# Video conferencing with residents and families for care planning during COVID-19: experiences in Canadian long-term care

Denise Connelly[1], BScPT, MSc, PhD
Melissa Hay[1], BSc, MPT, PhD
Anna Garnett[2], RN, MSc, PhD
Lillian Hung[3], RN, PhD
Marie-Lee Yous[4], RN, BScN, MSc, PhD
Cherie Furlan-Craievich[5], RD
Shannon Snelgrove[6] BA, RN
Melissa Babcock[5], RPN
Jacqueline Ripley[6], RPN
Nancy Snobelen[7], DHA, MBA, Reg CASLPO (non-practicing), SLP(C)
Harrison Gao[8]
Ruthie Zhuang[8]
Pam Hamilton[9], BA
Cathy Sturdy-Smith[9], MSc. BA
Maureen O'Connell[9], BHSc (PT)

[1]School of Physical Therapy, The University of Western Ontario, London, Ontario, Canada.

[2] Arthur Labatt Family School of Nursing, The University of Western Ontario, London, Ontario, Canada.

[3]School of Nursing, The University of British Columbia, Vancouver, British Columbia, Canada.

[4]School of Nursing, McMaster University, Hamilton, Ontario, Canada.

[5]Vision '74 Inc., Sarnia, Ontario, Canada.

[6]APANS Health Service - Copper Terrace Long Term Care Home, Chatham, Ontario, Canada.

[7]Registered Practical Nurses Association of Ontario (WeRPN), Toronto, Ontario, Canada.

[8]Department of Physiology and Pharmacology, The University of Western Ontario, London, Ontario, Canada.

[9]PIECES Canada, Toronto, Ontario, Canada.

*Address correspondence to: Denise Connelly, BScPT, MSc, PhD, The University of Western Ontario, Room 1000, Elborn College, 1151, London ON, N6A 3K7 Canada. E-mail: dconnell@uwo.ca

**Abstract**

**Background and Objectives:** Government-mandated health and safety restrictions to mitigate the effects of COVID-19 intensified challenges in caring for older adults in long-term care (LTC) without family/care partners. This article describes the experiences of a multidisciplinary research team in implementing an evidence-based intervention for family-centred, team-based, virtual care planning – PIECES$^{TM}$ approach – into clinical practice. We highlight challenges and considerations for implementation science to support care practices for older adults in LTC, their families, and the workforce.

**Research Design and Methods:** A qualitative descriptive design was used. Data included meetings with LTC directors and Registered Practical Nurses (i.e., licensed nurse who graduated with a 2-year diploma program that allows them to provide basic nursing care); one-on-one interviews with family/care partners, residents, Registered Practical Nurses, and PIECES mentors; and reflections of the academic team. The Consolidated Framework for Implementation Research (CFIR) provided sensitizing constructs for deductive coding, while an inductive approach also allowed themes to emerge.

**Results:** Findings highlighted how aspects related to planning, engagement, execution, reflection, and evaluation influenced the implementation process from the perspectives of stakeholders. Involving expert partners on the research team to bridge research and practice, developing relationships from a distance, empowering front-line champions, and adapting to challenging circumstances led to shared commitments for intervention success.

**Discussion and Implications:** Lessons learned include the significance of stakeholder involvement throughout all research activities; the importance of clarity around expectations of all team members; and the consequence of readiness for implementation with respect to circumstances (e.g., COVID-19) and capacity for change.

Keywords: Virtual care; Family engagement; Implementation science; PIECES

**Background and Objectives**

Context of COVID-19

In Canada, the COVID-19 pandemic challenged long-term care (LTC) policy and processes with unexpected pressures arising from acuity, volume, and resource limitations, coupled with historical issues such as staffing shortages, heavy workloads, infrastructural deficiencies and lack of infection control processes (McGilton et al., 2020; Marrocco et al., 2021). Relative to other health sectors, COVID-19 disproportionately impacted LTC homes, residents, families, and staff (Hsu et al., 2020; Thompson et al., 2020; CIHI, 2021). This disparity reflects the vulnerability of older people living in LTC homes but has also been a measure of inadequate standards and quality improvement initiatives in LTC (Inzitari et al., 2020).

Promising Practices to Reimagine Care for Older Adults in Long-term Care

In July 2020, the Canadian Foundation for Healthcare Improvement published a report presenting six areas of focus to potentially mitigate the impacts of future COVID-19 outbreaks (CFHI, 2020). This research addresses three of the six promising practices: improving pandemic preparedness (*planning for COVID-19 and non-COVID-19 care*); providing a clear workforce strategy for integrated resident care (*people in the workforce*); and safely engaging family in care partnerships (*presence of family*) to avoid recurring detrimental effects of the first wave of COVID-19. These practices were selected as they were seen as potentially being addressed by our proposed intervention and involved key stakeholders (i.e., LTC workforce and families) in research.

Implementation Science Considerations and Challenges

Implementation science was determined as the best approach to this research to promote uptake of research findings and adoption of evidenced-based practices into existing care processes (Bauer & Kirchner, 2020). It is defined as having the goal of identifying

barriers and facilitators across multiple affected groups (e.g., residents, families, staff, and organizations) and creating strategies to enhance intervention uptake (Bauer & Kirchner, 2020). Since implementation science requires active engagement within the context where interventions are to be delivered, multidisciplinary research teams should include academic researchers and operational partners (e.g., administrators, clinicians, older adults, and families) (Bauer et al., 2015; Bauer & Kirchner, 2020).

Challenges also exist to implementation science including flexibility for sites to adapt interventions to their context without compromising intervention fidelity, identifying leadership to prioritize the implementation of new interventions, and finding ways to integrate interventions into existing workflows (Damschroder et al., 2009; Levy et al., 2022). Coordination of a multidisciplinary team can be achieved using an implementation science approach by setting mutually agreed upon goals and timelines. The level of engagement of key individuals also influences the quality of the execution of the implementation of an intervention (Damschroder et al., 2009). Our research aims to address these considerations and challenges by exploring the implementation of an intervention using qualitative description. This allows for a greater understanding of how key stakeholders view the intervention and its implementation as well as contribute to its development (Gilgun & Sands, 2012).

Implementation of Foundational Evidence-based Intervention

Implementing and sustaining evidence-based innovations into clinical practice are a challenging task due to the ever-evolving relationships between the desired intervention, nuanced contextual factors, and existing clinical processes (Damschroder, 2020). Previous research on improvement initiatives in mental health, medicine, and LTC settings has demonstrated that establishing effectiveness of an intervention does not translate directly into sustained uptake in clinical practice (Morris et al., 2011; Bauer & Kirchner, 2020; McArthur

et al., 2021). This suggests an apparent gap in translation of established best practices and the clinical utilitarian application to those individuals for whom the practices were designed.

This implementation science project embedded the PIECES™ approach – an evidence-based care planning framework – to address the presence of family, provide support for the workforce (Registered Practical Nurses [RPNs] specifically) (i.e., licensed nurse who graduated with a 2-year college diploma that allows them to provide basic nursing care), and care of older adults during and beyond the pandemic. PIECES™ (Hamilton et al., 2020) – a holistic, family-centered, shared solution-finding approach – has been shown to be effective for fostering continuous improvement for individuals in LTC and community settings (Sullivan et al., 2004; McAiney et al., 2007; Stolee et al., 2009; Hung et al., 2016) (See Figure 1 for a description of PIECES).

The purpose of this paper is to describe the experiences of a multidisciplinary team in implementing an evidence-based care planning intervention into clinical practice in two LTC homes. Experiences of the research team, guided by the Consolidated Framework for Implementation Research (CFIR, 2022; Damschroder et al., 2009) domains, are described to underscore challenges and opportunities of implementation science to support care practices for older adults living in LTC, their families, and the workforce during COVID-19.

**Research Design and Methods**

<u>Study Design and Location</u>

A qualitative description design (Sandelowski, 2000) was selected as it allows researchers to explore and capture all elements of a process; it also supports detailed description and low-inference interpretations of case studies in everyday language for real-life settings with special relevance to practitioners and knowledge users (Sandelowski, 2000). The Consolidated Criteria for Reporting Qualitative Research (COREQ) was used as a reporting guideline (See Supplementary Material Section 1) (Tong et al., 2007). The research

was conducted in two LTC home facilities in Ontario, Canada with no pre-established relationship prior to the study. Both are mid-sized homes in operation for more than thirty years. One home operates as a for-profit venture and has 136 beds located in basic, semi-private and private rooms. In addition to basic services (e.g., family physician, nursing and personal care, housekeeping, meals, laundry, leisure activity programming), services within the community for scheduling are available (costs covered by provincial health care plan or no fee for service) such as physiotherapist, social worker, x-ray, and ultrasound services. Staffing mix consists of a registered nurse (i.e., degree-certified nurse) and Registered Practical Nurse on duty 24 hours a day, 7 days a week. A ratio of 1 personal support worker for 10 residents. The second home operates as non-profit, has 146 beds, and offers varying levels of care. Private rooms and two-ward rooms are available. Additional services available are provided by the following: physiotherapist, registered dietitian, registered dental hygienist, nurse practitioner, Behavioural Supports Ontario trained staff, social worker, and foot care nurse. Behavioural supports Ontario aims to support persons living with behaviours associated with complex mental health, dementia, or other neurological conditions in LTC homes or independent living settings. With regards to staffing levels, at every shift there is at least 1 registered nurse and Registered Practical Nurse and 1-4 personal support workers on every floor for about 26 to 32 residents.

Consolidated Framework for Implementation Research

The CFIR offers a conceptual framework for assessing various factors of implementation efforts (Damschroder et al., 2009; Keith et al., 2017; Damschroder et al., 2020). It has been demonstrated to be an effective tool for guiding rapid-cycle implementation efforts for clinical practice transformation initiatives (Keith et al., 2017). The comprehensiveness of the CFIR makes it well-suited to document the intricacies of transformative interventions, including redesigns and adaptations to current care models

(Safaeinili et al., 2020). The CFIR is specifically composed of five major domains – characteristics of the intervention, characteristics of the individuals involved, inner setting, outer setting, and the process of implementation. The domains are further comprised of constructs relating to each, providing a practical and systematic structure to assess complex, interactive implementation processes (Damschroder et al., 2009). As a determinant framework, the CFIR offered a foundational structure for this exploratory evaluation for advancing understanding of the implementation process within real world contexts of LTC homes. Ethics approval was granted from the University Research Ethics Boards (#118629 and #H21-01428).

Research Team and Process

A 23-member team of researchers, PIECES experts, research trainees, Registered Practical Nurses, family/care partners, older adult residents and directors of LTC brainstormed adaptation of the PIECES$^{TM}$ approach (Hamilton et al., 2020) to be delivered via videoconferencing using PHIPA (Personal Health Information Protection Act)-approved ZOOM within two partner LTC homes. The research process included weekly team meetings. Over nine months, the virtual PIECES intervention was shepherded by an on-site Registered Practical Nurse champion and supported by an expert team of clinicians, Behavioural Supports Ontario. The Registered Practical Nurse champions at each LTC home supported their PIECES staff to develop an algorithm for addressing new resident behavioural expressions of concern, engaging families/care partners in care planning, and leading collaborative PIECES assessments. PIECES mentors supported the Registered Practical Nurse champions and their teams to explore solutions for challenges encountered and celebrate successes.

<u>Data Collection</u>

Convenience sampling (Etikan et al., 2016) was employed to gather rich descriptive information across stakeholders on the research team. To select participants, we stratified individuals into categories of role on the research team. All members of the research team who were considered to be key stakeholders (i.e., LTC administrators, Registered Practical Nurse champions, older adult residents, family/care partners, and community partners) were invited to participate to allow for a variety of perspectives. This process also ensured the voices of people with lived experience in LTC were featured, whom the implementation science effort would continue to impact beyond the course of the research projects. Individuals whose roles were considered to be 'academic' (i.e., university faculty, postdoctoral, graduate and undergraduate students) were not originally invited to participate in interviews as it was purported that the perspectives of the academics would be represented through data collection, analysis, and writing in the selection of interview questions and key messages. Ultimately, one academic representative was asked to participate in an interview offering insight into project development from the initial grant proposal. Participants were invited to participate via email and invited participants were able to understand and speak conversational English. The sample size was not predetermined; rather, adequate diverse but overlapping data indicated the approximation of data saturation (Steward, 2006; Khan, 2014). Data saturation was achieved when no new themes emerged. Data of challenges and considerations in implementing video conferencing in LTC homes during COVID-19 were compiled from: observations of PIECES training workshops; planning meetings with LTC home directors and Registered Practical Nurses; one-on-one ZOOM interviews with families/care partners, residents, Registered Practical Nurses, and PIECES mentors; and reflections of the academic research team. Interviews lasted between 30-70 minutes, and no repeat interviews were conducted. With informed consent of participants, these interviews

were recorded and subsequently transcribed verbatim by an experienced transcriptionist. All participants provided either written informed consent, indicated by signing a consent form, or verbal consent which was audio-recorded. All participants received a participant letter of information prior to participation and had opportunities to ask questions. See Supplementary Material Section 2 for a description of the CFIR application.

Data were also collected throughout the implementation process through biweekly "data capture" meetings, which facilitated discussions of successes, challenges, and adaptations to the implementation process. Those who attended regularly at these meetings were academics, LTC administrations, Registered Practical Nurse champions, and PIECES mentors. Resident and family/care partner research partners attended a few meetings during the planning stage of the intervention. These meetings were recorded for subsequent analysis. Field notes were documented by an interviewer with training in qualitative data collection methods [MH] throughout meetings and interviews.

Data Analysis

A deductive approach to coding and assigning themes was employed using qualitative content analysis (Sandelowski, 2000). The Consolidated Framework for Implementation Research (CFIR) provided sensitizing constructs for deductive coding of data gathered about the implementation of PIECES (e.g., barriers and facilitators in preparation for implementing an innovation). Sensitized by the language of the CFIR framework, analysis of the qualitative data identified use of words, as well as the frequency, relationships, and structure trends in word use (Vaismoradi et al., 2013). This analysis summarized the informational contents of the data, to inform understanding of the process of implementation and interpretation of key messages, and provided rich, detailed descriptions reflective of the complex content of the entire data set. Content analysis was selected as most suitable for data analysis to explore multifaceted phenomenon such as the implementation of PIECES and explore an area in

which limited knowledge exists. With content analysis a descriptive approach is used to code data and interpret how often a code is mentioned to inform a theme (Vaismoradi et al., 2013). This analytic method was used for identifying, describing, interpreting, and summarizing emerging patterns within the data, allowing themes to remain strongly data-driven and linked to the voices of participants themselves (Lambert & Lambert, 2012; Sandelowski, 2010; Vaismoradi et al., 2013).

Elo and Kyngäs (2008) method for content analysis was used which includes three steps: preparation, organizing, and reporting. Preparation began with MH and MY being immersed in the data as a whole and focusing on data that relates to the CFIR domains and constructs. With regards to organizing, open coding was utilized to create sub-themes and themes by first grouping codes sharing similar ideas under higher order headings, which offered a general description of the experience (Elo & Kyngäs, 2008). The analysis was afterwards reported based on the CFIR domains which served as a conceptual framework. For example, *engaging* is a deductive theme informed by CFIR, while *meaningful stakeholder engagement to bridge research and practice* is an inductive theme emerging from the experiences of the research team.

Analysis of interview transcripts, as well as observational field notes, allowed the researchers to look at organizational factors, implementation process, team culture, compatibility, relative priority of the intervention, team engagement, and the implementation process from the perspectives of key stakeholders. Preliminary codes (i.e., meaningful labels applied to phrases), subthemes (i.e., a gathering of similar labels under a representative subheading), and themes (i.e., a term or short phrase to represent an interpretation of related subheadings) were generated from the data through discussions between two research team members [MH, DC]. Consensus on themes to include was reached by all team members. Data analysis also involved reflexive participant collaboration wherein LTC directors and staff, as

well as resident and family/care partner research partners, provided ongoing feedback on interpretations to support participant validation and trustworthiness in the presentation of the findings (Motulsky, 2021; Slettebø, 2021). The involvement of LTC partners was achieved through meetings to review themes and subthemes to ensure they accurately captured their perspectives and interviews with LTC partners. Despite potential concerns of confidentiality related to the inclusion of two sites, only academic members had access to interview transcripts and all identifying information was removed including sites before sharing with the larger team.

**Results**

Participants (*N*=12) were members of the research team, who all offered reflections on their experiences throughout the implementation science process (Table 1). Individuals represented the academic, LTC, and community organization settings as well as older adult residents and families/care partners.

Themes and subthemes from participants' reflections as influential factors impacting the implementation science process within LTC during COVID-19 were developed. The focus of this paper was to explore themes related to the CFIR (2022) process domain. The other four domains (i.e., intervention characteristics, inner setting, outer setting, and characteristics of individuals) were used to support themes and subthemes related to the implementation process of PIECES in LTC. For example, the intervention was perceived as adaptable to be redesigned for virtual delivery to meet the needs of residents and families during the COVID-19 pandemic therefore positively impacting its implementation in LTC homes.

Within *planning* of the CFIR (2022) process domain, subthemes related to expert partners on the research team, empowering partnerships, and authentic congruence between intervention and implementation. Within *engaging*, meaningful stakeholder engagement to

bridge research and practice, and developing relationships and rapport from a distance were highlighted. In *executing*, support from LTC administrative leadership, empowerment of frontline champions and encouragement from community partners were key subthemes. Finally, relating to *reflecting and evaluating*, subthemes included challenges of context, capacity for change, and communication. Our analysis also noted circumstantial factors of the inner and outer setting, as well as the individuals involved in the process; however, these factors were not considered as influential as the four aforementioned themes in relation to the implementation process (Supplementary Material Table 1).

*Planning*

This research prioritized the integration of key stakeholders as expert partners on the research team representing the voices of those impacted by the research and ensuring compatibility between the proposed processes and practices within LTC settings. According to the CFIR guide, 'planning' is defined as "the degree to which a scheme or method of behaviour and tasks for implementing an intervention are developed in advance, and the quality of those schemes or methods" (CFIR, 2022). Moreover, planning for the implementation effort set the foundation of a plan-do-study-act cycle, a well-recognized model for implementing change (IHI, 2003).

Weekly research team meetings were held virtually with representation from the academic, LTC, and professional organizations to track progress and develop strategies to simplify execution. These experts included representatives from PIECES Canada, who best understood the foundations of the intervention and worked to redesign the PIECES approach to be delivered virtually. The redesign of the PIECES education program for training purposes occurred prior to the development of this implementation science project to be delivered virtually for enhanced ease of access tailored for Registered Practical Nurses. The

PIECES representatives would also serve to engage Registered Practical Nurse champions within the LTC homes.

> […] in this redevelopment of the PIECES approach, the most critical enhancement is that it's being led by a commitment to the voice of experience. […] a key focus in the redevelopment of the PIECES approach was recognizing, honouring complexity in those many challenges that teams across continuing care are constantly navigating which include complexity, time and resources, ever-changing policies and practices with the covid pandemic. [P5]

In designing this research project, and in accordance with established best practices for implementation science efforts, it was understood that meaningful stakeholder engagement to bridge research and practice would be essential to promoting effective implementation by enhancing local capacity for using the PIECES approach (CFIR, 2022).

> What I really like about it is how collaborative the partnership is, and I think everybody brings something to it so it's a really nice reflection of PIECES. […] Everyone has a contribution and the conversations are really rich. [P6]

Similarly, another community partner shared her excitement about the cooperative and pragmatic nature of the implementation research.

> What I have really appreciated was, the interaction with the home and that kind of problem solving […] You're taking a research lens to that process, and quantifying that or in some way describing that really well. [P7]

*Engaging*

According to the CFIR guide (2022), 'engaging' is considered as "attracting and involving appropriate individuals in the implementation and use of the intervention through a combined strategy of social marketing, education, role modeling, training, and other similar activities" (CFIR, 2022). Each team member was engaged in the research design, planning,

and implementation. Fostering empowering partnerships was emphasized by one academic member:

> Distributed leadership was integrated into the research plan from the very beginning. The intention was to have a respectful exchange of ownership and collaboration between the academic researchers and the clinical expert team members. The budget and finances were distributed to the LTC partners, allowing them to make their own decisions about spending. […] This was especially helpful for establishing a sense of trust, particularly during COVID when all of our interactions were virtual. [P12]

Another community partner who acted as an opinion leader with informal influence on others as a peer within the LTC home emphasized the importance of authentic congruence between the implementation science effort and the intervention, along with the timing of the project, stating *"It was great to have a scientific research project, something very practical, very engaging, because the project itself really reflected what is so central to the PIECES approach."* [P5].

Appreciating reasons behind participants' willingness to join the research team helped to ensure the research direction aligned with meaningful motivators for the individuals involved. For instance, one older adult resident team member recognized the potential impact of the research on enhancing people's lives within LTC.

> Right away I wanted to do it. […] Psychology has always been an important thing and people's behaviour. And all of that is very, very important to me. [P1]

Correspondingly, one family/care partner highlighted the significance of the research objectives to the care of his loved one.

> It's a good way to do it. People weren't going into the home. […] Communication is so important, not just with the resident but also with the family. [P4]

Additionally, a second family/care partner underscored the importance of representation of stakeholder voices on the research team.

> It's paramount that a family representative is involved in the research going forward. The ability to garner that perspective of family members, even residents, that is the collaboration that benefits everyone. The holistic approach is invaluable to the care that they're receiving in these LTC homes, and I can't speak enough to the benefits of this process, even in my individual interactions with the staff, and my mom with the staff. [P3]

Throughout the entirety of this project, all research team meetings were virtual. While larger team meetings with all members made for more efficient discussions, feedback from the resident research team members underscored that, in fact, meetings where laymen terms are being used were much preferred. A resident team member stated:

> The biggest thing is when there's four, five, or six of you and everybody's talking about something different, a lot of it does go over your head because we're not in that field. […] Keep it so [residents or families/care partners] understand what this research is about. And really specify what it is you want from that person. [P2]

Per the request of the family/care partner and older adult resident research team members, regular updates were communicated following each meeting. Separate meetings were conducted with family and resident research team members.

*Executing*

According to the CFIR guide (2022), 'executing' is considered as "carrying out or accomplishing the implementation according to plan" (CFIR, 2022). Executing the implementation of the PIECES approach with virtual care conferences required support from administrative leadership so that the PIECES implementation is done according to plans discussed within the research team. One director professed:

The key for us was getting one or two key leaders on the staff to buy in and support it. When success is seen it spreads like wildfire. We embrace an attitude that all staff input matters so we try to have staff involved at the ground level when change may occur. The ownership of change allows us to have increased support. [P10]

Similarly, authentic engagement of frontline Registered Practical Nurse champions within the LTC homes was understood as essential in liaising between the clinical settings and the research team, as well as bolstering internal support for the uptake of PIECES. Registered Practical Nurse champions had in-depth knowledge about how PIECES should be implemented as they attend weekly research team meetings. They ensured that staff were following appropriate processes in terms of referrals and next steps for planning for care conferences held by video with families and residents in LTC. Moreover, the encouragement from PIECES mentors to facilitate adaptations to care planning processes was valued from all individuals.

I see my role as a mentor as listening to the mentees to hear where they are at, helping them to identify what would be helpful to their development, identifying their strengths and ensuring that they see their strengths, but also gently encouraging them to move from a position of strength to stretch. [P7]

Importantly, it was noted by one Registered Practical Nurse champion that, despite her eagerness for the novel intervention and her understanding of the implementation process, involvement in the implementation process was more onerous than initially anticipated.

Getting to see the research aspects of how things are developed has been very interesting. […] I never realized how much work it was, and how time consuming and lengthy the process was. But it's been very insightful, and I've enjoyed it all. [P8]

While research activities may have been more time-consuming than initially anticipated, another Registered Practical Nurse champion found support from the PIECES mentors and the research team to be instrumental.

> It was really eye-opening to be involved in the implementation science part of it. I really got to work with the researchers from beginning to end. I have a better understanding of how much work goes into research projects […] Meeting together with the mentors – the creators of PIECES – they were providing really helpful insight and making sure that we had a really good understanding of what PIECES was. [P9]

*Reflecting and evaluating*

With regards to the CFIR guide (2022), 'reflecting and evaluating' is defined as "quantitative and qualitative feedback about the progress and quality of implementation accompanied with regular personal and team debriefing about progress and experience" (CFIR, 2022). In reflecting and evaluating the process of implementation, considerations highlighted challenges and opportunities learned in real-time. With respect to the new process and its reception within her LTC facility, one Registered Practical Nurse champion noted:

> The virtual approach to care planning is a great idea. At first, I was a little hesitant because it was something new. […] The feedback was great that it was really nice to see family members face-to-face and collaborate. [P9]

Competing priorities challenged by the context of the COVID-19 pandemic influenced participants' experiences of facilitating the implementation process within the LTC settings. One LTC administrator reflected on the challenges of navigating this landscape with respect to capacity for change within the home.

> During the pandemic there was so much going on in LTC. There were constant changes in the directives from the government, staffing challenges, outbreaks. It has

been a rollercoaster. PIECES implementation was the same. We would focus on the

process, get things moving, and then something would stop the forward momentum.

[…] The pandemic ebbed and flowed Registered Practical Nurse excitement over the

project also. It required us to listen to them and adjust the process so that they were

not too fatigued to participate. Now that there is full implementation with the PIECES

team, it's awesome to see the excitement over PIECES return. Overall, it has been

very positive despite the challenges involved. [P10]

Observational field memos noted the significance of communication for continuing to move

the project ahead, stating: *"This week's data capture meeting seemed pivotal to realigning*

*the research team members, ensuring everyone remained on the same page for goals, while*

*facilitating a trusting relationship with open lines of communication."* Overall, when

reflecting on bridging the gap between research and clinical context, one LTC director noted:

It has been a positive experience with a lot of support to the home from the research

team in the development of tools and dialogue to work through the project with the

research team and another LTC home. Initially we were a bit intimidated with the

thought of research; however, as the project evolved, we realized our contributions to

the project and the value it brought to our home. [P11]

In reflecting and evaluating on the implementation process, aspects relating to

communication, objectives, and timelines were highlighted as important for linking the

research and clinical team members and ensuring expectations were satisfactorily met on both

sides.

**Discussion and Implications**

This is the first study to explore the implementation processes for virtual delivery of

the PIECES<sup>TM</sup> approach. Experiences of the research team highlighted opportunities and

considerations for future implementation science efforts. Key lessons learned within this

implementation effort included the importance of meaningful early and ongoing stakeholder involvement, clarity around expectations, and readiness and commitment for implementation.

In this project, stakeholder involvement on the research team helped to inform the development of the research grant, the creation of algorithms for the implementation process, and avenues for knowledge translation. Having administrative and Registered Practical Nurse support championing the implementation strategy within the LTC homes demonstrated eagerness to frontline staff of the benefits of the new process and, thus, enhanced engagement of Registered Practical Nurse staff with carrying out the novel PIECES approach and video conferences. The significance of stakeholder engagement in directing research priorities within LTC has been previously identified (Backhouse et al., 2016; Chamberlain, 2020; Levy et al., 2022). Moreover, recognizing older individuals as experts in their own lives is essential for creating meaningful partnerships and developing impactful research (McWilliam, 2009; Richardson, 2020). Collaboration with key stakeholders – including older adult residents of LTC, their families/care partners, and their healthcare team – may enhance the relevance, clarity and dissemination of research and translation to clinical practice (Fudge et al., 2007; Chamberlain, 2020). Underscoring the relevance of new learning materials and to key stakeholders, particularly frontline staff, may serve to foster enhanced buy-in, uptake, and ultimately lead to improvements in family-centered care outcomes for older adult residents (Coffey et al., 2021). Despite what is known about the benefits of stakeholder engagement in implementation science research, this present study provides a unique contribution in how best to engage certain stakeholders. Resident and family research partners were found to be more forthcoming with their experiences and involved through one-on-one versus larger team meetings. This finding reveals the need for research teams to be mindful of research partners' time, how they see themselves contributing and the bridging work by the research team needed to address the gap between the academic study of lived experiences and those living

the experience as research partners. Previous research has also suggested the importance of remaining flexible with respect to the roles of older individuals as part of the research team, their preferences for collaboration, time commitment and feedback (Luff et al., 2015; Backhouse et al., 2016). Adaptability was key with respect to scheduling of meetings and avenues for providing input throughout the research process (e.g., preference for smaller meetings, individual conversations).

<u>Novel contributions</u>

Registered Practical Nurse stakeholders were truly embedded in the virtual delivery of PIECES as they received paid training and education and were provided with shifts where they would focus solely on PIECES. They were well supported by an onsite PIECES trained champion, and PIECES mentors for implementation of PIECES. There was a commitment to distributed leadership demonstrated by providing each LTC home partner with their own separate budget to control. This ensured that trust and accountability was built between the research team and LTC home partners from the very start of the project. Collaborators on the study included representation of the people needed to implement the intervention at every layer, from the resident outwards to the research team; multiple stakeholders contributed to the research projects including academics and research trainees, managers, bedside nurse providers, PIECES Canada representative, PIECES mentors, nurse professional organization representative, families/care partners, and residents. The research was entirely completed virtually which was new technology for residents and some families/care partners, and Registered Practical Nurses . Findings reveal that engagement of stakeholders was still possible despite no in-person contact.

Reflections offered by the participants indicated room for improvement with respect to understandings of expectations, responsibilities, trust, and how their input was being used. Previous research involving 'patient engagement' emphasized that projects must outline

roles, responsibilities, and goals for team members from the outset of the research project (Feldman & Kane, 2003; Shippee et al., 2015; Hamilton et al., 2018). Specifically, clarifying expectations around timelines of the intervention as well as research deliverables, expected resources required for implementation, roles of champions, and incentives can facilitate better outcomes for translating evidence-based tools into clinical practice in LTC (Feldman & Kane, 2003). Within the complex arena of implementation science, and bridging academia with clinical practice in LTC, the present research highlighted a stronger emphasis on the essentiality of communication among the research team as to expectations and standards from both perspectives.

Notably, the research team was assembled remotely, beginning at the height of the second wave of the COVID-19 pandemic, and the research was carried out with all members of the team contributing via virtual platforms. Moreover, the key stakeholders were experiencing the repercussions of COVID-19 in real-time while carrying out of this research endeavour. A novel contribution of the present study was that it was still possible for research teams to persevere with implementation efforts within the context of COVID-19 and virtual processes. Facilitating factors included open lines of communication as well as mentoring support from the community partners in problem-solving and confidence-building of the LTC partners as they rolled out the new processes. These findings support previous literature, which has suggested the significance of communication and trust in developing a sense of 'team' whilst working remotely (Lukić & Vračar, 2018).

Previous literature supports the impact of organizational context on successful implementation of healthcare innovations in LTC homes (Bunn et al., 2020; Levy et al., 2022). Factors such as strong senior management, support of champions, alignment with organizational culture, communication, and sufficient capacity for engagement of staff have been suggested to affect readiness for and success of implementation efforts (Oosterveld-

Vlug et al., 2019; Bunn et al., 2020; Miake-Lye et al., 2020; Kormelinck et al., 2021). When research activities conflicted with providing resident care, or in times of reorganization or added stress, motivation to engage may be low. In contrast, the ability to prioritize involvement in the implementation of the new process, including dedicated time for research activities, access and management of funds to cover costs, and managerial backing, may enhance engagement in the implementation process (Oosterveld-Vlug et al., 2019). Implementation of new practices in clinical settings is complex and, thus, should be tailored to the specific needs of the target organization with carefully selected internal champions (Kormelinck et al., 2021). The results of the present study corroborate these findings of the aforementioned research.

**Limitations**

While enthusiasm for the promise of the novel intervention was high at the outset of the research, circumstantial factors surrounding subsequent repeated COVID-19 outbreaks among residents and staff at both partner LTC homes ultimately did impact the capacity of the research team and frontline staff for executing research-oriented tasks. However, the pandemic also presented ideal circumstances to push the virtual envelope. Arguably, these trying times created an opportunity to try a novel approach to team-based care planning and the necessity for creative problem-solving may have facilitated uptake of the virtual delivery model.

Finally, the implementation efforts for rolling out the PIECES approach with novel virtual care conferences were ongoing throughout the conduct of this qualitative descriptive study. Thus, another limitation may have been that aspects relating to execution, reflection and evaluation were not finalized at the point of data collection. Participants' interpretations of the implementation process may change as the intervention spreads and is sustained within the LTC homes. Greater information related to the demographics of participants such as race

and ethnicity were not included in this study. There is a need for more diverse representation in future studies to ensure different perspectives are being captured.

**Conclusion**

This study presents the experiences of a multidisciplinary, multi-sector partnership innovating a novel virtual team-based care planning process with Registered Practical Nurses for residents of LTC homes employing implementation science methods during the COVID-19 pandemic. Findings offer practical insights into challenges and considerations inherent in planning, engaging, executing, reflecting, and evaluating the implementation of new evidence-based interventions in real-life contexts of LTC. This research demonstrates effective strategies to consider when undertaking implementation science research – including key stakeholders on the research team to bridge research and practice, developing research relationships from a distance, empowering frontline champions, and adapting to challenging circumstances – which may enhance shared commitments for successful implementation in the long term.

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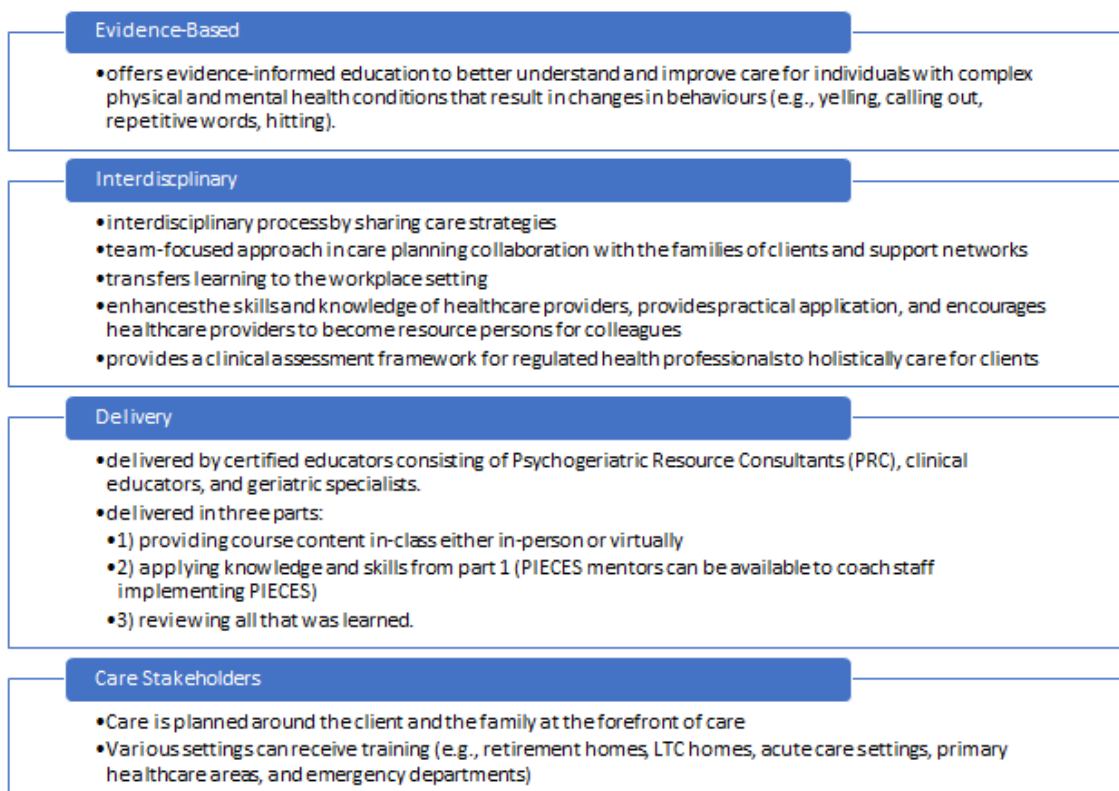
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Table 1. Descriptive characteristics of the participants (*N*=12)

| Variable | *N* |
|---|---|
| Age (years) | |
|   18-34 | 1 |
|   35-44 | 1 |
|   45-54 | 6 |
|   Over 55 years of age | 4 |
| Gender | |
|   Female | 9 |
|   Male | 3 |
| Role on the Research Team | |
|   Academic researcher and educator | 1 |
|   Long-term care administrator | 2 |
|   Registered Practical Nurse champion | 2 |
|   Older adult resident | 2 |
|   Family care partner | 2 |
|   Community partner | 3 |
| Discipline | |
|   Nursing | 2 |
|   Allied health disciplines | 1 |
|   Administration/directorship | 2 |
|   Non-health care discipline | 7 |
| Previous research experience | 5 |

Figure 1

## Evidence-Based

- offers evidence-informed education to better understand and improve care for individuals with complex physical and mental health conditions that result in changes in behaviours (e.g., yelling, calling out, repetitive words, hitting).

## Interdisciplinary

- interdisciplinary process by sharing care strategies
- team-focused approach in care planning collaboration with the families of clients and support networks
- transfers learning to the workplace setting
- enhances the skills and knowledge of healthcare providers, provides practical application, and encourages healthcare providers to become resource persons for colleagues
- provides a clinical assessment framework for regulated health professionals to holistically care for clients

## Delivery

- delivered by certified educators consisting of Psychogeriatric Resource Consultants (PRC), clinical educators, and geriatric specialists.
- delivered in three parts:
  - 1) providing course content in-class either in-person or virtually
  - 2) applying knowledge and skills from part 1 (PIECES mentors can be available to coach staff implementing PIECES)
  - 3) reviewing all that was learned.

## Care Stakeholders

- Care is planned around the client and the family at the forefront of care
- Various settings can receive training (e.g., retirement homes, LTC homes, acute care settings, primary healthcare areas, and emergency departments)