Establishing a COVID-19 Defensive Culture in Congregate Settings

A Health Promotion Approach

Evaluation
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Summary

Southwestern Public Health (SWPH) identified an opportunity to strengthen infection prevention and control (IPAC) practices at long-term care, retirement and group homes during the pandemic. We created an intervention, using Social Cognitive Theory, to strive for a COVID-19 defensive culture in these settings. The intervention was piloted and evaluated at three sites (one long-term care home, one retirement home and one group home) and consisted of three leverage points (i.e. method of peer recruitment, method of peer-to-peer training and type of reinforcement) identified as potential key contributors to success.

We used developmental evaluation and appreciative inquiry for our evaluation approach and collected data from action logs, key informant interviews, focus groups, field notes and memos. We used a constructivist grounded theory approach for analysis. Using this approach, we co-constructed new theories and understandings of the intervention with the participants through our ongoing interactions.

The long-term care home was the only site to complete the pilot from start-to-finish. The participants noted it was important to have champions from various professional occupations who were well respected among staff, to have tailored training methods familiar to staff and to have reinforcements impactful enough to motivate change in IPAC practices. The retirement and group homes had varying levels of participation and did not finish the pilot. The retirement home selected champions and had plans to implement training before ending their participation, while the group home selected champions but were satisfied with implementing quick wins. This group home had not yet envisioned creating a shift in the overall IPAC culture of their home.

It was evident that each site had varying levels of foundational knowledge and execution of IPAC practices. For example, the long-term care home and the retirement home had existing IPAC-related interactions with SWPH and had received outbreak management support in the past. Therefore, both were more primed to use this intervention to build upon their existing IPAC knowledge and behaviours to create more sustained practices. Conversely, the group home had limited experience working with SWPH and had only implemented basic infection control practices. We see value in implementing this intervention again in other long-term care and retirement settings and evaluating how effective and sustainable it can be in achieving a COVID-19 defensive culture.

Establishing a COVID-19 Defensive Culture in Congregate Settings

Background

Coronavirus disease 2019 (COVID-19) is an infectious disease that was first identified in Wuhan, China in December 2019. Canada had its first confirmed case of COVID-19 on January 25, 2020[1] and by March 11, 2020, when the World Health Organization declared COVID-19 as a pandemic, 113 countries had confirmed cases of this disease.[2]

Various levels of government implemented interventions to decrease the burden of COVID-19. At the provincial level, the Ontario government introduced measures to reduce crowd sizes and closed non-essential businesses for a period of time, while the federal government introduced subsidies for those affected by business shutdowns. At the local level, public health units worked to reduce the spread of COVID-19 by conducting case and contact tracing and providing support, awareness and communications about the disease to their communities, institutions and workplaces. Public health units also enacted additional measures, such as introducing local municipal orders and delivering targeted interventions to prioritize more vulnerable populations.

Our public health unit, Southwestern Public Health (SWPH), identified an opportunity during the pandemic to strengthen infection prevention and control (IPAC) practices within prioritized settings by striving for a COVID-19 defensive culture: a shared commitment to IPAC practices, demonstrated values, attitudes and actions and support in the belief that settings are safe from infection acquisition and transmission (adapted from Infection Prevention and Control Canada's culture of IPAC safety).[3]

To identify which congregate settings to prioritize during this pandemic, we completed a series of key stakeholder interviews, an environmental scan of current IPAC interventions within our region and an impact/effort activity. The findings identified staff working at long-term care,

retirement and group homes as high priority because of the risk (e.g. serious illness, death) that the disease posed to people in their care.[a]

At the time of conception, interventions focusing on comprehensive health promotion-based principles to reduce or prevent the spread of infectious diseases at these settings, in particular, did not exist in the literature. Previous interventions provided by SWPH focused on education and enforcement activities. Therefore, a new intervention and theory of change (Appendix A) was developed. The intervention used Social Cognitive Theory as its basis for influencing actions and behaviours at congregate settings (settings) to create a COVID-19 defensive culture.

We recruited three organizations to participate in this pilot that represented the types of settings we prioritized (i.e. one group home, one retirement home and one long-term care home). Among other things, we aimed to introduce peer champions (champions) to model and encourage consistent IPAC practices at each site.

Purpose and Evaluation Questions

The purpose of this formative evaluation is to adapt the intervention and its theory of change to changing conditions, new knowledge and meet the needs of stakeholders to ensure IPAC practices are established and maintained at the different settings to create an overall COVID-19 defensive culture.

The project will answer the following questions:

1. What is the nature of the adaptation or innovation in the intervention?
2. What are the strengths of ongoing adaptations or innovations to the intervention?
3. What adaptations or innovations to the intervention are carried over for the various settings?

[a] The factors we identified that increased the risk to acquire COVID-19 in these settings included: number of residents and staff; layout of the facilities (e.g. shared rooms, bathrooms, kitchens, etc.); resident factors (e.g. moving in and out of facilities, behavioural and cognitive issues); and access to health care.

4. How well did the intervention meet the needs of the stakeholders?

Secondary research questions, indicators and data sources are listed in the evaluation matrix (Appendix B).

Study Design

The intervention (which focuses on influencing staff actions and behaviours through role-modelling, training and the reinforcement of good IPAC practices) and the evaluation were implemented concurrently. A project team member (MA) worked with SWPH's Infectious Diseases Team to identify pilot sites that would benefit from additional public health support. Initially, MA met with potential pilot site administrators to obtain buy-in to participate in the pilot. Once sites agreed to participate in the pilot, MA met with administrators and staff representatives at each site to understand what was working well and which opportunities and challenges existed to determine the unique needs of each site. For this reason, the intervention looked different at each site.

Once each sites' needs were identified, MA engaged staff champions and administrators to work on ways to address their needs. This included but was not limited to reviewing/updating COVID-19 policies and procedures, communicating COVID-19 policies and procedures to staff, implementing IPAC-related training and implementing a surveillance system to monitor compliance. This intervention aligned with best practices to create a culture of IPAC safety within health care organizations.[3]

For our evaluation approaches, we used both developmental evaluation and appreciative inquiry. Data collection and analyses occurred simultaneously and informed future collection activities (e.g. categories identified in analyses informed questions and/or directions of interviews).[4] Data collection and analysis began in September 2020 and was completed by October 2021.

Stakeholders from the three pilot sites were asked to help inform, adapt and co-create the intervention to suit their needs in their settings. As a result, our existing theory of change was modified to account for lessons learned during this evaluation (Appendix C).

Methodology

We used developmental evaluation and appreciative inquiry to adapt the intervention to changing conditions, new knowledge and stakeholders' needs. Developmental evaluation is an approach used to support innovation and adaptive learning in evolving initiatives or interventions. It requires evaluators and stakeholders to work together, collect information and make decisions and adaptations throughout the development of the intervention.[5] This evaluation approach is different from others as the progression of steps from problem to solution are not clearly laid out.[5,6] Given our intervention was new and had yet to be implemented, we felt this approach would be beneficial because of its emergent and flexible nature.

Appreciative inquiry uses a strengths-based approach to address challenges. The approach focuses on successes, sharing stories of highpoints, to shift perceptions on strengths rather than weaknesses.[7] This approach includes the following five steps:

- Definition: Frame the intervention
- Discovery: What is good? What has worked?
- Dream: What might be?
- Design: What should be? What is the ideal?
- Destiny: How to make it happen?[7(p.2)]

We also used constructivist grounded theory and an inductive approach to data analysis to adapt or create new theories and understandings of the intervention from action logs, key informant interviews, focus groups, field notes and memos. With this approach, data was co-constructed by the researcher and participants through their ongoing interactions. The findings highlighted the researchers' interpretations of how participants created their understandings and meanings of reality (e.g. peer champion recruitment experiences, peer-to-peer training experiences, etc.).[4,8]

Data Collection

Action logs, tracked by the primary investigator (MA), were used to log the nature of the intervention for each of the settings (i.e. Definition). During the conception of this intervention,

we identified leverage points[b] or areas wherein small shifts in the intervention could affect the success experienced by the pilot sites in adopting and maintaining IPAC practices. The leverage points were chosen using best practices and were based on elements we felt could be replicated or modified in other homes. Therefore, aspects of the intervention differed for each setting based on input from stakeholders and/or their nuance in practices.

Key informant interviews (interviews) with peer supervisors and champions were used to identify successes for each leverage point (i.e. Discovery). We intended to interview peers as well; however, we were unable to secure interviews with them for this pilot. During the interviews, participants were asked broad, open-ended questions to elicit rich, in-depth responses about their experiences. Semi-structured interview guides (Appendix D-E) with questions based on the three leverage points were used to steer conversations. Participants ultimately guided conversations as the interviewer was flexible and responsive to elements highlighted by the participants. In addition, the interviewer (MA) asked probing questions to elicit more detailed and rich descriptions of their experiences.

Interviews were conducted in-person and via telephone and lasted about 30 minutes. The in-person interviews were audio recorded and transcribed verbatim (with identifying information removed) and the interviewer took field notes and memos.

We intended to conduct the focus group with all of the site supervisors. However, given the strains the pandemic put on our pilot sites, we were only able to conduct one focus group with participants from the long-term care home.[c] The participants included one supervisor and three champions. At the beginning of the focus group session, participants reviewed a summary document highlighting the interview findings from their setting (e.g. successes, opportunities for improvement). Then, participants were asked to consider their vision of their site's future state with respect to IPAC practices (i.e. Dream), share their successes and dreams, uncover different successful practices and design solutions to try and achieve their visions of their future state (i.e. Design and Destiny).

[b] The leverage points for this intervention are methods of peer recruitment and peer-to-peer training and the type of reinforcements provided.
[c] We submitted an ethics amendment and received approval to modify our study approach.

The focus group was conducted over MS Teams. It was recorded and transcribed, and field notes and memos were taken by the moderator and used during analysis. We also used a semi-structured interview guide to steer discussions in this focus group (Appendix F).

Throughout the pilot, we also recorded our own reflections and used logs to understand the extent to which the intervention, as a whole, was feasible for SWPH.

Data Analysis

The information tracked in the action logs was used to understand the nature of the intervention for each setting and was stored and analyzed using Microsoft Excel. The action logs charted demographic and contextual information. This helped us map out the similarities and differences in how the settings completed their intervention. Social cognitive theory theorizes similarities among models and observers (i.e. champions and peers) may increase observers' motivation and self-belief to convey skills;[9] therefore, we analyzed indirect identifiers of champions and peers, such as role/occupation to assess how champions that were selected were reflected in the peers they worked with.

Data was constructed from the interactions, observations and materials we collected from the interviews, focus groups, field notes and memos. We immersed ourselves in the data by coding using two main phases: initial and focused coding. Initial coding allowed us to begin conceptualizing our ideas by conducting line-by-line coding (i.e. naming or coding every line of data). Focused coding allowed us to separate, sort and synthesize the data by selecting more frequent or significant codes identified in the line-by-line coding. We also wrote memos while coding during these two phases to record our thinking about meanings and processes that occurred during the development and initiation of the intervention at the various sites.[4]

Results

It was evident early in the pilot, during our assessments with stakeholders, that each site had varying levels of foundational knowledge and execution of IPAC practices. We expected this

and planned our pilot accordingly by using an emergent design. However, due to the time in which this pilot was implemented (i.e. during the pandemic), sites had strains that limited their participation. The long-term care home completed the entire pilot from start-to-finish and had participants take part in both the interviews and the focus group. The retirement home and group home had varying levels of participation and did not have any members participate in either of the interviews or focus group. In the sub-sections below, we summarize the findings from each setting and detail their level of participation. To protect the privacy of our participants, we used pseudonyms to hide their identities.

Long-Term Care Home

The long-term care home in this pilot participated for 12 months. They employed 96 staff and had 69 residents living in their facility. The occupational roles for people working in this setting included administrative staff, registered nurses, personal support workers, cooks and resident support aides. We completed audits, field notes and memos and conducted two interviews and one focus group at this home. We conducted separate interviews with one director (Stacy) and one champion (Colleen), and we conducted one focus group with one director (Stacy) and three champions (Colleen, Jane and Jackie).

This home had existing IPAC policies and procedures in place and had worked closely with SWPH in the past. As a result, they were familiar with outbreak management protocols and the staff participated in yearly training sessions focusing on IPAC practices.

The project team for this home consisted of MA, the director of the home and four champions (the three mentioned above plus Kathy) nominated by the director. The champions included a registered nurse, personal support worker, cook and an administrative staff. When selecting champions, it was important that the director selected individuals she felt were passionate and knowledgeable about IPAC practices and were well-respected among staff.

> **We are a small home, so we picked someone from each department. We didn't want just nurses talking to kitchen staff and PSWs. It was nice to have someone from each group. […] Jane was a good choice. She was very passionate about it. She lost her grandmother to COVID [sic] at the start of the pandemic. […] Colleen is very passionate about it as well. She speaks very well with other staff and would watch. Jackie is very knowledgeable […] and Kathy has worked here for a long time and knows a lot of the girls.**
>
> **Stacy**

Most of the champions were "thrilled" to be nominated, but one was hesitant and needed to be persuaded. According to Stacy, she worked "in a different department and was not used to working with IPAC processes." However, she was well-regarded among her peers and she finally came around to being a champion. If they were to do it again, Stacy mentioned they would also recruit their younger workforce, like their recently hired screeners, to become champions. She felt this would have enabled them to reach a greater audience.

The project team searched for IPAC training opportunities and decided Public Health Ontario's IPAC Core Competency online modules would be an excellent option for their home.
Due to the time commitment required to complete the training and the existing workload within the home, the project team felt staff should be compensated to complete the training outside of work hours. Their request was sent to head office, but only registered staff (i.e. registered nurses) were approved to be compensated (seven hours of work) to receive the training.[d] This consisted of seven registered nurses (one of which was selected as a champion for our pilot) and the director. Based on this, we adapted the intervention to meet the needs of the home. Stacy acknowledged that providing head office with notification well in advance of any future endeavour was beneficial because it would allow them to vet the endeavour and obtain an understanding of the resources that may be required.

The seven registered nurses then shared their learnings with the rest of the staff during their weekly team huddles, an existing practice used prior to the pandemic that typically ran anywhere between 5-to-15 minutes. According to Colleen, delivering the training to staff via "mini huddles worked the best […] because the night staff didn't have to come in early for

[d] The modules the champions completed included: Health Care Provider Controls; Chain of Transmission & Risk Assessment; and Additional Precautions.

training or meetings.” Here, Colleen implies the registered nurses also worked different shifts. This was important because it allowed the evening staff to receive training consistent with those working during the day without being inconvenienced by coming in earlier for their shift.

The champions were then used to ensure the IPAC practices shared in the team huddles were carried out and routinely practiced by all staff. They demonstrated their commitment to these practices by visually showing their peers correct IPAC procedures and motivating them to adopt them as well. When required, they provided reminders to their peers and gave them positive feedback when they saw their peers doing a great job. They worked to shift the understanding of IPAC in their home and ensured everyone had a shared commitment to keeping residents and staff safe by trying to reduce the spread of COVID-19.

To further encourage IPAC behaviour change among staff, a reward program (i.e. reinforcement) was implemented. Anytime a champion witnessed staff correctly donning or doffing appropriate personal protective equipment (PPE) or performing proper hand hygiene, they wrote the staff member’s name on a piece of paper and entered them into a draw for a $25 Ultimate Dining gift card. The draws were monthly and staff could have unlimited entries. During the first three months of the pilot, four winners were announced during each draw. However, during the subsequent four months of the pilot, only one winner was announced for each draw. This was done to extend the length of the reward program without increasing the budget allocated for gift cards.

Colleen noted, “the gift cards were a huge boost.” She encouraged staff to get their names in the draw, which got people going. It motivated them to participate in the training and perform IPAC procedures more consistently. The timing of the reward program was also intentional; the prevalence of COVID-19 was low and staff were less worried about the risk to the home. Therefore, the incentive truly pushed staff to continue their IPAC practices despite the low level of perceived risk during that period of time.

> **The fact that the reward was a $25 gift card for food made it really worth it to staff. This meant some people were able to pick up dinner to bring home. The fact that we were in lockdown made it even better as they could share their prize with those in their bubble.**
>
> **Colleen**

According to Stacy, after several months into the pilot, it was evident staff became more diligent with performing IPAC procedures. To state her case, Stacy pointed to a time in which there was a positive case among their staff, and even though there were a couple of days of exposure, no one else contracted COVID-19. “It speaks to us doing something right with the hand hygiene, masking and other IPAC practices,” she said.

Yet, there were some staff who did not follow all of the proper procedures. Both Colleen and Stacy mentioned that providing staff with a warning of any potential changes weeks in advance of implementation, especially with respect to PPE, was a key factor in obtaining staff buy-in.

> **Getting ahead of issues is important. I knew eye protection was coming and some staff were frustrated with me for bringing it up, but it did buy us a couple of weeks to try some different options before it became mandatory. We were given some flexibility in what we wore and what worked best for each of us.**
>
> **Colleen**

For Colleen, Stacy, Jane and Jackie, maintaining a COVID-19 defensive culture in their home, well into the future, looks bright. They are confident they can carry the momentum forward because of their learnings from the pilot and because the pandemic hit so close to home for many of the staff. They cared to change their practices because “it touched more people and it became more real,” Jane said. In turn, the pilot helped staff by providing them additional tools to protect those in their work setting and social bubbles.

The focus group participants discussed several opportunities to keep the COVID-19 defensive culture alive in their long-term care home. First, they insisted that staff audits (i.e. watching staff complete or not complete proper procedures) continue because it helped keep staff accountable for their actions. Besides, they felt staff were “ingrained” in wearing proper PPE and practicing good hand hygiene since it was already “a part of their daily life now (Stacy).”

They felt the staff could use refresher training periodically and specifically discussed the benefits of using visual methods so that staff could physically see what they were being asked to do. The participants also wanted to continue using a reward program, periodically, because it offered additional motivation for staff to maintain proper practices. Lastly, they insisted it was necessary to continue encouraging staff with frequent reminders that they were valued and their efforts as a collective were not going unnoticed.

> **We haven't had an outbreak! I've even had staff come forward and say that. It's been a team. It hasn't been one person or one group or management, it's been all of us! We went through a suspect outbreak with no other infections and we haven't had influenza or gastro [sic] in this building in two years. This is huge! Staff need reminding of that.**
>
> **Stacy**

Retirement Home

The retirement home in this pilot participated for two months. They had 21 residents living in their home and employed 12-to-14 staff who primarily worked as personal support workers. Due to the ongoing nature of the pandemic and the strain it imposed on many of the homes in Ontario, we did not conduct any interviews or focus groups with individuals from this home. As a result, the findings shared below are derived solely from the action logs, field notes and memos we collected.

Having worked with SWPH, this home was familiar with outbreak management protocols. Still, they had minimal experience receiving any additional IPAC training and had just written new IPAC policies and procedures to comply with a mandate set by their governing body (the Retirement Home Regulatory Authority). In light of this, however, these policies and procedures had not yet been fully implemented prior to the start of the pilot.

The pilot for this home consisted of two champions, both personal support workers, nominated by their manager. The manager of this home selected these two champions because they were knowledgeable about IPAC practices and were well-respected among staff.

Once the champions were selected, MA scheduled a meeting with them and the owner/operator of the home. They reviewed the COVID-19 Prevention and Control Checklist for Long-Term Care and Retirement Homes and implemented immediate IPAC-related changes to their

operations.[e] They also agreed to focus their initial staff training on proper hand hygiene using tools and resources from Public Health Ontario's "Just Clean Your Hands" program.

The champions felt gathering everyone together for formal training would be difficult, so they suggested using a video-based training method because staff were familiar with this method and it had been effective in the past. It allowed staff flexibility to complete the training on their own time and gave them the ability to refer back to the videos later if they needed a refresher.

The training videos were set up on iPads in the lunchroom for staff to view during their work time. There were three separate videos and each video was less than 10 minutes in length. One new video was shared with staff every week for three weeks. The 4 Moments of Hand Hygiene (posters) were placed around the home to reinforce the learnings from the videos. However, the pilot ended abruptly because the home needed to shift their focus on to other matters immediately.

Group Home

The group home participated in this pilot for four months. They employed 6 unregulated staff who provided personal care (e.g. cooking, cleaning, etc.) to the 21 residents living in their home. Similar to the retirement home above, we did not conduct any interviews or focus groups with individuals from this home. The findings below were derived from the action logs, field notes and memos we collected.

In our early conversations with this home, it was evident they lacked some foundational knowledge of IPAC policies and procedures. This may have been because, unlike the long-term care and retirement homes, they did not provide direct care for their residents, employ registered nurses or prioritize IPAC practices prior to the pandemic.

The director of the home nominated two champions to participate in the pilot. They were nominated because they were full-time staff. During MA's initial meeting with the champions and the director, the participants discussed the additional workload that was required by staff in their

[e] IPAC-related changes included: placing a form at the front-desk informing staff of processes for visitors; inserting hand sanitizer at each dining table; posting additional "How to use Alcohol-Based Hand Rub" signs throughout the home; and ensuring garbage's were secured at each room entrance so staff can doff PPW upon exit, if required.

home. This included additional cleaning measures, screening all residents and visitors, and entertaining and supervising residents throughout the day because day programs were cancelled during the pandemic. They also mentioned having had some difficulties enforcing IPAC protocols, as staff and residents were not consistently masking and performing hand hygiene. They described that in the early days of the pandemic, residents did not believe or understand the extent of COVID-19 and what was happening around them.

In the meeting, MA and the champions discussed some quick wins they could apply immediately to address some essential aspects of IPAC protocols that had not yet been implemented. For example, they ordered lanyards so that staff could attach them to their masks. This encouraged staff to use their masks more consistently and reduce the times they left them in the office. The champions also felt that the residents would benefit from hand hygiene training. MA provided this training on-site.

Additionally, they placed a visitor logbook at the main entrance (for contact tracing purposes) and set up hand sanitizer dispensers, with signs showing instructions on how to properly sanitize one's hands, throughout the home. Once staff completed the training and these changes were implemented, the director was content with their progress and did not feel she could add any additional work or training to the staff's workload. There was already a strain on staff resources and she was not willing to push them over and above their legislated requirements.

Beyond this point, our communications with this home were limited. However, we continued to offer resources and support via email over the next couple of months. The director agreed to reach out if they found the capacity to continue the pilot.

Implications

The timing and delivery of this intervention was intentional. We aimed to leverage the heightened awareness of IPAC measures in vulnerable settings during the pandemic to implement a tailored health promotion approach to applying IPAC practices in these homes. While the findings from our pilot showed successes, we also witnessed sites being stretched

fairly thin and having to often shift priorities quite suddenly. This limited our ability to obtain a more detailed picture of how the intervention worked at each of our sites. Still, there were many key observations and learnings we feel are important to take away from this evaluation.

All of our sites enjoyed some level of success in achieving their IPAC needs, despite their varying levels of participation. Here, success can be measured relative to each site's goals and objectives and their knowledge and experiences with IPAC prior to the pandemic. The long-term care and retirement homes, for example, had existing relationships with SWPH[f] and had previous experience implementing IPAC and outbreak measures. Because of this, they were able to – at the very least – use the pilot to try and build upon these foundations to create more lasting change. In contrast, the group home had minimal IPAC experience. They used the pilot to implement fundamental IPAC measures that were most pressing at the time. As a result, they had not yet envisioned implementing a more sustainable IPAC culture for their site.

In Ontario, group homes do not have a history of working with public health units (to the same extent as long-term care and retirement homes) to prevent the spread of infectious diseases. For this reason, we feel our intervention is more suitable for long-term care and retirement home settings because it builds upon their foundations of IPAC knowledge and experiences and uses a comprehensive health promotion approach (i.e. Social Cognitive Theory) to create culture change.

We believe there is value in piloting this intervention in additional long-term care and retirement homes to see how well it translates to other sites. The intervention should continue to be flexible and attend to the varying needs of participating sites. Additionally, the three leverage points we identified prior to the start of the pilot should be carried forward in any new rendition of the intervention. We learned from our sites that diverse and well-respected staff are best suited for the champion role, the method of training (e.g. verbal, video, in-person demonstration, etc.) should be flexible and familiar to staff and reinforcements should be substantial enough to motivate staff to change their IPAC behaviours.

After the pilot was formally completed at each site, we did not follow up with them to see how well they maintained their IPAC practices. This is an important element for the next iteration of the pilot that we need to entertain. We recognize organizational buy-in was high while we

[f] In Ontario, long-term care and retirement homes have a history of working with public health units to prevent the spread of infectious diseases.

actively worked with sites to enhance their IPAC practices; however, we are unaware of how well these practices were sustained after our involvement ended. To ensure this intervention truly shifts the culture of IPAC in homes, we need to understand how pilot sites maintain practices well into the future. This will allow us to understand if this intervention is feasible, scalable to a population-level (i.e. the ability to implement at **all** long-term care and retirement homes in our region) and worthwhile to implement.

Though we do not suggest this particular intervention is ideal to implement in group homes, we see value in considering another approach for these settings. An intervention in this type of setting would need to be centred on foundational IPAC capacity building.

Conclusion

We identified an opportunity to strengthen IPAC practices at long-term care, retirement and group homes during the pandemic. The intervention was created to achieve a COVID-19 defensive culture within these settings. However, due to the ongoing nature of the pandemic, we were unable to complete the intervention in two-of-the-three participating pilot sites. Despite this, we were still able to achieve successes and take away some key observations from this intervention.

Our findings showed that our intervention, specifically, was more suited for long-term care and retirement homes. These homes were more primed to realize a COVID-19 defensive culture because of their previous working relationship with SWPH and their experience implementing IPAC policies, procedures and outbreak management protocols. Conversely, the group home had very little IPAC knowledge and/or experience prior to the start of the pilot. For this reason, we believe this type of home requires more foundational IPAC capacity building versus our intervention's focus on a more comprehensive approach to changing the IPAC culture in homes.

We believe there is value in piloting our intervention in additional long-term care and retirement homes. In doing so, we would need to measure how well homes sustain practices well into the future after our involvement has ended. This will help us understand if the intervention is feasible, scalable to a population-level and worthwhile.

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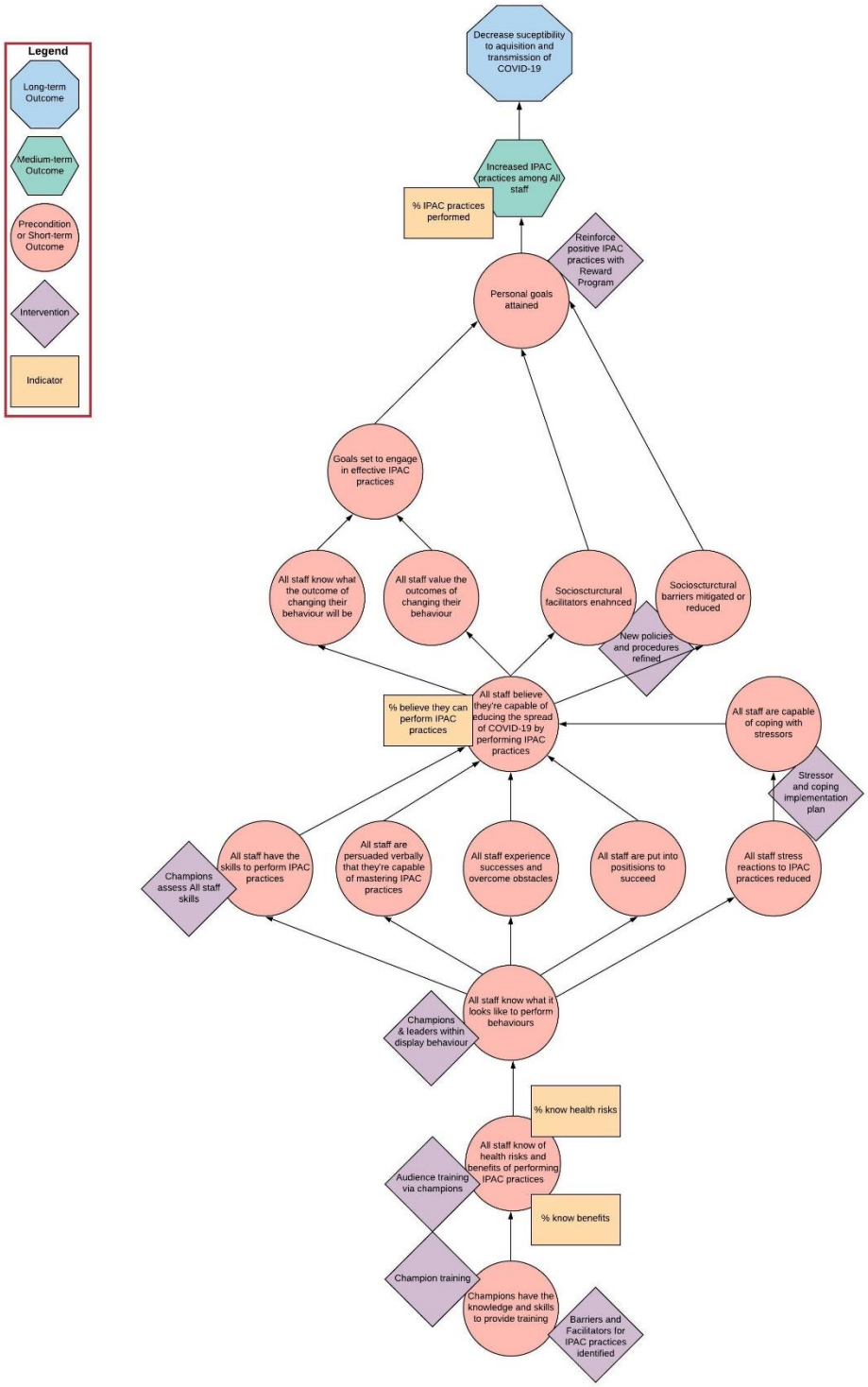
Appendix A – Pre-Pilot Theory of Change



Appendix B – Evaluation Matrix

Question	Indicators	Data Sources
What is the nature of the adaptation or innovation in the intervention?		
1a. What differences exist in the ways in which congregate settings (settings) recruit peer champions?	Mode of recruitment: • Assigned • Nominated • Volunteer • Mixed # of peer champions recruited Characteristics of peer champions: • Roles/occupations Characteristics of staff: • # of staff • Roles/occupations	Action log Action log Action log Action log

1b. What differences exist in the ways in which settings provide peer-to-peer training?	Method of training
	• In-person
	  ○ Individual
	  ○ Team
	  ○ Organizational
	• Online
	• Combination
	
	Method of observational learning
	• Behavioural modeling
	• Indirect pictorial modeling
	• Verbal modeling
	
	# of training session(s)
	• By type of training session(s)
	
	Length of training session(s) (minutes)
	• By type of training session(s)
		Action log
		
		Action log
		
		Action log
		
		Action log

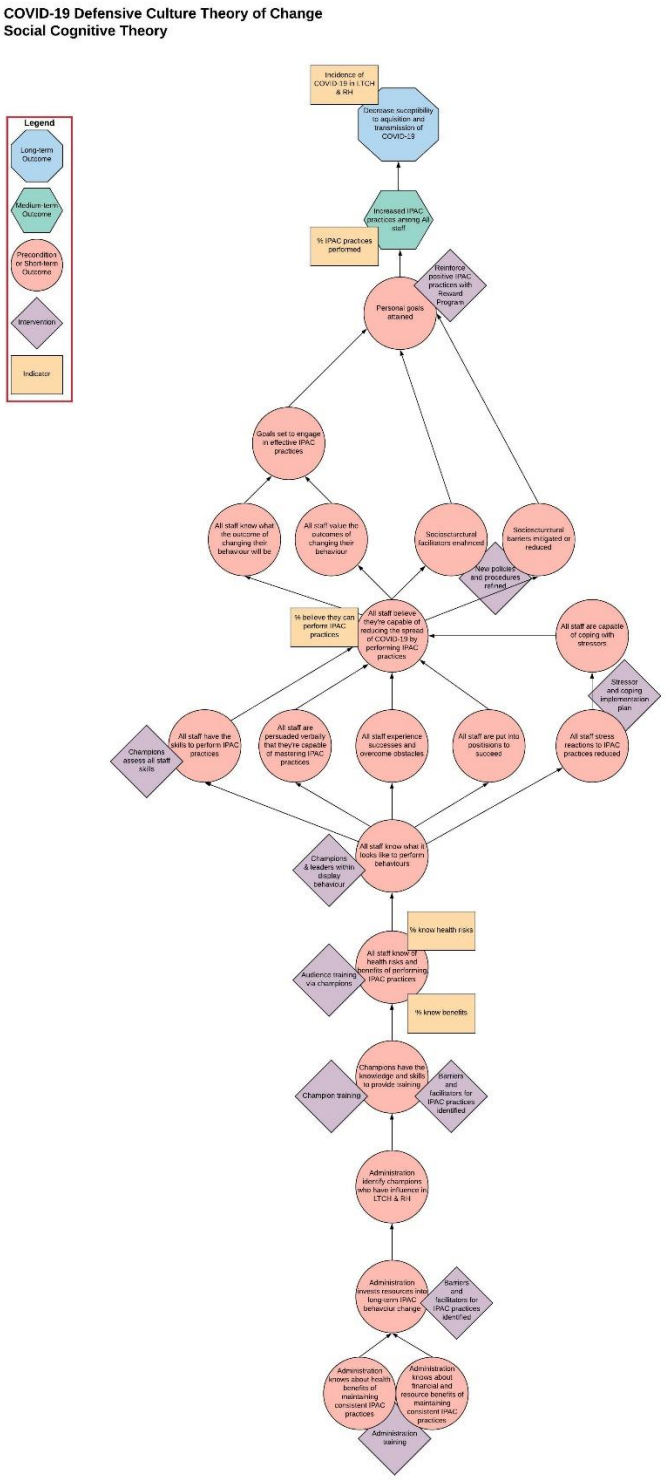
1c. What differences exist in the ways in which settings provide reinforcements (rewards or punishments)?	Type of reinforcements • Internal/external # of reinforcements Timing of reinforcements	Action log Action log Action log

Question	Indicators	Data Sources

	Delivery method of reinforcements
	• In person
	  ○ Role
	  ○ Relationship to peers
	• Other
		Action log

What are the strengths of ongoing adaptations or innovations to the intervention?		
2a. To what extent did participants think adaptations to peer champion recruitment were successful?	Fit among champions & peers • # recruited/# staff • Demographics: champions & peers • Other Success re: mode of recruitment	Action log Peer supervisor interview Peer supervisor interview Peer champion interview
2b. To what extent did participants think adaptations to peer-to-peer training were successful?	Success re: training	Peer champion interview
2c. To what extent did participants think adaptations to reinforcements were successful?	Success re: reinforcements	Peer champion interview
2d. Why did participants think the adaptations successful?	Peer champion recruitment Peer-to-peer training Reinforcements	Peer supervisor interview Peer champion interview Peer champion interview Peer champion interview
What adaptations or innovations to the intervention are carried forward for the various congregate settings?		
3a. What is the vision for the future?	Future state re: congregate settings: • IPAC practices • Champion recruitment • Peer-to-peer training • Reinforcements Needs to achieve vision of the future	Peer supervisor focus group Peer supervisor focus group

Appendix C – Post-Pilot Theory of Change



Appendix D – Peer Supervisor Interview Questions

I am going to ask you a few questions about your experiences with this intervention/training. Our focus today will be on the strengths or positives of this intervention, so if there is something that you think about that could have been improved, try and think of a way about how you can turn that into a strength or an opportunity for improvement.

1. Tell me about your experiences with the intervention/training.
    - [Prompt] What went well? Why did those things go well?
    - [Prompt] What are some opportunities for improvement?

2. Reflect on your experiences of selecting the peer champion(s). What about them makes you glad that you selected them as peer champions?
    - [Prompt] Why were they a good fit to be champions among their peers?

3. If you had friends and colleagues at another [retirement home/group home/long-term care home] who were interested in implementing this intervention, what would you tell them was the most important to do/pay attention to with respect to recruiting peer champions?
    - [Prompt] Mode of recruitment?
    - [Prompt] Characteristics of peer champions? (e.g. specific roles/occupations? # of champions?)

Appendix E – Peer Champion Interview Questions

I am going to ask you a few questions about your experiences with this intervention/training. Our focus today will be on the strengths or positives of this intervention, so if there is something that you think about that could have been improved, try and think of a way about how you can turn that into a strength or an opportunity for improvement.

1. Tell me about your experiences with the intervention/training.

2. How did you become a peer champion (e.g. assigned, nominated, volunteered, mix)? Why do you think that worked?

3. Thinking back to the intervention/training, tell me about the things (e.g. type/method/length) about the intervention/training that went well. The things that helped staff learn and understand the content better.
    - [Prompt] What was it that made it so effective?
    - [Prompt] What value did it add to the training?

4. Thinking back to the [insert reinforcements], what about them made it helpful for staff to learn and understand the content better?
    - [Prompt] Nature of reinforcement?
    - [Prompt] Timing of reinforcement?

5. If this intervention/training were designed to be clear, interesting and engaging, what three wishes would you give to the training designers to make that possible?

Appendix F – Focus Group Questions

1. Think back to your experiences during the intervention/training and the summaries provided to you before today's session, can you describe to the group some of the aspects of the intervention/training that were successful at your setting?
    - [Prompt] Peer champion recruitment
    - [Prompt] Peer-to-peer training
    - [Prompt] Reinforcements

2. What were some of the successful aspects of other settings' intervention/training that differed from your intervention/training?

3. Based on what you experienced and what you heard from others, can you describe what maintaining a COVID-19 defensive culture looks like at your organization or similar organizations in the future (e.g. 6 months, 1 year)?
    - [Prompt] Consider the successes from your site
    - [Prompt] Consider the successes from other sites and whether they can be incorporated at your setting(s)

4. What are the steps that you can start or continue doing (e.g. put into action, things to create) to make a COVID-19 defensive culture come to life?
    - [Prompt] Consider new initiatives, projects, resources, strategies, etc.

5. How are you going to deliver these actions so that a COVID-19 defensive culture is embedded within your organization?
    - [Prompt] Consider best practices, project management principles, metrics, etc.

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