services to the provision of online training certification. Nia is in charge of the ISTP, which offers training modules that are based on empirical research to promote intercultural competence in the workplace. As the SOEIC's intercultural education specialist, Nia has decided to expand the reach of the ISTP's training to include culturally competent and safe health care services for Indigenous people. Her primary role as the head of the ISTP is to develop and implement training modules for disparate clients, and this is an exhaustive process.

To achieve this, Nia undertakes extensive background research on the training topics, consults interested clients to gauge their expectations and mindset before the training session, prepares the training modules, and then facilitates the training sessions. She is constantly striving to improve her training sessions in an effort to increase client uptake and ensure workplaces are inclusive and culturally safe for everyone. She has been running an extensive campaign for the past two months to collect information that is critical to developing a new, Indigenous-specific training module. Her next steps include discerning the optimal approach for implementing the training program. Nia is considering utilizing implementation research methodologies to determine the effectiveness of her program, and she has also decided that developing evaluation criteria is an important part of this process. Nia has determined this step will help her address some of the challenges she has previously faced while conducting ISTP training sessions.

SPECIFIC AREA OF INTEREST

Intercultural Competence and Cultural Safety

Intercultural competence is an evolving topic in Public Health and can have multiple definitions depending on the context. Intercultural competence in health care settings is defined as "knowledge, information, and data from and about individuals and groups that is integrated and transformed into clinical standards, skills, service approaches, policies, and marketing programs that match an individual's culture and increase the quality and appropriateness of health care and health outcomes" (Davis, 1998). However, during the module development process, stakeholders emphasized that cultural competence tends to focus more on the attainment of certain skills and knowledge, which can be viewed merely as checkmarks to those attempting to master these skills. Such a mindset may not be as helpful or impactful in the long term. Thus, it is important to note that gaining intercultural competence does not mean acquiring a defined set of skills to achieve an end goal; rather, it is meant to be a continuous effort and a commitment to developing and inculcating culturally relevant and safe practices on the journey to achieving health equity. Furthermore, as described by Fleckman et al., (2015), intercultural competence is an iterative process that requires individuals to self-reflect on their attitudes and beliefs and utilize this continuous process to serve them in interpersonal interactions as well.

As noted by Churchill et al. (2017), there has been a move toward embracing the concept of cultural safety in health care training. Cultural safety was first introduced in New Zealand by a Maori nurse, Irihapeti Ramsden, and incorporates the concepts of cultural awareness, cultural sensitivity, and cultural competency (Exhibit 1) (Shah & Reeves, 2015). Cultural Safety, as described by Ramsden and Spoonley (1994), is a process wherein healthcare workers such as nurses should be cognizant of the influence their own culture can have on others while delivering care and recognizing the existing power differences. Cultural safety acknowledges the "physical, mental, social, spiritual, and cultural components of the patient and the community" (Polaschek, 1998) and takes into consideration the experience of the individual receiving care (Nguyen, 2008). It further includes self-reflection and the role of colonization, racism, and other structures that promote health inequities in Indigenous people (Churchill, 2017). Thus, cultural safety serves as a more holistic training concept and allows for continuous learning and introspection while also helping health care professionals acquire valuable skills and knowledge. Various cultural safety training programs, such as Ontario's Indigenous Cultural Safety Training program, exist across Canada. This training program is offered by the Southwest Ontario Aboriginal Health Access Centre and incorporates antiracist and decolonizing approaches to educate people working in health and social service settings.

Nia needs to consider using these culturally sensitive approaches as she implements the training module. Not only will this help ensure a culturally safe environment for Indigenous participants and facilitators, but it will also encourage non-Indigenous participants to reflect on

their own experiences. During the stakeholder engagement portion of the project, Nia was advised to talk to interested clients before the training and ask about their reasons for joining the program and their expectations for it. After the training, the participants and the training facilitator would then complete a follow-up session to assess their experience and what they learned. Nia and her project team believe this is an excellent strategy for evaluating and modifying the training program after it is implemented and for ensuring the training program is sustainable. They decide to hold a meeting the next week with Vanessa Anderson, the Indigenous Health Coordinator at Middlesex-London Health Unit (MLHU), to discuss ideas and determine the best implementation approaches.

Implementation Research

Implementation research is defined as "the scientific study of the processes used in the implementation of initiatives as well as the contextual factors that affect these processes" (Peters et al., 2013). Peters et al. (2013) also describe the importance of implementation research in terms of assessing and analyzing Public Health programs within various contextual factors in a real-world setting. These contextual factors can be socioeconomic, cultural, or political, or they can be a part of the health care system (TDR, Special Programme for Research and Training in Tropical Diseases, 2014). Implementation research is also instrumental in helping organizations recognize the practical challenges they face while implementing programs, and this research can help them gain an understanding about their own capacity and performance. Although implementation research is used mainly to assess the direct impacts of health care interventions within a global health context, it is flexible enough to be adapted to many Public Health and health care settings. It can be employed while developing policy frameworks, health promotion projects, or even while developing smaller community programs. In its *Implementation Research Toolkit,* the TDR, Special Programme for Research and Training in Tropical Diseases (2014) describes implementation research as a type of research that "addresses implementation bottlenecks, identifies optimal approaches for a particular setting, and promotes the uptake of research findings." Implementation research can, therefore, be valuable in helping organizations anticipate any challenges or problems that might occur with a health care or Public Health program. It makes the transition between the planning stage and the practical application of ideas and concepts more seamless. The toolkit helps the user improve skills in six areas (TDR, Special Programme for Research and Training in Tropical Diseases, 2014) and these six areas are summarized in the implementation research cycle (Exhibit 2):

- contextualizing implementation research issues
- developing an implementation research proposal
- planning to execute implementation research
- analyzing implementation research data
- communicating the findings and feeding them back into the health system
- monitoring and evaluating the project

Furthermore, for implementation research to be successful, it should be a collaborative effort and involve all appropriate stakeholders. In Public Health settings, these partnerships are built between the researchers, the project planners, the decision makers, and the target audience.

Nia believes that in the context of the training program, an implementation research approach can be modified to a smaller scale and a more specialized setting. This will ensure that the training intervention will improve the intercultural competence of health care professionals and subsequently lead to improved health outcomes and experiences for Indigenous patients accessing health care services. Nia is very excited to share this idea with her development team and decides to use the *Implementation Research Toolkit* and adapt it to the training program.

Even though the training program is almost ready to be delivered, she believes it should be measured for its effectiveness and impact on a smaller scale before the SOEIC makes it a permanent part of their catalogue. Because of the importance of Indigenous partnerships, she also wants to ensure the training module follows respectful and ethical criteria. By using implementation research, Nia will be able to develop a research plan with her Indigenous partners and present the findings to these partners and the SOEIC to truly ensure that the cultural safety training allows health care and Public Health professionals to provide better care for their Indigenous clients.

Before her meeting next week with Vanessa and Lea, Nia plans to review the toolkit, complete step 1 of the process, and contextualize her intervention plan using the diagram provided in the workbook (Exhibit 3). As described in the toolkit, she summarizes the following contextual factors, which she shares with her colleagues at the meeting:

1. **Socioeconomic and Cultural:** The participants of the training (the target audience) will come from varying socioeconomic strata (health care workers, hospital administrative staff, or trainees, etc.). However, health care professionals tend to be from higher socioeconomic strata in terms of education and income. The health of the target patients is greatly influenced by determinants of health such as lack of access to health care, poverty, racism, and discrimination. Indigenous patients are disproportionately affected by systemic and interpersonal racism while interacting with the healthcare system (Horrill et al., 2018). Additionally, there is a disparity between on-reserve and off-reserve care, wherein Indigenous patients living in remote areas have difficulties accessing healthcare due to lack of transportation and high physician turn-over, which makes building a patient-physician relationship difficult (Jacklin et al 2017). The participants are also anticipated to be from diverse cultural backgrounds and will therefore have varying degrees of knowledge about Indigenous health. Generally, there is a lack of knowledge about Indigenous cultures, languages, histories, and traditional healing methods. Healthcare practitioners are described to be uninformed about traditional knowledge and perspectives related to health and well-being (McConkey, 2017). This is an important contextual factor to consider, as the participants come from different socioeconomic backgrounds and will have varying knowledge base and training. Thus, while implementing the training, it is vital to make sure there is opportunity to discuss this not only through the training curriculum but also during the facilitation of the sessions as well. This could be through group training and giving participants ample opportunity to ask questions and interact with each other. It will also be important to gather quantitative and qualitative data from the participants in the pre-training, during training, and post-training phases to assess their thoughts on their level of knowledge.
2. **Stakeholders:** The relevant stakeholders to be considered include Indigenous and non-Indigenous health care trainees, health care, and Public Health professionals, as well as Indigenous patients, Indigenous organizations, Indigenous educators, and the SOEIC. For the implementation to be effective, Nia believes these stakeholders should be involved throughout training and in the post-training phase to assess the overall effectiveness of the program.
3. **Health system:** Relevant trainees from the health system will include Public Health unit employees, health care professionals, health care administrative staff, and medical trainees. The goal is to introduce training to these participants to ultimately improve health outcomes for Indigenous communities. Consequently, long-term healthcare outcomes need to be measured to assess the impact of the training program. Nia also needs to discuss effective ways to recruit participants with the team, such as advertising in medical schools, seminars or through social media.

4. **Political:** The current political landscape supports reconciliation with Indigenous communities in Canada. The Truth and Reconciliation Commission of Canada (2015) encourages Indigenous-specific training for people working in health care and other public sectors. Overall, this is supportive to the organization's efforts to improve healthcare outcomes for Indigenous patients. Looking at getting government funding for the program after its initial implementation is another factor to consider for the team.
5. **Physical factors:** Due to concerns about social distancing during the COVID-19 pandemic, training might be difficult to conduct in person. However, online training can be challenging to conduct because of technical issues and because sessions are likely less interactive. Consequently, the ability to deliver both types of sessions is important.
6. **Institutional:** The SOEIC is considering expanding its ISTP initiative to reach additional clients and collaborate with other organizations and institutions. This can help the organization with expanding their training program to more healthcare organizations across Southwestern Ontario. Additionally, it would be beneficial in terms of financial resources and harnessing additional perspectives and points of view.

Indigenous Partnerships

As she developed the Indigenous-specific training program, Nia realized even more how important it is to include Indigenous perspectives and voices in the development process. Nia's stakeholder engagement plan enables her to work with Indigenous experts, health care workers, and relevant community members to create appropriate recommendations and content for the training module. It is important for her to honour her Indigenous partners and the valuable information they have provided in developing the module. Consequently, she believes that when research on Indigenous issues is undertaken or Indigenous community programs are introduced, it is important to follow the "4 R" framework—respect, relevance, reciprocity, and responsibility—which was developed by the Kirkness and Barhnhardt (2001). First, there should be respect for the diverse insight provided by Indigenous community members. Next, the project or intervention should be relevant to the needs of these communities. Nia was able to gather recommendations and valuable knowledge for her training module through consulting community members and local Indigenous organizations. She further plans to consult them for her implementation plan as well as throughout the evaluation phase. The learning process should also be reciprocal so both the communities and the researchers gain valuable knowledge from each other. Finally, the responsibility should lie with the researchers to actively involve the target community and foster sustained partnerships with its members. Strong Indigenous leadership and involvement is also needed in health research because health care initiatives and programs are often developed without these perspectives, which further exacerbates the lack of culturally relevant care for Indigenous people (Lines & Jardine, 2018). Furthermore, building trust between the target community and researchers is an important component of community participatory research and promotes openness to learning from community members (Snijder et al., 2020). While formulating the implementation research methodology, Nia plans to involve the Indigenous educators and key informants she has been in touch with during the stakeholder analysis. She also plans to consult local Indigenous organizations during the development of her implementation research plan as well as during the evaluation phase to ensure it is sustainable and culturally safe for the Indigenous participants and the entire Indigenous community. Having a trained facilitator with an Indigenous perspective to deliver the program is also paramount to ensuring Indigenous voices are included in all discussions on Indigenous topics.

SPECIFIC PROBLEM OF DECISION

Nia has already been talking with the MLHU about conducting her first training session at the health unit in the next couple of months. She knows that their Indigenous Health Coordinator, Vanessa, might be able to help her with augmenting her implementation research plan.

Vanessa has described an implementation research project that the health unit has been using to assess the effectiveness of their Healthy Baby program. In Nia's quest to ensure her training program will be effective for multiple clients (Public Health organizations, clinics, hospitals, medical trainees, etc.), she decides to ask the health unit about how she can utilize a similar methodology. She believes it will be an effective way to monitor the program in different settings and see whether long-term benefits are observed, specifically in health care settings with health care professional–Indigenous patient interactions or in Public Health units catering to Indigenous clients.

A week later, Nia meets with Vanessa and the team to present her plan. Because the SOEIC is looking to expand its clientele and does not currently have the resources and personnel needed for conducting the research, they decide to conduct the small-scale implementation research project with the help of the MLHU. The team also discusses the possibility of asking their partners at the local Indigenous organization to help draft the research proposal.

Nia and her team draft the following list of considerations to be discussed at the meeting:

1. The primary focus is the engagement aspect of the program and its uptake by the target audience. Nia has previously worked with clients who were resistant to learning and reluctant to open themselves up to meaningful conversations or embrace the context of the training. She wants to encourage open conversations while also maintaining a culturally safe environment for Indigenous participants and training facilitators.
2. The aim of the program is to use a mixed-model format offering some sessions in person and some online. There will be an opportunity for self-learning as well. Therefore, different evaluation procedures might have to be developed for the different modes of information delivery.
3. It is important that measurable qualitative and quantitative variables be used to assess the effectiveness of the program. These assessments could include asking health care and Public Health professionals to describe their program experience, self-evaluate their new knowledge, and assess their perceived confidence in interacting with Indigenous clients. After the program, Indigenous clients who receive care from program-trained professionals should also be asked about their experiences and interactions, and compare their experiences to healthcare they've received prior to interacting with healthcare workers trained in intercultural competence. Criteria for measuring long-term improved health outcomes can also be developed.
4. The resources, time, and funding for the implementation research project need to be considered. This will include establishing avenues for collaborating with other Public Health units and Indigenous organizations to use the best information and expertise on the topic. While the initial implementation will likely be small-scale, these additional partnerships can help bring in more diverse perspectives if SOIEC decides to expand its reach. While this will be beneficial to the program, the team needs to consider their financial resources and perhaps look at obtaining more funding in the long term to make this a reality.
5. The program will have to be monitored continuously and a feasible evaluation plan will have to be developed.
6. The people involved with implementing the program should be cognizant of the political, social, cultural, historical, and local Indigenous context as they disseminate the training.
7. The delivery and content recommendations gathered during the stakeholder engagement process must also be considered when the implementation research study is conducted.

CONCLUSION

The next step for Nia and her team is to draft a research proposal to present to her organization and the MLHU. The proposal will be developed in conjunction with an Indigenous training expert

from a local Indigenous organization to ensure the proposal considers the historical and sociopolitical context of the training material and its impact on Indigenous communities. The team can use the research proposal to identify the resources needed and to source sufficient funding for a small-scale implementation program. In addition, the research proposal for the implementation plan will aid the project team in formulating a research methodology (pre- and post-intervention plans and specific variables to consider), identifying any barriers to the implementation plan, help formulate timelines, and plan the evaluation phase. After the meeting, Nia takes a deep breath and settles into her office; she is hopeful for the future and excited to see more opportunities to partner with Indigenous and local health organizations as a result of her efforts. Although the project is in its infancy, she believes this initiative will encourage the organization to expand its capacity and approach other ISTP projects in a similar way.

EXHIBIT 1

Conceptual Model Describing Cultural Safety in the Indigenous Context

Source: Shah & Reeves, 2015.

EXHIBIT 2
Implementation Research Cycle

Figure 1: The six steps of the implementation research cycle

Source: World Health Organization, 2014.

EXHIBIT 3
Contextual Factors for Implementation Research

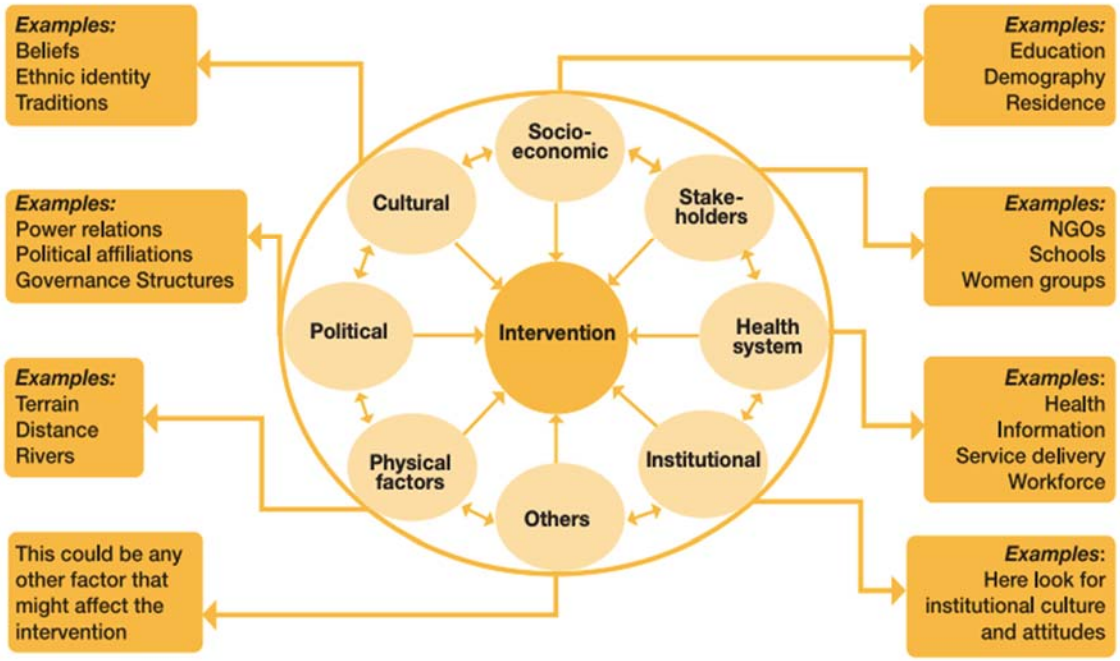

Figure 1: Contextual factors for implementation research

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Source: World Health Organization, 2014.

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INSTRUCTOR GUIDANCE

Implementation Research: A Strategy for Developing Indigenous-Specific Intercultural Competency Training Programs (Part B)

Eshana Ghuman, MPH (Class of 2020)
Mark Speechley, PhD (Professor, Western University)
Nitin Mohan, MD, MPH (Assistant Professor, Western University)
Danielle Alcock, PhD (Assistant Professor, Western University)

BACKGROUND

Nia Singh is an intercultural education specialist and leads the Intercultural Safety Training Program (ISTP) at the Southwestern Ontario Intercultural Education Centre (SOIEC). She has undertaken significant work with the ISTP developing and implementing training sessions and webinars to help clients make their workplace more culturally competent. Nia has recently observed that the ISTP could greatly benefit from including training materials to help health care practitioners provide improved health care to Indigenous patients. Indigenous people face numerous social, political, historical barriers while accessing healthcare services in Canada. Cultural differences can also lead healthcare practitioners to discriminate against their Indigenous patients and consequently, lead to worsening health outcomes (Harfield et al., 2018). Therefore, seeing the need for an Indigenous-specific program aimed at improving the intercultural competence and awareness of health care professionals, Nia contacted relevant stakeholders to help her research and develop a training module. With the background research and stakeholder input complete, Nia is finalizing the training module and delivery plan. She is now faced with the task of optimally implementing the training and assessing the challenges that may arise as the training is disseminated to its intended audience. During the implementation phase of the process, Nia collaborates with prospective clients to ensure the training module is used effectively and successfully fosters important dialogue about health equity and patient-centred care among health care professionals. At the end of the case, Nia decides to collaborate with the Middlesex-London Public Health Unit's Indigenous Health Coordinator, Vanessa Anderson, to draft an implementation research proposal so she can assess the impact of the new training program and evaluate it as it is disseminated in a practical, real-world setting.

This case is intended to provide students practice with contextualizing an implementation research plan so they can assess an Indigenous-specific cultural safety training program through an Indigenous lens. In addition, it will help students consider the value of multiple stakeholder perspectives while implementing these types of programs.

OBJECTIVES

1. Identify and predict the challenges of implementing an evidence-based cultural safety program in a Public Health Organization.
2. Apply the concepts of implementation research within an Indigenous-specific context to formulate an effective and sustainable plan for implementing this type of safety program.

3. Explain the importance, in an Indigenous context [perspective], of valuable community partnerships and stakeholder involvement to ensure sustained implementation of an Indigenous-specific intervention.
4. Distinguish between intercultural competence and cultural safety and discuss some ways in which cultural safety can be incorporated into the training program.

DISCUSSION QUESTIONS

1. In your learning team, design a research plan for the training module developed by SOIEC. Specifically, what will be your methodology, what study participants will you include and how will you evaluate the plan?
2. Who should be consulted when evaluating a Public Health intervention aimed at improving the intercultural competence of health care professionals?
3. How will implementation research help the SOIEC improve its capacity as an organization?
4. What are some best-practice approaches to keep in mind while implementing Indigenous-specific programs?

KEYWORDS

Intercultural competence; cultural safety; health equity; evaluation program; implementation research; Indigenous health; stakeholder; training program

CASE 8

Case Attribution for COVID-19: Who Counts What?

Anam Khan, MPH (Class of 2020)
Dorcas Taylor, BA, BSc, MSc
(Acting Director, Surveillance and Epidemiology, Public Health Agency of Canada)
Rukshanda Ahmad, MBBS, MHA (Medical Advisor, Public Health Agency of Canada)
Julie Thériault, RN, BScN, MScPH (Nurse Consultant, Public Health Agency of Canada)
Gerald McKinley, PhD (Assistant Professor, Western University)

Senior epidemiologist, Nina Mendez, is leading a case attribution project at the Public Health Agency of Canada (PHAC) to give provinces and territories a forum for discussing any jurisdiction issues they encounter when reporting COVID-19 cases. Nina notices discrepancies in the way provinces and territories are reporting cases, with some attributing cases to the jurisdiction of diagnosis (i.e., the province or territory they were tested in) and others attributing cases to the jurisdiction of permanent residence (i.e., the province or territory of their permanent residence).

The COVID-19 risk to any community is determined by the number of cases attributed to each community; however, with discrepancies in jurisdictional case attribution policies, epidemiological indicators describing the region may be inaccurate and may misrepresent the region's true COVID-19 case counts. This misrepresentation typically occurs when cases that are diagnosed and managed in one jurisdiction are attributed to the jurisdiction they are registered as living in. This leads to jurisdictions having various relationships to the case; in this context, the jurisdiction they are temporarily living in is the jurisdiction of temporary residence, the jurisdiction they are registered as living in is the jurisdiction of permanent residence, and the jurisdiction they are identified and treated in is the jurisdiction of diagnosis.

When jurisdictions have few cases, improperly attributing cases can misrepresent the jurisdiction's COVID-19 risks. Conversely, if a jurisdiction has many cases that are not being attributed to the right jurisdiction, it creates a false perception of few cases within the jurisdiction. These inaccurate perceptions of risk resulting from under- or over-representation of reported cases in some jurisdictions can cause public health measures to be implemented inappropriately.

Although the majority of the Canadian population is not moving between provinces and territories frequently, there are still numerous populations (i.e., students, border communities, commuters, and visitors) that require frequent travel between jurisdictions. Timely public health interventions are key when such outbreaks occur within a community as these outbreaks can have great consequences on the larger surrounding community.

Nina recognizes these inconsistent reporting approaches require discussion at the PHAC Special Advisory Committee (SAC) and Technical Advisory Committee (TAC) meetings

because this is an urgent problem under pandemic conditions that require very accurate planning strategies.

BACKGROUND

Governance of Public Health in Canada

The Pan-Canadian Public Health Network exists at the PHAC as a key intergovernmental mechanism to strengthen and enhance Canada's public health capacity, enable federal/provincial/territorial governments to better work together on the day-to-day business of public health, and anticipate, prepare for, and respond to public health events and threats (Pan-Canadian Public Health Network, 2018). The Pan-Canadian Public Health Network comprises people with public health expertise, from all sectors and levels of government, who work together to strengthen public health in Canada and address public health emergencies (Pan-Canadian Public Health Network, 2018). Large-scale international public health events (e.g., Ebola or Zika virus outbreaks) requiring federal coordination also fall within the Network's purview. These collaborations enhance notification processes and interjurisdictional information sharing, address expectations about public and professional communications, and enable advanced plans and decisions to be made for all jurisdictions involved (Pan-Canadian Public Health Network, 2018).

A coordinated federal/provincial/territorial COVID-19 public health response has been activated through the SAC. The Communicable Infectious Disease Steering Committee took on the TAC's role for technical issues such as surveillance case definitions and laboratory testing protocols. The Committee's federal/provincial/territorial representatives (or their designates) also chair the TAC (Pan-Canadian Public Health Network, 2018). These representatives are:

- Medical Officers of Health
- Epidemiologists
- Directors-General
- Medical Directors
- Chief Public Health Officers
- Public Health Managers

Technical Advisory Committee meetings are scheduled biweekly to discuss the evolving public health event and the technical products or proposed actions to address it. The TAC provides a forum for the subworking technical group to seek input, provide updates, receive direction from the TAC, and discuss issues regarding case definitions, epidemiological characteristics, case forms, case attributions, and public health measures, etc. Any technical issues requiring direction from the SAC are then introduced by the TAC chair.

The TAC and SAC meetings have played a key role in defining policies and protocols to address the numerous challenges the COVID-19 pandemic has presented. One of the major issues brought forward for discussion at the meetings relates to the discrepancies in how provinces and territories have been attributing COVID-19 cases to their respective jurisdictions.

- During previous notifiable disease public health emergencies, the Advisory Committee on Epidemiology defined a set of protocols for interprovincial/territorial notification of a case belonging to a notifiable disease (Health Canada, 2000). These protocols were presented at the TAC and SAC meetings to inform members of the current protocols in an effort to facilitate discussion about the issue of COVID-19 case attribution. Normally, the jurisdiction where the diagnosis is made reports the case or is responsible for ensuring the case is reported by some jurisdiction (Health Canada, 2000).

- The jurisdiction of diagnosis is responsible for notifying the jurisdiction of residence if public health action (e.g., contact tracing, contact management) is required in the jurisdiction of residence (Health Canada, 2000).
- When cases reside in one jurisdiction but are diagnosed in another jurisdiction (i.e., in border towns) and consequently affect the incidence rate in the jurisdiction of diagnosis, the two jurisdictions may make a disease-specific agreement that the diagnosing jurisdiction does not count the cases. Instead the jurisdiction of diagnosis notifies the jurisdiction of residence, which is responsible for counting them (Health Canada, 2000).
- Cases are not to be re-counted if they move from one jurisdiction to another while still under surveillance for a notifiable disease (Health Canada, 2000).

Populations of interest that move between jurisdictions, or have permanent residence in one jurisdiction but reside in another, are defined by the British Columbia Centre for Disease Control as follows:

- **Visitors:** Travellers visiting temporarily for holiday, business, or family reasons (e.g., summer vacation, summer camp, adventure hiking, one-time business trip).
- **Commuters:** Individuals who have multiple addresses—e.g., a permanent address in one jurisdiction and temporary address(es) in the jurisdiction(s) where they reside for work. The commuter has not established permanent residency in the location where they work but have a regular requirement to be in that jurisdiction (e.g., oil sands workers, work camps).
- **Temporary workers:** Individuals who have a permanent address in one jurisdiction and a temporary address in the jurisdiction which they reside while they are working. These individuals have relocated for an extended period of time and have established residency in the temporary location.
- **Snowbirds:** Travellers who have a permanent address in one jurisdiction and have a temporary residence in the jurisdiction they are visiting during a warmer season.
- **Students attending educational institutions:** Students who have a permanent address in one jurisdiction and a temporary residence in which they reside while attending school.
- **Staff/residents of institutional facilities:** Staff/residents of institutional facilities with a permanent residency of any jurisdiction but sleeping/living most of the time in the residential facilities of another jurisdiction.

ISSUE OF INTEREST

Nina Mendez is leading the project on case attribution and has introduced it for discussion at the SAC and TAC meetings. She has extensive knowledge and experience in surveilling reportable diseases and is now tasked with coordinating COVID-19 pandemic surveillance. The attribution practices of each province and territory (Exhibit 1) has been collected by the Public Health Agency of Canada, and was presented at the TAC meeting by Nina to bring forward any discrepancies for collaborative discussion. Nina also notes that the majority of provinces and territories attribute cases based on residence, with the exception of jurisdictions 1 and 10 (Note: the jurisdictions have been anonymized using numbers 1 to 13), which attribute cases uniquely:

Jurisdiction 1: As per the protocol for interprovincial/territorial notification of disease, non-jurisdiction 1 cases are counted by jurisdiction 1 if the case was identified and likely acquired in jurisdiction 1.

However, if a non-jurisdiction 1 resident case is identified in jurisdiction 1 but likely acquired the disease outside of jurisdiction 1 (as determined by contact tracing efforts), the Ministry of Health

forwards the patient data to the appropriate jurisdiction for follow-up and the jurisdiction of residence counts the case.

Jurisdiction 10: If a case is identified and managed in jurisdiction 10, it will be counted by jurisdiction 10 (i.e., the jurisdiction of diagnosis), regardless of whether the case is a resident of the jurisdiction. The province/territory of permanent residence is also notified for nonresidents.

A case is also counted by jurisdiction 10 if they developed COVID-19 signs and symptoms while residing in jurisdiction 10, or if they tested positive immediately after arriving in another jurisdiction or country. If the source is unclear and the case was within jurisdiction 10 at any point during the 14-day incubation period, a case-by-case investigation is to be conducted.

If a jurisdiction 10 resident is found to be positive for COVID-19 and is temporarily residing and being managed outside of jurisdiction 10, they will not be counted by jurisdiction 10. However, if a jurisdiction 10 resident returned to jurisdiction 10 during the 14-day incubation period, they will be counted in jurisdiction 10. Additionally, if a non-jurisdiction 10 resident is residing and being managed in jurisdiction 10, they will be counted by jurisdiction 10.

Other jurisdictions: Cases are primarily attributed to their permanent residence jurisdiction, with the exceptions of populations that are frequently moving between jurisdictions (i.e. visitors, students, commuters, etc.). As presented in Exhibit 1, each jurisdiction has a different method of attributing these cases.

As a result of these discrepancies, Nina noted the following:

1. Instances of cases being double counted. For example, cases that were diagnosed and treated in jurisdiction 10 but had permanent residence in another jurisdiction were still counted by jurisdiction 10, in addition to the jurisdiction of their permanent residence.
2. Cases being counted in a jurisdiction in which they were not present while positive for COVID-19. For example, commuters that had acquired the disease in the jurisdiction of their temporary residence, were counted by the jurisdiction of their permanent residence, even though they are not present there while being positive for COVID-19.

In jurisdictions with small population sizes, these discrepancies could potentially give the impression that a larger proportion of disease is circulating within the jurisdiction, leading to the implementation of stricter and unnecessary public health measures. In jurisdictions with large populations, there is a higher degree of flexibility with these discrepancies and this does not change the public health approach.

ISSUES REQUIRING DECISION-MAKING

Attribution Based on Jurisdiction of Permanent Residence

All provinces and territories, except for jurisdictions 1 and 10, attribute cases to their place of residence with the rationale that most cases reside in their jurisdiction of permanent residence and are, therefore, more likely to have acquired, been diagnosed, and been managed in the same jurisdiction. This makes the investigation manageable.

Attribution Based on Jurisdiction of Diagnosis

The other side of the argument presented by jurisdiction 1 and jurisdiction 10 is that, from an epidemiological perspective, attributing cases based on their place of acquisition and current residence irrespective of their permanent address will result in accurately showing how many cases are present in that jurisdiction. This is particularly important for jurisdictions with high interprovincial/territorial travel, and also results in public health measures being implemented

more appropriately. Attributions are to be considered on a case-by-case basis when it is unclear where the case acquired the disease.

Technical Advisory Committee Meeting
A number of scenarios were addressed during the TAC meeting, including:

Scenario 1. A student who is a permanent resident in one jurisdiction, is temporarily living in another jurisdiction for school. They are diagnosed and managed in jurisdiction 10. The case is attributed to the case counts of both jurisdictions which results in the case being double counted.

Scenario 2. A case acquires COVID-19 outside of Canada and then returns to a jurisdiction that is not their permanent residence and remains there for the duration of their illness. The case is then counted by the jurisdiction of permanent residence, which had no cases at the time, hence the case is attributed to a jurisdiction where they are not present during their illness. This leads to the implementation of unnecessary public health measures in a jurisdiction where it is not needed.

Scenario 3. A case travels to a different jurisdiction and is hospitalized outside their jurisdiction of permanent residence. As a result, the severe disease outcome (i.e., hospitalization) is counted by the jurisdiction of permanent residence even though the health care capacity of the jurisdiction of hospitalization treating the case is used. This attribution practice implemented by the jurisdiction of residence can make the hospitalization rates appear disproportionately higher if other similar scenarios are treated in the same way.

Nina knew clarification was needed for the following questions:

1. What is the definition of permanent residence?
2. Which jurisdiction should handle the public health investigation and management?
3. Which jurisdiction should report severe disease outcomes? For example, if a person is hospitalized in jurisdiction A, but resides in jurisdiction B, which jurisdiction will report this hospitalization considering that the health care capacity of jurisdiction A is used?

Each jurisdiction has unique circumstances, including varying population sizes, varying COVID-19 incidence/prevalence rates, and varying proportions of moving populations (e.g., students, work camps, commuters, or visitors, etc.). All these circumstances need to be considered when developing effective and clear attribution policies. Nina called a meeting with her surveillance team to discuss this complex issue and brainstorm revisions to existing policies for attributing COVID-19 cases. After a long meeting, her team proposed the following recommendations:

Permanent Residence Definition
It was proposed that official government documents such as a health card or driver's licenses be used to define permanent residence. However, the surveillance team knew that some provinces and territories have health service waiting periods for people who relocate. The team felt that in this circumstance the attribution should be based on the new residence address given at the time of case identification, even if the person has not yet received a health card.

Public Health Investigation and Management
Public health investigation and management should occur where it is needed (i.e., where the case is detected, even if this is not the location of permanent residence, following the policies of the jurisdiction in which the case is found). When a case is identified in a jurisdiction outside

their permanent residence, the jurisdiction of permanent residence should be notified as early as possible in case the patient has to be followed up in that jurisdiction. Early such notification also gives the jurisdiction of permanent residence an opportunity to request the jurisdiction of diagnosis take the attribution. Therefore, if the person has been absent from their permanent residence long enough that there is no chance of disease transmission, then the jurisdiction of diagnosis could count the case. This was one change proposed for COVID-19 that differed from previous public health event investigations pertaining to communicable/reportable diseases.

Reporting Severe Outcomes

Normally, all relevant health details are attached to each case report. When a case holds permanent residence in one jurisdiction but is managed by the health care system of another, there are challenges with gaining access to and transferring the patient's medical records. This is particularly true for COVID-19 cases because of the long disease duration and management, which makes it more likely the patient's care will be transferred back to their jurisdiction of permanent residence over the course of their treatment. Therefore, the TAC recommended that the medical record of the case be kept together even when they are managed by a jurisdiction that is different from their permanent residence jurisdiction. However, this does not mean that jurisdictions should not track service provision/resource use within their own jurisdiction in a way that is appropriate for them. Numbers reported for surveillance purposes should be consistent with all the case information coming from the jurisdiction that reports the case. The members of the TAC are willing to work together and collaborate effectively to keep the medical information of the case together. Service provision/resource use tracking can be undertaken within a jurisdiction without changing the general reporting practices for national reporting.

Special Considerations for COVID-19

It is important to note that jurisdictions have been more flexible when attributing cases to different jurisdictions during previous disease events (e.g., Zika virus, Ebola virus), as these diseases were not transmitted as easily when compared to SARS-CoV-2 transmission. With increasing disease transmission and mortality rates, and the lack of herd immunity, COVID-19 requires special consideration as a notifiable disease to mitigate public health risks. These factors create a low tolerance for jurisdictions to incorrectly attribute cases of COVID-19 unless it is meaningful to do so from an epidemiological and surveillance perspective (D. Taylor, personal communication, July 2020).

Additionally, COVID-19 is also a novel disease; therefore, provinces and territories are putting significant measures in place to track each case, including the circumstances of acquisition. To maximize the benefit from disease control efforts when attribution is unclear, decisions should be based on how the attribution will factor into control efforts (D. Taylor, personal communication, July 2020).

ALTERNATIVE STRATEGIES

Nina's team was responsible for proposing a solution to the unique COVID-19 case attribution requirements of each provincial and territorial jurisdiction. The most effective model of case attribution is one that leads to the fewest public health measures while achieving the most ideal medium- to long-term public health outcomes. In other words, the goal was to achieve a fine balance between ensuring the general public still has some level of freedom to move around with certain public health measures in place, while also maintaining low case counts in the region.

Nina's team proposed two options: 1) keep the existing protocol but require that jurisdictions of diagnosis dealing with temporary resident cases to notify the jurisdiction of permanent residence

and establish an agreement to attribute the case most appropriately, or 2) create unique, universally sanctioned protocols that address each jurisdiction's needs and consider the impact these protocols might have on case management and the implementation of public health measures.

CONCLUSION

The PHAC plays an integral role in the national surveillance and management of the COVID-19 response. Most jurisdictions attribute cases based on permanent residence, although jurisdiction 1 and jurisdiction 10 attribute cases based on the jurisdiction of diagnosis. This can create discrepancies in case counts because some jurisdictions either double count cases or miss cases completely. Nina was mindful of jurisdictional processes as she facilitated conversations with her team and developed options to be considered for further collaborative discussion at the federal/provincial/territorial tables. This case shows that public health is a joint responsibility that cannot be undertaken without jurisdictional involvement and collaboration. It also shows that discussions to propose case attribution protocol changes, specifically for communicable/reportable diseases, are necessary for implementing public health measures appropriately.

EXHIBIT 1
Summary of attribution practices of jurisdictions collected by the Public Health Agency of Canada

Province/Territory	Attribution rule	Exceptions
Jurisdiction 1	As noted in our *Notifiable Disease Report Manual* (p. 9), non-jurisdiction 1 residents are sometimes treated as jurisdiction 1 residents for the purposes of reporting of notifiable disease and completion of related forms. Examples include, but are not limited to, non-jurisdiction 1 residents who are employed or attending school in jurisdiction 1. For all persons diagnosed with a communicable disease in jurisdiction 1, an investigation is initiated to determine where the disease was likely acquired, regardless of their home address. For non-jurisdiction 1 residents, where the infection was identified in jurisdiction 1 and was likely acquired within jurisdiction 1, jurisdiction 1 Health Services completes the investigation, the case is reported to the Ministry of Health, and jurisdiction 1 counts the case. For non-jurisdiction 1 residents, where the infection was identified in jurisdiction 1 and was likely acquired outside jurisdiction 1, the minimum data set is forwarded by jurisdiction 1 Health Services to the Ministry of Health. The Ministry then forwards the information to the appropriate jurisdiction for follow-up with the assumption that the receiving jurisdiction (i.e., place of case's residence) will count the case and report it to the PHAC.	
Jurisdiction 2	In general, cases are reported by the jurisdiction corresponding to the client's residential address (permanent residence) at the time of the investigation. This applies even if the individual was travelling within or outside the jurisdiction when they became infected, and if their workplace address or mailing address is in an area different from their residential address. Geographic attribution is not done on the basis of a person's health insurance status, existence of a jurisdiction 2 PHN[1] or	Visitor: This includes travellers visiting temporarily for holiday, business, or family reasons (e.g., summer vacation, summer camp, adventure hiking/fishing, or one-time business trip). *Case details should be notified back to the case's jurisdiction of residence (e.g., Health Region)* for reporting purposes and should not be included in the counts of the jurisdiction that is being visited.

[1] PHN: Personal Health Number

Province/Territory	Attribution rule	Exceptions
	jurisdiction 6 HCIP[2] or First Nations status card as such identification can be retained even though a person has moved. Visitors are excluded from a jurisdiction's surveillance counts. This includes travellers visiting temporarily for holiday, business, or family reasons (e.g., summer vacation, summer camp, adventure hiking/fishing, or one-time business trip). Case details should be notified back to the case's jurisdiction of residence for reporting purposes.	Commuter: This is an individual with multiple addresses (e.g., a permanent address in one jurisdiction and temporary address(es) in another jurisdiction where they reside for the work requirement). The commuter has not established a permanent residency in the location where they are working but has a regular requirement to be in that jurisdiction. *Case details should be notified back to the case's jurisdiction of residence (e.g., Health Region)* for reporting purposes and should not be included in the counts of the jurisdiction that is being commuted to. In general, Address at Time of Case and Health Region should be documented based on their permanent address, not the address they are visiting or where they are working. Temporary workers, snowbirds, or students from jurisdiction 6 with temporary residence in jurisdiction 2 and jurisdiction 2 providing services are reported as jurisdiction 2 cases. Jurisdiction 6 staff/residents of institutional facilities living/sleeping most of the time in jurisdiction 2 residential facilities are reported by jurisdiction 2. Staff/residents of institutional facilities of any jurisdiction other than jurisdiction 6 and jurisdiction 2 living/sleeping most of the time in jurisdiction 2 residential facilities are reported by jurisdiction 2.
Jurisdiction 3	Jurisdiction 3 attributes cases of notifiable diseases, including COVID-19, by jurisdiction of residence, except for individuals living in city A. City A straddles the jurisdiction 1 and jurisdiction 3	

[2] HCIP: Healthcare Insurance Plan

Province/Territory	Attribution rule	Exceptions
	border. All city A residents with a notifiable disease are counted in jurisdiction 3.	
Jurisdiction 4	Cases will typically be attributed based on province/territory of residence (usually determined by health card/registration but other forms of ID will be considered if required). Consideration will be given to working with the PHAC and the diagnosing jurisdiction for the diagnosing jurisdiction to submit the report if the case has been out of territory for at least 1 month, public health management is being provided by diagnosing jurisdiction, and the individual has not returned to territory while communicable. This is expected to be rare and to be addressed on a case-by-case basis. (Note–many of the health care workers in jurisdiction 4 travel from other provinces/territories, this would also add some complexity in a significant outbreak involving health staff.)	
Jurisdiction 5	Our direction for attribution within jurisdiction 5 is for health units to count cases based on where the person resided most of the time at the time of their diagnosis. It is also how we have been approaching national reporting. If someone resides in jurisdiction 5 most of the time when diagnosed we count them here, if not we don't.	Typically for visitors we send IJNs[3] and don't count them.
Jurisdiction 6	In general, cases are reported by the jurisdiction corresponding to the client's residential address (permanent residence) at the time of the investigation. This applies even if the individual was travelling within or outside the jurisdiction when they became infected, and if their workplace address or mailing address is in an area different from their residential address. Geographic attribution is not done on the basis of a person's health insurance status, existence of a jurisdiction 2 PHN, jurisdiction 6 HCIP, or First Nations status card as such identification can be retained even though a person has moved.	Visitor: This includes travellers visiting temporarily for holiday, business, or family reasons (e.g., summer vacation, summer camp, adventure hiking/fishing, one-time business trip). *Case details should be notified back to the case's jurisdiction of residence (e.g., Health Region)* for reporting purposes and should not be included in the counts of the jurisdiction that is being visited. Commuter: This is an individual with multiple addresses (e.g., a permanent address in one jurisdiction and temporary

[3] IJN: Inter-jurisdictional notices

Province/Territory	Attribution rule	Exceptions
	Visitors are excluded from a jurisdiction's surveillance counts. This includes travellers visiting temporarily for holiday, business, or family reasons (e.g., summer vacation, summer camp, adventure hiking/fishing, or one-time business trip). Case details should be notified back to the case's jurisdiction of residence for reporting purposes.	address(es) in another jurisdiction where they reside for the work requirement). The commuter has not established a permanent residency in the location where they are working but has a regular requirement to be in that jurisdiction. *Case details should be notified back to the case's jurisdiction of residence (e.g., Health Region)* for reporting purposes and should not be included in the counts of the jurisdiction that is being commuted to. In general, Address at Time of Case and Health Region should be documented based on their permanent address, not the address they are visiting or where they are working. Temporary workers, snowbirds, or students from jurisdiction 2 with temporary residence in jurisdiction 6 and jurisdiction 6 providing services are reported by jurisdiction 6. Jurisdiction 2 staff/residents of institutional facilities living/sleeping most of the time in jurisdiction 6 residential facilities are reported by jurisdiction 6. Staff/residents of institutional facilities from any jurisdiction other than jurisdiction 6 and jurisdiction 2 living/sleeping most of the time in jurisdiction 6 residential facilities are reported by jurisdiction 6.
Jurisdiction 7	In general, coronavirus case investigations are reported by the jurisdiction corresponding to the client's residential address (permanent residence) at the time of the investigation (i.e., where the case is counted for surveillance purposes). This applies even if the individual was travelling within or outside the jurisdiction when they became infected, and if their workplace address or mailing address is in an area different from their residential address.	Visitors are excluded from a jurisdiction's surveillance counts (i.e., a case is allocated to a specific jurisdiction and counted only once within a given time frame). This includes travellers visiting temporarily for holiday, business, or family reasons (e.g., summer vacation, summer camp, adventure hiking/ fishing, or one-time business trip). Investigation details should be notified back to

Province/Territory	Attribution rule	Exceptions
		the case's jurisdiction of residence for reporting purposes.
Jurisdiction 8	We include in our case count cases whose address of residence is in jurisdiction 8. --- A case of COVID in a person from another province: a) who arrived in the province of jurisdiction 8 <14 days before the first symptoms will be declared/counted as "outside jurisdiction 8" b) A known case of COVID in a nonresident who is expected to leave the province of jurisdiction 8 in <28 days since the first symptoms will be also counted as "outside jurisdiction 8" In both cases, local authorities at the permanent residency of the case will be informed. Until now we have 26 cases "outside jurisdiction 8".	We include some people outside in our calculations for different situations (workers). In our information system, we have 26 recorded cases considered outside jurisdiction 8. Of these cases 19 also have an address of residence in jurisdiction 8. --- Long-term temporary residents, such as workers in work camps, are supposed to be reported in the same way by using the same criteria.
Jurisdiction 9	Permanent address in jurisdiction 9. Spends most of year in jurisdiction 9 such as: • Students from outside of jurisdiction 9 who are diagnosed in jurisdiction 9. • Incarcerated in a facility in jurisdiction 9 who are diagnosed in jurisdiction 9. • On a military base in jurisdiction 9 who are diagnosed in jurisdiction 9 • Sometimes, people from outside of Canada are counted as residents; this decision is made on a case-by-case basis (e.g., first case of COVID-19 in jurisdiction 9 was a jurisdiction 8 citizen counted in jurisdiction 9).	
Jurisdiction 10	**Counted as Jurisdiction 10 Cases** If a positive specimen was collected within jurisdiction 10, and the case is managed in jurisdiction 10, the case is counted as a jurisdiction 10 case. This includes nonresidents of jurisdiction 10 (temporary residents) whose case management will be carried out by jurisdiction 10. Notification of the case will be provided to the province/territory of residence for nonresident cases. If a client leaves the territory for the purpose of receiving medical care (e.g., medical evacuation), regardless of usual province/territory of residence, and a	**Counted as NOT Jurisdiction 10 Cases** For positive cases where the specimen was collected out of territory, the case will not be counted in jurisdiction 10 if: a) A jurisdiction 10 resident will remain out of territory and case management will take place out of territory—the case will not be counted by jurisdiction 10. However, jurisdiction 10 will receive notification of the case. b) The exception to this is if the case returned to jurisdiction 10, they will be counted in jurisdiction

Province/Territory	Attribution rule	Exceptions
	positive specimen was collected outside of the territory, the case will be counted as jurisdiction 10 if: a) the client developed COVID-19 signs and symptoms within jurisdiction 10 b) the client was tested immediately upon arrival at an out-of-territory jurisdiction (e.g., hospital admission) Note that a case-by-case investigation will be conducted where the source attribution is unclear, and the patient was within jurisdiction 10 at any point during the 14-day incubation period.	10 (including non-jurisdiction 10 residents). Clients who are epidemiologically linked to jurisdiction 10 but tested outside of jurisdiction 10 are not included in jurisdiction 10 test counts.
Jurisdiction 11	Generally, notifiable disease cases are reported and counted by the jurisdiction in which the case resides. Place of residence is defined as the place where a case lives most of the time.	Longer-term temporary residents would be counted under where they live most of the time.
Jurisdiction 12	For cases diagnosed in jurisdiction 12 who are residents of another province, we notify the province of residence and provide data required to report the case. We do not include the case in our case count. Jurisdiction 12 residents diagnosed in another jurisdiction would be counted as a jurisdiction 12 case, as long as we've been notified of such a case.	For cases residing in another country, jurisdiction 12 includes the case in our provincial total and also reports the case to the PHAC's IJN group. This would be our approach for longer-term temporary residents, such as temporary foreign workers.
Jurisdiction 13	Case attribution is based on place of residence, defined as where the case lives most of the time.	There are circumstances where place of residence may be difficult to define. For example, out-of-province students studying within jurisdiction 13. Depending on the time of temporary residence here, the place of diagnosis would be used. For the COVID-19 pandemic, these attribution rules have been blurred in jurisdiction 12, as has been the case for other provinces. There is support here to follow the long-standing guidelines for attribution of cases going forward.

Source: (D. Taylor, personal communication, July 2020)

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INSTRUCTOR GUIDANCE

Case Attribution for COVID-19: Who Counts What?

Anam Khan, MPH (Class of 2020)
Dorcas Taylor, BA, BSc, MSc
(Acting Director, Surveillance and Epidemiology, Public Health Agency of Canada)
Rukshanda Ahmad, MBBS, MHA (Medical Advisor, Public Health Agency of Canada)
Julie Thériault, RN, BScN, MScPH (Nurse Consultant, Public Health Agency of Canada)
Gerald McKinley, PhD (Assistant Professor, Western University)

BACKGROUND

The COVID-19 pandemic has emerged as an important topic of discussion at the Public Health Agency of Canada's federal, provincial, and territorial tables. Representatives from each Canadian province and territory have come together to discuss the discrepancies noted in the attribution of COVID-19 cases between jurisdictions. Senior epidemiologist, Nina Mendez, is leading a case attribution project to give provinces and territories a forum for discussing any jurisdiction issues they encounter when reporting COVID-19 cases. Nina notices discrepancies in the way provinces and territories are reporting cases, where the majority of jurisdictions have been reporting cases based on official permanent residence, however two jurisdictions have been attributing cases based on location of diagnosis. This discrepancy in attribution leads to a discussion about how different protocols influence the way public health measures are implemented within each jurisdiction. Specifically, in the context of when individuals such as students, commuters, visitors, or long-term temporary workers are away from their permanent residence long enough that the risk of disease transmission no longer applies to their permanent residence jurisdiction.

OBJECTIVES

1. Describe the fundamental epidemiological concepts involved in collecting data about infectious diseases.
2. Describe the various factors and special populations to be considered when implementing policies for case attribution in the context of the COVID-19 pandemic.
3. Understand the importance of collaborative decision-making.

DISCUSSION QUESTIONS

1. What are the pros and cons of attributing cases to the jurisdiction of diagnosis?
2. What are the pros and cons of attributing cases to the jurisdiction of permanent residence?
3. How do you think a public health emergency changes the need for accurately attributing case counts and severe disease outcomes in a jurisdiction? What consequences can result from the inaccuracies in how counts are attributed?
4. Discuss how discrepancies in the attribution practices between municipalities in a given jurisdiction may influence public health resource allocation and public health measures being implemented? How might this municipality-level discrepancy influence the identification and targeting of hot spots?
5. How would cases be attributed for other infectious diseases (e.g., Lyme disease, measles)? What potential issues do you foresee in case attribution for these diseases?

KEYWORDS
Case attribution; case management; COVID-19; public health emergency; pandemic; regional governance; jurisdictional governance; public health response; communicable diseases; infectious diseases; notifiable diseases

CASE 9

Gun Violence: A Public Health Issue?

Tiffany Kwan, RN, BScN, MPH (Class of 2020)
Brandy Tanenbaum, HBA, MPH (Coordinator, Centre for Injury Prevention, Sunnybrook Health Sciences Centre)
Shannon Sibbald, PhD (Associate Professor, Western University)

Sarah Smith is a registered nurse who works in the emergency department at Toronto's Sunnybrook Hospital and regularly volunteers at the Centre for Injury Prevention (CFIP) on several projects. It is the middle of July and she has just finished another busy shift at the hospital. She gets home from caring for several patients admitted with traumatic injuries only to find the local news describing another brutal gun-related incident in the City. Over the past five years, she has observed an alarming trend both at work and in the media of increasing gun-related injuries and fatalities in the City of Toronto. Disheartened and curious, she sets out to complete a rapid review of the literature and any available data she can find about this issue.

Sarah understands that gun-related crimes, injuries, and fatalities are a complex problem and that she alone will not find a way to end gun violence; however, she may be able to help address the issue in Toronto through other approaches. Through her research and by looking at the Toronto Police Service's firearm-related violence data, she realizes some communities in the city are disproportionately affected by these incidents. In the hope of gaining a better understanding about how gun injuries can be prevented, how the social determinants of health affect these incidents, and how she can help address gun violence in the city, Sarah has reached out to her colleague Amanda at the CFIP.

Through her work at the CFIP, Sarah knows that the Centre's focus is on preventing injury-related deaths and traumatic injuries across the lifespan. The CFIP's mission is to reduce intentional and unintentional serious and fatal injuries through collaboration, advocacy, research and education (Stop The Bleed, 2021). After speaking to Amanda and the supportive team at the CFIP, Sarah learns they have been looking to expand their Stop the Bleed program—an initiative that trains citizens to manage massive bleeding in any victim who has suffered a traumatic injury—to at-risk communities affected by gun violence. Amanda suggests Sarah lead this Stop The Bleed expansion plan. Sarah will need to use her knowledge and experience as a Stop the Bleed course instructor to create a realistic program expansion plan. Sarah cannot wait to get started. She believes this is a great chance to improve community relations while implementing a valuable initiative; however, she knows this will be a challenging endeavour.

BACKGROUND

Gun violence is a worsening problem in Toronto. In 2019 alone, there were 492 shooting incidents and 284 people injured or killed by guns (Toronto Police Service, 2020a). The highest profile gun-related incident that year occurred in June after the Toronto Raptors NBA championship parade, and this incident affected many people both physically and mentally. Since 2014, the number of gun-related incidents and the number of people killed or injured from these incidents has more than doubled (Exhibit 1) (Toronto Police Service, 2020a). The City of

Toronto, emergency medicine professionals, and gun control advocates are trying to determine what they can do to help address the sudden surge in gun crime.

CITY OF TORONTO AND BLACK CREEK

City of Toronto

With a population of almost three million people, Toronto is Canada's largest city and the fourth largest city in North America (City of Toronto, 2019). Toronto's residents come from diverse cultures and backgrounds, making it one of the most multicultural urban centres in the world (City of Toronto, 2019). Toronto is a world leader in finance, business, entertainment, technology, and culture (City of Toronto, 2019). It is ranked as one of the safest cities in North America; however, in 2018, there was a significant spike in gun violence and gun-related homicides within the city (City of Toronto, 2018). City of Toronto research has shown that several factors have increased the involvement of youth in this gun violence (City of Toronto, 2018).

The factors that contribute to youth violence and increased youth involvement in gun violence include (City of Toronto, 2018):

- Increasing social media prevalence promoting gang culture, which can lead to retaliatory responses to victimization and violence
- Lack of programs to support youth reintegration after they exit gang life or incarceration
- Changes to gang structure, impacting gang decision-making and leadership
- Increased drug use
- Increased rates of complex mental health challenges and few culturally appropriate services
- Lack of emergency housing for families affected by violence
- Limited coordination of culturally relevant social supports and inadequate investment in resident engagement in social housing communities
- Difficulty engaging and reaching youth who have been failed by social systems such as education and employment

The City of Toronto is committed to providing safe and inclusive neighbourhoods. As a result of the complex nature of gun and gang violence, city representatives are working closely with community stakeholders and marginalized and vulnerable populations to build community capacity and provide direct interventions (City of Toronto, 2018). Given the alarming increase in gun violence, the City has partnered with several community organizations, law enforcement agencies, and non-profit groups to develop violence-prevention initiatives aimed at risk intervention and reducing the vulnerability to serious crime (City of Toronto, 2018). Some of these strategies include the Toronto Youth Equity Strategy, Toronto Youth Partnerships & Employment, Toronto Strong Neighbourhood Strategy 2020, the Community Safety and Well-being Unit in Social Development/Finance and Administration, Community Crisis Response Program (CCRP), and Furthering Our Community by Uniting Services (FOCUS) (City of Toronto, 2018).

The CCRP and FOCUS are particularly important initiatives that address youth violence and victim support. Specifically, the CCRP focuses on supporting communities that have been affected by traumatic and violent incidents, aiming to provide assistance with healing and recovery. The CCRP offers victim and psychosocial support, neighbourhood outreach, counselling, conflict de-escalation, and safety planning services (City of Toronto, 2018). FOCUS is a youth violence prevention plan, led jointly by the United Way, Toronto Police Service, and the City of Toronto, that aims to reduce the percentage of youth becoming involved in crime and

victimization. The group meets weekly with local community agencies to review risks, implement plans, and administer and monitor any implemented interventions.

Black Creek Neighbourhood

The Black Creek Neighbourhood is one of many at-risk communities within the City of Toronto. The Black Creek neighbourhood (Exhibit 2) is an approximately 3 km^2 area in the City of Toronto that has 21,737 residents and a population density of 6,282 people/km^2 (City of Toronto, 2016). During the 2016 City of Toronto census of the Black Creek neighbourhood, 49% of respondents reported they spoke a nonofficial language as their mother tongue, and 38% reported that they spoke a nonofficial language as their primary language at home (City of Toronto, 2016). The census reported 33.5% of residents lived below the poverty line and the median household income was $46,580, which was $19,249 lower than the median household income for the City of Toronto (City of Toronto, 2016). More than 77% of families in the area live in unsuitable housing, unaffordable housing, or inadequate housing (City of Toronto, 2016). Finally, 33% of the people residing in the Black Creek neighbourhood have no certificate, diploma, or degree, and only 29% of respondents indicated they have a secondary school diploma (City of Toronto, 2016).

GUN VIOLENCE

Gun violence is a complicated public safety and public health issue. Since 2014, the rates of gun violence have been increasing in the City of Toronto (City of Toronto, 2018). Although gun-related incidents are often associated with criminal activity, they are also associated with the social burdens of routine violence and neighbourhood destruction (Cook & Ludwig, 2019). In addition to injury and death, gun violence is a major source of emotional trauma that can negatively impact the mental health of residents living in communities that have a high incidence of gun violence, resulting in chronic stress and other health issues (City of Toronto, 2018; Cook & Ludwig, 2019). Additionally, living in a community where gun violence is a “normal” event can result in feelings of abandonment by societal institutions such as schools and the police (Francis, 2018).

Residents who are not perpetrators of gun-related crimes and live in communities affected by high rates of gun-related violence often experience feelings of hypervigilance, fear, hopelessness, powerlessness, isolation, anxiety, anger, and emotional numbing (Francis, 2018). Research has also shown that people who live in poverty and have witnessed or have been a victim of a gun crime are more likely to be a perpetrator of firearm violence themselves (Francis, 2018). Therefore, living in an environment of constant threat and feeling a lack of safety can lead to one’s involvement in firearm use and criminal activity (Riley et al., 2017).

Youth-involved violence is a complex issue that has its roots in poverty and systemic racism (City of Toronto, 2018). Young adults have historically demonstrated they are more involved in gun violence than any other age demographic (City of Toronto, 2018). Having to live in constant fear can lead to poor educational outcomes for children and this can have severe consequences on their long-term mental health (City of Toronto, 2018). A study by Nanney, Conrad, McCloskey, & Constans (2015) showed that some youth view carrying a gun as a protective mechanism to discourage assailants. However, carrying a gun can also increase the chances that others are armed in the same way, which increases the likelihood of injury. Research clearly shows that day-to-day living conditions and experiences—the social determinants of health—are important determinants of injury (Atlantic Collaborative on Injury Prevention, 2011). Effective strategies that aim to reduce and prevent injury demand the consideration of an individual’s home, work, and community environment, as well as their personal, educational, social, and economic resources (Atlantic Collaborative on Injury Prevention, 2011).

Therefore, a multisectoral approach involving key stakeholders and community members is crucial to developing and implementing strategies to decrease gun-related violence. This approach could be helpful in rebuilding trust between authority figures such as the police and the community members in at-risk communities. In 2017, the City of Toronto formed a Gang Prevention Task Force in response to the increase in gang and gun violence (Toronto Police Service, 2020b). Reducing and preventing gang violence is a multifaceted problem that requires addressing the underlying causes and risk factors associated with violence, and requires the resources of law enforcement agencies, the legal system, and various community partners. The government also needs to continue investing in youth, families, and neighbourhoods to address the root causes of gun violence. However, empowering laypeople in communities disproportionately affected by gun violence to provide lifesaving interventions during a traumatic event may be an effective way to reduce mortality and improve rates of survival in victims of violence and gun-related trauma.

SUNNYBROOK HOSPITAL AND THE CENTRE FOR INJURY PREVENTION

Sunnybrook Hospital is Canada's first regional trauma centre and is recognized as a leader in trauma care (Sunnybrook Health Sciences Centre, 2021a). The hospital strives to provide specialized care to critically injured adults, to educate patients and their families, and to be a leader in injury prevention through education, advocacy, and research (Sunnybrook Health Sciences Centre, 2021a).

The CFIP was established in 1986 at Sunnybrook Hospital's Tory Trauma Program (Sunnybrook Health Sciences Centre, 2021b). This organization aims to prevent injury-related mortality and prevent traumatic injuries across the lifespan through collaboration, research, innovation, and community education (Sunnybrook Health Sciences Centre, 2021b). The CFIP is a leader in injury prevention at all levels through the delivery of multiple resources and programs both independently and with a team of collaborators (Sunnybrook Health Sciences Centre, 2021b). The Centre has established several injury-prevention initiatives such as the P.A.R.T.Y. program, iNavigait, Play Safe, and the Stop the Bleed program (Sunnybrook Health Sciences Centre, 2021b). Sarah has identified the Stop the Bleed program as an initiative that could help address gun violence in at-risk communities that are disproportionately affected by this problem.

STOP THE BLEED PROGRAM

The Stop the Bleed program is a secondary prevention measure that was created by the American College of Surgeons after the Sandy Hook Elementary School shooting. Several stakeholders, including emergency medicine, law enforcement, and government experts, developed recommendations on how to improve the survival rates of people suffering from severe bleeding (Stop the Bleed, 2021). The recommendations are known as the Hartford Consensus because two of the first meetings were held in Hartford, Connecticut. The goal of the Stop the Bleed program is to improve the rate of victim survival during and after mass shootings and other acts of mass violence. The program aims to empower laypeople to become immediate responders by taking lifesaving action and managing massive bleeding in critical incidents until emergency medical professionals arrive, regardless of the situation or cause (Stop the Bleed, 2021).

Massive bleeding as a result of any cause can lead to death within five to 10 minutes if the bleeding remains uncontrolled and medical responses are delayed (Sunnybrook Health Sciences Centre, 2021c). People participating in the Stop the Bleed course are taught the proper techniques for controlling bleeding and are certified in doing this by using dressings, tourniquets, and their own hands (Stop the Bleed, 2021). As the largest trauma centre in

Canada, Sunnybrook Hospital was a natural fit for the initiative and is the first hospital in the country to offer this unique training opportunity.

HADDON MATRIX

Developed by William Haddon in 1970, the Haddon Matrix is a tool to assist in the creation of injury prevention ideas (Runyan, 2015). This framework helps the user understand the origin of injuries and identify interventions that can be used to address them (Runyan, 2015). Users of the matrix then need to determine which interventions and alternatives to apply in the development of their injury prevention program. A Haddon Matrix is created by listing the pre-event, event, and post-event phases in three rows, and listing the host, agent/vehicle, physical environment, and social environment in four columns (Runyan, 2015).

Amanda has previously discussed the Haddon Matrix with colleagues as a way for developing creative measures to address gun violence, and she has used this framework to understand an injury problem and create injury prevention programs. Although the aim of the project is to expand the Stop the Bleed program to at-risk communities, she suggests Sarah uses the matrix to ensure she truly understands the issue of gun violence and related injuries, and the possible interventions that can be implemented to address the issue beyond the Stop the Bleed program itself.

TRAUMA-INFORMED APPROACH

Sarah understands at-risk communities are disproportionately affected by traumatic incidents and living in communities regularly affected by traumatic incidents can affect individuals in a multitude of ways. The Substance Abuse and Mental Health Services Administration (SAMHSA) and the Centers for Disease Control and Prevention have developed a new approach to the role of trauma-informed care during public health emergencies (Centers for Disease Control and Prevention, 2020). The CFIP team recommends that Sarah use SAMHSA's (2014) six guiding principles (Exhibit 3) to develop a trauma-informed approach to her program:

1. **Safety**: the staff and individuals they serve feel psychologically and physically safe.
2. **Trustworthiness and transparency**: decisions are made with the goal of building and maintaining trust with individuals, communities, staff, and anyone else involved.
3. **Peer support**: peer support and self-help are key for creating feelings of safety and hope, enhancing collaboration, building trust, and using lived experiences to emphasize healing and recovery.
4. **Collaboration and mutuality**: partnering and levelling the power imbalance between individuals and staff because everyone has a role to play.
5. **Empowerment, voice, and choice**: individual experiences and strengths are built on; the organization believes in a community environment and an individual's resilience and ability to heal and recover from traumatic events.
6. **Cultural, historical, and gender issues**: programs need to move past stereotypes and biases, and incorporate protocols and processes that respond to the ethnic, racial, and cultural needs of the individuals it serves.

SAMHSA (2014) defines individual trauma as resulting from "an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and has lasting adverse effects on the individual's functioning and mental, physical, social, emotional, or spiritual well-being (p.11)." Using a trauma-informed approach means identifying and understanding how trauma can affect individuals, families, and communities (SAMHSA, 2014). Programs and organizations need to recognize the signs of trauma and respond by applying the principles of a trauma-informed approach to all areas of care

(SAMHSA, 2014). Further, using a trauma-informed approach means preventing the retraumatization of individuals by avoiding the triggering of painful memories (SAMHSA, 2014).

Sarah realizes the residents of the at-risk communities she will be working with may benefit from the application of a trauma-informed approach to her program expansion plan. However, she has never planned a program using these principles. As she plans the Stop the Bleed expansion, Sarah makes sure to incorporate a trauma-informed approach. Teaching the course with this approach in mind will require Sarah's increased awareness, attention, sensitivity, and a possible cultural change. Sarah's previous experience involved teaching the course only to law enforcement officers; therefore, she will need to take a new approach when facilitating Stop the Bleed training in at-risk communities. It is vital that she brings forth an understanding attitude, uses appropriate and sensitive language, and does not "blame the victim."

SARAH'S TASK

Sarah has been given the opportunity to collaborate with the City of Toronto, the CFIP, and the Black Creek Community Health Centre (a local community health centre) to expand the Stop the Bleed program to at-risk neighbourhoods that are disproportionately affected by gun-related injuries and fatalities.

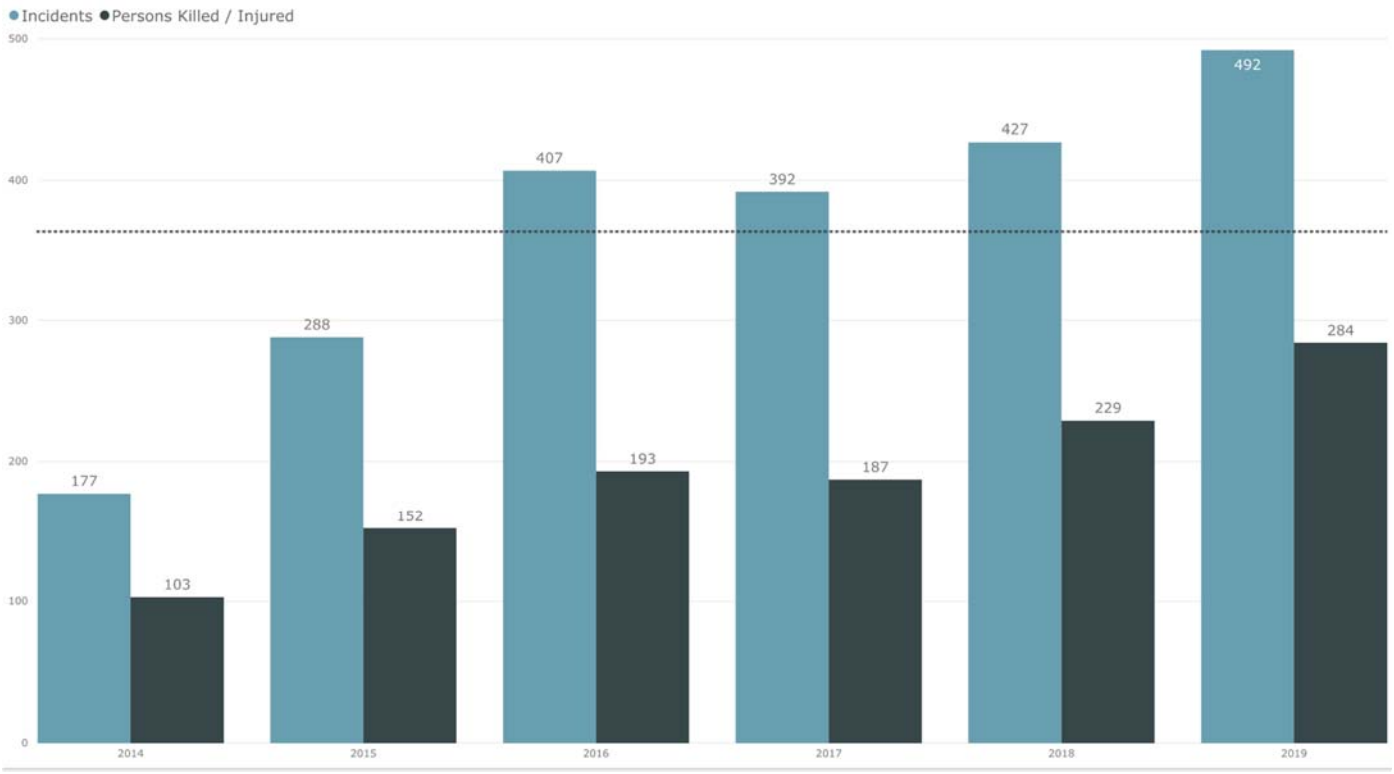
Sarah needs to complete a program planning and expansion proposal using evidence-informed decision-making, a trauma-informed approach, and the Haddon Matrix to ensure the expansion is realistic, beneficial, and financially feasible.

Sarah will present her program expansion plan to the CFIP, the leadership committee at the Black Creek Community Health Centre, and representatives from the City of Toronto. She will need to complete a literature review and the program planning process, as well as an environmental scan, a logic model, a budget expenditure estimate, and a workflow chart. Sarah will need to engage stakeholders and communities in a meaningful way in order to ensure the success of the program. It will also be important that she consider the community's demographics and experiences in all aspects of program planning.

CONCLUSION

Although there are clear benefits to expanding this secondary injury prevention measure, if the program expansion is too stigmatizing it could be harmful to people living in at-risk communities. Knowing at-risk communities and their residents are often stigmatized, should Sarah continue with the program expansion despite this possible stigmatization as long as gun-violence related deaths can be prevented? Although there are some potential program pilot sites and significant interest in the program from the City of Toronto, the benefits and disadvantages of this expansion must be considered. Sarah now has four weeks to complete a program expansion plan and present it to the CFIP, the City of Toronto's representatives, and the leadership committee at Black Creek Community Health Centre. These stakeholders will then decide whether to pilot the Stop the Bleed program in Toronto's at-risk communities.

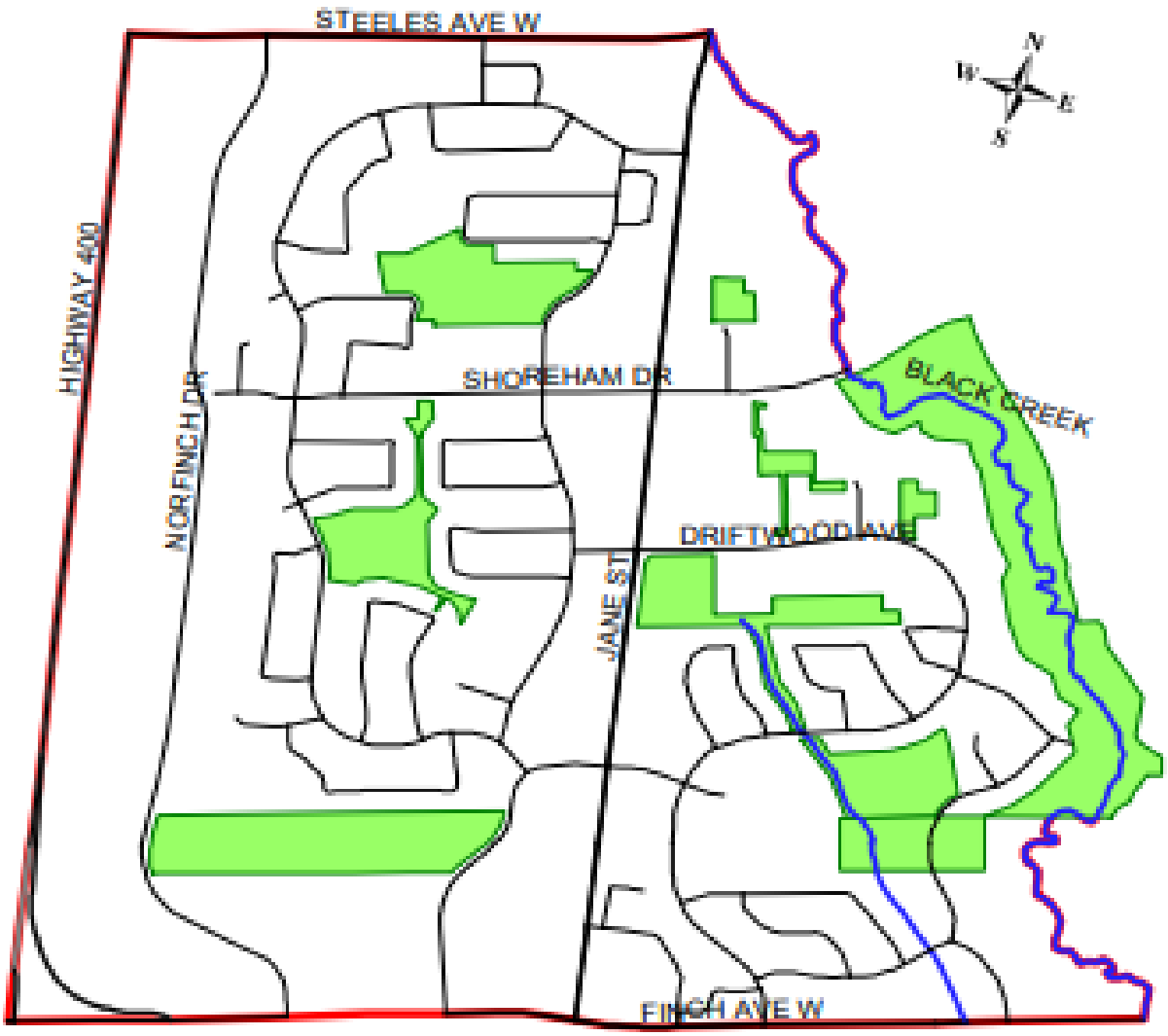
EXHIBIT 1
Shootings and Firearm Discharge Incidents and Injuries in Toronto from 2014 to 2019



Source: Toronto Police Service, 2020b.

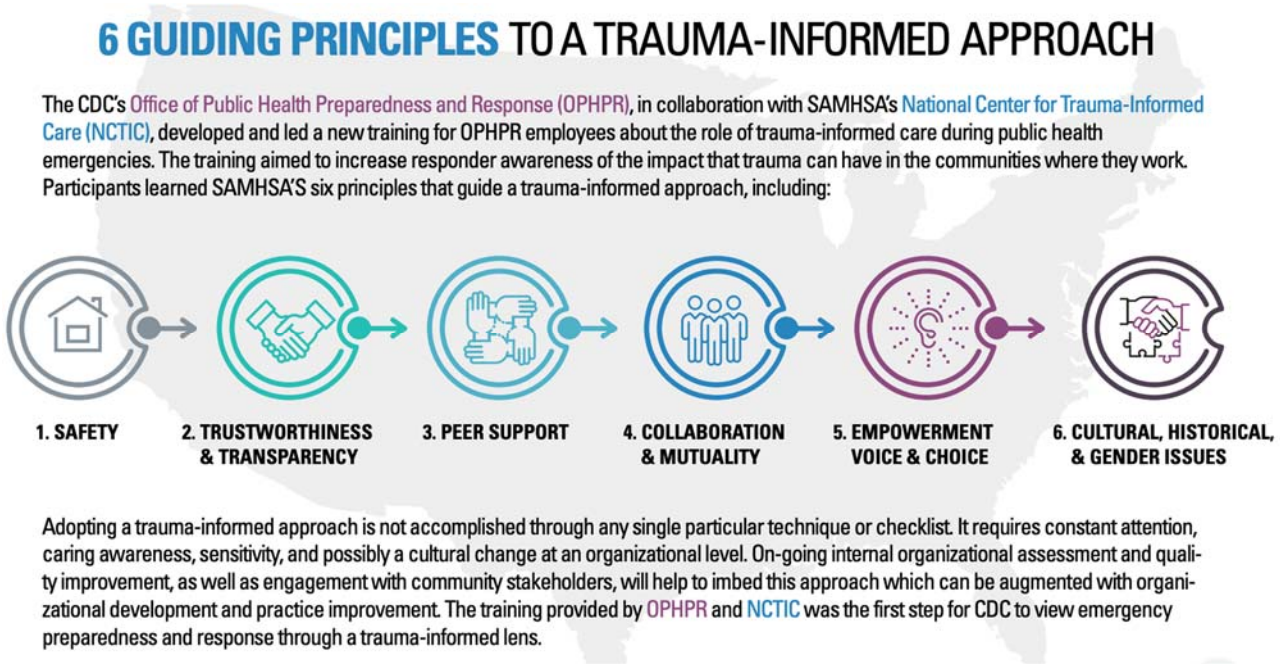
EXHIBIT 2
City of Toronto Neighbourhood Profile #24—Black Creek

Black Creek



Source: City of Toronto, 2016.

EXHIBIT 3
Centers for Disease Control and Prevention Guide to a Trauma-Informed Approach



Source: Centers for Disease Control and Prevention, 2020.

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INSTRUCTOR GUIDANCE

Gun Violence: A Public Health Issue?

Tiffany Kwan, RN, BScN, MPH (Class of 2020)
Brandy Tanenbaum, HBA, MPH (Coordinator, Centre for Injury Prevention, Sunnybrook Health Sciences Centre)
Shannon Sibbald, PhD (Associate Professor, Western University)

BACKGROUND

Gun violence is a growing concern in the City of Toronto. The number of injuries and fatalities related to firearm incidents has been increasing at an alarming rate over the past six or seven years. The Stop The Bleed program is a secondary injury prevention program aimed at training laypeople how to respond during critical incidents to prevent fatal outcomes caused by massive bleeding. Along with the Centre for Injury Prevention at Sunnybrook Hospital, Sarah Smith, a registered nurse working in the hospital's emergency department, has been given the opportunity to collaborate with multiple stakeholders, including the Black Creek Community Health Centre and the City of Toronto, to pilot a Stop The Bleed expansion program in the city's at-risk communities. Sarah is aware that several complex variables intertwine to comprise this public health issue and she knows that a multifaceted approach is needed to try to stop deaths resulting from gun violence entirely. However, to determine whether the program expansion is feasible, Sarah must complete a comprehensive planning process that considers the facilitators and barriers to program implementation, including the stigmatization of at-risk communities.

OBJECTIVES

1. Understand the principles and steps involved in the program expansion planning, implementation, and evaluation.
2. Develop a program expansion logic model for the Stop The Bleed program using evidence-informed decision-making.
3. Apply Haddon's Matrix, a trauma-informed approach, and evidence-informed decision-making to plan a program for a complex problem.
4. Identify the facilitators and barriers to working with at-risk communities and explain how health inequities contribute to community/population health.
5. Understand the importance of stakeholder engagement and the consideration of community priorities when designing and implementing this type of program.

DISCUSSION QUESTIONS

1. What are the important principles to consider when completing program planning, implementation, and evaluation?
2. Are there benefits to completing an environmental scan before developing the program plan? Why or why not?
3. What social determinants of health should be considered when planning this program? How do health inequities contribute to community/population health and the public health issue of gun violence?
4. How would a logic model be developed for the Stop The Bleed program expansion?
5. How would you evaluate the success or failure of this program expansion?

6. What are some facilitators and barriers to implementing the Stop The Bleed expansion program?

KEYWORDS
Gun violence; injury prevention; logic model; program evaluation; program planning; social determinants of health; trauma-informed approach; violence-prevention initiatives; stigmatization; youth; Stop The Bleed

CASE 10

Lost in Translation: Developing Strategies for Indigenous People who have Cancer, Limited English Proficiency, and Limited Health Literacy

Hillary Martin, BA, MPH (Class of 2020)
Janet Papadakos, PhD, MEd (Co-Director, Cancer Health Literacy Research Centre, Princess Margaret Cancer Centre)
Amanda Terry, PhD (Associate Professor, Western University)

Six Nations of the Grand River is a rural First Nations reserve located approximately an hour and a half from the busy city of Toronto, Ontario. It is also home to Dorthey, one of the few remaining fluent Mohawk language speakers in the territory, and her daughter Sarah. Dorthey is not bilingual; she speaks predominately Mohawk and understands some English. She believes in traditional ways of healing and is skeptical and afraid of Westernized health care. However, her daughter Sarah believes the two forms of care can work together.

In April 2020, just one month after the Ontario government declared a state of emergency because of the global COVID-19 pandemic, Dorthey received a devastating disease diagnosis. In her 70th year, she had been referred to Princess Margaret Cancer Centre in Toronto to undergo cancer testing. She was diagnosed with stage 3 breast cancer and had to start a treatment and care plan that would involve going to the hospital for weekly chemotherapy and radiation treatments. However, because of the current pandemic, there were new restrictions and guidelines in place at the hospital.

On the day of her first appointment, Dorthey was collecting her belongings to bring to the hospital for the daunting day ahead of her. “Okay, it’s time to go,” Sarah said. “We don’t want to be late.”

Sarah made sure to give her mother an iPad so she could call her and listen in on her mother’s appointments. Because of COVID-19 restrictions, Sarah was not allowed in the hospital and Dorthey had to go alone. Sarah made sure to explain the basics to her mother, but she was still a bit unsure about how to use it.

As Sarah pulled up to the hospital, Dorthey explained how scared she was. “I don’t want to go in by myself,” she said in her traditional language.

“It will be okay,” said Sarah. Dorthey got out of the car and was escorted into the hospital where she was now alone and afraid. She did not speak English very well or understand what was happening around her. She was taken to her hospital room where she was greeted by a nurse and a doctor who explained more about the tests and the treatment plan ahead of her.

With all the activity going on around her, Dorthey had forgotten all about the iPad Sarah had given her. She was still unsure how to use it as it was all new to her.

Dorthey was scared to ask questions and had a limited understanding about her diagnosis and treatment plan. She was fairly confused and did not know what to do.

Halfway through her first chemotherapy treatment, she was feeling weak and fatigued. A nurse walked by and Dorthey said, “Ohné:ka.” The nurse turned around with a confused look.

“What did you say?” she asked.

Dorthey replied, “Ohné:ka.”

Just then, Rebecca Smith, the Indigenous Patient Navigator, walked by and overheard the conversation. She recognized the word because she too spoke the Mohawk language. She looked at the nurse and said, “She’s asking for water, could you get her some please?”

Rebecca turned to Dorthey and smiled. She explained in the Mohawk language that water was on its way, so Dorthey would understand. Dorthey’s sense of relief showed on her face.

Rebecca introduced herself as the Indigenous Patient Navigator and continued speaking Mohawk to ask Dorthey if she needed help. This was the first time Dorthey felt a sense of security. Rebecca continued to explain to Dorthey more about the medicine she was being given and how it would help her. She showed Dorthey how to set up her iPad so they could get in touch with Sarah, and she continued to sit with her and talk to her for the remainder of her treatment.

As the Indigenous Patient Navigator at the hospital, Rebeca was puzzled. At the time, the only way for patients to access the navigator program was to reach out. Rebecca realized that without a system to connect patients to the program, it will not be accessible to patients who are unaware of the service.

BACKGROUND

History of the Six Nations of the Grand River Territory

The Six Nations reserve comprises all six nations of the Haudenosaunee Confederacy – Mohawk, Cayuga, Seneca, Oneida, Tuscarora, and Onondaga peoples. It is the largest First Nations reserve in Canada by population, with 27,559 band members registered in 2019, and it is the second largest reserve by size (Groat, 2020). According to the Six Nations of the Grand River Development Corporation (2020), the territory spans more than 46,500 acres, but this represents only 5% of the original land promised in the 1784 Haldimand Treaty.

Many people residing throughout the territory still use the traditional languages to communicate, although few truly fluent speakers remain. The main languages spoken are Cayuga and Mohawk, and both languages are taught at the seven elementary schools on the reserve. Traditional culture is a way of life, with ceremonies continuing to be practised in homes and longhouses throughout the year. Many First Nations people believe in traditional ways of healing and view health through a holistic lens that treats the mind and body as one. Traditional ways of healing can include traditional ceremonies, and the use of plant-based medicine and land-based healing as ways of dealing with sickness, whether physical or mental.

The people of the Six Nations have a complicated history because they suffered through European colonization and assimilation. The longest-running residential school in Ontario was located just west of the reserve in the city of Brantford (Groat, 2020), and operated from 1831

until 1996. The existence of these schools is one of the root causes of much of the mistrust, fear, and anger felt by the local First Nations people regarding Western ways of learning. Residential schools were established by the Government of Canada to "kill the Indian in the child" and force Indigenous children to assimilate into Western society (National Centre for Truth and Reconciliation, 2015). The experiences of the Indigenous students who were forced to attend these schools have caused years of intergenerational trauma and negative health impacts for many First Nations people.

Two-Eyed Seeing

In the fall of 2004, Elder Albert Marshall began to use the term Two-Eyed Seeing (Institute for Integrative Science and Health, n.d.). Two-Eyed Seeing is a framework that balances the traditional Indigenous ways of knowing with Westernized ways of knowing (Bartlett et al., 2012). It can be described as learning to see with one eye, using an Indigenous lens and way of knowing, and learning to see with the other eye, using a Westernized lens and way of knowing, and then learning to use both together (Institute for Integrative Science and Health, n.d.). This is an important approach for Indigenous people because colonization has pushed them into a Westernized world. This framework and the overlap and interconnectedness of both ways of knowing can be seen in Exhibit 1 (Institute for Integrative Science and Health, n.d.).

In terms of its application to cancer care for Indigenous people, Two-Eyed Seeing can be used to create a treatment plan using the patient's traditional ways along with Westernized approaches. Two-Eyed Seeing brings together the best of both worlds to produce the optimal patient outcome. It beneficially ties together two cultures and ways of knowing by integrating traditional Indigenous knowledge with Western medicine.

This process does have the potential to complicate care and treatment. Ultimately if there is a trusting relationship between patient and health care provider, then they are more likely to have clearer lines of communication. However, if there is no relationship built or no understanding, the patient may seek traditional healing on their own and potentially impact their course of Westernized treatment and care. This can be avoided by the healthcare provider taking the time to be patient, understand the needs and wants of their patient, and working in conjunction with what they want. Taking the time to get to know a patient can create a much more trusting relationship and help establish communication. In order to understand patients, some homework might be required by the health care provider, such as a talk with an elder from the community or some research on the internet.

About the Princess Margaret Cancer Centre

The Princess Margaret Cancer Centre is a world-renowned hospital leading the way in cancer research. The Centre has 12 site groups and 24 specialty clinics that allow more than 3,000 employees to see and treat over 1,000 patients each day (University Health Network, 2020). The Princess Margaret Cancer Centre continues to be on the frontiers of medical, surgical, and radiation oncology through ongoing research, education, and innovations (University Health Network, 2020). The Centre has taken actions to ensure the highest standards for patient care and ensures the best practices in patient care are applied throughout daily work.

Through ongoing research, the Princess Margaret Cancer Centre is transforming the hospital into a friendlier and more inclusive environment. By establishing plain language signage, information, and education programs, the hospital is becoming an easier place to navigate for patients, caregivers, and visitors.

The Centre offers an array of amenities and inpatient and outpatient programs. The hospital has activity and relaxation programs, a patient and family library, an Indigenous Council, a child care centre, and food, retail, internet, phone, and television services (University Health Network, 2020).The Indigenous Council has a main goal of educating the community outside and within the hospital setting about past and present issues affecting Indigenous people.

The COVID-19 Pandemic and Cancer Care

In January 2020, a new virus was gaining recognition around the world (Government of Canada, 2020). COVID-19 is the disease caused by the SARS-CoV-2 coronavirus, a member of a large family of viruses (Government of Canada, 2020). In March 2020, the World Health Organization officially declared COVID-19 a global pandemic (Government of Canada, 2020). COVID-19 has permanently changed how the world works. Provincially, in March of 2020 only those deemed essential or frontline workers were able to remain open. To name a few, this included emergency responders like fire, police, and paramedics, as well as nurses, doctors, etc. Most businesses were either shut down completely or reverted to curbside pick-up and delivery. This lockdown was in place until the provincial government came up with a plan on how to move forward while protecting people from the virus as much as possible. At the onset of the COVID-19 pandemic, cancer testing and nonemergency surgeries were initially rescheduled or postponed at Princess Margaret Cancer Center. In November 2020, Ontario then moved to a reopening pandemic plan, moving from stages 1-3 to a colour-coded system with ever-changing protocols and guidelines (see Exhibit 2).

In response to the global pandemic, Ontario's hospitals were forced to modify services to patients through the use of:

- Restricted appointments
- Masking policies
- No-visitor policies
- Covid-19 screening processes upon arrival
- Covid-19 onsite testing
- Virtual care
- Personal protective equipment (to ensure both patients, caregivers, and healthcare personnel are all properly protected)

Hospitals were given the green light to enter into a phased reopening during Phases 1 and 2 of Ontario's framework to open the province in early May 2020. The Princess Margaret Cancer Centre eased back into a more regular schedule of diagnostic testing, appointments, surgeries, and other procedures (University Health Network, 2020). This required the hospital to balance patient needs, services, and programming with the updated public health standards (University Health Network, 2020). Although the hospital did reopen, plans were made for a possible second wave of the pandemic.

After the province reached Phase 3 of its reopening plan in the summer months of 2020, health professionals switched to a colored coded approach to identify 'hotspots.' This meant that some parts of the province would be in a yellow (cautionary) phase while other cities and towns, like Toronto, would be classified as grey (locked down).

As predicted by public health professionals, there was a surge in Covid-19 positive cases in the fall and winter months. Complicating this more, Christmas and New Year's celebrations proved to be the biggest test. Health professionals started to see a rise in Covid-19 cases after the

holidays, ultimately leading to the declaration of a provincial State of emergency for the second time.

SPECIFIC AREA OF INTEREST

Limited Health Literacy and Limited English Proficiency

Health literacy can be defined as people's knowledge, motivation, and competencies to access, understand, appraise, and apply health information in order to make judgements and decisions in everyday life (Parker, 2009). Recognizing health literacy early in the patient process is essential to better identify patient needs. It needs to be addressed at both the patient level, in terms of their own understanding, as well as from a health perspective. A patient must first understand what is being said to them with clear messaging and plain language and the person explaining the message needs to be cognizant of their audience. Paasche-Orlow & Wolf (2007) use a conceptual causal model to show limited health literacy is directly related to poorer health outcomes (Exhibit 3). It is important to address limited health literacy because evidence shows adults with low health literacy have inferior health care and poorer health outcomes than those of the general population (Institute of Medicine, 2009). Adults with limited health literacy often know less about disease management and health-promoting behaviours, and they are less likely to use preventative services versus those with high health literacy (Institute of Medicine, 2009). Minimal attention has been given to researching the effects of limited health literacy and limited English proficiency on health outcomes, even though these limitations affect the health of a substantial number of people (Institute of Medicine, 2009). Recent research shows reduced health literacy not only generally leads to poorer health outcomes, but it is also an underestimated global public health problem (Paakkari & Okan, 2020).

In health care settings, health professionals use complex medical terminology, most of which is not well understood by the general population. Patients who have limited health literacy and limited English language skills are at an even greater disadvantage than the general population in understanding health-related concepts. Social and cultural determinants of health can be directly correlated with health literacy and English language proficiency. Racism, stereotypes, cultural identity, poverty, education, and access to health care are all factors that play a role in influencing health literacy and language proficiency (Paakkari & Okan, 2020).

In order to create positive impacts on society, this problem needs to be addressed by creating new strategies to improve health care, and by ensuring health information and health care meet the needs of the patients, caregivers, and the greater public (Institute of Medicine, 2009).

SPECIFIC PROBLEM OF DECISION

Dorthey is alone at the hospital and is still a bit confused about her care. The current COVID-19 pandemic has created barriers for her during her treatment. As an Indigenous woman, Dorthey is already at a disadvantage having to constantly deal with social determinants of health such as poverty, racism, and education/literacy. She is unable to have her daughter with her and her limited English language skills make it very difficult for her to stay positive and understand what is happening. When Rebecca met her, Dorthey was completing her first round of chemotherapy at the hospital. It was simple luck that Rebecca noticed Dorthey speaking the traditional Mohawk language halfway through her treatment and understood her needs. After Dorthey finished her treatment for the day, Rebecca went back to her office to reflect on what had happened. She wondered how she could make it easier for patients coming to the hospital to get in touch with the Indigenous Council and the Indigenous Patient Navigator. How could she facilitate this connection? How could the hospital do a better job at bringing more attention to

the Indigenous Patient Navigator Program? Rebecca also wondered which approaches would be best for communicating with patients like Dorthey who have limited English and limited health knowledge. She started to write down some possible strategies. These included:

- Increasing hands-on care (i.e., bathing, eating, brushing teeth, physiotherapy)
- Augmenting the patient library with more Indigenous-specific educational materials
- Increasing community support and partnerships
- Involving a community translator
- Offering virtual support
- Using more visual aids and pictures (for cancer information, around the hospital)
- Increasing Elder involvement in programs
- Employing more Indigenous hospital staff
- Ensuring frontline staff are aware of the Indigenous Patient Navigator Program through enhanced promotion, increased education, and cultural sensitivity training

Through this experience, Rebecca realized more specialized strategies need to be developed to meet Indigenous patient needs at the hospital. The Princess Margaret Cancer Centre and the Indigenous Council will continue to work together to be leaders in patient care and in developing more effective ways to connect Indigenous patients with appropriate patient navigators. Rebecca will contact other hospitals and Indigenous communities to put together a variety of possible strategies and programs to present to the Princess Margaret team at the next meeting with the hopes of implementing a new framework as soon as possible.

At the next meeting, Rebecca hopes to create a new Indigenous-led taskforce made up of herself, an Indigenous council representative, representatives from nearby hospitals, and an Indigenous elder. She hopes to receive input from a variety of stakeholders to create ‘best practice’ guidelines moving forward and to hear what others in the area are doing. She hopes to be able to have an open conversation and learn from each other on how best to move forward and create the best culturally sensitive framework as possible.

CONCLUSION

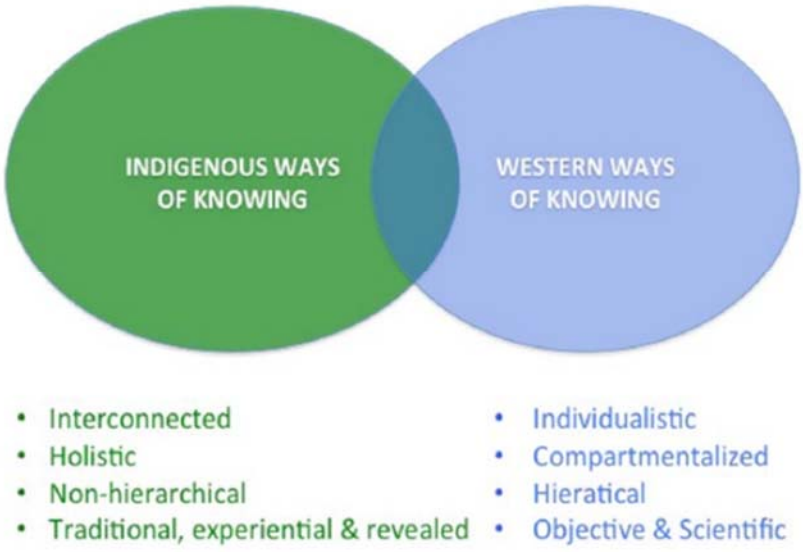
Dorthey was ultimately able to connect with Rebecca and build a trusting relationship with her, which helped her throughout her treatment. It simply involved having a friend to talk to, having someone who understood her and her specific needs, and having someone who was able to advocate for her and what she wanted in terms of her traditional ways of healing. She was able to advocate for her ways of healing and for the ability to communicate in her language. However, this relationship was stumbled upon accidentally. Had this not happened, Dorthey would have been navigating her cancer treatment at the hospital all alone and it would have been completely different. And the next patient in similar circumstances might not be so lucky.

Unfortunately, a cancer diagnosis for patients who also have limited health literacy and limited English proficiency can directly correlate with negative health outcomes. The Indigenous lens used in health care treatments for First Nations people must also consider this reality. Often, Western medicine does not consider traditional views or alternate ways of healing. This is where cultural competency training is often overlooked in bigger institutions. From an Indigenous lens, healing looks different for everyone. Holistic healing is of great importance because one must heal mind, body, and spirit in order to be healthy versus the Westernized approach to healing which involves treating just the problem. In this case, Dorthey attended a Westernized institution which took her through the path of chemotherapy and it did not really consider who she was or where she came from. She was reluctant to receive care because she also wanted traditional

healing. Often, Indigenous patients will go ahead with their own traditional medicines in conjunction with Westernized treatments. Therefore, it is important to have advocates and a clear patient-health care provider relationship, to ensure the best possible care and make sure everyone understands. Along with Westernized approaches to cancer care, the limited health literacy and limited English proficiency that often affects Indigenous people is also compounded by racism, cultural stereotypes, and lack of access to health care. Health care professionals need to ask their Indigenous patients questions to determine if they really understand what is happening and whether they can make informed decisions about their treatment. Using the Two-Eyed Seeing approach, health professionals can gain their patients' trust by incorporating both types of knowledge into one comprehensive treatment. There needs to be clear communication between the patient and health professional in order to do this. If there is not, steps need to be taken in order to build a trusting relationship. This may include an interpreter or having a conversation with a family doctor or community elder. Ultimately, hospitals in Westernized health care systems need to be aware of their patients' needs and give them the best resources possible. There must be enhanced programming and information for Indigenous people that is straightforward and easy to find and use. Ensuring that Indigenous people and other marginalized communities have greater access to targeted and appropriate health care resources and treatments will improve the health outcomes for these populations.

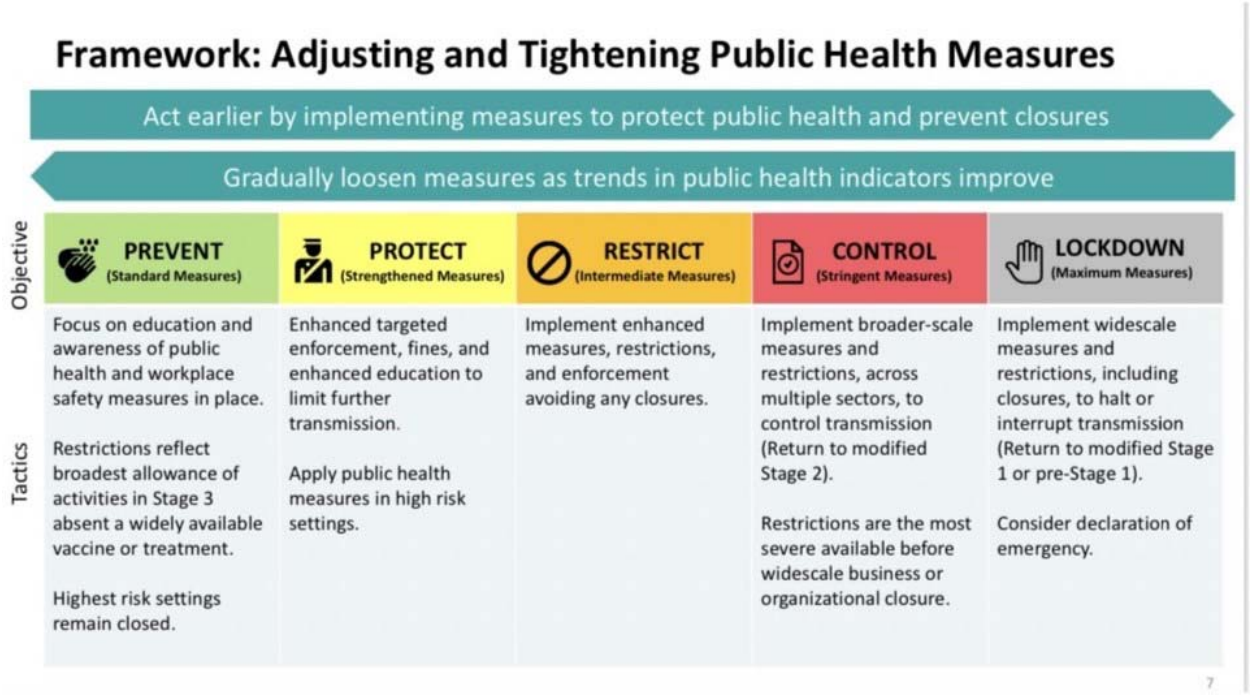
EXHIBIT 1

Two-Eyed Seeing



Source: Carter et al., 2016. Adapted from Bartlett et al., 2010.

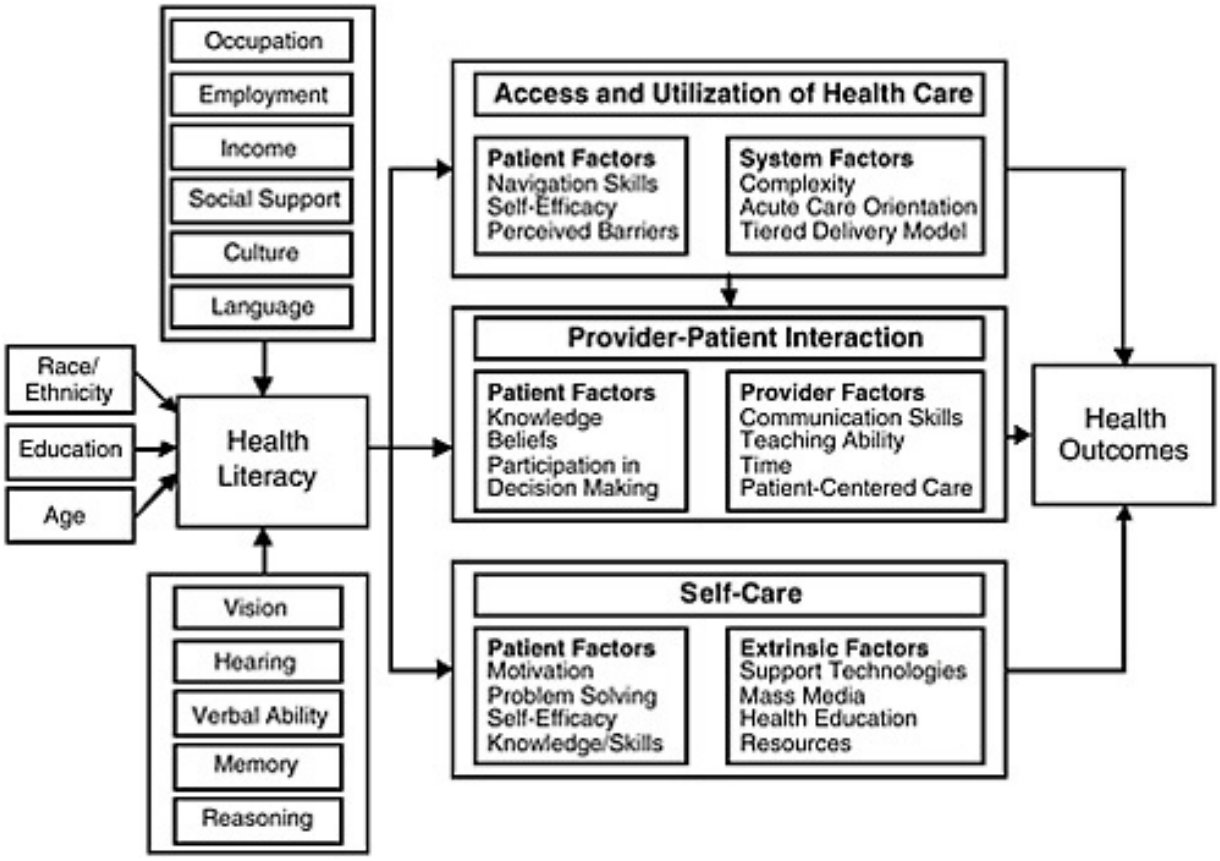
EXHIBIT 2
Ontario's Colour-Coded Covid-19 Framework



Source: Government of Ontario, 2020.

EXHIBIT 3

The Causal Pathway between Limited Health Literacy and Health Outcomes



Source: Paasche-Orlow & Wolf, 2007.

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INSTRUCTOR GUIDANCE

Lost in Translation: Developing Strategies for Indigenous People who have Cancer, Limited English Proficiency, and Limited Health Literacy

Hillary Martin, BA, MPH (Class of 2020)
Janet Papadakos, PhD, MEd (Co-Director, Cancer Health Literacy Research Centre, Princess Margaret Cancer Centre)
Amanda Terry, PhD (Associate Professor, Western University)

BACKGROUND

Studies have documented that people who have limited health literacy and limited English proficiency often have challenges with all aspects of health care, including difficulties accessing health care, understanding medical information, making treatment decisions, taking prescriptions properly, and communicating with health care workers. People who have limited health literacy often have an overall negative outlook about health care, and they are less likely to seek help from health care providers or health programs, which can negatively affect their overall long-term health and lead to poorer health outcomes than those with high health literacy.

The main goals of this case are for the reader to understand limited English proficiency and health literacy in the context of health care for Indigenous populations, and to define and apply strategies to effectively communicate with these populations in a health care setting.

This case provides the reader with an array of information regarding Indigenous health issues and perspectives. It gives the reader the opportunity to assess a health care problem and identify the social and cultural determinants of health within it. Through the use of concept mapping, the reader will be pushed to explore the relationships between limited English proficiency, health literacy, and Indigenous knowledge and beliefs in a healthcare setting. It will challenge the reader to think critically about the situation and propose strategic interventions to break down communication barriers.

OBJECTIVES

1. Define health literacy.
2. Describe the importance of communicating clear treatment plans to patients who have limited English proficiency and limited health literacy.
3. Identify the social and cultural determinants of health faced by Indigenous cancer patients in health care settings.
4. Develop communication strategies for Indigenous cancer patients through the use of a concept map.

DISCUSSION QUESTIONS

1. How can a global pandemic affect hospital cancer care and potential impacts of a pandemic on patients who have cancer?

2. What are some creative tools and/or strategies that can be used to communicate with patients who have limited English proficiency?
3. Are there particular barriers to working with Indigenous people in the health care setting? Why or why not?
4. What kind of community partnerships could be involved in creating an Indigenous-specific cancer care program?

KEYWORDS
Cancer; concept map; COVID-19; English proficiency; First Nations; health communication; health education; health literacy; Indigenous people; Mohawk language; pandemic; residential schools; traditional medicine/healing; Two-Eyed Seeing; The Causal Pathway.

CASE 11

Evaluating a Public Health Program for Continuous Quality Improvement: Options and Methods in a Time of Pandemic

Adeola Oyelade, MSc, MBA, MPH (Class of 2020)
David Pavletic, MPH, CPHI(C)
(Manager, Food Safety and Healthy Environments, Middlesex-London Health Unit)
Gerald McKinley, PhD (Assistant Professor, Western University)

It is a bright and sunny day in the middle of June, but not like the usual June. This one is mired in caution and focused on expectations for Rex Paul, Manager of the Food Safety and Healthy Environments (FSHE) team at the Middlesex-London Health Unit (MLHU). The province of Ontario is making a gradual and progressive recovery from the COVID-19 pandemic, so the government is loosening public health restrictions while planning to allow certain businesses, services, and public spaces to reopen cautiously. Rex noticed an email from Dr. Lee Sue, the Associate Medical Officer of Health at the MLHU, who was sharing information from the office of Ontario's Chief Medical Officer of Health (CMOH) regarding public health inspections. In the email Dr. Sue writes, "our recovery discussions will be impacted by this information."

The statement from the CMOH meant a lot to Rex and his team. He quickly updated his discussion points on the agenda for the weekly virtual meeting of the public health inspectors and program staff of the Environmental Health Team scheduled for 1:00 p.m. that day. During the meeting, Rex informed his team that the Ontario CMOH has guided public health inspectors in preparation for the phased approaches to reopening businesses in the province. He reported that according to the CMOH, and in line with the *Ontario Public Health Standards* (Ministry of Health and Long-Term Care, 2018a) and related protocols, certain facilities will not need reopening inspections but, at a minimum, facilities such as pools, spas (hot tubs), and public beaches will require an inspection before reopening. He emphasised the plan toward supporting the operators of these businesses as they prepare to reopen. A public health inspector chipped in and reported that operators are already calling the health unit about reopening, and that they wish to have public health inspection consultations. In response, Rex restated the efforts of the Health Unit to establish guidance material, key messages, and appropriate triaging to address any specific questions they may have. Sipping his remaining coffee after the meeting, Rex realized a lot was ahead for his team. He knew he had to send notice to the Director of Environmental Health and Infectious Disease, John Albert, regarding the number of inspections and consultations needed in the coming days to weeks.

Scrolling through his emails for updates, Rex thought about evaluating the experiences of the public pool and spa operators with the public health inspection services delivered when these facilities reopened. He knows there has been inadequate evaluation of client perceptions in most of the MLHU's mandatory public health inspection programs. These are programs involving inspection or regulatory work like housing, personal service settings, pool, and food premises inspections. Same gaps have been identified during a review of public health inspector activities, and plans were underway to map out how to proceed with this at the next public health inspection review meeting. Meanwhile, Rex envisages that collecting feedback on

the reopening experiences of public pool and spa operators will serve as a pilot test for the proposed survey on the experience of clients receiving mandatory services from the MLHU. These public pools and spa operators are regulated by government and are referred to as clients in this context.

Rex wants to address this challenge before the next annual review meeting. He contacts Ellen Grey, a program evaluator at the MLHU, to brainstorm about the relevant steps that need to be taken. He also plans to involve some of his team members and one of the volunteer practicum students, Mary Brown.

Ellen assured Rex that she would review the MLHU Planning and Evaluation Framework (Exhibit 1) and give Rex some feedback in a week. The week passed by quickly and Ellen walked into Rex's office on Monday morning looking excited. She informed Rex that she has carefully assessed the logic model designed for the pool safety program. She noticed that client experience was missing in the short-term indicators of the logic model for pool safety. Rex liked this observation and confirmed this information is of utmost interest to him because it represents a unique strategic priority area that sets the direction for the MLHU's service delivery and platform for continuous quality improvement. They both agreed his department had to go through the planning process of evaluation and incorporate client satisfaction as an important component of the short-term outcome indicators. Ellen proceeded to revise the logic model to incorporate client service experiences as the health unit's foundational standards requirements.

As part of the planning phase of evaluating public health programs, the MLHU must engage the relevant stakeholders. In this instance, these stakeholders include the public pool and spa operators, supervisors, or managers, pool user representatives, public health inspectors, program evaluators, program managers, IT units, and statisticians. Ellen and her team want to gather evidence on best practices for collecting data about client experiences related to mandatory public health programs. The team also wants to work with Rex to prepare the Evaluation Plan (Exhibit 2) and New Data Collection Tool (Exhibit 3). The Evaluation Plan helps to map out evaluation steps and guides formulation of evaluation questions for program improvement. On the other hand, the New Data Collection Tool guides for identifying relevant data sources are used every time new data are being collected. These tools will help Rex's team incorporate clients' feedback into interventions to improve the delivery of mandatory public health services. The feedback will also provide baseline information for the planned monitoring of how clients experience the MLHU's mandatory programs.

BACKGROUND

In 2018, a review of the MLHU's public health inspection program focused on public health inspection learning and development needs, service delivery models, workload balance, performance measurement, and quality and performance indicator monitoring. One important cluster recommendation from the review the MLHU must implement in order to meet the requirements of the *Ontario Public Health Standards* is to initiate activities to promote quality assurance and continuous quality improvement. These activities include developing key performance indicators, establishing an audit process for inspection reports, and monitoring clients' experiences of mandatory public health services. Monitoring client experiences will involve regular surveys to provide the health unit with information for improving quality of mandatory public health services. The client perceptions survey is expected to examine the ease or burden of complying with relevant regulations, provide feedback about client awareness levels, their confidence, interest, and knowledge about their responsibilities to comply with regulations.

As the MLHU planned to implement these recommendations, it became clear that the approach/methodology had to differ from previous client experience surveys, which had focused on healthy individuals and patients. Instead, the survey needed to focus on businesses – people who risk enforcement activities, such as fines, suspensions, and closures, from the health unit – to improve the quality of mandatory public health service provided to food service, pools, and personal service operators. The evaluation also needed to measure the success of the public health inspection (PHI) program from the clients' perspectives, while helping to improve communication strategies between public health inspectors and clients. Of note, PHI interventions with operators also include education and assisted compliance work, where PHIs work with operators to address any compliance challenges they may have. Thus, the survey could seek to inquire on areas where there could be value added.

Together, Rex and Ellen will explore the best practices and/or approaches for helping the MLHU understand client experiences and support businesses as they resume operations during the pandemic. This will also provide information for the MLHU client experience initiative to improve client and community confidence and quality of mandatory public health services for regulatory clients instead of service-seeking clients.

Middlesex-London Health Unit Service Delivery

The MLHU delivers programs and services to prevent the spread of diseases and to promote and protect the health of residents of London and Middlesex County. This is in line with the *Ontario Health Protection and Promotion Act* and further guided by the *Ontario Public Health Standards*. The unit's mandate is to identify and address public health issues that affect individuals, families, and communities while promoting healthy living and identifying community needs. This is the underpinning of the MLHU's commitment to collecting feedback from the community and the businesses they serve to improve service delivery and maintain continuous quality improvement.

The MLHU's services to individuals, families, and the community are either voluntary for clients who seek public health services or nonvoluntary for clients mandated to receive regulatory services according to the *Ontario Health Protection and Promotion Act* and *Ontario Public Health Standards*. According to these classifications, the unit's service-seeking clients include people receiving public health services through immunization clinics, dental health programs, sexual health programs, family planning services, and communicable disease assessments. It also includes refugee services, school programs, long-term care, and retirement home services, among others. Mandatory or regulated clients are those who own restaurants and operate food services, public pools, spas, tattoo shops, and hairdressing and nail salons. These mandatory services are mainly under the purview of the EHID division of the MLHU, specifically in the FSHE and Safe Water, Rabies, and Vector-Borne Disease (SWRVBD) programs.

Rex invited Mary to a quick meeting to brief her on plans for the public pools and spas client experience evaluation. This is a good practicum learning opportunity for her as she will join the public health inspectors during the survey and also experience how the unit will guide the public pools and spas that are preparing to reopen after a long winter and COVID-19 closure. Rex reiterated this is in line with the directives of the provincial CMOH to inspect pools and provide the necessary support for operators as they reopen for business after the initial COVID-19 lockdown. He explained that public health inspectors inspect facilities, provide consultation services and mandatory educational training to operators and their employees, and render other regulatory services to ensure compliance with safety, quality, and business standards. Rex continued his routine mentoring and capacity development discussions with Mary as she nodded in agreement and continued to take notes.

Recreational Water and Pool Safety

Recreational water includes pools and spas, wading pools, splash pads, and public beaches. These water facilities are used for sport or exercise, relaxation, health therapy, or pleasure (MLHU, 2020a). The use of recreational water requires concerted public health measures to ensure a safe environment. In the *Health Protection and Promotion Act*, health units in Ontario are required to ensure safe and sanitary operation of recreational water according to the *Ontario Public Pools Regulation (Health Protection and Promotion Act, 2007)*, *Ontario Public Health Standards*, and other related guidelines. Common recreational water illnesses associated with the use or ingestion of contaminated recreational water include eye, skin, ear infections and, most commonly, diarrhea. If not properly treated, recreational water can harbour bacteria, viruses, and parasites such as *Escherichia coli*, *Cryptosporidium*, *Giardia*, *Legionella, Pseudomonas* (hot tub rash), *Schistosomes* (schistosomiasis), *Shigella* (shigellosis), and diseases caused by noroviruses (Farquhar, 2015). There are also recreational water safety issues including drowning and those associated with injuries from swimming such as cuts and scrapes, pinched skin, sprains or strains, broken bones, head and spinal injuries, and overheating due to high water temperatures in hot tubs (Davis, 1984).

London and Middlesex County have approximately 225 public pools and spas. The health unit's public health inspectors work closely with the operators of these pools and spas to provide regular inspections, and to provide support and guidance to ensure safe and sanitary operations. Sustained efforts from all levels of government, local businesses, industries, members of the community, and recreational water managers and users are important to ensure the safety and cleanliness of the facilities.

Rex updated his notes as he prepared to brief John Albert about the scheduled plan to evaluate how clients experience services provided by the EHID division. Before this meeting, Rex wants to discuss the foundational standards of the Ontario Public Health Programs with his team so they are updated on requirements underlying the public health programs delivered by the division, with a specific focus on program planning, evaluation, evidence-based decision-making, and quality and transparency. Rex knew his team had to be fully aware of the requirements of the *Ontario Public Health Standards*, its prerequisite for program service delivery, and the plan to conduct the survey.

Foundational Standards for Public Health Programs in Ontario

The foundational standards outlined in the *Ontario Public Health Standards* underlie the public health programs, including the FSHE and SWRVBD programs, delivered by the MLHU. The foundational standards support the use of best available evidence to respond to the needs and emerging issues of the health units, which is the foundation for effective public health practice (Ministry of Health and Long-Term Care, 2018a). The key areas of the foundational standards integral to the delivery of effective public health programs include population health assessment, health equity, emergency management, and effective public health practice. Effective public health practice requires applying skills in program planning, evaluation, and evidence-informed decision-making; research, knowledge exchange, and communication; and quality and transparency (Ministry of Health and Long-Term Care, 2018a).

Population-based goals, program outcomes, and specific requirements have been designed as core components to operationalize the foundational and program standards. For instance, the goal of the foundational standards on effective public health practice is to see that "public health practice is transparent, responsive to current and emerging evidence, and emphasizes continuous quality improvement" (Ministry of Health and Long-Term Care, 2018a). One of the

desired outcomes of public health practice is to ensure that ongoing program improvements enhance client and community partner experiences and address issues identified through various means.

Rex reiterates the core components of the foundational standards and speaks to the proposed plan to evaluate the experiences of the clients served by his team. He highlights the requirements of the standards with respect to effective public health practice through program planning and evaluation. These requirements are the specific actions the health unit is expected to conduct consistently across the province of Ontario while being responsive to the individual and local needs of priority populations.

To further underscore the importance of regulatory standards and uniformity when implementing public health programs, Rex emphasizes the need to follow the phases and stages outlined in the Planning and Evaluation Framework (Exhibit 1), which models how planning and evaluation work is conducted at the MLHU (MLHU, 2020b).

The Middlesex-London Health Unit Planning and Evaluation Framework

The Planning and Evaluation Framework (Exhibit 1) represents the common vision for planning and evaluation processes at the MLHU. It is designed to be adaptable when developing a new program or monitoring and evaluating ongoing programs or activities that form the core phases of the framework. The framework provides relevant guides and tools that support program managers and other users in the recommended stages of each phase of the program, and it can be scaled to fit the needs of each program. Health equity and stakeholder engagement are critical concepts to apply when using the framework during the planning, implementation, and evaluation phases (MLHU, 2020b). However, it may not be necessary to use all the recommended tools in each stage of the framework. The program manager is responsible for identifying the appropriate tools to be used. The *evaluate* phase of the framework includes four stages: "focus the evaluation," "prepare to evaluate," "evaluate the program," and "share the result" (MLHU, 2020b).

Ellen advised Rex during their brainstorming meeting to think about the evaluation phase of the framework, particularly the "prepare to evaluate" stage, as the basic outline of steps to take for the public pools and spa operators client experience project. The stage highlighted the need to develop evaluation work plans, identify the activities, resources, and support required for the program. It also helps in identifying existing data sources or the need for collecting new data for the project. In a more general sense, the evaluation plan helps users ask appropriate questions that will address the evaluation needs and ultimately improve the program (Martin, 2015; MLHU, 2020b).

Ellen also noted that the Evaluation Plan (Exhibit 2) and New Data Collection Tool (Exhibit 3) would be useful for determining the evaluation questions and data collection methods to use, the types of data to collect, and which measures or indicators to seek - quantitative or qualitative (MLHU, 2020b). Ellen had also reiterated the importance of reviewing the program logic model developed at the program planning phase. This will help them understand how client experience fits either as a process indicator or as a short-term outcome indicator as they prepare to evaluate the program (Abdi & Mensa, 2016; W. K. Kellogg Foundation, 2004).

Measuring the Perception and Experience of Clients Receiving Mandatory Services

The Ontario *Excellent Care for All Act* created an expanded provincial quality agency, Health Quality Ontario, whose mandate is to undertake health system performance monitoring and public reporting, support quality improvement, and promote the provision of best-quality health

care. The act mandates that health sector organizations include quality committees on their boards and that patient, family, and employee satisfaction surveys be conducted (Ministry of Health and Long-Term Care, 2018b). The client satisfaction survey is a key method for evaluating the quality of health care services. The design and execution of an effective quality management system focuses on quality improvement, error reduction, and associated risks. The evaluation generates interventions aimed at quality improvement and ensures better management systems, good process design, wise resource use, meeting patients' needs, and increased satisfaction (Adane et al., 2019). There is a growing need to measure performance to review the effectiveness of regulatory programs to ensure greater accountability (Organization for Economic Co-Operation and Development [OECD], 2012).

As reflected in the *Ontario Public Health Standards,* the principles encouraging the evaluation of regulatory program effectiveness are promoted globally. Perception surveys are used to assess how businesses and citizens most affected by regulations perceive the impact and benefit of these regulations. However, one key factor to a successful regulatory function is positive perception and stakeholder support, which encourages business investments and consistent compliance with regulatory requirements (OECD, 2012). OECD cites studies showing that business start-up decisions are greatly influenced by individual perceptions about business regulations and associated regulatory qualities such as regulatory structure, regulatory approaches, and regulatory enforcement. Perception surveys have become a useful tool for evaluating and communicating the level of awareness and confidence of businesses and citizens on regulatory initiatives to inform necessary reforms and improve government policies (OECD, 2012).

Rex received some input from his team on the approaches used for evaluating the client satisfaction survey, providing further insights on how to proceed with the project. Two approaches, qualitative and quantitative, have been promoted recently for evaluating patient satisfaction. However, a multimethod approach incorporating both focus groups and individual interviews is recommended to evaluate client satisfaction and add useful information about client perspectives (Boechler et al., 2002).

Although there is no prescribed data collection instrument for the client experience survey, selecting the right instrument depends on a balanced consideration of aspects about utility, reliability, and validity (Beattie et al., 2015; de Almeida et al., 2015). Some instruments for measuring patient satisfaction are provided by private vendors and, because they are usually not public, their reliability and validity are not clear. Other standardized public instruments include patient satisfaction questionnaires; the five-dimension service quality (SERVQUAL) scale; the Patient Satisfaction Questionnaire Short Form (PS-18); and the Consumer Assessment of Health Care Providers and Systems program (CAHPS). In 2019, the MLHU used the Algoma Client-Centered Care Tool (ACCCT) to collect data for measuring service-seeking client experiences. Such instruments have good reliability and validity; however, they offer a limited scope of survey questions (Boston et al., 2013). Internally developed instruments may have the advantage of context and inclusion of questions from other existing standardized instruments (Al-Abri & Al-Balushi, 2014; Teshnizi et al.,2018). In terms of delivery mode, standardized questionnaires (self-administered, interviewer administrated by telephone or in person, via the web or apps, or on paper or online) have been the most common assessment tool for conducting patient/client satisfaction surveys (OECD, 2012; Quintana et al., 2006; Urden, 2002). It should be noted that variation in the mode of delivering a survey questionnaire can affect the quality of the responses collected (OECD, 2012).

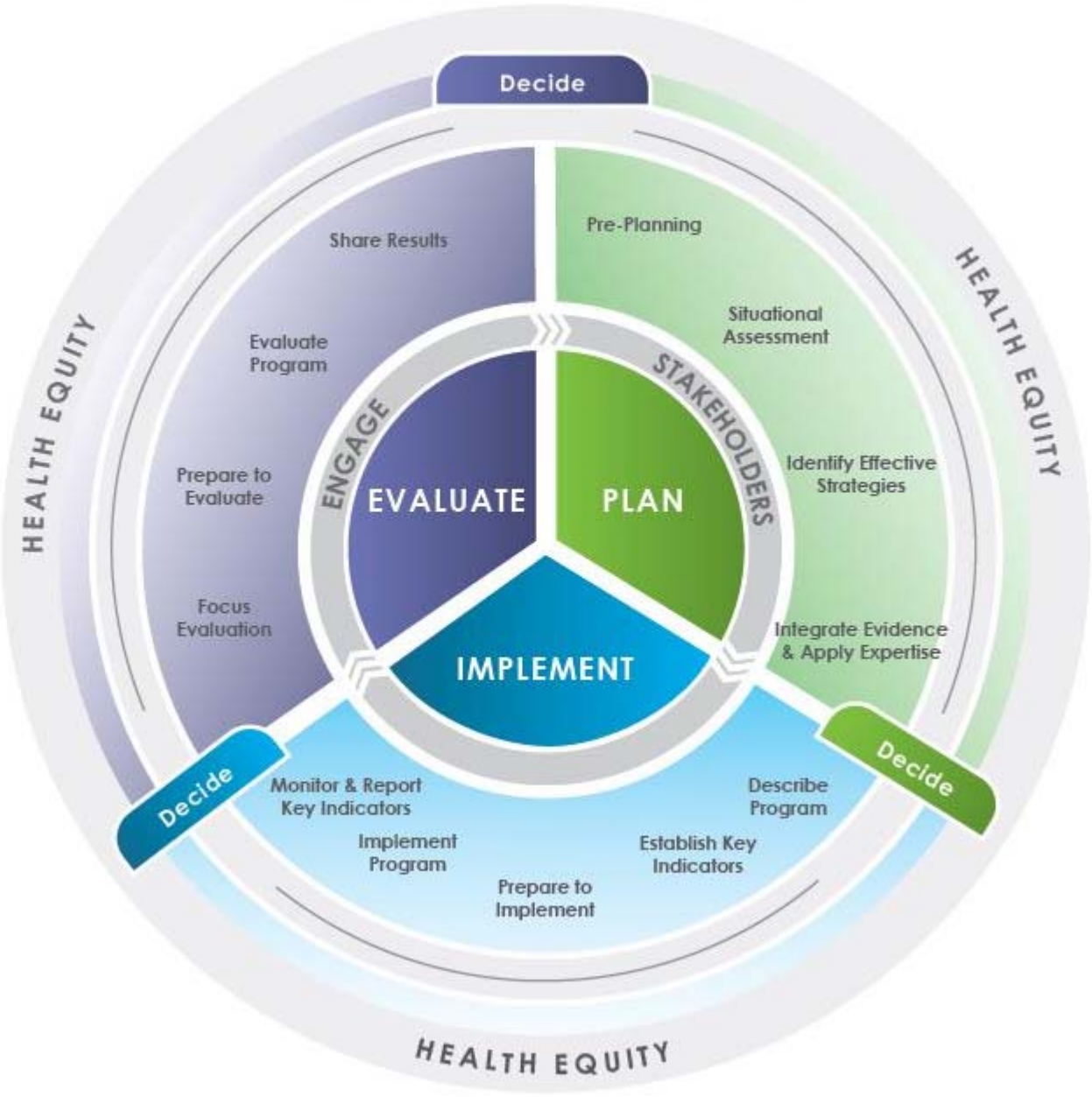
There are many methodological issues to consider when designing a client satisfaction survey. According to Lebow (1983), these issues include uniformity myths, the inclusion of items not measuring satisfaction, ambiguity in response alternatives, lack of precision in the use of terminology, failure to distinguish dissatisfaction and lack of satisfaction, failure to sufficiently probe, poor psychometric practice, the absence of accepted measures, failure to identify norms for satisfaction, lack of control over the procedure, sampling bias, biasing responses, the lack of variability in responses, and primitive design, analyses, and reporting. Other key considerations before fieldwork starts may include training data collectors, planning data analysis, interpreting patient experience data, and consensus on how the data will be used to improve the quality of practice (Gleeson et al., 2016).

CONCLUSION

Rex thought about how the COVID-19 pandemic would impact data collection processes and approaches. Given the various business restrictions and reduced customer interactions, he wondered whether the survey would help the unit collect new information about the concerns and attitudes of its clients to inform quick policy responses that subsequently supported businesses.

Within the stipulated timeframe, Rex received the logic model design and completed the Evaluation Plan and New Data Collection tool from his team. As he read through the documents, he kept pondering other questions relating to the survey. He wondered which pitfalls he should avoid when conducting client experience surveys. Which practices should be used in this design compared with those from the previous survey on service-seeking clients? What needed to be considered when researching public health emergencies? He began to write an email about his scheduled meeting with John Albert, outlining all the necessary documents and information required for evaluating client experiences now and in the future.

EXHIBIT 1
Program Evaluation Framework



Source: Middlesex-London Health Unit Program Planning and Evaluation Framework, 2018.

EXHIBIT 2
Middlesex-London Health Unit
Evaluation Plan A

EVALUATION PLAN

The ***Evaluation Plan*** will help ensure you are asking the right questions to address your evaluation needs and ultimately, improve your program.

Instructions:

- After consulting with your stakeholders, clarify the purpose of the evaluation.
- Identify the key evaluation questions to be answered; avoid questions that are trivial or irrelevant.
- Develop your ***Evaluation Plan*** before you start developing data collection tools or collecting data.
- The ***Evaluation Plan*** will help you map out your evaluation. The details will be determined as you develop your ***New Data Collection Plan(s)*** and ***Work Plan***.

Evaluation Purpose *How will results of the evaluation be used?*			
Evaluation Questions *What do you need to know?*	*Evaluation Question 1*	*Evaluation Question 2*	*Evaluation Question 3*
Rationale *Why is this question important?*			
Type of Data *What measures/indicators are you looking for?* *Is this a qualitative or quantitative measure?* *Example: % of youth 15-19 using condoms during sex; perspectives on negotiating safer sex among youth 15-19*			

Data Source *Where can you get the data?* *Identify if there are existing data or if new data needs to be collected.* ***Existing data sources:*** *Identify sources such as surveillance data, monitoring data & program administrative data.* ***New data collection:*** *Identify sources such as program participants, program partners, program staff.*			
Data Tools *Are data collection tools required?* *Identify if data tools will be required to access existing data or collect new data. Document any known existing tools or indicate if tools will need to be developed.* *Note: If you are collecting **new** data, complete the **Data Collection Plan** for each data collection tool.*			
Data Collectors *Who will collect/collate the data?*			
Timeline *When will data be collected*			
Data Analysis *Who will analyze the data?*			
Communication *Who needs the results?* *Identify the audiences that need to hear about the evaluation results.*			

Source: Middlesex-London Health Unit Program Planning and Evaluation Framework, 2018.

EXHIBIT 3
Middlesex-London Health Unit
New Data Collection Tool

NEW DATA COLLECTION TOOL

The ***New Data Collection Tool*** should be used every time you are collecting new data. If you are using existing data sources, refer to the ***Existing Data Source Tool***.

Instructions:

- Complete each section as outlined to document your plan to collect new data and analyze it. Consider consulting Program Planning & Evaluation, or Population Health Assessment and Surveillance staff as needed.
- Prior to collecting data, please refer to the Research and Evaluation Policy (2-040) to ensure that ethical considerations and organizational standards are understood.

Overall Purpose of the Project	
Purpose of Data Collection	
Key Questions *Broad questions that the data collected will answer These key questions directly relate to the purpose of collecting data, and should not be the specific questions on your data collection instrument.*	
Data Collection Tools	
Data Sources *From whom will the data be collected? Who are the respondents?*	
Procedure for Data Collection *What methods will be used to collect the data?*	
Timeframe for Data Collection	
Data Entry *Who will complete data entry? What format will be used to store the data?*	
Analysis Procedure *Who will analyze the data? What methods will be used to analyze the data?*	
How do you propose to share the results? *Consider using the **Knowledge Exchange Plan**, when appropriate*	

Source: Middlesex-London Health Unit Program Planning and Evaluation Framework, 2018.

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INSTRUCTOR GUIDANCE

Evaluating a Public Health Program for Continuous Quality Improvement: Options and Methods in a Time of Pandemic

Adeola Oyelade MSc, MBA, MPH (Class of 2020)
David Pavletic, MPH, CPHI(C)
(Manager, Food Safety and Healthy Environments, Middlesex-London Health Unit)
Gerald McKinley, PhD *(Assistant Professor, Western University)*

BACKGROUND

In 2018, a review of the public health inspection program by the Middlesex-London Health Unit (MLHU) identified a gap in how its Environmental Health and Infectious Disease division evaluated mandatory public health services. To meet the requirements of the Ontario Public Health Standards, the MLHU must implement important recommendations from the review to ensure the most effective and efficient service model is delivered. One recommendation under consideration is to initiate activities that will entrench quality assurance and promote continuous quality improvement through monitoring and integration of findings from client experience into MLHU's mandatory public health services. Rex Paul, the Manager of the Food Safety and Healthy Environment team at the MLHU, wants to initiate an evaluation framework for mandatory public health inspection programs. He is interested in exploring best practices and/or approaches for evaluating experiences of public pool and spa operators. This will serve as a pilot to assess client experiences with other mandatory public health services. Additionally, Rex wants to know the best data collection methods for the assessment of mandatory public health services in the context of COVID-19 pandemic. This will take a different approach as it is focused on improving the performance of staff who conduct regulatory work that enforces rules as opposed to previous client experience surveys where clients seek services from Public Health (vaccines, sexual health checks, smoking cessation, etc.).

This case outlines the procedures and approaches for the evaluation of a public health program. It discusses relevant tools including logic models useful for clarifying the purpose of evaluation, mapping out an evaluation plan, identifying data collection tools, and collecting important information to address evaluation needs. The case also describes the importance of organizational standards and stakeholder consultations towards effective data collection and analysis for overall improvement in the program outcome.

This process will help Paul's team understand best approaches for collecting client feedback and incorporating findings to improve delivery of mandatory public health services. It will eventually provide baseline information for the planned monitoring of all regulated clients' experiences of the MLHU's mandatory programs.

OBJECTIVES

1. Discuss the importance and consequences of logic models in the evaluation of public health programs.
2. Explain the purpose of an evaluation plan and discuss its components.
3. Identify the barriers and facilitators for successful evaluation of mandatory public health programs, especially those faced during a pandemic.

4. Discuss the likelihood of long-term adaptation beyond the crisis mode of the present project and the possibilities for later use in non-crisis evaluations.
5. Highlight the benefits of conducting research, such as client experience surveys, during a pandemic.
6. Discuss the approaches for successful data collection during public health emergencies such as the COVID-19 pandemic.

PRE-DISCUSSION QUESTIONS

1. Why do you think it is important to evaluate public health programs and why evaluate the program in today's case?
2. Who should be involved in evaluation processes, both in general and in this case?
3. What is the purpose of an evaluation plan when planning to evaluate a program?
4. What is the importance of logic models in the planning, implementation, and evaluation of public health programs?
5. What are the components of a logic model? List the components in this case.
6. Distinguish between mandatory and non-mandatory public health services.

DISCUSSION QUESTIONS

1. What are the key stages and the appropriate evaluation questions for designing an evaluation plan? What stages and evaluation questions/methods would be appropriate for the case?
2. What are the different ways of designing a logic model and how would you develop a logic model for evaluating the program?
3. What are the different data collection methods for evaluating public health programs?
4. What data collection method(s) do you think are suitable for this case?
5. In what ways can measuring the performance of a regulatory organization through client experience surveys contribute to continuous quality improvement of a mandatory public health program?
6. What are the issues to consider when designing a client experience survey of a public health program?
7. What are the benefits of conducting research, such as client experience surveys, during a pandemic?
8. What approaches would you suggest for successful data collection during public health emergencies such as the COVID-19 pandemic?

KEYWORDS

Client experience; COVID-19; logic model; mandatory services; pandemic; pool safety; program evaluation; Public Health; public health inspection; quality assurance; regulation; service delivery; surveys.

CASE 12

Eyes on the Supplies: Improving Canada's National Emergency Stockpile System (NESS)

Abbas Rizvi, BScH, MPH (Class of 2020)
Mark Gera, MPH (Partner, ETIO Public Health Consultants)
Amardeep Thind, MD, PhD (Professor, Western University)

INTRODUCTION

It was four weeks into the COVID-19 pandemic and Edgar Reyes, a public health logistics consultant at the consulting firm Axiom Alliance Health, was sitting in a conference room at his office. Waiting for him on a Zoom call was the Deputy Minister of Health, the Director of the Health System Emergency Management Branch of the Public Health Agency of Canada (PHAC), the Director of Operations at the Office of Emergency Response Services (OERS) branch of PHAC, and the Minister of Public Safety and Emergency Preparedness. Because he had been closely following the news that had reported global medical supply rationing measures and supply chain bottlenecks, Edgar was anxious to hear what was being done to address the logistical gaps experienced by Canada's frontline health care workers in securing personal protective equipment (PPE). He had heard from a friend, who was an executive at a for-profit health care facility operator in the United States, that her colleagues were anticipating severe shortages in PPE and were running short on ventilators. Edgar hoped the situation would not escalate to that level of severity in Canada.

The conversation commenced with an overview of the agenda for the hour-and-a-half meeting, which included discussions about the current state of PPE supply chains across the provinces, the future plans for increased funding to support the development of emergency preparedness systems in Canada, and finally Axiom Alliance Health's task to determine what could be done to support the federal emergency response capacity for future pandemics. A federal advisory committee was being formed to tackle these issues, and Axiom had been tasked with providing initial insights, planning, and data to support the committee. Edgar's research into the current political landscape gave him insights as to what was being done already to meet supply chain gaps; however, he knew he would need to conduct investigations into the federal emergency preparedness infrastructure to facilitate the process. An additional requirement of the project was to determine a need for improving emergency response and supply delivery for Indigenous and remote communities from the National Emergency Stockpile System (NESS) and provide direction to the federal advisory committee on this matter.

It was the Deputy Minister of Health who had the last word of the meeting, saying: "It looks like we dodged a bullet for now, but it's high time we start investigating what we can do to improve federal action in the future for pandemic planning. We need to make sure our processes are fair, and that we can mobilize our resources at full capacity if needed."

BACKGROUND

Emergency Management in Canada

"Better to have and not need, than to need and not have."

- *Franz Kafka*

Emergency management in many countries, including Canada, takes an "all-hazards" approach to the understanding that there are commonalities in how countries can prepare for emergencies (Public Safety Canada, 2018). The concept of an all-hazards approach in emergency management is a principle based on systems-level thinking and acknowledges a need for functional integration across all levels of government (Moore et al., 2007). The premise is that community resilience during an adverse event is greater than the sum of its constituent parts. According to Public Safety Canada (2018), emergency management in Canada has four systems-level, interconnected components that may be considered concurrently (Exhibit 1):

1. **Prevention and mitigation.** The reduction of risks from disasters through structural and nonstructural mitigative measures.
2. **Preparedness.** Measures taken to increase response capacity to an adverse event, including public awareness activities, resource inventories, emergency plans, and mutual assistance agreements.
3. **Response.** Ability to act during or immediately before or after a disaster to address the consequences of an adverse event.
4. **Recovery.** After a disaster, the ability to restore conditions to an acceptable level through recovery programs.

These components are informed by community engagement and evidence-based risk assessments to support community resilience and adaptability (Public Safety Canada, 2018).

EDGAR REYES

Edgar Reyes had spent six years as the head of the logistics consulting department at Axiom Alliance Health. He previously worked directly with the firm's partners on various teams, including those pertaining to data and policy analysis. Before that, he was a research analyst at PHAC, specializing in supply chain analysis, which made him an ideal candidate for helping the federal government modify and improve existing solutions for emergency preparedness.

His earliest work involved stratifying economic data based on social determinants of health to support the development of a provincial food security program. This project helped him recognize the importance of nuanced analyses that are based in principles of equity to ensure that the most vulnerable people get adequate support when environmental, economic, and social factors influence basic needs like health and security. Edgar wanted to translate this into the development task he was about to tackle.

THE GOVERNMENT OF CANADA

The Minister of Public Safety and Emergency Preparedness

Under the *Emergency Management Act* (2007), it is the Minister of Public Safety and Emergency Preparedness' responsibility to exercise leadership at the federal level for emergency management activities. This includes implementing policies and other measures related to emergency preparation and management plans, monitoring emergencies, and coordinating a federal emergency response (*Emergency Management Act,* 2007). The Minister assists the Government of Canada in mobilizing resources from federal department headquarters, regional federal departments, provincial and territorial emergency management

organizations, and private sector and/or non-Governmental organization entities (*Emergency Management Act,* 2007).

Public Health Agency of Canada – Office of Emergency Response Services (OERS)
Overseen by the Minister of Health, PHAC is responsible for the development and maintenance of federal emergency health plans related to disease outbreaks, natural disasters, and chemical, biological, or nuclear events. As a branch of PHAC, the OERS is charged with managing the NESS. Edgar has identified the OERS office as a key stakeholder that can help Axiom gather information about NESS operational processes and existing capacities.

Canada's National Emergency Stockpile System (NESS)
Established in 1952, the NESS was created as part of military planning for potential threats from the Cold War (PHAC, 2011). The scope of the stockpile has increased over time to include supplies for use during natural disasters, bioterrorism events, and other emergencies. The NESS includes generators and beds, pharmaceutical agents such as antiviral medications and anesthetics, and medical equipment such as ventilators, stretchers, and PPE (PHAC, 2011). In 2012, the stockpile's assets were spread over 11 warehouses in nine strategic sites across Canada, but they were consolidated in 2019 to eight warehouses in six different locations (PHAC, 2011). Furthermore, as of 2010, approximately 1,300 pre-positioned supply centers exist in diverse locations across Canada, whose purpose is to respond to provincial/territorial requests within 24 hours (PHAC, 2010). These sites are jointly managed by provincial/territorial and federal governments. The latest audit of the NESS in 2010 revealed it had an approximate value of $300 million in assets with $7.7 million in warehouse leases and an operating budget of $4 million (PHAC, 2011).

Edgar recalled briefly reading about NESS in the Globe and Mail. Media reports on the failings of the NESS during the pandemic helped Edgar's team isolate the NESS as a major point of focus for their investigations. His team was curious as to why a federally-maintained stockpile of emergency resources was unable to meet the country's needs during an emergency as predictable as a pandemic.

The NESS has been used in emergencies such as the H1N1 outbreak in 2009 and the Fort McMurray wildfires in 2016. PHAC was established in 2004 after the severe acute respiratory syndrome pandemic, and NESS assets (formerly under the purview of Health Canada) were placed under PHAC control (PHAC, 2011). PHAC works with provinces and territories when municipal emergency resources are overwhelmed by an event, and the release of supplies from the NESS is coordinated by the provincial health or social services directors (PHAC, 2010). In 2011, an evaluation of the NESS by PHAC highlighted the need for modernizing the system to improve its role in emergency preparedness (PHAC, 2011). Previous recommendations have suggested increasing attention from program management to address issues related to allocating resources from the NESS to municipalities, updating resource maintenance processes, improving control and record-keeping systems, and implementing processes to ensure obsolete and/or expired supplies are audited (PHAC, 2011). It is unclear to what degree recommendations have been implemented, and whether improvements to emergency response capacity have been made.

Indigenous Services Canada (ISC)
ISC is a federal organization that was created to improve quality of life of First Nations, Métis and Inuit peoples in Canada through infrastructure development, social support programs, and community initiatives (ISC, 2020). ISC, along with Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), is one of two governmental departments that are responsible for policies relating to Indigenous communities in Canada (ISC, 2020).

ISC also works with First Nations communities to develop emergency prevention, planning, response, and recovery. ISC's Emergency Management Assistance Program provides funding to provinces, territories, and non-government organizations (NGOs) to support emergency management on First Nations reserves, and partners with First Nations stakeholders including Indigenous councils and organizations (Government of Canada, 2021). Federal funding totaling $926.7 million was allocated to ISC to support community-led responses to the COVID-19 pandemic. ISC funding includes coverage of public health expenses related to emergency supplies such as PPE, infection prevention and control supplies, storage costs, and more (Government of Canada, 2021).

Edgar viewed the ISC as a valuable stakeholder organization that could support his investigations on improving emergency supply accessibility for Indigenous communities. Edgar believed it was important that Indigenous public health should be self-determined to account for varied community contexts, needs, and ways of living. Leveraging the existing relationships between the ISC and Indigenous communities could be an effective way to gain access to Indigenous community insights, bring community voices to the forefront of the federal advisory committee, and foster improvements in emergency infrastructure.

BOTTLENECKS IN THE NATIONAL EMERGENCY STOCKPILE SYSTEM (NESS)

Stakeholders are a major asset to investigating gaps in existing systems. A variety of stakeholders from different levels of operation are generally required to develop a big-picture understanding of systems-level problems. For example, Edgar knew the PHAC employees responsible for inventory management at NESS warehouses would likely have valuable insights for understanding challenges at the microlevel, whereas conversations with senior administrators may reveal external challenges such as a lack of funding for improvements or communication gaps. Developing solutions alongside stakeholders and actors associated with program implementation is a key strategy in system improvement.

Edgar decides to host an interview with the Director of Health System Emergency Management at PHAC to learn more about the current state of NESS and its role as seen by an individual in a leadership role. The Director of Health System Emergency Management revealed to Edgar that the NESS baseline budget of $4 million annually was being increased along with additional funding for improvement over the coming five years, for better functionality during pandemics and disasters. Issues with the NESS were becoming clear—large amounts of stored PPE, including N95 masks, had expired. Expired supplies in a stockpile would make it more difficult for the NESS to support health care facilities in the event of future provincial PPE shortages.

Edgar learned that despite a 2006 federal budget allocation of $600 million for pandemic planning, including funding for the NESS, staffing shortages and a lack of health supplies in the NESS asset mix were negatively impacting the OERS ability to support the overwhelming needs of provinces and territories during the COVID-19 pandemic.

Edgar's research brought him to an analysis of factors that contributed to PPE shortages during the COVID-19 pandemic in the US (Cohen & Rodgers, 2020), which provided a good starting point of research for his team. Factors highlighted in this analysis included the federal stockpile not being replenished, PPE expiring, and supply chain issues including exportation of PPE and overdependence on imported PPE (Exhibit 2). During the interview with the Director of the Health System Emergency Management, Edgar learned of the Canadian government's difficulties in timely procurement of new PPE due to long wait times for international order fulfillment.

The Political Landscape

Edgar also knew based on the analysis that a variety of legal directives in response to COVID-19 would likely complicate federal procurement procedures in an emergency scenario (Cohen & Rodgers, 2020). For example, there was hesitation from the office of Prime Minister Justin Trudeau in invoking Canada's Defense Production Act, which grants the Minister of Public Services and Procurement Canada (PSPC) the authority to direct industry and assume control of industrial operations for production of emergency goods including ventilators and masks (Mills et al., 2020). The hesitation was likely due to the perception in government that other options with a lesser magnitude of policy considerations were available and adequate to achieve the level of response necessary to tackle the pandemic.

While policy decisions were likely based on pandemic model projections and expert insights, there is always a level of uncertainty for a system's ability to deal with an unprecedented disease. For example, genetic mutations leading to increased transmissibility, restriction fatigue in the general population leading to illegal gatherings and disregard for pandemic safety measures, and super spreader events such as protests or holiday celebrations could all lead to spikes in infection and hospitalizations that models may not be able to account for. Because of unforeseeable risks and potential miscommunication among government and private-sector stakeholders, Edgar felt that unprecedented policy implementations could lead to issues during a severe national emergency. This further highlighted a need for improvements and increased volume of existing emergency supplies, to serve as a cushion against unforeseeable risks and lengthy policy implementation timelines.

From Research to Actionable Goals

Further investigations brought Edgar's team to the conclusion that while there were many factors related to emergency supply chains that were out of their control including international trade, domestic policy, and consumer behavior, there were two actionable areas of focus that could improve existing capacity for emergency response:

1. **Resource Capacity –** The term *resources* in this context incorporates elements that require infrastructural and monetary support to function and can include intangible assets such as time allocated for ensuring resources are available for an emergency (Khan et al., 2018). Decision-making related to allocation of physical, financial, and structural resources can be an ethically complex challenge, especially given the time-sensitive nature of emergency responses. Therefore, transparency is a core tenet of emergency resource allocation, along with community consultation to ensure trust among community partners and appropriate priority setting (Khan et al., 2018).

2. **Mobilization Capacity –** This concept is primarily based on human workforce assets, such that social infrastructure, specialized expertise, strong communication channels, and adaptability across workforces are available to assist in a public health emergency (Khan et al., 2018).

Edgar decided he would need to develop recommendations and priorities for improvement of the NESS through the lens of these two factors.

ISSUE 1: IMPROVING THE NATIONAL EMERGENCY STRATEGIC STOCKPILE RESOURCE CAPACITY

Edgar hosted an online roundtable meeting involving several OERS employees in the following week. The participants list included two staff members who were responsible for inventory management and four administration staff members responsible for, among other things,

facilitating the transportation of NESS resources to designated federal locations during adverse events.

After facilitating the two-hour meeting by asking a series of detailed questions and allowing free conversation about the NESS among the participants, Edgar and his team conducted a thematic analysis of their meeting notes to identify actionable areas for improvement.

FINDINGS FROM THE ROUNDTABLE MEETING

Misunderstandings about the NESS in Federal Departments

After initial discussions, there was consensus among the group that the PHAC's role in stockpiling supplies was not clear to provincial departments, partly because of the existence of provincial stockpiles for emergencies. Provincial stockpiles are often varied in jurisdictional authority and asset mix, depending on the nature of the disaster, the stockpile is tailored to mitigate. For example, in Ontario, the Ministry of Health and Long-term Care is responsible for maintaining and replenishing provincial emergency PPE supplies periodically (Loriggio, 2021). In British Columbia, Emergency Management BC is the leading provincial agency responsible for maintaining supplies of cots and blankets to support First Nations communities' response to emergencies that result in population displacement (Government of British Columbia, n.d.). The NESS was designed to receive requests from provincial governments, making it the responsibility of provincial stockpile administration to reach out to OERS staff for supplies. Roundtable participants highlighted that many provincial organizations might experience difficulties in acquiring NESS resources, as the OERS had not allocated significant resources into developing clear guidance for provincial agencies on how to request supplies apart from a single government webpage. Edgar established the need for emergency planning guides that would be accessible to provincial and territorial departments, along with layperson fact sheets related to the mobilization of NESS assets in emergency scenarios.

Large Quantities of Expired Supplies

Inventory management staff frequently brought the conversation back to the topic of expired supplies, which participants agreed created difficulties in mobilization of resources. Participants discussed costs associated with restocking the stockpile, as well as potential difficulties associated with a lack of adequate supplies in an emergency setting. "After H1N1, inventory replacement strategies were a major talking point for antivirals. A lot of these drugs are nearing the end of their shelf-life, but they likely aren't going bad right away."

Edgar made a note to explore the possibility of implementing a shelf-life extension program (SLEP) following the meeting, as he had learned from one of the employees that these types of programs have been implemented in other countries to prevent depletion of national emergency stockpiles (Laing & Westervelt, 2020). Another noteworthy talking point during this conversation concerned what potential roles industry could play in supporting NESS, and whether there was a path forward that could enable the government to lean on existing production infrastructure.

Lack of Real-Time Inventory Management

Supply management staff from the OERS identified the lack of an electronic inventory system as a major barrier to effective data processing on NESS assets. Participants with inventory management responsibilities stated the exact quantities of available supplies were unknown, and that many of the NESS warehouses had an undetermined number of expired supplies (Laing & Westervelt, 2020). It became clear to Edgar that a mobilization response would be significantly hampered by a lack of real-time inventory management, making the implementation of an improved supply tracking system an action priority.

Shelf-Life Extension Programs (SLEP) for waste reduction

This process is a cost-conserving method for extending the expiration dates of pharmaceutical supplies in a stockpile. For example, the United States Department of Defense (DoD) administrates the US Strategic National Stockpile (SNS). Batches of medicines from various storage locations of the SNS are sent to the Food and Drug Administration for stability and quality testing (Courtney et al., 2009). Subject to a minimum threshold of chemical availability in tested drugs, the Food and Drug Administration approves the batch for relabeling based on new conservative estimates for the useful life of the drug (Courtney et al., 2009). This process is repeated biannually and annually depending on the drug (Courtney et al., 2009).

It is estimated for every $1 USD spent on SLEP testing (shipping, relabeling, and other associated processes) by the DoD, $22 USD worth of replacement costs are saved (Courtney et al., 2009). Furthermore, SLEP programs are able to increase reported pharmaceutical shelf lives by years. In the case of ciprofloxacin, an antibacterial drug in the United States SNS, the shelf life was extended by an average of 55 months out of 242 tested batches, up to a maximum of 142 months (Lyon et al., 2006). A study by Lyon et al. (2006) testing the stability of 122 expired drugs showed two-thirds of expired medication were stable past expiration date in every batch tested. Edgar felt a strong case could be made for the implementation of SLEP for the NESS from a cost-savings and supply retention perspective, however, further investigations would need to be conducted.

SLEP often focuses on pharmaceuticals, however, quality evaluation and sampling plans have been developed for PPE including respirators and surgical gowns (Moore & Greenawald, 2017). Edgar found no manufacturer-approved or government sanctioned programs were available for stockpiled PPE despite availability of pre-existing standard testing procedures from the National Institute for Occupation Safety and Health (NIOSH) (Yorio et al., 2020).

Edgar's team was keen on exploring the potential of implementing SLEP, based on further review of the successes of the US DoD with the SNS. Based on his team's initial findings, there was evidence that the Canadian government could greatly benefit from a program such as this, potentially freeing up funding for further development of emergency response infrastructure. There was evidence that SLEP implementation had the potential to increase cost-savings in the long term, and the financial benefits of SLEP had been demonstrated from use cases in the international community (Laing & Westervelt, 2020). It was clear that a context specific analysis and economic modelling would need to be conducted to develop a case for SLEP in the NESS. Some of the challenges with SLEP implementation include the need for improved storage and security guidelines (Laing & Westervelt, 2020). SLEP implementation would likely require an overhaul of the existing inventory system, with lengthy system and software design considerations to support management of emergency assets. SLEP implementation would also require updated staff training protocols and documentation systems to ensure proper batch testing (Laing & Westervelt, 2020).

ISSUE 2: ADDRESSING NESS MOBILIZATION CAPACITY

Edgar's team established the need for more insights from individuals from the receiving end of supplies, as well as provincial stockpile management staff. His team emphasized the need to understand perspectives of geographically isolated communities in receiving supplies, as they anticipated a disparity between urban and rural healthcare facilities in receiving equipment.

Edgar's team members were concerned that solely relying on stakeholder insights from provincial government staff, who would then distribute supplies based on their discretion, would mean missing out on the potential issues experienced by other groups including long-term care facilities and First Nations communities. This was a concern Edgar weighed heavily; however, due to time constraints for initial reporting to the Director of the OERS, the team found it would

not be feasible to gather data from these groups at this stage. The team decided further data collection from marginalized groups would be a priority to support an equitable development process at later stages of the development process, once initial solutions were further hashed out.

The Axiom team sent questionnaires with quantitative and qualitative elements to administrative managers from each province, who were responsible for intake of NESS supplies in the event of provincial resource depletion. Topics covered in the questionnaire included a description of the Axiom team's project goals and associated timeline, questions to assess managers' knowledge of NESS and understanding of NESS protocols to receive supplies, and whether there were anticipated/previously experienced gaps in emergency supply delivery. Example answers were provided in the questionnaire to facilitate the process. Edgar's team received responses from almost all provincial staff within a week of sending questionnaires, and subsequently conducted a thematic analysis on the responses.

FINDINGS FROM QUESTIONNAIRES

1. Rural areas within provinces, characterized by a population density of fewer than 150 persons per square kilometer, had greater difficulties in receiving supplies on time from provincial stockpile locations. Geographic isolation was a commonly cited issue, however many of the qualitative questionnaire responses lacked depth and the mechanisms behind this issue were unclear. Urban healthcare facilities near large population centers generally received supplies within 12-24 hours from provincial stockpiles when requested.

2. There was a lack of data on NESS performance from provincial governments during the H1N1 outbreak and other emergencies due to data collection gaps, therefore it was unclear how efficient emergency supply procurement from the NESS was.

3. There was a lack of awareness in newly hired provincial management staff about the protocol for requesting federal supplies from the NESS, as many staff had not been present during the H1N1 outbreak, had not received training on federal emergency supply acquisition, and were not aware of the existence of the OERS.

4. There was a lack of understanding among participants on the NESS asset composition and provincial stockpile asset composition. This finding highlighted a gap in administrative knowledge that could hinder effective distribution of NESS supplies to provincial agencies.

While some of the findings from questionnaires aligned with findings from the roundtable with NESS staff, Edgar felt there was still much to be learned about federal emergency supply mobilization capacity. Despite this limitation, Edgar's team used the information collected from the roundtable meeting and questionnaires to develop a list of action items and a report on future directions for the Director of the OERS to review before dissemination to the federal advisory committee.

IMPROVING NESS FOR INDIGENOUS COMMUNITY SUPPORT

Edgar's team began working on the final stage of the project, which was to provide direction to the federal advisory committee on improving the NESS's capabilities of servicing remote and Indigenous communities. Edgar determined there were multiple ways in which his team could assess the NESS's existing capabilities while isolating new opportunities for federal government-Indigenous community relationship building. However, there were a variety of factors to consider for each alternative including the time constraint and feasibility, benefits, and drawbacks. The time constraint of Edgar's project meant that his team would only be able to

provide comprehensive planning and direction for one alternative, as both would require further stakeholder consultation and coordination.

Alternative 1 – Conduct testing of NESS supply deployment to a sample of Indigenous communities and remote locations

Edgar felt there were too many unknowns associated with NESS mobilization capacity. Due to staff turnover and data collection gaps, many stakeholders that were sent questionnaires to elucidate information about NESS supply delivery did not have a great deal of information to share. Edgar's team suggested the idea of staging a test of the system, working with provincial offices from across the country and sampling operations from some of the pre-positioned warehouses surrounding Indigenous communities and rural locations.

This would be the first active test of the system to Edgar's knowledge. It would serve as an opportunity to gain primary quantitative and qualitative data on the current operational capacity of the NESS as it relates to Indigenous and remote areas. A test of this nature would also allow Edgar's team to get to work on developing a long-term testing program to ensure NESS performance is adequate to deal with emergencies and would provide more insight for development of performance indicators. Relying on anecdotal evidence from previous emergencies alone was a weak foundation for determining mobilization capacity. A system test might also reveal gaps in previously unforeseen areas and may provide evidence for future funding and resource requests.

This plan had potential drawbacks as well. Provincial offices may be hesitant to participate as many may be overburdened by their own priorities. This alternative would require a great deal of coordination that might be difficult to implement due to the broad-reaching nature of the test. Furthermore, small sample size due to cost and time constraints may be a limitation. It would only be possible to capture a snapshot of how the system functions, as there are six warehouses, hundreds of pre-positioned supply centers, and even more communities with diverse contexts and geographic variables that could impact the accuracy of the test. Another drawback of this plan was a lack of room for Indigenous community voices, as this test would be focused primarily on administrative and operational capacity of provincial offices and the NESS to deliver supplies to an area. The test would not include community specific planning or significant stakeholder engagement with Indigenous or remote community leadership, potentially leading to missed opportunities for infrastructure development. Additionally, this alternative would likely be more costly overall than the second alternative.

Alternative 2 – Host stakeholder consultations with members of the ISC and Indigenous community partners

This plan would serve as a "soft" approach to highlighting gaps in NESS mobilization capacity, as it focused more heavily on stakeholder engagement with actors who had lived experience with emergency supply management and community insights. Edgar planned on hosting focus groups and interviews with members from the ISC emergency management hierarchy, including senior and administrative staff, to learn about their experiences working with Indigenous and remote communities. Edgar also planned on investigating opportunities for fostering direct connections between the ISC and NESS, to support infrastructure for getting federal supplies into the hands of Indigenous communities in the event of a disaster. He also planned to leverage existing ISC connections with Indigenous community leadership and Indigenous organizations to host community-level stakeholder consultations.

Edgar felt it was important to work with Indigenous communities directly and develop planning and direction through community participation. This would enable the development of context-specific planning for improving the NESS to support Indigenous and remote communities. Edgar

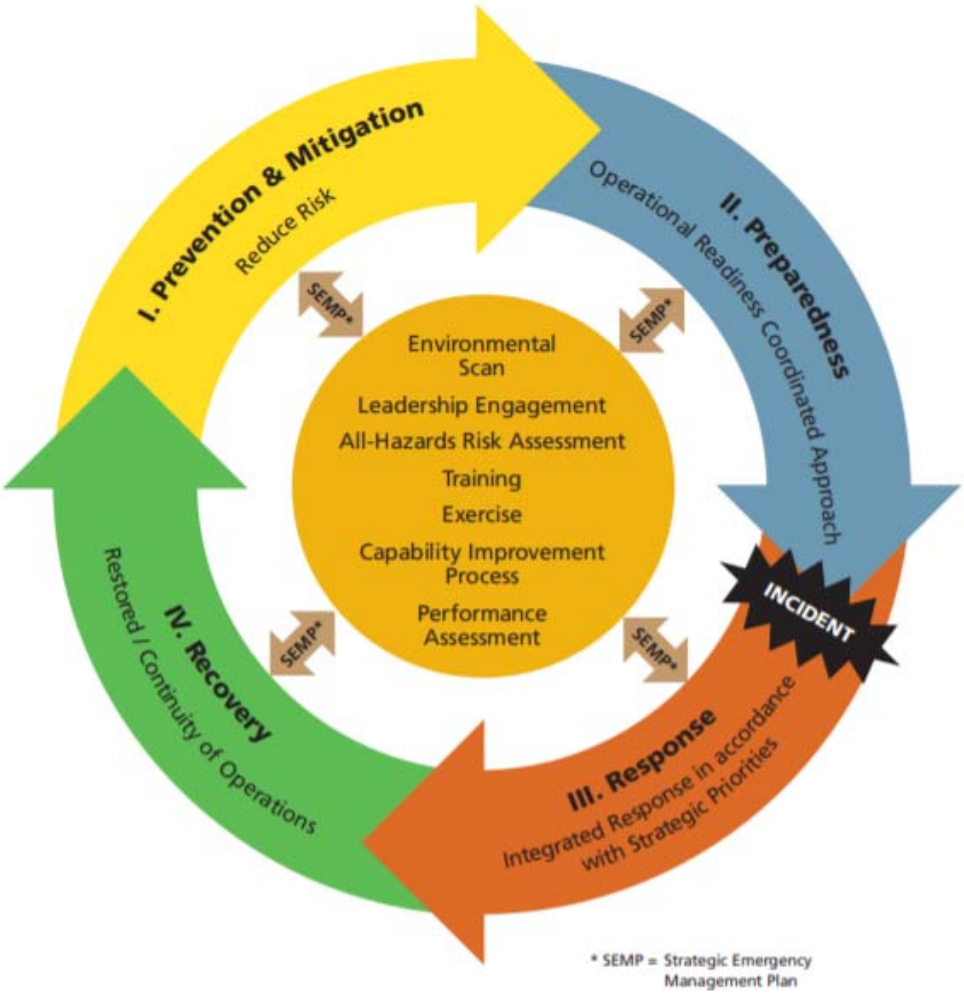
had yet to determine the best method of conducting community-level consultations, but was considering an online qualitative and quantitative survey to capture data from many communities in addition to conducting focus group meetings with selected community leadership members from a smaller list of communities. This alternative would provide greater community visibility for the federal advisory committee and facilitate future community engagement by building connections with community stakeholders. This alternative would also enable Edgar to capture data from across Canada through the online survey, providing novel data on Indigenous and remote community accessibility to emergency supplies. This plan would likely be less expensive than conducting a large-scale test, and therefore may be more feasible.

A drawback of this plan was the risk that stakeholder consultations with the ISC and community partners may be unfruitful in helping Edgar's team determine clearly actionable ways to improve NESS operations as compared to a direct system test. Community leadership may not have significant experiences working with federal departments like the OERS and may only be able to provide context-specific insights that are not directly related to emergency supplies, such as challenges with receiving non-emergency deliveries. A lack of participation could also be a potential drawback of this plan, as community stakeholders may not feel comfortable or may not be available to participate in focus groups. Engaging with marginalized populations is a sensitive matter and requires careful planning and coordination with experts and community members. Rushing and improper planning of stakeholder engagements of this nature could have long-term negative impacts for future collaborative efforts if indigenous community members are made to feel as though they have been exploited or tokenized. Furthermore, isolated Indigenous communities may not have access to online services for completing the survey, and further planning would be required to determine who would facilitate distribution of the survey and collection of results, as well as other potential logistical concerns related to data collection. The timeframe of the project might not be suitable to support the development of a meaningful and respectful relationship with community members prior to engagement, or to accommodate large-scale data collection in the priority population with participatory planning and community knowledge translation.

MOVING FORWARD

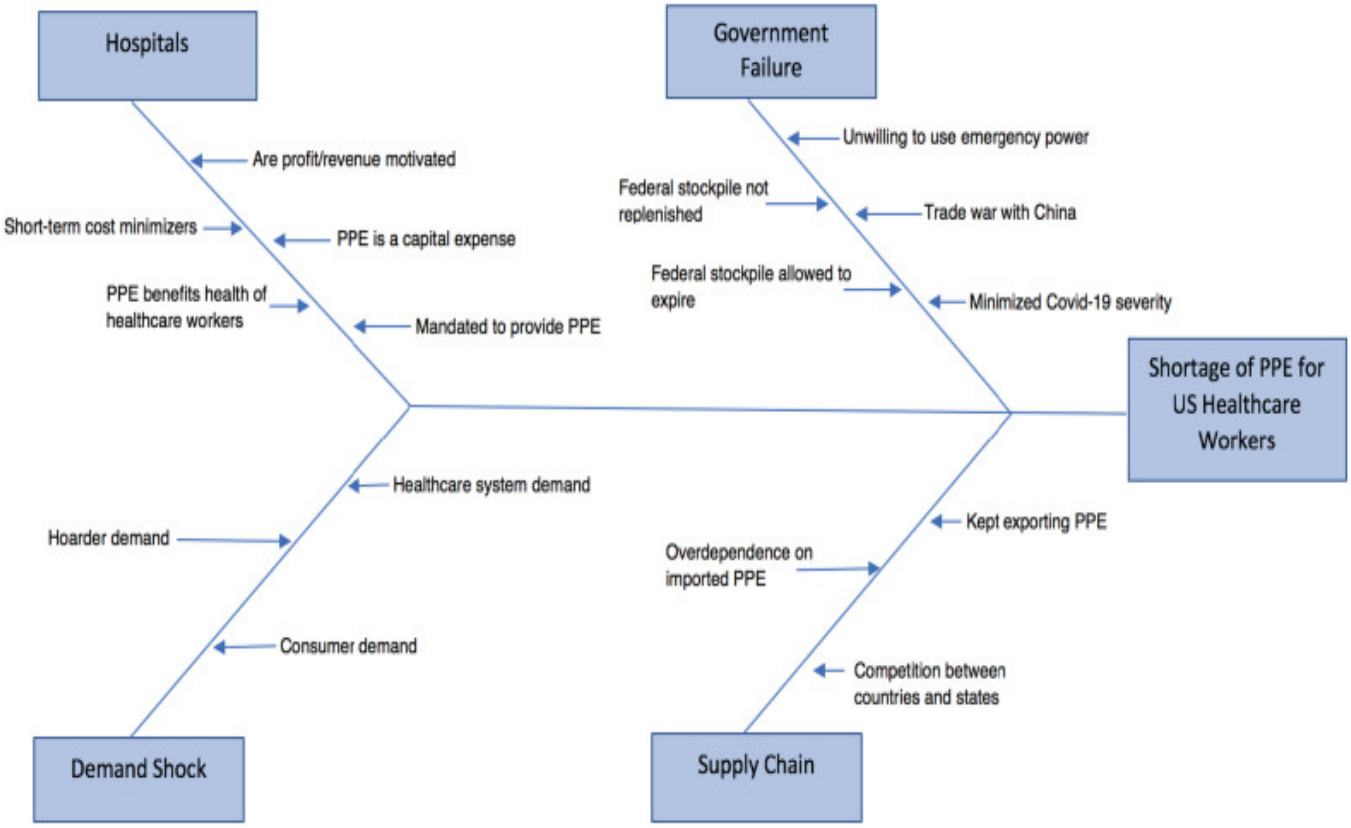
Edgar still had much to consider before choosing between either alternative, and wondered if there were any stakeholders or experts he could consult prior to making a decision on how to move forward. He also wondered if there were any stakeholders he did not include in his initial investigations who could have supported the project.

EXHIBIT 1
Public Safety Canada's Emergency Management Continuum



Source: Public Safety Canada, 2018.

EXHIBIT 2
Factors Contributing to PPE shortage in the US during COVID-19



Source: Cohen & Rodgers, 2020.

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INSTRUCTOR GUIDANCE

Eyes on the Supplies: Improving Canada's National Emergency Stockpile System (NESS)

Abbas Rizvi, BScH, MPH (Class of 2020)
Mark Gera, MPH (Partner, ETIO Public Health Consultants)
Amardeep Thind, MD, PhD (Professor, Western University)

BACKGROUND

The Canadian Federal Government is looking into improving the mobilization capacity of federal emergency supply systems. Edgar Reyes, a consultant at the public health consulting firm Axiom Alliance Health, has been awarded a federal contract to identify solutions to suit this need. The COVID-19 pandemic has revealed gaps in the National Emergency Stockpile System (NESS), which is maintained by the Public Health Agency of Canada. These gaps have affected the government's ability to address pandemic-related supply shortages. Edgar's task is to provide recommendations to increase the system's response capacity. He hopes to isolate actionable areas for review by a future advisory committee and support the development of federal emergency response. Edgar has also been tasked with determining a need and solutions for improving emergency response and supply delivery for Indigenous and remote communities from the NESS. Edgar and his team conduct a roundtable stakeholder meeting with the key stakeholders associated with the NESS to determine common themes and systems-level solutions. Edgar also conducts stakeholder engagements with provincial administrative employees to isolate further gaps in the system. He determines there are significant data gaps, and more investigations will be required to support improvements in NESS mobilization capacity. Edgar manages to identify two specific action items that have their own unique tradeoffs. A key consideration between these alternatives is the potential consequence of excluding Indigenous and isolated community insights from emergency planning and emergency infrastructure development.

LEARNING OBJECTIVES

1. Gain an understanding of emergency preparedness and emergency resource allocation principles.
2. Consider the role of social determinants of health in the context of an adverse population-level event.
3. Understand the importance of stakeholder engagement to generate solutions for resource mobilization and capacity building.
4. Understand the role of systems-level thinking in emergency preparedness.

DISCUSSION QUESTIONS

1. What are the main issues presented in the case? Who are the key people and groups involved, and what are their perspectives?
2. How can the social determinants of health influence community resilience during adverse events? What might the role of social determinants of health be in the context of emergency preparedness and the case?

3. What are potential consequences of failing to involve rural and Indigenous community stakeholders during emergency planning? What are some challenges to stakeholder consultation given the context of the case?
4. What other stakeholder engagement activities could Edgar have used that would help him in his investigations?
5. How might systems thinking be used to understand disaster resilience and emergency preparedness?

KEYWORDS
All-hazards approach; emergency management; emergency preparedness; stakeholder consultation; COVID-19; National Emergency Stockpile System; emergency supply mobilization; emergency resource capacity; systems-level thinking; shelf-life extension programs; Indigenous community consultation.

CASE 13

From Bench to Classroom: Knowledge Translation in School Mental Health Initiatives

Tess Wishart, BHSc, MPH (Class of 2020)
Gerald McKinley, PhD (Assistant Professor, Western University)

CONTENT WARNING: the following case references self-harm/non-suicidal self-injury (NSSI). The content of this case may be emotionally and intellectually challenging for students. Although the goal is to make the classroom a space to empathetically and thoughtfully discuss the content, students are invited to step out of the room and/or discontinue reading the case if they wish.

Avery McCann leaned back in her chair, feeling the warmth of the scarce February sun on her face. Three years into her position as the lead mental health researcher at Georgian Bay Health Unit (GBHU)[1], she had been given her most challenging task yet: to direct the Georgian Bay Adolescent Self-Harm Steering Committee. A few months ago, GBHU received a call from Patric Andersson, the Director of Student Wellness at Georgian Bay District School Board (GBDSB)[1], expressing concern over the number of students within the district exhibiting self-harm behaviours. Unfortunately, Patric had limited knowledge and experience pertaining to self-harm and thus sought external help for this initiative. Given her extensive experience in youth mental health research, Avery was assigned to take the lead on the project. Immediately, Avery began to talk with teachers and principals to grasp a better understanding of the issues at hand.

After piecing together each teacher's testimony, Avery knew three things. First, self-harm was significantly more prominent in Georgian Bay's high school population this year than in any previous year. Second, it did not appear to be single occurrences of harming in these teenagers; rather, it seemed to be repeated incidents. Finally, although none of the teachers quite knew how, social media was a huge aspect of the students' harming. Although these conversations had been helpful, Avery found her mind kept wandering to the same question—would the research translate well into comprehensible knowledge for the schools and students? How could she ensure her research could be taken and applied to these students' lives (see Exhibit 1)? She thought back on the experience that had led her to the position; she had completed nearly a decade of research on adolescent mental health at a large university in Central Ontario. Gazing out her small office window, Avery knew she had the right knowledge for this project, but she worried about how well she could articulate it to her new partners.

In collaboration with GBDSB, Avery selected eight members to work with her on the Georgian Bay Adolescent Self-Harm Steering Committee. The committee members varied widely in their knowledge and experience. The members consisted of Patric, two teachers, two students, one of Avery's colleagues from GBHU, and two counsellors from GBDSB. The students, Sydney and

[1] *This organization is fictitious, created solely for the educational purposes of this case. The organization is loosely based on the equivalent counterpart in Simcoe County, Ontario*

Jake, had been selected because they had each independently approached guidance counsellors in their schools with concerns about peer self-harm. Sydney, a grade 11 student in the district, also indicated she had lived experience with self-harm and with online communities/forums related to self-harm. The teachers, counsellors, and students were all specifically chosen to represent different schools in an effort to include attitudes, needs, and values from throughout the district. In 10 days, the committee would present its final findings to Marc-André Lavoie, the Director of Education at GBDSB. With the research completed, all that remained was for Avery and the committee to select the final knowledge product. This product or tool, in whatever format they select, should be able to convey their research to Marc-André and the students of Georgian Bay.

GEORGIAN BAY REGION

Situated along the coast of Lake Huron's Georgian Bay, just north of Toronto, the Georgian Bay region encompasses a diverse set of urban and rural centres. The region is home to more than 550,000 residents, with many more who make Georgian Bay their summer home during cottage season[2]. As a result of urban sprawl from the Greater Toronto Area, the population of Georgian Bay is increasing rapidly, with projections estimating that the region will be home to more than 750,000 residents by 2040[2]. Currently, children 0 to 14 years of age live predominantly in urban, Southern areas of the region, and account for approximately 16% of the total population[2].

Georgian Bay also encompasses three school boards, including GBDSB. Georgian Bay District School Board, the focus of the present case, serves an estimated 51,500 students ranging from kindergarten to grade 12[3]. Spread across 4,700 square kilometres, the board oversees 85 elementary schools and 16 secondary schools in a variety of urban and rural settings[3].

CURRENT HEALTH EDUCATION

In her discussions with Patric, Avery learned of his background in kinesiology, which logically contributed to GBDSB's recent focus on physical health. While he expressed interest in expanding mental health education throughout the school board, Patric acknowledged that he had limited awareness of what this might entail. In her informal conferences with teachers and counsellors, Avery deduced the information students might receive about mental health largely depended on the backgrounds of their individual teachers and counsellors. Furthermore, the Ontario curriculum did not mandate a specific mental health curriculum; rather, it presumed such topics were interwoven into other units. However, the current Ontario grade 9 health curriculum contains a technology unit, which was a seemingly perfect place to add the committee's research findings on the influence of social media on self-harm.

SELF-HARM

Self-harm, also known as self-injury, refers to "deliberate acts that cause harm to one's own body, mind, and spirit" (Canadian Mental Health Association [CMHA], 2020). This behaviour may take many forms, with the three most common in Canada being cutting (75% of those who self-harm), hitting (30%), and burning (28%) (Centre for Suicide Prevention, 2016). Adolescence represents a critical time for interventions relating to self-harm because the onset of such behaviour is typically between the ages of 12 and 15 years of age (Centre for Suicide Prevention, 2016). Recent estimates suggest that 1% to 4% of the Canadian population self-

[2] Given the fictitious nature of GBHU, the statistics and descriptions in this section are extrapolated from data from Simcoe Muskoka District Health Unit (Simcoe Muskoka District Health Unit, n.d.).
[3] Given the fictitious nature of GBDSB, the statistics in this section are extrapolated from data from Simcoe County District School Board (Simcoe County District School Board, 2020).

harms, whereas rates in adolescents specifically range from 14% to 39% (BC Partners for Mental Health and Addictions, 2013). Four major reasons for self-harm are described in the literature—to feel better (e.g., to release pent-up feelings or to feel something); to communicate emotional pain; to provide a sense of control; or to self-punish (Centre for Suicide Prevention, 2016). Typically, people who self-harm are not trying to cease all feeling, but this harm can lead to suicide if the self-injurious behaviour is no longer effective at offsetting feelings (Centre for Suicide Prevention, 2016; CMHA, 2020).

SOCIAL MEDIA USE

In today's world, it is no secret that Canadian youth are readily incorporating technology into their daily lives. According to Statistics Canada (2019), nearly 100% of adolescents use the Internet on a daily basis. Further, 93% of Canadians 15 to 30 years of age use social networking sites, which is creating a world connected on an unprecedented level (Statistics Canada, 2019). Not only are today's youth present on social media, but this presence is substantial, with 86% reporting daily social media use (Boak et al., 2018). In 2017, 20% of Ontario teens reported spending five or more hours per day on social media, which was up 9% from just four years before (Boak et al., 2018). This excessive social media use has been specifically outlined as a public health concern by the Canadian Centre for Addiction and Mental Health (Boak et al., 2018). Social media has drawn scrutiny from health professionals given its aptitude to promote unattainable lifestyle and body ideals, and to increase feelings of anxiety and depression, while also displacing positive health behaviours (Boak et al., 2018). However, the effects of such media sites are not all negative. Social media can extend and strengthen social support networks, promote self-expression, and provide access to health information and services (Boak et al., 2018).

RESEARCH FINDINGS

Leaning back in her chair, Avery thought about what she had learned in the past few months of researching. It seemed that what was happening at Georgian Bay secondary schools was not unique; instead, it followed a pattern seen around the world. Adolescent self-harm was seemingly linked to social media use for a variety of reasons. Picking up a marker and walking over to the whiteboard on her wall, Avery began to write a list: 1) cyberbullying; 2) social media dares and challenges; and 3) online friends/communities. "There," Avery thought, "focusing on those three topics should give the committee more than enough to work with."

1. Cyberbullying

Starting at the top of her list, Avery sat back at her desk, pulled out a notepad and began to jot down everything she knew. With the new age of technology and nearly every adolescent in the country using the Internet daily, what once was a school yard problem had quickly found its way home. The most recent figures Avery found showed that 17% of Canadian youth had been cyberbullied or cyberstalked within the past five years (Statistics Canada, 2019). Analogous to traditional styles of bullying, this variant can intensify feelings of emotional distress, depression symptoms, psychological distress, and hopelessness (Richards et al., 2015).

However, what had grabbed Avery's attention was the way in which the literature indicated that cyberbullying may actually be worse for adolescents than other forms of bullying. In all the papers Avery read, the online form was indicated as worse by students and more strongly linked to suicide and self-harm (Aboujaoude et al., 2015; Hamm et al., 2015; Le et al., 2017). From these robust findings, it was clear that any comprehensive adolescent self-harm curriculum would need to discuss cyberbullying. Avery was not worried about explaining this aspect to

Marc-André or anyone at GBDSB; understanding and responding to bullying had long been an important component of teacher training.

2. Social Media Dares and/or Challenges

Moving on to the second item on her list, Avery took a deep breath and began to write. Throughout her research, Avery had come across a number of online "challenges" that involve participants (usually adolescents) completing tasks that result in severe burns, fatalities, and other self-induced injuries. She read about the "salt and ice challenge", the "fire challenge", the "blackout game", and the "Blue Whale Challenge." As Avery kept researching, more and more challenges kept appearing. It seemed there was an endless supply of ideas on the Internet for adolescents to harm themselves for "fun". Avery realized this breadth of information could pose some difficulties for proposing ideas to Marc-André for a concise curriculum. How, she wondered, could the wide array of challenges be reduced into a single understanding and lesson? The challenges range in intensity and popularity but, generally, the objective is for the youth to undertake some risky task (such as lighting oneself on fire) and see how long they can withstand the pain (Roussel & Bell, 2015). Participants are expected to film themselves completing the task and then post it to their social media. However, what stood out most to Avery was the way in which the social media posts seem to glorify the acts while concealing their true danger. Youth who were badly injured or unable to complete the challenge generally did not post their video online; a fear of admitting "failure" prevented others from seeing the true dangers of attempting such feats (Avery et al., 2016).

3. Online Communities

Given the popularity of social media among today's youth, it came as no surprise to Avery that numerous online imagined communities have formed to discuss self-harm. Imagined communities are online societies and groups based on the affirmation of arbitrary similarities between group members (Coles & West, 2016). These communities take many different forms, using various networking sites, but ultimately, they serve the same purpose: to connect like-minded individuals (Boak et al., 2018). In her years of working in mental health, Avery had come across many similar online communities for youth, including those for depression, anxiety, phobias, and many others. Unfortunately, the common rhetoric seemed to reinforce the myth that these types of communities encourage negative health behaviours, including initiating normalization, contagion, or competition (Marchant et al., 2017). However, Avery knew from her extensive research that online mental health communities have numerous benefits including crisis support, reducing social isolation, and outreach, among others (Marchant et al., 2017).

In her previous job, Avery had completed a significant amount of research on online adolescent anxiety forums, finding that these communities were highly beneficial for youth. As it turned out, these online self-harm communities were no different. After combing through dozens of scientific articles and organization websites, and even doing some browsing of her own on forum websites, Avery saw the power of these communities to bring youth together. Research has indicated these discussions had the potential to increase anxious or depressive feelings in adolescents, or increase exposure to cyberbullying (Boak et al., 2018); however, Avery could simply not ignore the numerous benefits they offered.

Online communities are appealing to adolescents given that isolated youth often feel more comfortable opening up and expressing their feelings virtually rather than face-to-face (Ali & Gibson, 2019). This provides youth who might otherwise be silent with a voice to speak about their experiences and concerns, with the option of staying anonymous. In turn, interacting with others who understand and have had similar experiences provides a sense of belonging for

these youth (Dyson et al., 2016). Many active users in these communities are able to build friendships that are open, honest, and provide mutual support. This feeling of community and friendship is very important in self-harm prevention and reduction because loneliness and a lack of connection to others are two of the most prominent reasons adolescents indicate for wanting to harm themselves (Ali & Gibson, 2019). In fact, one of the predominant studies Avery read in her literature review reported that 41.8% of adolescents indicate their involvement in an online community was able to reduce their self-harming behaviour (Dyson et al., 2016). Avery knew that regardless of the final knowledge product the committee created, it should include both the positive and negative aspects of online communities.

SELECTING A KNOWLEDGE PRODUCT

In the previous meeting, the committee had compiled a list of four possible knowledge product options but could not reach a consensus on which one to choose. Unfortunately, because of time and budget constraints, only one could be selected. Tomorrow, the committee would meet again to select which plan to create. As she prepared for the meeting, Avery wrote out the four alternatives again: 1) a formal report; 2) presentations; 3) infographics and posters; 4) booklets. Each option would require different resources as well; fortunately, GBDSB had approved funding for resources regardless of the option selected.

First, Avery's colleague and fellow researcher at GBHU, Dominik Straka, proposed compiling a formal report for the Director of Education. Following the format of a literature review, the report would outline key themes regarding social media use and self-harm in adolescents. Recommendations could also be provided within the report proposing future programs and/or interventions for GBDSB to implement. The first step, Dominik argued, was to educate the Director of Education and other leaders at GBDSB on the topic, before focusing on creating materials for students to use.

Erica Murray, a grade 9 health teacher on the committee, proposed creating presentations. A series of PowerPoint presentations, she reasoned, could be easily assimilated within school health classes. The slides would provide the basic information so even someone with no background in mental health education could properly deliver the knowledge and materials to students. Most health teachers, herself included, already use PowerPoints to deliver the health curriculum to students, so the implementation would be simple, she said. Further, the presentations could be posted online or offered outside of school hours to parents, if there was interest, to further spread knowledge on the topic.

Another suggestion, proposed by Sydney and Jake, was to create a series of infographics and posters that could be distributed and/or put up around the schools. These forms of visual information could then easily be posted to the school website and social media accounts, which many students, parents, and community members follow. "Although not all students will stop to read the posters in the hallways," Sydney had said, "most will at least read the titles. Then they know where to find more information if they need or want it." The students could also be given the posters as handouts so they could read them at home if they wanted to do so more privately. However, what stood out to Avery most about this option was a statement that came from Jake late in the meeting, "if we know that the students who are self-harming are using social media, why don't we use that as a way to access them?"

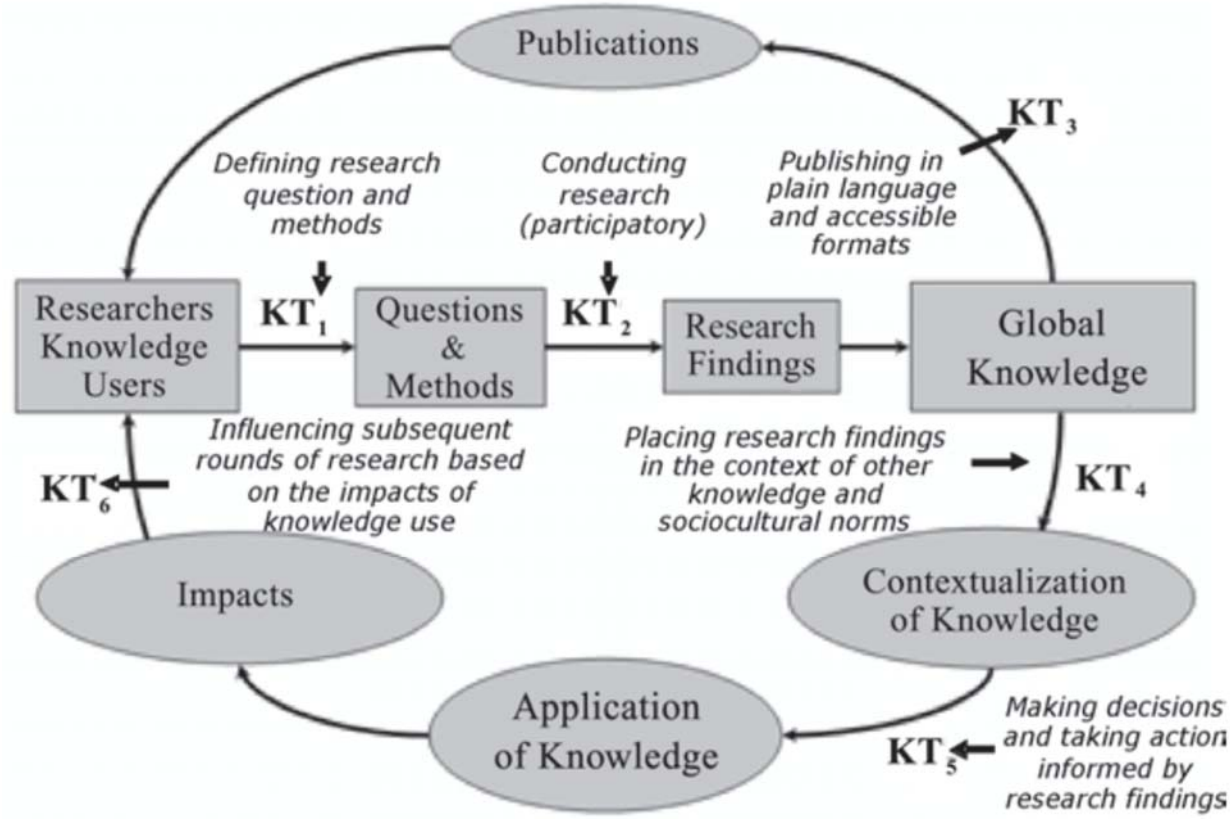
The fourth and final idea presented to the committee was the creation of educational booklets for students. Proposed by Patric, the booklets would be filled with information pages, worksheets, resources, and even journals that students could use to keep track of their mental

well-being, regardless of whether they self-harm. The booklets, he suggested, could be given out during health lessons and completed either during class or at home by the student—depending on what the health teacher wanted to do.

CONCLUSION

Each alternative offered unique advantages but also presented potential barriers to implementation and uptake. Fortunately, the cost of resources needed to make each option was not an issue, as funding had already been approved by the committee and GBDSB. Regardless of which option would be selected, the decision was not an easy one. Although she would rely on the committee's discussion and vote tomorrow morning as the designated leader of this project, Avery knew her recommendation would be heavily valued. Looking at the thick yellow notepad on her desk, full of notes from committee meetings, Avery reflected on the choices before her. Four options remained, and she had to endorse one. A formal literature report, PowerPoint presentations, infographics and posters, or booklets —which would best educate the students? However, it was not just a question of displaying the material best, but it was also a question about how to engage the students so that they wanted to learn. Which option would the students respond to most? Avery let out a sigh and glanced at the clock on her computer screen; it was the end of the workday. As she shut down her computer, and packed up her notepad and belongings, Avery made herself a silent vow: before she went to sleep tonight, she would have made up her mind for the morning meeting.

EXHIBIT 1
CIHR Model of Knowledge Translation



Source: The National Center for the Dissemination of Disability Research (Sudsawad, 2007)

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INSTRUCTOR GUIDANCE

From Bench to Classroom: Knowledge Translation in School Mental Health Initiatives

Tess Wishart, BHSc, MPH (Class of 2020)
Gerald McKinley, PhD (Assistant Professor, Western University)

BACKGROUND

The case outlines the journey of Avery McCann, a researcher at Georgian Bay Health Unit. Avery has been asked to create a knowledge product for the local school board, Georgian Bay District School Board (GBDSB), to teach about adolescent self-harm and how social media may influence this behaviour. Formatted as a decision-making case, four potential options are proposed: a formal literature review report for the Director of Education, PowerPoint presentations, infographics and posters, or educational booklets. The head of the committee in the case details the relative benefits and drawbacks to each possible option because they offer different solutions to the same problem. Limited by time and budget constraints, the researcher, along with her team, must choose a single knowledge product to use, hopefully selecting the option that creates the most positive change.

Along with her team, Avery must determine which option is best for conveying their findings to the students, parents, and teachers of Georgian Bay so that tangible change is created. Unfortunately, the Director of Student Wellness at GBDSB, Patric Andersson, does not have extensive knowledge about mental health, making the selection of a knowledge translation method even more critical. It is vital that the students receive the appropriate messaging regardless of the medium (online or written communication) or person presenting it to them (i.e., teachers, counsellors, etc.). The issue at hand is very pressing. Although self-harm is not usually fatal, it can create lasting damage to the physical, emotional, and mental well-being of those who engage in it, as well as to their loved ones. Further, self-injurious behaviour can be fatal, meaning that a delay in acting could be incredibly costly to the lives and well-being of the students at GBDSB. Ultimately, the case presents students with a complex and important decision that requires detailed consideration, planning, and evaluation in order for a successful outcome to be reached.

OBJECTIVES

1. Understand and explain the concept of knowledge translation.
2. Apply frameworks/models of knowledge translation to understand, justify, and plan for a knowledge product that enables adolescents to research and learn about self-harm.
3. Use behavioural theories to understand the rationale for knowledge translation and to enhance the quality of knowledge product creation by using the case as an example.
4. Compare alternatives for a health communication strategy using knowledge of health literacy and knowledge translation principles.

DISCUSSION QUESTIONS

Pre-Class Discussion

1. How would you describe knowledge translation to someone who has never heard the term before?
2. Which of the four proposed knowledge products would you select? Why?
3. Do you know of any other knowledge translation strategies that Avery and the committee did not consider?

Class Discussion

1. Briefly summarize the case, outlining the key challenges or issues being faced.
2. What stood out to you as good knowledge translation practices undertaken by the characters in the case?
3. What stood out to you as less effective knowledge translation practices undertaken by the characters in the case? Why do you believe these would be less effective?
4. Which steps from the Canadian Institutes of Health Research Model of Knowledge Translation are prominent in the case? Which steps have already occurred and have yet to occur? What actions take place during each of these steps?
5. How can the knowledge-to-action framework be applied to the case? What has occurred or will occur in each stage?

KEYWORDS

Adolescents; health promotion planning; knowledge translation; mental health; school-based programs; self-harm; social media; online communities; cyberbullying.

FACULTY CASE

CASE 14

Hiring a Competent Health Promoter: Can Competency Statements Help?

Natalie Dupuis-Blanchfield, MPH
(Community Health Promoter, North Bay Parry Sound District Health Unit)
Shannon L. Sibbald, PhD (Associate Professor, Western University)

It is a Friday morning and Saraz Frasier is sitting at her desk after a long week. Saraz balances many demanding responsibilities, including updating her team's budget, reviewing project proposals, attending meetings, and leading her team's operational planning and logic model development. Recently, Saraz has been tasked with hiring a new health promoter for her Healthy Communities team. This new hire will help lead Saraz's team in health promotion and help plan special health programs.

Saraz has been the manager of Special Programs and Healthy Communities for more than five years. She has helped transform the Healthy Communities team into an innovative, progressive, and health equity-driven group. She has also been praised for her excellent leadership and team-building abilities, her great communication skills, her comprehensive public health thinking skills, and her ability to adapt to changes quickly. In other words, Saraz is a true trailblazer for her health unit. She is determined to find a candidate who will understand and contribute to her team's current dynamics, work ethic, and equity-related priorities, and to the organization's vision and desired culture change.

The top three candidates were already interviewed this past week. Saraz now needs to decide who the best person is for this position. There are many factors to consider when hiring a new employee, such as their ability to fit within the existing team dynamics, their comprehension of the role, their level of expertise pertaining to the position, and their professional and personal alignment with the organization's mission, vision, and values. It is a difficult task to distinguish between three excellent and qualified candidates and to pick the most appropriate person for the job. Saraz needs to find a reliable way to evaluate and compare her three candidates' competencies, and fast!

As Saraz sits back in her chair, the *Ontario Health Promotion Friday Email Bulletin*, a health promotion newsletter produced by Health Nexus, arrives in her inbox. She slowly scrolls through the email, when a webinar on the *Pan-Canadian Health Promoter Competencies* catches her attention. "That's it," she thinks, "I will compare the candidates using this framework." Saraz grabs her notes from the interviews and opens the webinar on her computer. The end of the day—and the week—is hours away. It is decision time!

THE PAN-CANADIAN HEALTH PROMOTER COMPETENCIES: THE WHAT, WHY, WHO, AND HOW

The *Pan-Canadian Health Promoter Competencies* (Exhibit 1) comprise a compilation of skills, knowledge, and abilities that health promoters should possess to fulfill their mandate efficiently and adequately (Health Promotion Canada, 2015). Essentially, these Competencies act as a

framework upon which health promoters, and others who work within health promotion, can base their work in targeting health, health equity, and the social determinants of health (Health Promotion Canada, 2015). Health Promotion Canada (2015) created these competencies to address the growing need for public health professionals to possess:

> The knowledge, abilities, skills, and values necessary to address the increasing complexity of health issues and burden of chronic diseases, the concern for health inequities, and the recognition of the importance of healthy public policies and creating supportive environments for health. (p.3)

These Competencies were developed, in particular, for health promoters, health promotion managers, and educational institutions who instruct and train health promoters (Health Promotion Canada, 2015). The framework was also developed to address challenges related to role and position misinterpretations and differences in health promoter job descriptions across organizations, and to ensure that health promotion training and education align with the needs of the workforce (Health Promotion Canada, 2015). The Competencies are meant to be both a foundation for excellence in health promotion and a framework of professional development for health promoters. Health promoters do not need to have all of the competencies when they begin their careers; some skills are further developed through experience, and some change over time and in different contexts.

The Competencies are intended to (Health Promotion Canada, 2015):

- increase understanding of the range of knowledge, skills, attitudes, and values for health promotion practice that are needed to plan, implement, and evaluate health promotion action
- inform competency-based job descriptions and performance appraisal processes for health promoters
- inform health promotion training programs and continuing education
- inform career planning and decision-making for health promoters regarding their professional development and training needs
- contribute to greater recognition and validation of the value of health promotion and the work done by health promotion practitioners

Specific values and principles were selected as underlying and guiding forces in the development of the *Pan-Canadian Health Promoter Competencies*. These include (Health Promotion Canada, 2015):

- a social–ecological model of health that considers the cultural, economic, and social determinants of health
- a commitment to equity, civil society, and social justice
- a respect for cultural diversity and sensitivity
- a dedication to sustainable development
- a participatory approach to engaging the population in identifying needs, setting priorities, and planning, implementing, and evaluating the practical and feasible health promotion solutions to address needs (Public Health Agency of Canada, 2010)

These principles and values not only underline the Competencies, but they should also be consistent in the health promoter's work in the community.

It is essential that the framework translates to real and concrete action and does not simply remain as an abstract concept for the health promoter. The Health Promoter Competencies

represent actual abilities required to make positive change within a community and aim to have the greatest impact on health and well-being.

As the manager of Special Programs and Healthy Communities, Saraz can strategically use these competency statements to create a profile of the perfect candidate for the position, based on the skills, abilities, and knowledge that is required. Saraz can subsequently evaluate and rate the candidates and compare them with her ideal candidate profile to determine which candidate best meets the criteria.

HEALTH PROMOTION AND THE HEALTH PROMOTER

According to the World Health Organization (WHO, 2021), health promotion consists of providing individuals with the skills and knowledge to simultaneously have control over, and improve, their health. Health promotion uses a community-based approach, taking into consideration all the social, economic, and environmental factors that may facilitate, or inhibit, health. It does not focus its work on changing individual behaviour, but instead develops, implements, and evaluates society-wide interventions that target many factors (WHO, 2021).

Health encompasses both experiential and functional physical, mental, social, and emotional well-being (McCartney et al., 2019). In order to achieve optimal health, individuals need to accomplish goals and ambitions, satisfy basic needs, and adapt to their environment (WHO, 1986). According to the *Ottawa Charter for Health Promotion*, basic needs for health include peace, shelter, education, access to safe food, income, a stable ecosystem, sustainable resources, health equity, and social justice (WHO, 1986). Optimal health can only be achieved once these needs are satisfied. Health encompasses, and is influenced by, political, social, economic, cultural, environmental, behavioural, biological, personal, and physical factors (WHO, 1986). Therefore, health promotion not only targets lifestyles and behaviours, but it promotes holistic well-being (WHO, 1986).

Facilitating and advocating for health equity are significant components of health promotion. According to the Public Health Agency of Canada (2014), health equity refers to the “absence of health inequalities, which are avoidable or remediable differences in health among populations or groups defined socially, economically, demographically, or geographically” (p. 3). Health equity work therefore aims to reduce these socially constructed health disparities among population groups to ensure equal opportunity for achieving optimal health and well-being within society.

By using a health equity approach, health services are modified and reoriented to target needs more appropriately and to lessen the possible negative impacts of the social determinants of health. Health promotion actions include building healthy public policy, creating supportive environments, strengthening community action, enabling people to develop personal skills, and reorienting health services (WHO, 1986). Together, these actions promote health in an all-encompassing manner.

Ultimately, a health promoter’s main role is to practice the art of health promotion (Health Promotion Canada, 2015). The *Pan-Canadian Health Promoter Competencies* align with the work of practitioners whose main capacities are in accordance with the strategies and actions of the *Ottawa Charter for Health Promotion* (Exhibit 2), regardless of the type of organization (i.e., public health units, governmental and nongovernmental organizations, or health- and non-health-related bodies) (Health Promotion Canada, 2015).

Health promoters are expected to use various strategies, techniques, models, and approaches to improve health within a community, including the use of (Health Promotion Canada, 2015):

- extensive knowledge and understanding of health, its components, and all of its determinants
- analyses of the complexities involved in being healthy and the associated behaviours
- strategic, high-level thinking, and leadership qualities
- evidence-based decision-making, theory and ethical principles
- work conducted in ways that encourages community engagement and participation

Essentially, the health promoter's principal function, through skill and capacity building, is to enable others to conduct the art of health promotion for themselves and to address their own needs (Health Promotion Canada, 2015). In other words, health promoters empower individuals, through community programming and outreach, to practice their own health promotion in order to lead healthier lives.

Competencies that contain health promotion aspects are also incorporated within the *Core Competencies for Public Health in Canada* (Public Health Agency of Canada, 2008). However, those working within health promotion can refer to the *Pan-Canadian Health Promoter Competencies*, as they build on the *Core Competencies for Public Health in Canada* and consist of more in-depth expectations for professionals in terms of knowledge, proficiency, skills, and abilities (Health Promotion Canada, 2015). Adding to the complexities of health and well-being are the differing position titles and practice contexts that exist within the health promotion field (Health Promotion Canada, 2015).

As a result of the complexities involved in health promotion, it is imperative to hire a candidate who has clearly demonstrated the skills, knowledge, and abilities to conduct this work in a competent manner. Ultimately, the health promoter must target the social determinants of health with the goal of reducing health disparities among population groups and creating opportunities and environments that ensure holistic health and well-being is achieved within all communities. Because this is an important component of Saraz's Healthy Communities team's activities, the chosen candidate must reflect and represent these values and prioritize health equity within their work.

THE HEALTHY COMMUNITIES TEAM

The Healthy Communities team is an interdisciplinary health profession group comprised of Saraz (manager), a program administrative assistant, two dietitians, and seven health promoters. The health promoters are each responsible for disseminating the most current information pertaining to one specific topic to the team, in order to create well-rounded health promoters. Topics include, but are not limited to, physical activity, healthy eating, injury prevention, mental health, youth engagement, and substance abuse prevention.

The team is responsible for promoting health, planning, conducting, and implementing health initiatives and programs, working with community partners, developing policy, and reducing disparities within the community in accordance with the requirements of the *Ontario Public Health Standards* (Ministry of Health and Long-Term Care, 2018).

This team is also responsible for organizing special programs that may arise within a given year. Special program topics have included the opioid crisis, Indigenous health, LGBTQ2S+ positive spaces, mental health initiatives, and physical literacy. Essentially, the Healthy Communities team leads the planning and implementation of any initiatives when special health promotion

programming is needed for any significant and ongoing health crisis occurring within the community.

Saraz has completely revamped the Healthy Communities team. Under her leadership, the group has created a logic model, a work plan, and vision, values, and mission statements to aid in guiding and prioritizing their work within the community. The team's priorities include addressing inequities among population groups, adequately targeting the social determinants of health, modifying and reorienting existing programs to meet community needs, developing culturally competent mass media messages, creating meaningful and best-practice initiatives for people who are the most vulnerable, and using innovative and creative methods to engage community members.

The Healthy Communities team is an exemplar group at Saraz's health unit. Accordingly, the candidate who best reflects the *Pan-Canadian Health Promoter Competencies* and Saraz's ideal candidate profile must be chosen, as these competencies are required to undertake the type of work conducted by the Healthy Communities team.

THE CANDIDATES

Candidate 1

Candidate 1 is a registered nurse who holds a Bachelor of Science in Nursing degree. The candidate has five years of experience working as a community health promoter at a rural public health unit, sitting on an interdisciplinary health profession healthy living team. Candidate 1 has extensive knowledge about the population health promotion approach and has applied this technique to analyze health issues within the community. This applicant works extensively on health initiatives that pertain to injury prevention and physical activity and uses a social determinants of health lens when planning, creating, and modifying programs. Candidate 1 aims to decrease health disparities among vulnerable populations with the intention of increasing health equity throughout the community. This candidate has experience in managing and coordinating health-related projects within the community and has often found connections between these projects in order to promote health in a comprehensive and holistic fashion. The candidate has worked with multiple community agencies and stakeholders in planning and implementing physical activity initiatives within the community. Candidate 1 is also able to critically assess applied health research and develop detailed program proposals and reports to inform and contribute to their work. They are familiar with the *Ontario Public Health Standards* (Ministry of Health and Long-Term Care, 2018) and the *Patients First: Action Plan for Health Care* resource (Ministry of Health and Long-Term Care, 2015). This candidate has program planning and evaluation experience gained from serving as a planning lead for community physical activity and injury prevention programs such as bike rodeos, bike lane projects, and drinking and driving campaigns. This applicant has evaluated the successes and failures of these initiatives by consulting community members and community agencies impacted by the work. The candidate has excellent verbal and written communication skills and strong computer and technology skills, and works well both independently and within a team environment.

Candidate 2

Candidate 2 has completed an Honours Bachelor of Science degree and has recently obtained a Master of Public Health degree. As a new graduate, the applicant does not have work experience in the public health field apart from practicum experience, a significant amount of volunteer work, and experience as a public health graduate student. The candidate had the opportunity to work on an interdisciplinary and heterogeneous learning team throughout graduate school, which enabled them to build teamwork skills, learn how to appreciate different opinions and perspectives, and learn how to create meaningful projects based on each team member's unique experiences. Candidate 2 has a deep understanding of, and passion for, the

social determinants of health and health equity, displays great leadership skills and communication skills, and advocates strongly for vulnerable groups within the community. The candidate has applied health promotion methods in their graduate work with a community organization, developing a culturally competent marketing campaign aimed towards at-risk youth. Through this work, candidate 2 applied various behaviour change theories in the marketing campaign planning. In addition, the candidate was responsible for coordinating the community project and communicating with the designated stakeholder by providing weekly updates on the project's progress and soliciting project feedback. This candidate managed and coordinated many health projects throughout graduate school and is great at prioritizing projects based on importance, workload, and deadlines. Throughout their practicum, the applicant also demonstrated the ability to foster community partnerships with diverse stakeholders. Candidate 2 can critically appraise health research, draw inferences, question methods, and apply the research results accordingly. The candidate is familiar with the *Ontario Public Health Standards* (Ministry of Health and Long-Term Care, 2018), is able to assess the implications involved in the modernization of these standards, and can discuss the impact this will have on public health services within the community. Candidate 2 is bilingual, has excellent verbal and written communication skills, is extremely fluent in computer technology (especially social media), and thrives in both independent and teamwork environments. This candidate also has connections with fellow Master of Public Health graduates working in other public health units across Ontario.

Candidate 3

Candidate 3 has a Bachelor of Physical and Health Education degree and a Master of Education degree. The candidate has four years of experience working as a health promotion specialist on a healthy schools team within a public health unit. This candidate works extensively on tobacco-use prevention school and youth programs and has developed skills in analyzing health policies and guidelines. The applicant has experience in developing youth-friendly and youth-relevant media advocacy campaigns about tobacco prevention and is skilled at communicating accurate health information on social media aimed at impressionable audiences. Candidate 3 is familiar with school curriculums, the *Ontario Public Health Standards* (Ministry of Health and Long-Term Care, 2018), and the Ministry's *Foundations for a Healthy School* resource (Ministry of Education, 2014). In their work on a healthy schools team, candidate 3 has demonstrated the ability to plan, coordinate, and evaluate health initiatives and programs within schools, and has developed meaningful relationships with these schools and their boards. The applicant has displayed a capacity to modify and orient initiatives based on the target population's needs and desires, and to consider the health research and the social determinants of health that are most relevant and prevalent among school-aged children and youth. Candidate 3 has also worked with community agencies to develop action plans aimed at promoting healthy student behaviours and reducing and preventing tobacco use among youth. This candidate has placed great emphasis on diversity within their work, ensuring all voices are promoted and heard in health projects and campaigns. Candidate 3 has shown great verbal and written communication abilities during their creation and delivery of numerous presentations on several topics to diverse audiences. This applicant is proficient in using social media platforms and computer technology, and is great at working individually and in teams.

CHOOSING THE RIGHT CANDIDATE USING THE COMPETENCIES

It is undeniable from a managerial perspective that all three of Saraz's candidates are competent, skilled, and knowledgeable. Saraz is looking for an employee who possesses the skills and abilities that will best suit the position's needs, has a natural passion and spirit for creativity, and can integrate themselves quickly into the existing team dynamics. Saraz wants to hire someone who possesses the appropriate education and experience, and who is a team player, leader, and innovator. Her ideal candidate understands and values the complexities

involved in public health and values and continuously strives for health equity. Saraz needs a candidate who is flexible and adaptable, and always contributes greatly to their team and their work. Speaking and understanding more than one language is also a great asset for the Healthy Communities team. Now, Saraz has to take one last look at her candidates and determine who is most likely to best fulfill her expectations for a competent health promoter.

Of the three candidates, which one is the best choice? Which one most appropriately reflects the Health Promoter Competencies? Which person is most similar to Saraz's ideal candidate profile? Which candidate will contribute most significantly to the Healthy Communities team?

CONCLUSION

The *Pan-Canadian Health Promoter Competencies* may be clear and straightforward, but this decision is not. Saraz has read her documents pertaining to the Competencies and has compared her three candidates based on this framework.

The end of the day is fast approaching. Which candidate will Saraz hire?

EXHIBIT 1
The Pan-Canadian Health Promoter Competencies

1. Health Promotion Knowledge and Skills
Draw upon a multidisciplinary base of core concepts, principles, theory, and research to understand health issues and inform health promotion action.

A health promoter is able to:
1.1. Apply a population health promotion approach, including determinants of health and health equity, to the analysis of health issues.
1.2. Apply health promotion principles, theory, and research to:
- Identify options for health promotion action.
- Plan, implement, and evaluate health promotion action.

2. Situational Assessments
Partner with communities to conduct a situational assessment for a health issue to assess needs, strengths, and opportunities in the context of health determinants and health equity. A situational assessment integrates consideration of the health needs of the population; the social, economic, political, cultural, and environmental contexts; stakeholder perspectives; and, existing evidence and experience, in order to inform options for health promotion action.

A health promoter is able to:
2.1. Retrieve and synthesize population health status information to describe the importance and underlying causes of a health issue.
2.2. Access and critically appraise evidence (i.e., published and grey literature, systematic reviews, and promising practises) for potential health promotion action.
2.3. Conduct an environmental scan to identify community perspectives, assets, resources, challenges, and gaps.
2.4. Interpret population health status information, evidence, and environmental scan findings to identify options for health promotion action.

3. Plan and Evaluate Health Promotion Action
Working with stakeholders, develop a plan to achieve measurable health promotion goals and objectives based on a situational assessment's findings. Modify the plan as needed based on monitoring of its implementation and evaluation of its impact.

A health promoter is able to:
3.1. Develop a plan to implement health promotion action including goals, objectives, and implementation and evaluation steps.
3.2. Identify and oversee resources (e.g., skills, personnel, partner contributions, budget) to develop, implement, and evaluate sustainable health promotion action.
3.3. Monitor and evaluate the implementation of health promotion action.

4. Policy Development and Advocacy
Reflecting community needs, contribute to the development of, and advocacy for, policies to improve health and reduce inequities.

A health promoter is able to:
4.1. Describe the potential implications of policy options (i.e., health, economic, administrative, legal, social, environmental, political, and other factors, as applicable).
4.2. Provide strategic policy advice on health promotion issues.

4.3. Write clear and concise briefs for health promotion issues.
4.4. Apply understanding of the policy making process to assist, enable, and facilitate the community to contribute to policy development.

5. Community Mobilization and Building Community Capacity
Facilitate community mobilization and build community capacity around shared health priorities.

A health promoter is able to:
5.1. Develop relationships and engage in a dialogue with communities based on trust and mutual respect.
5.2. Identify and strengthen local community capacities to take action on health issues.
5.3. Advocate for and with communities to improve their health and well-being

6. Partnership and Collaboration
Work collaboratively with partners and across sectors to enhance the impact and sustainability of health promotion action.

A health promoter is able to:
6.1. Establish and maintain linkages with community leaders and other key health promotion stakeholders (e.g., schools, businesses, local governments, faith groups, nongovernmental organizations, etc.).
6.2. Utilize leadership, team building, negotiation, and conflict resolution skills to build community partnerships.
6.3. Build and support coalitions to stimulate intersectoral collaboration on health issues.

7. Communication
Communicate health promotion information effectively with diverse audiences using appropriate approaches and technologies.

A health promoter is able to:
7.1. Provide information tailored to specific audiences (e.g., professional, community groups, general population) on population health status and health promotion action.
7.2. Apply communication methods and techniques to the development, implementation, and evaluation of health promotion action.
7.3. Use the media, information technologies, and community networks to receive and communicate information.
7.4. Communicate with diverse populations in a culturally appropriate manner.

8. Diversity and Inclusiveness
Interact effectively with diverse individuals, groups, and communities to promote health and reduce health inequities.

A health promoter is able to:
8.1. Recognize how the determinants of health (biological, social, cultural, economic, and physical environments) influence the health and well-being of specific population groups.
8.2. Address population diversity when planning, implementing, adapting, and evaluating health promotion action.
8.3. Apply culturally relevant and appropriate approaches with people from diverse cultural, socioeconomic, and educational backgrounds, and persons of all ages, genders, health status, sexual orientations, and abilities.

9. Leadership and Building Organizational Capacity

Provide leadership within an employing organization to build health promotion capacity and performance, including team and individual level learning.

A health promoter is able to:

9.1. Describe the context of health promotion structures and roles at different jurisdictional levels.
9.2. Describe how the work of health promotion supports the organization's vision, mission, and priorities.
9.3. Contribute to developing key values and a shared vision in planning and implementing health promotion action in the community.
9.4. Demonstrate an ability to set and follow priorities, and to maximize outcomes based on available resources.
9.5. Contribute to maintaining organizational performance standards.
9.6. Manage self, others, information, and resources in an ethical manner.
9.7. Contribute to team and organizational learning in order to advance health promotion goals (e.g., mentor students and other staff, and participate in research and quality assurance initiatives).
9.8. Pursue lifelong learning in the field of health promotion (e.g., professional development and practice development).

Source: Health Promotion Canada, 2015.

EXHIBIT 2
Ottawa Charter for Health Promotion Strategies and Actions

Ottawa Charter for Health Promotion

Strategies:

- Advocate for conditions favourable to health
- Enable people to achieve their full health potential
- Mediate between differing interests in society for the pursuit of health

Actions:

- Build healthy public policy
- Create supportive environments
- Strengthen community action
- Develop personal skills
- Reorient health services

Source: Adapted from Ottawa Charter for Health Promotion, 1986.

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INSTRUCTOR GUIDANCE

Hiring a Competent Health Promoter: Can Competency Statements Help?

Natalie Dupuis-Blanchfield, MPH
(Community Health Promoter, North Bay Parry Sound District Health Unit)
Shannon L. Sibbald, PhD (Associate Professor, Western University)

BACKGROUND

Saraz Frasier has been the manager of Special Programs and Healthy Communities at her health unit for the past five years. She is a true trailblazer within her organization. Saraz has helped transform her team into an innovative, progressive, and health equity-driven team. This team is responsible for promoting health, planning, conducting, and implementing health initiatives and health programs, working with community partners, developing policy, and reducing disparities within the community.

Saraz has recently been tasked with hiring a new health promoter for her Healthy Communities team. This new hire will help lead Saraz's team in health promotion and help plan special health programs. She is determined to find a candidate who will understand and contribute to her team's current dynamic, work ethic, and equity-related priorities, and to the organization's vision and desired culture change.

The top three candidates were already interviewed this past week. Saraz now needs to decide who the best person is for this position. As she is thinking about finding a reliable way to evaluate and compare the three excellent candidates, Saraz opens her email only to find a webinar on the *Pan-Canadian Health Promoter Competencies*. It's a sign! She will use the Competencies to evaluate and compare her three candidates in order to hire the best person for the job.

The *Pan-Canadian Health Promoter Competencies* outline the skills, knowledge, and abilities that health promoters should possess to fulfill their mandate efficiently and adequately (Health Promotion Canada, 2015). These Competencies serve as a framework upon which health promoters, and others who work within health promotion, can base their work and practice their skills in targeting health, health equity, and the social determinants of health (Health Promotion Canada, 2015). Saraz can strategically use these competency statements to create a profile of the perfect candidate for the position, based on the skills, abilities, and knowledge that she requires, and then compare the three qualified candidates to this profile. The candidate who best reflects the Health Promoter Competencies and Saraz's ideal candidate profile must be chosen soon, as these skills are required to undertake the type of work conducted by the exemplar Healthy Communities team at Saraz's health unit.

All three of Saraz's candidates are competent, skilled, and knowledgeable. Saraz is looking for an innovative leader who possesses the required education and experience, and understands and values the complexities involved in public health. Saraz has to take one last look at her

candidates, using the ideal candidate profile she has developed based on the Competencies, to determine who is most likely to best fulfill her expectations of a competent health promoter.

OBJECTIVES

1. Learn about the *Pan-Canadian Health Promoter Competencies* and their role in creating qualified, skilled, and knowledgeable health promoters.
2. Understand and appreciate the complexities involved in hiring the perfect candidate for a health promoter job and how the Competencies can help.
3. Learn about health promotion and its importance within communities. Consequently, understand the importance of hiring candidates who possess the correct competencies to adequately perform the job of health promotion.

DISCUSSION QUESTIONS

1. Why are the *Pan-Canadian* Health *Promoter Competencies* important in the field of health promotion?
2. Explain why these Competencies are a great tool to use when hiring a health promoter.
3. Why is health promotion important? Why is it important to have qualified health promoters whose qualifications align with the Competencies?
4. What type of qualifications and experience would you look for in hiring a health promoter? Which competencies are most important? Would you use the *Pan-Canadian Health Promoter Competencies* as a tool to help you make your decision?

KEYWORDS

Health promotion; health promoter; hiring; management; Pan-Canadian Health Promoter Competencies; qualifications, careers

CASE 15

When the Midnight Train is the First of Many: Dealing with Irregular and Unsafe Railway Crossings in the City of London

Shannon L. Sibbald, PhD (Associate Professor, Western University)

While visiting a local school, the mayor of London was asked a simple question by a grade three student: “Why aren’t there flashing light barriers at all railway crossings that are close to the places where children play”?

“Great question,” the Mayor responded.? With frequent travel of dangerous materials and freight through the London area, why weren’t there better safety measures in place? Why did parents of young children have to worry about the safety of their children when they were close to home? Why do London, Ontario and the surrounding areas have some of the highest train-pedestrian accident rates across the country? What was wrong with the current safety plans and railroad infrastructure?

The mayor did not have answers to any of these questions, but he knew something needed to be done. But what? And by whom?

THE CITY OF LONDON AND SURROUNDING AREA

Known as the Forest City, London was founded in 1826 and has flourished and expanded since then to reach its current population of over 400,000 people. London is the seat of Middlesex County (containing many other small townships) and is surrounded by Perth and Huron County to the north, by Oxford County to the east, by Elgin County to the south, and by Chatham-Kent and Lambton counties to the west. London is a regional centre of health care and education, home to Western University and Fanshawe College. London is one of the largest cities in the province of Ontario with an international airport as well as train and bus stations. Located in the southwest region of the province, London and the surrounding area have become natural corridors for freight and passenger trains, with many train tracks located in accessible, public areas and on residential streets throughout the city.

RAILROAD COMPANIES

There are two major freight companies currently using the London corridor: Canadian Pacific Railway (CP) and Canadian National Railway (CN). Canadian Pacific Railway stretches across Canada and its history in London dates to 1881. Canadian National Railway’s tri-coastal network spans Canada from east to west with 20,000 track miles. There have been concerns about the goods these two companies carry, and it has been noted that 10% of goods shipped by CP and 14% of goods shipped by CN through London are dangerous products such as chemicals and petroleum gases (Dubinski, 2017). Although CN and CP predominantly transport goods, CP was previously Canada’s largest passenger train company before VIA Rail Canada was established. VIA Rail operates the national passenger rail service on behalf of the Canadian government (Via Rail Canada, 2020). However, 98% of the passenger railroads used by VIA Rail Canada are networks owned by CP or CN (Via Rail Canada, 2020). VIA Rail Canada operates more than 514 train departures every week on a 12,500 km railroad network

that connects more than 400 Canadian communities (Via Rail Canada, 2020). Some of these trains travel through downtown London at regular intervals throughout the year. Although passenger trains tend to run on predictable and routine schedules, freight trains do not. Canadian Pacific Railway and CN trains operate 24 hours a day, seven days a week. Some rail lines in London may only carry one or two trains each week, whereas busy corridors can carry more than 30 trains per day along 65 rail crossings (Dubinski, 2017).

A recent addition to London's railway system includes the GO train service between and London, launched in partnership with VIA Rail and CN. As of October 18th 2021, a pilot project testing one weekday early morning trip from London to Toronto, and a weekday evening trip back was launched ("Metrolinx begins GO train service", 2021). With this, the regional transportation agency Metrolinx has established the first ever GO connection to London, increasing access to Southwestern Ontario ("Metrolinx begins GO train service", 2021). In addition to this, the newly added service enhances the frequency and speed of passenger railway travel in the Ontario region ("Metrolinx begins GO train service", 2021).

THE TRANSPORTATION CHALLENGE

The Transportation Safety Board of Canada is an independent agency that investigates marine, pipeline, railway, and aviation transportation occurrences with an aim to make recommendations that boost transportation safety (Transportation Safety Board of Canada, 2019a). Records from The Transportation Safety Board reveal a total of 1246 rail accidents reported over the year of 2019, a 17% increase from the 2009-2018 average of 1064 rail accidents (Transportation Safety Board of Canada, 2019c). Of all 2019 accidents, 175 accidents were railway crossing accidents (Transportation Safety Board of Canada, 2019c). This equates to about one accident every two days. A total of 252 people have been killed since 2008, and 302 people have been seriously injured from rail crossing accidents (Transportation Safety Board of Canada, 2019a).

Because the reality of trains in London is not changing, the need to address the concerns about safety is essential. Within London there are several dangerous rail crossings that have no gates or barriers to block the road. The main concern is the safety of pedestrians at these crossings.

Rail crossings in London are typically prone to risk. Specifically, data gathered from 2000 to 2015 listed a St. George street crossing as one of the top 25 accident-prone rail crossings in Canada (Marcoux, J. et al., 2016). Accident reports from London crossings also revealed concerns about several widespread design flaws in the railway crossings, including lack of visible railway signage, lack of pedestrian gates, poor maintenance of existing crossings, and lack of adequate warning signals (Transportation Safety Board of Canada, 2019b). Problems exist with lines of sight, a lack of gates and warnings, and confusing lights (Transportation Safety Board of Canada, 2019b). Not only do these problems exist in London but they also exist across Canada. Many believe there is a lack of adequate warning systems for pedestrians and motor vehicles.

The Canadian Council of Motor Transport Administrators (CCMTA), which includes representation from provincial and territorial governments as well as the federal government of Canada, coordinates all matters dealing with the administration, regulation, and control of motor vehicle transportation and highway safety (CCMTA, 2018). The CCMTA aims to address Canadian road safety priorities to improve the safety and efficiency of Canadian passenger and goods transportation (CCMTA, 2018). According to the CCMTA, there are many pedestrian-focused solutions for rail-grade crossings, including signs encouraging pedestrians to take specific actions. These solutions can include active and/or passive devices. Active devices are

those that give advanced notice of a train approaching, such as flashing light signals, bells, and automatic gates (United States Department of Transportation, 2019). Physical barriers such as fencing can be installed to encourage pedestrians to look both ways before crossing. Pavement markings can delineate the pathway to indicate where people should stop when waiting for a train. Other active systems that use auditory and visual signals, such as pedestrian gates or loud warning bells/flashing signs, can be installed to warn pedestrians that a train is approaching. In contrast, passive devices only indicate that there is a crossing and the pedestrians or people in motor vehicles must look for an approaching train and then take appropriate action (United States Department of Transportation, 2019). The United States Department of Transportation (2019) has shown that active traffic control devices are a more effective method of improving railway crossing safety and reducing collisions.

In Canada, however, only 17% of all 17,000 railways have gates, and the primary purpose of these gates is to control motor vehicles. An additional 22% of crossings have flashing lights and/or bells (Marcoux, J., & McDonald, J., 2016). This means that together, just slightly more than one-third of railway crossings have automated warning systems that can be classified as active devices (Marcoux, J., & McDonald, J., 2016). The remaining two-thirds have passively protected crossings that only use the white crossing “X” and/or stop signs (Marcoux, J., & McDonald, J., 2016). Efforts are needed to install more active devices at railway crossings in conjunction with passive devices to maximize railroad safety.

RECENT TRAGEDIES

London residents have become accustomed to the trains but remain frustrated by the delays at rail crossings on busy commuter roads and by the lack of safety mechanisms on smaller, less travelled streets. Some residential areas have more than 12 freight trains cross their area each day. Local residents are used to the inconsistencies both in train frequency and train speed. Although train safety is promoted, it is not unusual to see pedestrians climbing through the open doors of a stopped train or running to get across the tracks before a slow train blocks the road.

In 2012, 11-year-old Kendra Cameron was struck and killed while crossing over a set of train tracks in her neighbourhood. The trains in the area where Kendra lived and played were often slow moving (Marcoux, J. et al., 2016). Kendra’s mother believed Kendra misjudged the speed of the train, which was going at almost 50 km/h, and thought she could outrun the train (Marcoux, J. et al., 2016). The tragedy was followed by a call for barriers to be erected on either side of the street to dissuade pedestrians from trying to outrun the trains.

In 2014, two women were killed in a car crash in Southwest Middlesex at a VIA Rail train crossing on Melbourne road, the fourth most risky crossing in Canada (“Police Identify 2 Women Killed”, 2016). The mayor called this tragedy a “wake-up call”, and subsequently sought support from Middlesex County to install protective gates at the crossing to prevent future incidents (“Police Identify 2 Women Killed”, 2016). In court, the lawyer representing the victims argued that, even though there had been previous crashes at the same crossing, the failure to install appropriate safety measures was an ongoing problem and a gate had not been installed when it should have (Van Brenk, 2016). At a subsequent Middlesex County council meeting, the motion to install gates was voted down. The county stated that, “it isn’t up to the municipalities to correct rail safety” (Van Brenk, 2016).

More recently, the city of London was convicted for the death of 26-year-old Malcolm Trudell, who lost his life when he was hit by a freight train while snowplowing a sidewalk in January of 2018 (Stacey, M., 2020). This was attributed to a six-year snowplowing contract, formed between the City of London and Jackson Pools. Jackson Pools had then subcontracted another

company named WeeBee for the job, without informing the City of London (Stacey, M., 2020). The deadly incident was linked to a lack of instruction and inadequate training on snowplowing, where Malcolm had only worked five shifts before his shift on the day he was killed. Moreover, although an official G license was required under the contract, Malcolm only held a G1 license. Both WeeBee and Jackson Pools pleaded guilty for providing insufficient training, supervision and instruction, and were fined for $15,000 and $60,000 respectively (Stacey, M., 2020). The City of London also faced two health and safety charges as both subcontracted companies were formally employed under the City. Following the collision, the importance of adequate training on safe work practices was emphasized in a report released by The Transportation Safety Board of Canada (Stacey, M., 2020).

KEY PLAYERS

Trains fall into a jurisdictional triangle. Many organizations, local municipalities, and provincial and federal ministries are involved in building and overseeing railways. All parties must work collaboratively to improve safety at the more than 17,000 crossings across Canada (Marcoux, J., & McDonald, J, 2016).

Transport Canada supports the safe coexistence of railways and communities (Transport Canada, 2016). It is ultimately responsible for the maintenance and safety of railway crossings, and its role includes regulating/enforcing railroad rules (Transport Canada, 2016). Safety standards depend on the specific crossing (traffic, location, etc.). However, system checks are seldom conducted by Transport Canada, unless in the case of an incident.

The Transportation Safety Board of Canada assumes a watchdog role, advocating for tougher rules and regulations. The Board recently pressured the federal government to set new standards, calling on municipalities, provinces, and railway organizations to examine each crossing to determine necessary upgrades. It is expected that these new regulations will not be in force until 2021.

More recently, the Transportation Safety Board of Canada has launched a 5-year Strategic Plan, projected to come into effect for 2021-2022 to 2025-2026, to advance marine, rail, pipeline and air transportation safety (Government of Canada, 2021). The Board plans to conduct independent investigations to the contributing factors and causes behind many rail accidents (Government of Canada, 2021). With this, the Board can collaborate with stakeholders to make recommendations to eliminate any unsafe practices or hazards (Government of Canada, 2021).. Some goals specific to the rail program that the Board wishes to achieve are: a reduction in the amount of fatal accidents; a reduction in the average time taken to complete a safety investigation as well as an increase in the response to implement changes to identified safety deficiencies with the railroad system – all targeted for completion by March 22, 2022 (Government of Canada, 2021).

DECISION POINT

Any decision about how to move forward will be complex and require mass consultation with key players including government agencies such as Transport Canada, and railroad companies such as CN, CP, VIA Rail and GO transit. The process needs to be collaborative and transparent. All parties need to show their data and work collectively to define the problem and come up with options for solutions. Local communities and residents should also be consulted Considering the varied logistics and differing requirements needed at individual crossings, it must be determined what comprehensive redesigns are required in order to meet the new safety standards.

Not to mention, money has been a key player in issues with rail safety, as widespread changes can cost hundreds of millions of dollars. With the involvement of many for profit companies in the railroad business, most of these companies do not take initiative to go beyond the restrictions imposed on them by the Transport Canada. Municipalities also do not do so, as the installation and maintenance of new equipment can increase their tax base quite significantly. For example, each full gate costs between $200,000 and $1 million (Canadian National Railway, 2016). Although the safest route is to remove road crossings and use underpasses or overpasses instead, this approach is even more costly and unrealistic, and thus avoided by both railroad companies and municipalities. As a result, the only other alternative is promoting rail safety awareness and education.

RAIL SAFETY EDUCATION

Pedestrians need to be educated about the dangers of crossing railway tracks. School boards and public health agencies have an important role in educating children and adults on this issue. Several initiatives do exist to improve railway education in the local community. For example, Operation Lifesaver found at: https://www.operationlifesaver.ca is a dedicated group of rail safety ambassadors funded by the Railway Association of Canada and Transport Canada. In cooperation with industry, government, police, unions, public organizations, and community groups, Operation Lifesaver promotes awareness about highway and railway crossings in an effort to help save lives and reduce suffering incurred from railroad accidents (City of London, 2018). In 2018, London started participating in a national railway crossing safety-awareness program (City of London, 2018). The “Look. Listen. Live. Community Safety Partnership Program” developed by Operation Lifesaver works to identify locations where railroad safety signs can be implemented across the country and to raise awareness about the need to be cautious around railroad crossings (City of London, 2018). The municipal government in London has also taken a step forward by asking CN and CP to identify dangerous goods (i.e., high-risk chemicals) that are being shipped across the city (Dubinski, 2017).

In addition, railway police are federal police officers who are often hired privately by railway companies (such as CP or CN) to enforce security and safety of their railways. Although hired privately, railway police have the same standing, powers and licensing as other police officers in Canada (CP Police Emergency Management, 2021). Some duties of railway police officers include investigating railway crimes, protecting cargo and passengers travelling on the railways, issuing tickets for railway misconduct and providing education to the general public (CP Police Emergency Management, 2021). Railway police officers often give presentations to children and educate them about the risks associated with public crossings and trespassing on railway property (Transportation Safety Board of Canada, 2017). These presentations are traditionally given to schools located within a mile of crossings (Transportation Safety Board of Canada, 2017). However, it is ultimately up to school principals to decide whether or not to host these educational seminars (Transportation Safety Board of Canada, 2017). Unfortunately, cuts to railway police and lack of school principal agreement have limited the delivery of these workshops (Transportation Safety Board of Canada, 2017).

ENFORCEMENT AT CROSSINGS AND TRESPASSING LAWS

As of 2008, the Canadian Pacific Police Service (CPPS) partnered with Operation Lifesaver to promote their mission of enforcing railway safety, through assisting with educational lessons on topics such as dangers of ignoring signals at railway crossings and consequences of railway trespassing (“Canadian Pacific Police Services”, 2011). Moreover, the CPPS identified high-risk areas, those that had high incidences of disobedience of railway signals or frequent railway trespassing, to make daily patrols (“Canadian Pacific Police Services”, 2011). The CPPS officers utilized laser speed detection to identify drivers who may speed as they approach

railway crossings in an effort to bypass the train in time ("Canadian Pacific Police Services", 2011).

However, much of the safety enforcement at railroads currently is done by local police, due to a decrease in the number of railway police officers has in recent years. (Transportation Safety Board of Canada, 2017).

TRANSPARENT DATA FOR "HIGH-RISK" RAILWAY CROSSINGS

Transport Canada uses software called GradeX, developed by engineers from the University of Waterloo, as a decision-support tool to evaluate "high-risk" hotspot railway crossings across the country and to help determine which crossings need to be prioritized for safety upgrades (Marcoux, J., & McDonald, J., 2016). However, Transport Canada failed to provide these investigation reports to local and municipal communities (Marcoux, J., & McDonald, J., 2016). Similarly, other municipalities across Canada are mostly unaware of GradeX and whether their counties rank in the top 500 "hot spots" for railway incidents (Marcoux, J., & McDonald, J., 2016). The United States uses a program called GX Dash as a tool to present a cohesive snapshot of all grade crossing collisions in the country over the past 10 years (United States Department of Transportation, 2020). This tool is publicly available and is designed to enhance the user's ability to visualize data (United States Department of Transportation, 2020).

POSSIBLE NEXT STEPS

To improve safety for pedestrians at railway crossings, countries such as the United Kingdom, Netherlands, and Portugal have implemented a variety of safety measures. In the United Kingdom, Network Rail has placed signs and fences at the end of platforms to deter pedestrians from crossing over the tracks (Network Rail, 2020). They have also installed alarms, flashing lights, large warning signs, red light safety cameras, and sometimes physical barriers (Network Rail, 2020). Within two years of implementing this ambitious safety enhancement program, the risk to the public was reduced by 25% at more than 6,500 level crossings (Railway Technology, 2013). Both the Netherlands and Portugal have adopted similar strategies by erecting large fences and signs. Through similar measures, Belgium has seen a 78% reduction in railway trespassing over a period of three months (Community Research and Development Information Service, 2015). Fences, cameras, anti-trespass panels, and warning signs have been placed at railway crossings across many Belgian cities. Belgium has gone as far as eliminating 22 level crossings and has taken 26 other crossings out of service (TUC Rail, 2020). Australia is taking the same approach by planning to remove 25 level crossings before 2025 in addition to the 29 crossings that were already removed over the past three years (Level Crossing Removal Authority, 2018).

Prorail from the Netherlands has also seen significant declines of near misses at crossing sites after painting specific rail crossing road surfaces, and they are now looking to extend this approach to other such tracks (Vosman, 2018). The government and the Dutch Research Council for Safety are trying to reduce the number of level crossing accidents by 50% over the next 10 years, and an additional €50m will be allocated to achieve this and improve level crossing safety (Vosman, 2018).

Next-generation smart technology with the latest advancements in data acquisition and real-time active warning systems should also be implemented to make railroad crossings safer and smarter (Chen & Hsiao, 2017). Many countries around the world are also taking serious steps to ensure pedestrian safety at railway crossings (Laapotti, 2016; ILCAD, 2019).

Something needs to change in the City of London and the surrounding area to improve rail safety and prevent further tragedy. Mom's like Kendra's and other members of the community call for safety changes to be made, for education to be provided to pedestrians to stop trying to outrun trains, and start realizing the very real danger that exists. Crucial steps should be taken to improve railway safety in Canada, including having Transport Canada be more transparent with their database and publicizing the GradeX decision-support tool.

Operation Lifesaver believes more education and awareness will help. Community members are pushing for the installation of more active systems but spending more money on railways is not always politically favourable. Something needs to be done, but what, and by whom? With so many organizations and groups involved, it is difficult to determine who should ultimately be responsible for this dilemma.

What is the problem? Who should define it? Who is responsible for devising a solution? Who should ultimately implement that solution?

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INSTRUCTOR GUIDANCE

When the Midnight Train is the First of Many: Dealing with Irregular and Unsafe Railway Crossings in the City of London

Shannon L. Sibbald, PhD (Associate Professor, Western University)

BACKGROUND

While visiting a local school, the mayor of London was asked a simple question by a grade three student: “why aren’t there flashing light barriers at all railway crossings that are close to the places where children play?” The mayor did not have an answer to this question or the many other questions that went along with it, but he knew something needed to be done. But what? And by whom? Rail crossings in London are typically prone to risk. In Canada, only 17% of all 17,000 railway crossings have gates, and the primary purpose of these gates is to control motor vehicles. London residents remain frustrated by the delays caused at rail crossings on busy commuter roads. Residents are also concerned about the lack of safety mechanisms at smaller, low-traffic streets.

Trains fall into a jurisdictional triangle. Many organizations, local municipalities, and provincial and federal ministries are involved in building and overseeing railways. All parties must work collaboratively to improve safety on the more than 17,000 rail crossings across the country. Decisions about how to move forward with this issue are complex and require mass consultation from government agencies such as Transport Canada and from railroad companies such as Canadian National Railway, Canadian Pacific Railway, and VIA Rail Canada. Pedestrians need to be educated about the dangers of crossing railway tracks. Railway police often give presentations to children and educate them about the risks associated with public rail crossings and trespassing on railway property. In recent years, the number of railway police officers has declined. Cities such as London are no longer able to have police at rail sites. Something needs to change in the City of London and the surrounding area to improve rail safety and prevent further tragedies. Operation Lifesaver believes more education and awareness will help. Community members are pushing for the installation of more active systems but spending more money on rail safety is not always politically favourable. What needs to be done, and by whom, remains uncertain. With so many organizations and groups involved, it is difficult to determine who should ultimately be responsible for this dilemma. Because the reality of train safety in London is not changing, the need to address the concerns about this issue is essential. Unfortunately, London has several dangerous rail crossings that lack gates or other physical barriers to block the crossing. The main concern is the safety of pedestrians at these sites.

OBJECTIVES

1. Appreciate the complexity of municipal-level decision-making.
2. Learn about strategies for effective health communication campaigns.
3. Understand the role of multiple stakeholders across multiple jurisdictions in health promotion interventions.

DISCUSSION QUESTIONS

1. Who are the stakeholders involved in decision-making at the municipal level? How does this change when provincial and federal policies impact the decision?
2. Who is responsible for railway safety? Does this change whether it is for pedestrians, automobiles, or other types of trains? Should it?
3. What might a railway safety health education campaign look like? What would your messaging look like? Who would your audience be? Who could you get to support your campaign?
4. What should be done in the City of London to improve overall railway safety? Be sure to consider the feasibility of your suggestions, including issues related to cost, timing, and public support.

KEYWORDS

Health promotion; municipal government; pedestrian safety; railway; stakeholder analysis