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Original Study

Building Long-Term Care Staff Capacity During COVID-19 Through Just-in-Time Learning: Evaluation of a Modified ECHO Model

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A B S T R A C T

Objectives: The onset of the COVID-19 pandemic significantly challenged the capacity of long-term care (LTC) homes in Canada, resulting in new, pressing priorities for leaders and health care providers (HCPs) in the care and safety of LTC residents. This study aimed to determine whether Project ECHO (Extension for Community Healthcare Outcomes) Care of the Elderly Long-Term Care (COE-LTC): COVID-19, a virtual education program, was effective at delivering just-in-time learning and best practices to support LTC teams and residents during the pandemic.
Design: Mixed methods evaluation.
Setting and Participants: Interprofessional HCPs working in LTC homes or deployed to work in LTC homes primarily in Ontario, Canada, who participated in 12 weekly, 60-minute sessions.
Methods: Quantitative and qualitative surveys assessing reach, satisfaction, self-efficacy, practice change, impact on resident care, and knowledge sharing.
Results: Of the 252 registrants for ECHO COE-LTC: COVID-19, 160 (63.4%) attended at least 1 weekly session. Nurses and nurse practitioners represented the largest proportion of HCPs (43.8%). Overall, both confidence and comfort level working with residents who were at risk, confirmed, or suspected of having COVID-19 increased after participating in the ECHO sessions (effect sizes $\geq$ 0.7, Wilcoxon signed rank $P < .001$). Participants also reported impact on intent to change behavior, resident care, and knowledge sharing.
Conclusions and Implications: The results demonstrate that ECHO COE-LTC: COVID 19 effectively delivered time-sensitive information and best practices to support LTC teams and residents. It may be a critical platform during this pandemic and in future crises to deliver just-in-time learning during periods of constantly changing information.

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The COVID-19 pandemic has disproportionately affected older adults, particularly those in Canadian long-term care (LTC) homes where outbreak threats and risk of transmission are especially high.[1–3] Health care providers (HCPs) in LTC homes have also faced unprecedented circumstances with increased workload pressures, exacerbation of pre-existing low staffing levels, changing guidelines around infection prevention and control (IPAC), and the need for environmental changes to promote physical distancing.[4–6] As of May

2020, LTC residents accounted for 85% of COVID-19—related deaths in Canada, with the province of Ontario reporting the second highest number of confirmed cases of COVID-19 among residents in LTC homes.[7] At a time where information about COVID-19 and system practices changes daily, the need for rapid knowledge exchange to facilitate sharing of best practices has never been more relevant; in particular, information about IPAC measures, proper use of personal protective equipment (PPE), recognizing atypical presentations of COVID-19 in older adults, and understanding facts and myths about COVID-19. In addition, with higher demands on HCPs in managing workload and uncertainty during COVID-19, HCPs' stress, anxiety, and burnout are key areas that require support.[8,9]

Project Extension for Community Healthcare Outcomes (ECHO) is a virtual, capacity-building education program with the capability to provide rapid real-time dissemination of best practices.[10] Developed in 2003 at the University of New Mexico School of Medicine, Project ECHO develops Communities of Practice using a Hub-and-Spoke model of knowledge dissemination and collaborative learning; exchanging knowledge between interprofessional teams of specialists at an academic center (Hubs) with primary care providers (Spokes), particularly those in rural, underserved areas.[11,12] In the ECHO model, knowledge flows in multiple directions: bidirectional from Hub specialists to primary care providers and between primary care providers.[13] Bridging the gap between emerging best evidence and the application of that evidence by LTC HCPs is a function of this education intervention. Since 2018, Baycrest Health Sciences, a Canadian academic health science center fully affiliated with the University of Toronto, in partnership with the North East Specialized Geriatric Centre, a program of Health Sciences North, have utilized Project ECHO for various Care of the Elderly (COE) programs, providing virtual continuing education focused on caring for frail, medically complex older adults in both the community and LTC.

The onset of the COVID-19 pandemic necessitated many changes including the uptake and utilization of virtual platforms to provide opportunities for enhanced knowledge exchange, education, and to promote collegial networks. To support HCPs in LTC build capacity, strengthen their LTC teams, and support residents during this pandemic, we mobilized our existing infrastructure to launch ECHO Care of the Elderly-Long-Term Care (COE-LTC): COVID-19 in collaboration with the Ontario Centres for Learning, Research and Innovation (CLRI) in LTC at Baycrest. The present study aimed to determine the effectiveness of ECHO COE-LTC: COVID-19 in delivering just-in-time learning and best practices for LTC HCPs to support their teams and residents.

Methods

Study Design

This study used a mixed methods evaluation of ECHO COE-LTC: COVID-19 involving quantitative and qualitative analyses.

Participants

All participants were interprofessional HCPs working in LTC or redeployed to work in LTC and had the basic technology requirements to join the live weekly sessions. Participants were recruited through ECHO COE alumni mailing lists, the Ontatio CLRI Listserv, LTChomes.net (which is accessible to every LTC home administrator across Ontario), and via social network platforms (ie, Twitter, LinkedIn). In addition to targeting LTC homes across Ontario, we permitted out-of-province participants to join. This project has approval from the Research Ethics Boards at Baycrest and Health Sciences North.

Adaption of ECHO Care of the Elderly-Long-Term Care (COE-LTC) for COVID-19

The typical delivery and format of our ECHO COE-LTC program entails weekly sessions over 10-15 weeks with participants enrolling for the entire program and committing to attend at least 75% of the sessions. Each session includes the following components: introductions, a brief didactic presentation on an LTC-related topic, a case-based discussion period followed by a summary of session learnings. The case aspect of the session is usually planned in advance with participants submitting and presenting their own challenging client cases using a template.

In response to COVID-19, the ECHO COE-LTC program was adapted as follows. ECHO COE-LTC: COVID-19, which was planned for an initial 4 weeks, was expanded in blocks of 4 weeks to a total of 12 weeks due to high engagement, number of attendees, and requests for more sessions from participants as the pandemic continued to affect LTC homes across Ontario. In anticipation of changing demands and schedules of HCPs in LTC, a rolling enrolment process was implemented whereby participants could flexibly attend 1 or more sessions, but did not need to commit to 75% attendance. A total of 12 weekly, 1-hour sessions were offered. The typical case submission by partner and spoke homes was modified in order to accommodate the increased demands on HCPs for pandemic efforts. Instead, cases in our sessions were related to participants' personal experiences and narratives, which were elicited and shared spontaneously during the 1-hour session; these reflected the current situation in their LTC home (referred to hereafter as situational exemplars). A trained Hub member with clinical and leadership expertise in LTC facilitated each session to encourage dialogue and exchange of ideas. Recordings of the didactic presentations and summarized transcriptions of situational exemplars were posted on the Ontario CLRI website. In addition to the recordings and transcriptions, relevant articles and tools for practice were shared on the ECHO COE Community of Practice website.

Program Curriculum

The curriculum was developed based on a needs assessment survey of HCPs in Ontario LTC homes, alumni of ECHO COE-LTC programs, and through discussions with Hub team members (N = 75; see Supplementary Table S1 for curriculum). As we extended our program from 4 weeks to 12 weeks, we continued to plan the curriculum in 4-week blocks to take into consideration the changing pandemic education needs of HCPs and care needs of residents and to allow for just-in-time learning and knowledge exchange across the LTC sector.

Measures

Participants completed surveys at pre-ECHO (prior to attending their first session), following each weekly session, and at post-ECHO (at the completion of the 12-week program). We define the effectiveness of ECHO COE-LTC: COVID-19 by reach, satisfaction with the program, self-efficacy, intent to change behavior, impact on resident care, and knowledge sharing.

Demographics

Participant demographic information was collected via an Application Form at pre-ECHO and included gender, highest level of education completed, profession, years in practice, percentage of older adults on caseload, and comfort level working with residents aged ≥65 years who are at risk, confirmed, or suspected of having COVID-19. Collection of practice setting data (eg, geographic location and rural vs urban/suburban) allowed for demonstration of reach.

Outcome Measures

Satisfaction

Satisfaction was assessed weekly following each session and post-ECHO. Each week, participants rated their overall satisfaction with the session using a 5-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree. At the end of the 12-week program, participants were invited to complete a Feedback Survey about their experience including fulfilment of program expectations.

Self-Efficacy

Self-efficacy was assessed at pre- and post-ECHO as well as weekly after each session. At pre- and post-ECHO, participants were asked to rate their comfort level working with residents who are at risk, confirmed, or suspected of having COVID-19 from "not at all comfortable" to "very comfortable." Participants were also asked to rate their degree of confidence in their understating of the weekly topics before and after participating in the weekly sessions. Prior to starting the program, participants were initially asked to complete a Self-Efficacy Questionnaire, which asked them to rate their perceived ability to perform a task on a COVID-related LTC topic from 0 = not confident to 100 = very confident. This questionnaire was phased out after 3 weeks as the rolling enrolment meant that some participants may not have participated in all sessions and, therefore, may not have been able to sufficiently rate their confidence. Instead, 2 questions pertaining to participants' confidence before and after participating in individual sessions were added to the Weekly Satisfaction Survey.

Practice Change, Impact on Resident Care, and Knowledge Sharing

Additional open-ended survey items following the weekly sessions and at post-ECHO asked participants about their intent to change behavior. Indications of behavioral intent included measures of intention to apply what was learned in practice. At post-ECHO, participants were also asked open-ended questions related to impact on client/resident care and knowledge exchange resulting from program participation.

Survey Procedures

After completing the Application Form, registered participants received an onboarding e-mail that provided information about the program, an opportunity to provide informed consent as well as a 1-page document on how to use the online virtual platform (Zoom). Following each session, participants were sent a link to the Weekly Satisfaction Survey, which they had 1 week to complete. At post-ECHO, participants were asked to complete a Feedback Survey. All data were collected using REDCap, a secure data collection platform.[14]

Data Analyses

All data were summarized and reported using descriptive statistics. Before-after comparison of survey ratings were done through the Wilcoxon signed-rank test with the standardized response mean as the effect size (ES) measure. Data processing and analyses were carried out in SAS, version 9.4.[15] Responses to open-ended questions were deidentified and imported into NVivo, version 11, software (QSR International Pty Ltd, Doncaster, Melbourne, Australia) for analysis. A deductive coding approach was adopted where the codes and subsequent themes derived from the topics being explored in the open-ended survey questions. In line with the quantitative validation approach detailed by Creswell and Plano Clark, primary themes,

subthemes, and supportive quotes were triangulated with the quantitative data that were collected concurrently.[16]

Results

Demographic Information

Of the 252 individuals that registered for ECHO COE-LTC: COVID-19 and submitted application forms, 160 (63.5%) attended at least 1 weekly session (see Table 1). These participants were mostly female (88.8%) and had been in practice for more than 10 years (65%). Providers were physicians (10.6%), LTC directors of care (13.1%), nurses and nurse practitioners (43.8%), allied health professionals (11.3%), and other LTC staff (21.3%; ie, administrators, educators, learners and students, psychogeriatric resource consultants, spiritual care practitioners, quality improvement personnel, and research and nonclinical managers). On average, participants reported that 88.53% of their caseload included older adults and that they felt "somewhat comfortable" working with residents aged ≥65 years who were at risk, confirmed, or suspected of having COVID-19. Overall, participants were from more than 140 LTC homes primarily across Ontario, with 41.9% practicing in rural or remote environments.

Quantitative Analysis

Satisfaction

Of the 160 participants who attended the weekly sessions, 133 participants provided responses to the weekly surveys although the number of responses varied each week. Overall, the mean satisfaction

Table 1
Participant Demographics and Practice Characteristics

Participant Demographics	Registered (N = 252)	Attended at Least
1 Weekly Session (n = 160)		
Female gender*	223 (88.5)	142 (88.8)
Highest level of education completed[†]		
College or university diploma/degree	171 (67.9)	104 (65.0)
Postgraduate (MSc, PhD)	79 (31.4)	56 (35.0)
Primary profession		
Physician (attending, medical director)	22 (8.7)	17 (10.6)
Director of care or assistant director of care	40 (15.9)	21 (13.1)
Nurse	66 (26.2)	48 (30.0)
Nurse practitioner	30 (11.9)	22 (13.8)
Allied health professional	41 (16.3)	18 (11.3)
Other: learner/student, educator, other LTC staff	53 (21.0)	34 (21.3)
Years in practice		
Less than 5 y[‡]	56 (22.2)	31 (19.4)
5-10 y	56 (22.2)	25 (15.6)
>10 y	140 (55.6)	104 (65.0)
Environment of practice[§]		
Remote or rural	99 (39.3)	70 (43.8)
Suburban or urban	154 (61.1)	93 (58.1)
Approximate percentage of older adults aged ≥65 y on current caseload, mean (SD)	251 88.5 (15.3)	159 89.6 (14.0)
Comfort level working with residents aged ≥65 y who are at risk, confirmed, or suspected of having COVID-19, mean (SD)[‖]	252 3.6 (1.1)	160 3.6 (1.1)

Unless otherwise noted, values are n (%).
  *Others include male, transgender, and those who prefer not to respond.
  [†]Less than 2% of all applicants with a high school diploma.
  [‡]Includes not applicable.
  [§]≤3% of applicants (all and by group) practice in both and/or other environments.
  [‖]Scale: 1 = not at all comfortable, 2 = somewhat comfortable, 3 = neutral, 4 = somewhat comfortable, 5 = very comfortable.

Table 2
Overall Satisfaction Ratings (N = 133)

Survey Items	Mean (SD)
Overall, I was satisfied with the session.	4.4 (0.6)
This program content enhanced my knowledge.	4.2 (0.6)
The presenter(s) were clear and effective in delivering material.	4.5 (0.6)
I will be able to share knowledge gained from this session with others.	4.3 (0.6)
This session will enhance my clinical practice.	4.2 (0.7)
This session increased my confidence in either preparing for or responding to a COVID-19 outbreak in my LTC home.	4.1 (0.7)
There was sufficient opportunity to interact with other participants.	4.4 (0.6)
The session was facilitated well.	4.5 (0.6)
I would recommend this session to others.	4.4 (0.6)

Rating Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

rating was 4.4 on a 5-point Likert-type scale indicating that participants were satisfied with the sessions (see Table 2 for full item reporting for the Weekly Satisfaction Survey).

At post-ECHO, a total of 78 participants responded to the Feedback Survey with varying numbers of respondents depending on the survey item (minimum = 59). Participants responded "agree" that ECHO COE-LTC: COVID-19 met their expectations. All respondents indicated that they would recommend ECHO COE-LTC: COVID-19 to others.

Self-Efficacy

Among respondents, comfort level in working with older adults who are at risk, confirmed, or suspected of having COVID-19 increased significantly from pre-ECHO (mean = 3.6 of 5) to post-ECHO (mean = 4.3, ES = 0.7 or medium, $P < .001$).

As a whole, participants' levels of confidence increased (mean = 16.5%) from before to after participating in the ECHO sessions ($P < .001$, ES = 1.1 or large; Table 3). Individual sessions also showed large increases in confidence levels, which were all statistically significant and had large effect sizes.

Intent to change behavior, resident care, and knowledge sharing

In terms of impact on behavior, 62.7% reported that they are now using or plan to use a new tool or knowledge learned through ECHO. Regarding impact on resident care, the mean rating was 3.8 on a 5-point Likert-type scale indicating that participating in ECHO COE-LTC: COVID-19 has had a positive impact on their client or resident

care. In addition, 66.1% reported that they shared information from ECHO with their colleagues or team members and more than half of the respondents watched and/or recommended the recordings on the Ontario CLRI website.

Qualitative Analysis

Of the 133 participants who provided responses to the weekly surveys, an average of 21 participants provided qualitative comments (range: 10-42). At post-ECHO, of the 78 participants providing responses to the Post-Feedback Survey, 59 participants provided comments. Two primary themes emerged from thematic analysis: (1) reflections on experience and (2) impact of ECHO COE-LTC: COVID-19. Subthemes of increased confidence in clinical care, integration of knowledge into practice, prioritization of LTC staff wellness, and knowledge dissemination emerged under the impact of ECHO COE-LTC: COVID-19. For each theme and subtheme, exemplar quotes are reported.

Reflections on Experience

Overall, the majority of participants providing responses reported a positive experience with ECHO COE-LTC: COVID-19. Participants stated that the program was "a great learning opportunity," with "knowledgeable presenters," and "encouraging and engaging moderators," which "has been an invaluable source of support during the pandemic." As one participant noted.

> The sessions highlighted the professional and personal realities we bring to the work we do; the people we serve; and, those we feel a great sense of responsibility for, especially, in light of COVID-19 this includes our residents; LTC staff colleagues; our loved ones; and ourselves. Being able to speak with staff who are returning to the LTC, not just around their plans for the care they hope to provide to residents with responsive behaviors, but also, how they are "feeling" about going back in, was critically important. I know there may be challenges ahead, but [I] have a few more tools in the "kit bag" to draw from.

Several individuals highlighted the "timely" manner of the program and the importance of preventing professional isolation in the LTC setting. Participants noted that it was "a good opportunity to hear the experiences of others working in LTC during COVID-19," and that it was "almost therapeutic attending these [sessions] weekly."

At the same time, several individuals expressed overall positive sentiments but provided areas for improvement, which were largely

Table 3
Weekly Satisfaction Before and After Confidence Rating (0-100%)

Session Title	n	Before				After				Difference				P^*	Effect Size[†]
		Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max		
Infection control myths about COVID-19 in LTC	65	68.5	15.8	27	94	84.8	14.5	20	100	16.3	14.4	−48	70	<.001	1.1
Stress, anxiety and health care providers	55	71.2	13.9	21	97	84.8	11.1	51	100	13.6	11.9	−10	68	<.001	1.1
Ethical guidance and tools for LTC during COVID-19	46	67.7	16.0	27	90	84.9	9.4	47	100	17.3	14.2	−10	71	<.001	1.2
Delirium: Prevention, assessment, and management	45	66.8	17.6	20	100	83.6	12.2	49	100	16.8	14.1	0	70	<.001	1.2
Engaging and integrating redeployed staff into LTC	29	62.2	22.0	4	95	83.1	11.4	54	100	20.9	18.3	−1	76	<.001	1.2
Compassionate and proactive communication	36	68.8	18.8	20	98	86.8	9.7	49	100	18.0	15.6	0	60	<.001	1.2
Virtual care and e-visits	38	67.8	21.5	13	100	80.2	16.7	15	100	12.3	14.1	0	68	<.001	0.9
Burnout prevention	24	69.2	14.8	33	94	86.1	10.2	50	100	16.9	14.9	−5	51	<.001	1.1
Rewiring our approach to safety	29	64.3	16.5	27	95	82.5	10.2	51	100	18.2	14.8	−3	62	<.001	1.2
Isolation and loneliness	17	67.0	14.5	40	91	86.7	10.1	62	100	19.7	14.2	3	50	<.001	1.4
Overall[‡]	384	67.7	17.2	4	100	84.3	12.1	15	100	16.5	14.5	−48	76	<.001	1.1

Confidence ratings are not provided for first 2 sessions on "Symptoms management and end-of-life care in the COVID-positive resident" and "Preparing your long-term care home for COVID-19" as they were added at week 3 to account for the rolling enrolment process.

*Unadjusted Wilcoxon signed-rank test.
[†]Standardized response mean, thresholds: 0.2 = small, 0.5 = medium, 0.8 = large.
[‡]For all observed ratings including participants who rated different sessions.

related to certain sessions having information that was "redundant" or "less accurate or relevant. . . [because] the playing field is moving so quickly." Despite this, responses were entirely positive when participants were asked to comment on recommending the program to others, with multiple participants reporting instances of "encouraging colleagues to participate." Specifically, participants cited that it was "informative and user-friendly," and "great to network with others and share stories and strategies during these trying times." Further to this point, responses also reflected a willingness to continue the program, with several participants providing various suggestions for future implementation, such as "preparation in a rural/remote context" and "mediation techniques for siloed staff and also families."

Impact of ECHO COE-LTC: COVID-19

Participant responses yielded 4 subthemes related to impact that participation in ECHO COE-LTC: COVID-19 has had on their practice.

Subtheme 1: Increased Confidence in Clinical Care. When speaking to preparing and responding to COVID-19 in general, the majority of responses provided described how participation "allows for capacity building in those providing direct care," as it "informs approaches that need to be reinforced" by "running over [situational exemplars] and difficulties other physicians were facing with regards to COVID-19 in LTC." Numerous other participants reported having "greater comfort in my knowledge," "increased confidence in managing residents during this pandemic," and feeling "better prepared to deal with COVID-19 cases in LTC." Some also spoke to their comfort making suggestions for changes, with one participant commenting, "I feel more secure in suggesting changes within [the] LTC I work." These sentiments were confirmed by supporting quotes presented below:

> These educational sessions were strengthening to myself, as an "onsite single manager" to present a calm and "in control" atmosphere in the home. The discussions and reflections learned from the webinars helped to validate our approaches and reactions to the daily changes/emails/rules brought about by COVID-19.

> [Participating] increased staff awareness and knowledge base, as well as improving the confidence level of staff at the Charge Nurse level, dealing with daily decisions and assessments of residents.

> When I'm speaking with a resident and they ask questions about COVID-19 or how well we are prepared, I am able to answer with more confidence because of the knowledge I gained through these sessions.

> I have learned primarily that all across this industry of eldercare we are one huge Canadian community with similar or identical struggles throughout. I feel like this makes me feel a sense of community and belonging and that the answers are out there within the community when I do not have them. It's validating and reassuring.

A large number of responses noted safety management with multiple participants providing examples of improved confidence on PPE and strategies for compliance. Reports included "taking more active role in protocols for PPE and compliance," "improved and more appropriate use of PPE, both in COVID-19 mode and non-COVID-19 mode," and an appreciation for learning "cleaning practices. . . for re-use of facial protection," and "the idea of a 'buddy system' for encouraging proper use of PPE." In addition, several participants reported a change in perception regarding safety management, with one participant commenting that they are "more aware of my role in safety promotion, and [that] I can contribute to safety management."

Subtheme 2: Integration of Knowledge Into Clinical Care. Of the participants who provided responses related to changes in clinical care, the majority reported implementing knowledge learned into their own practice and in some instances how that has had a direct impact on residents. Examples largely pertained to preparing and responding to COVID-19 in LTC, resident isolation and loneliness, virtual care, and communicating with residents and families. Supporting quotes are reported below.

Preparing and Responding to COVID-19. [Our LTC home] now has a pandemic plan in regards to medications and which medications are absolutely necessary to be administered, along with having our physician providing virtual visits.

I have compressed medications and put on hold nonessential medications in all my homes.

[We have] improved management of those dying from severe respiratory infections who may or may not have COVID-19.

I especially appreciated having the information on how to manage our wandering resident should the resident become COVID infected.

Based on [the palliative care] presentation I have drafted our End-of-Life Order Set: COVID-19 and have reviewed with my physician group who are very pleased to have this information and guidance.

Isolation and Loneliness. I used learning from the session on ethical care in isolation to help a depressed [resident] who had stopped eating.

I engaged in a discussion with a younger resident following this presentation and discovered [they are] feeling both lonely and socially isolated, worsened by COVID-19 restrictions.

[We have implemented a] framework for making decisions, especially as related to balancing resident isolation/loneliness with potential risk of contracting COVID.

Virtual Care. I feel very motivated to enhance the virtual support we offer/provide to residents, especially physician visits, after this session.

[I] have now seen residents during a video visit with family. [It is] not as good as in person, but very helpful. The smiles on the residents' face during and after warms the heart.

Communication and Relationships with Families. [I] understood more the different ways to care for the residents during this pandemic and provided the emotional support for the family.

[I'm now] having resident/family discussions on goals of care and wishes in a time of COVID-19.

At the same time, several participants expressed neutral sentiments, stating that they "were doing those things already," "all relevant tools are in place that were discussed," or that "most of the discussed items had already been addressed by our home."

Subtheme 3: Prioritization of Staff Wellness. Numerous participants expressed appreciation for the sessions on HCP wellness (ie, Stress, Anxiety and Healthcare Providers and Burnout Prevention), remarking that these "decreased mental stress" and "improved emotional well-being." One participant stated that they were using "self-care techniques to ground myself during this crisis" and another participant remarked that they were "making a contract

with co-workers to engage in one specific self-care activity per week." Responses also highlighted how participation "went beyond the pure 'medical' perspectives of COVID-19" by "recognizing anxiety and stress in colleagues and offering support." This is further represented by the following quotes:

[As a result of participating] I recognized burnout, and I see it in myself as well. This is important because as a leader I can support staff but also support myself so I can keep supporting staff. I also learned strategies to support this, especially the small mindset change of "what if" to "even though/even if."

[As a result of participating I learned] how to address anxiety with staff [and] how to understand the 2 types of staff, the ones who are cavalier about COVID-19 and those that are very fearful, and help each group through it.

[As a result of participating I learned] the importance of self-care during prolonged self-isolation and how to recognize and help manage the effects of physical and social distancing on oneself and others.

Subtheme 4: Knowledge Dissemination. Several instances were observed of participants transferring the knowledge gained during a session to peers who would benefit from the information; participants facilitated this exchange through sharing of topic-specific resources. For example, one participant indicated they shared tools obtained during the session with their team, including the SBAR [Situation, Background, Assessment, and Recommendation] communication tool for families. The following quotes provided further examples of knowledge dissemination:

I relayed the myths about COVID and it tempered staff fears.

I educated staff on what to expect during a respiratory COVID death and management of symptoms.

I have passed along the resources to all the facilities I support, [and] I am following up when times and workload settle a little to discuss how we can put changes suggested into practice. The series is very positive and helps to give confidence in my own knowledge base and thought/assessment process; it has been a positive experience.

Discussion

The COVID-19 pandemic caused disruptive impacts to both the delivery of patient care and education. The LTC sector was, and continues to be, affected by this pandemic. These study findings provide first evidence that ECHO COE-LTC: COVID-19 is an effective way to provide time-sensitive education around COVID-19 to support LTC teams and residents. Overall, increases in confidence and comfort levels working with older adults who are at risk, confirmed, or suspected of having COVID-19 were demonstrated. Participants also reported high program satisfaction. Importantly, participants reported implementing or intending to implement what they learned from the sessions into practice (ie, tools, knowledge, and resources), impact on residents, as well as sharing information learned with colleagues and team members.

The implementation of health evidence into clinical practice remains slow and challenging.[17] Interventions that promote deliberate interactions between knowledge producers and knowledge users aid in closing this gap. Using a well-established infrastructure of virtual knowledge sharing, ECHO COE-LTC: COVID-19 delivered effective, just-in-time learning and best practice information sharing for HCPs in LTC. ECHO COE-LTC: COVID-19 is an example of an intervention that facilitates the rapid uptake and sharing of LTC-specific clinical practice evidence with HCPs who are able to enact changes in practice.[18] These ECHO sessions highlighted HCP needs as COVID-19−related protocols and system practices changed daily, further amplifying the need for just-in-time knowledge sharing. Education theory suggests that communities of practice are a key feature of just-in-time learning, which aims to provide knowledge to learners when and how it is needed.[19,20] Furthermore, communities of practice increase and support knowledge sharing, therefore preventing professional isolation.[21,22] Moreover, communities of practice can foster resilience following crises and disasters.[23] As reported by participants, feelings of increased connectedness through hearing the shared experiences of others working in LTC during the COVID-19 pandemic were insightful and affirming. This is consistent with previous findings of our ECHO COE-LTC programs where participants also noted that information specifically targeted toward LTC made them feel better connected with colleagues in the sector.[24] Additionally, participants reported an increased sense of well-being after implementing wellness and burnout management strategies learned.

Several limitations are worth noting. First, the rolling enrolment process meant that some participants may not participate in all sessions and therefore could not benefit from the entire program. Second, we did not measure changes in knowledge due to planning the curriculum in 4-week blocks. We also recognized that LTC homes had varied levels of preparedness and readiness around COVID-19 and therefore some information may be affirming rather than new knowledge. However, LTC homes that were less prepared may have benefited from the LTC homes that were better prepared. Lastly, only a subset of participants provided responses to certain open-ended questions, as this was not a mandatory requirement for all questions. This limitation was mitigated by data triangulation between qualitative and quantitative data, which complemented and strengthened each other.

Conclusions and Implications

In summary, ECHO COE-LTC: COVID-19 is an innovative and effective way to deliver time-sensitive information and best practices for health care providers in LTC to support their teams and residents. With the unprecedented rate of changing information and system practices, just-in-time learning using a structured format of brief didactic presentations paired with multiple situational exemplars and facilitated group discussions is useful for building capacity in LTC health care providers during this evolving pandemic and in future crises.

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Supplementary Table S1
ECHO CO- LTC: COVID-19 Curriculum

Curriculum
Symptoms management and end-of-life care in the COVID-positive resident
Preparing your long-term care home for COVID-19
Busting infection control myths about COVID-19 in long-term care
Stress, anxiety and health care providers
Ethical guidance and tools for long-term care during COVID-19
Delirium: Prevention, assessment and management during the COVID-19 pandemic
Engaging and integrating redeployed staff into long-term care
Rebuilding relationships with families in the context of COVID-19: Compassionate and proactive communication
Virtual care and e-visits
Burnout prevention: Practical strategies for building resilience for long-term care staff and administrators
Rewiring our approach to safety
Isolation and loneliness