

Project ECHO

AIHPC 2019

**Enhancing Palliative Care for Primary Care
Occupational Therapists and Physiotherapists**



Report on Project ECHO AIHPC: OT and Physio

Prepared by Ruth Usher, Assistant Professor Occupational Therapy, Trinity College Dublin.



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Acknowledgements

Sincere thanks to the Project ECHO team – Dr.Cathy Payne, Leonora Carey, Shirley Real, Bernadette Pirihi, Mick Bannon and Karen Charnley; and to TCD colleague Dr. Deirdre Connolly.

Abstract

Introduction Project ECHO (Extension for Community Healthcare Outcomes) uses teleconferencing technology to support and train healthcare professionals (HCPs) remotely. A 4-month palliative care ECHO programme was developed and implemented for primary care occupational therapists and physiotherapists to explore its utility in providing education and support to enhance palliative care provision by primary care therapists. The programme involved participation in fortnightly ECHO sessions using video conferencing technology. Teaching and case-based discussions were facilitated by specialist palliative care staff.

Methods A mixed-methods prospective longitudinal cohort study was used to evaluate the project. ECHO participants completed pre- and post-programme questionnaires regarding their knowledge and skills across key palliative care domains. They also evaluated session topics and identified if and how they intended to change their practice. Focus groups were held with participants of the ECHO programme before programme commencement to explore attitudes and experiences of palliative care and after programme conclusion to explore the experiences of the ECHO programme.

Results 26 primary care HCPs commenced the ECHO programme. Mean scores in self-rated confidence in knowledge and skill improved significantly ($p < 0.002$) following the ECHO programme. Post-ECHO scores of self-rated confidence in knowledge and skills were significantly higher than pre-ECHO scores. 95% ($n=19$) of participants reported ECHO met their learning needs and 85% of participants ($n=17$) would recommend ECHO to their colleagues. 95% of participants ($n=19$) reported that ECHO was an effective format to enhance clinical knowledge and 75% ($n=16$) reported it was an effective format to in enhance clinical skills.

Conclusions This study supports the use of Project ECHO for primary care HCPs in Ireland to improve knowledge and skills. As a high-impact model, ECHO provides an affordable solution to addressing growing need for integrated palliative care services.



All Ireland Institute of Hospice & Palliative Care

PROJECT ECHO AIIHPC

Enhancing Palliative Care for Primary Care Occupational Therapists and Physiotherapists

AIIHPC PILOT 2019

26 PARTICIPANTS

16-26 Occupational therapists and Physiotherapists joined each session from Primary Care settings



SPOKE SITES 16

Cork, Clare, Donegal, Dublin, Limerick, Offaly, Tipperary

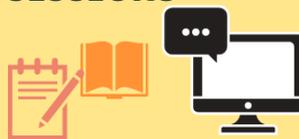


2 HUB SITES

Milford Care Centre and Our Lady's Hospice and Care Services

10 SESSIONS

Curriculum topics guided by Palliative Care Competences Framework and prioritised by participants



RESULTS



- Significantly improved confidence in knowledge and skills in palliative care approaches
- Practice changes leading to better patient outcomes
- Enhanced communication between Specialist Palliative Care and Community Services
- 95% Participants report ECHO met their learning needs
- 85% Participants would recommend ECHO to colleagues

PROJECT ECHO AIIHPC: PALLIATIVE CARE FOR PRIMARY CARE OTS & PTS



Introduction

Palliative care provision

Palliative care is an active and total approach to care that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification, assessment and treatment of pain and other physical, psychosocial and spiritual issues (World Health Organisation (WHO), 2002). Every person with a progressive illness should have access to palliative care (WHO, 2004). Internationally, due to population ageing and rising prevalence of terminal non-communicable diseases, there is a growing need for palliative care, yet access to palliative care services is often limited and clinicians may lack the capacity to provide care to all in need (Arora et al, 2017).

Increasingly, integrated palliative care services are promoted (den Herder-van der Erden et al, 2017). Palliative care must be considered an essential integrated service for people in the community with serious or life-threatening illnesses, for ethical, public health and financial reasons (WHO, 2018). However, it is neither feasible nor necessary for most palliative care to be provided by palliative care specialists (WHO, 2018). Accordingly, the WHO Framework on Integrated, People-centred Health Services (2016) asserts that palliative care is an essential function of primary care. WHO recommends integrating palliative care into primary care in particular, to reach all those in need and recommends initiating required training in palliative care for all clinicians who treat people with palliative care needs, including training in basic palliative care for all primary care clinicians.

Irish context

Kane et al (2015) identified Ireland as having the most rapidly rising need for palliative care in Europe with 80% of deaths from conditions recognised as having associated palliative care needs. Strategic planning has identified the need for education and training to meet this anticipated growth in demand for palliative care services.

Palliative care service strategic developments in Ireland have been guided by government policy and the development of the National Clinical Programme for Palliative Care (NCPPC) to improve quality, facilitate equitable access and promote efficient use of resources. The Palliative Care Development Framework 2017-2019 (HSE, 2017) and the more recent Adult Palliative Care Services, Model of Care for Ireland (NCPPC, 2019) aims to enhance palliative care service delivery in both community and acute hospital services, focusing on the delivery of quality person-centred, safe care for patients and their families. Policy proposes that palliative care services, both specialist and non-specialist, should be available in all care settings, including the community. Palliative care services are structured in three levels of ascending specialisation, referring to the expertise of the staff providing the service (see Figure 1).

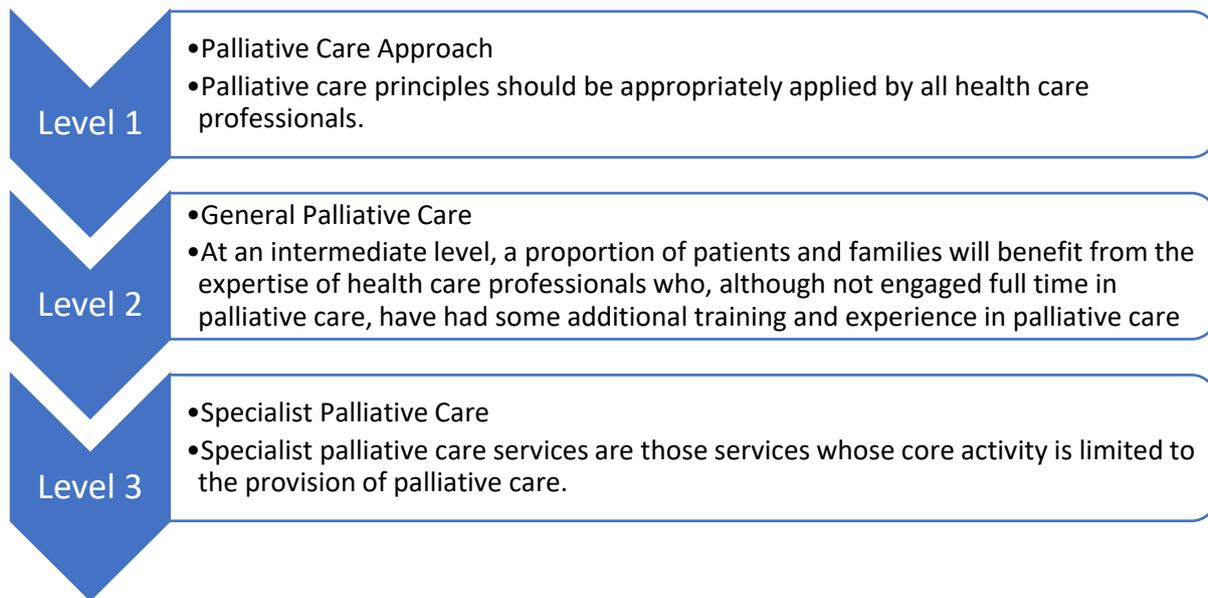


Figure 1: Levels of ascending palliative care specialisation

In Ireland, primary care teams are the main providers of primary care in the community. Primary care seeks to promote a multi-disciplinary team-based approach to community-based service provision. It is usually the first point of contact for people with healthcare professionals (HCPs). While the majority of general palliative care in the community is provided by the general practitioner and public health nurse, other disciplines such as occupational therapy, physiotherapy, speech and language therapy, dietetics and social work are also involved in the care of patients in the community.

A multi-professional team, including members from different healthcare and non-healthcare professions and disciplines, is regarded as a central component of palliative care (Jünger et al, 2007; Radbruch and Payne, 2009; 2010). The European Association for Palliative Care (EAPC) includes occupational therapists and physiotherapists, alongside doctors, nurses and others as essential members of the interdisciplinary team of HCPs in specialist palliative care, who have knowledge and skills related to their discipline of practice (Radbruch and Payne, 2009; 2010).

Delivery of palliative care by primary care allows for more holistic responses to adults living with advancing life-limiting conditions in the community. Internationally, HCPs agree that integration of a palliative approach to care is within the scope of primary care and identified education addressing knowledge and application of palliative interventions and practice coaching as key elements which would support this transition (Nowels et al, 2016).

The report from the National Advisory Committee (NAPC; 2001) recognised that most people with end-stage disease would prefer to die at home, yet most die in hospital and highlighted the need for more responsive community services, which would reduce unnecessary hospital admissions. Greater general palliative care provision at community level was required and this prompted the establishment of the Primary Palliative Care (PPC) programme (IHF, ICGP, HSE, 2011).

Training and Education

The need for palliative care education that is delivered in an integrated, collaborative and cost-effective way is well documented. Consultation with community-based HCPs in Ireland identified education and training to upskill clinical management of patients with palliative care needs (IHF, ICGP, HSE, 2011). The NAPC Report (2011) and WHO (2018) have identified the importance of

disseminating the principles of palliative care to other HCPs and highlighted the need for education and training for community-based HCPs. The Irish Health Service Executive (HSE) Palliative Care Competence Framework sets out the training, education and skills required across three levels of palliative care at generalist, intermediate and specialist levels. The HSE Palliative Care Programme developed a competence framework for HCPs (Palliative Care Competence Framework Steering Group, 2014) to inform academic curricula and professional development programmes to enhance the care of people with life-limiting conditions. Core competences are common to all HCPs and represent the primary understanding required to provide palliative care. The six domains of competence as set out by the HSE Palliative Care Competence Framework are listed in Figure 2.

1	Principles of Palliative care
2	Communication
3	Optimising comfort and quality of life
4	Care planning and collaborative practice
5	Loss, grief and bereavement
6	Professional and ethical practice in the context of palliative care

Figure 2: Domains of Competence from the HSE Palliative Care Competence Framework

Distance learning and online learning models offer much potential to overcome barriers to accessing education for HCPs by allowing engagement in learning at a convenient time and location, enabling balance between work commitments and professional development (Sinclair et al, 2015). Project ECHO (Extension for Community Healthcare Outcomes) is a distance health education model, which uses audio-visual technology to connect a team of experts (termed the ‘Hub’) with many healthcare professionals working in a number of community settings (termed the ‘Spokes’). ECHO aims to enable community-based healthcare professionals to provide advanced levels of care for patients they see in the community by bringing together primary care clinicians with interdisciplinary specialist teams for case-based learning, mentoring, and sharing of best practices.

The ECHO model has been applied to many chronic diseases and patient groups such as hepatitis C, HIV, tuberculosis, chronic pain, multiple sclerosis, mental health, and geriatrics (Alschuler et al, 2019; Arora et al, 2011; Bennett et al, 2018; Dubin et al, 2015; Johnson et al, 2017; Katzman et al, 2014; Mariciano et al, 2017; Sockalingam et al, 2018). It has also been implemented for palliative care internationally, as a means to disseminate knowledge and services to community HCPs, to enable them to address the palliative care needs of their patients. Evaluations of various international palliative care ECHO projects have demonstrated improvements in participants’ self-efficacy and knowledge of symptom management and suggest much potential of this model in enabling HCPs acquire new knowledge, skills and best practice resources in palliative care (Arora et al, 2017; Burpee et al, 2019; Marr and Neale, 2012; Watson, 2017; White et al, 2019; Yennurajalingam et al, 2019). ECHO has potential to bridge the gap between the growing need and limited palliative care resources in Ireland by facilitating palliative care specialists to disseminate core principles and best practices to primary care practitioners, thus developing communities of practice.

Project ECHO AIIHPC: Palliative Care for Occupational Therapists and Physiotherapists in Primary Care

The AIIHPC ECHO programme was developed and delivered with the overall aim of improving access to palliative care for those in the community by offering easily accessible and up-to-date training on principles of palliative care and best practices to occupational therapists and physiotherapists who deliver primary care in communities throughout Ireland.

This study aimed to evaluate the impact of delivering education using the ECHO model on occupational therapists and physiotherapists self-reported confidence in their clinical knowledge and skills in addressing the palliative care needs of clients they work with in the primary care setting. In this case, the ECHO Hub consisted of senior HCPs with relevant specialist palliative care experience from specialist palliative care and hospice settings, Milford Care Centre and Our Lady's Hospice and Care Services. The Hub consisted of occupational therapists, physiotherapists, a dietician and a nurse manager, and was led by Palliative Care National Clinical Therapy Leads and facilitated by an allied health professional with academic, research and clinical experience in palliative care delivery. The ECHO Spokes were occupational therapists and physiotherapists who were working in primary care and attended remotely from their workplace. The HSE provided funding, in partnership with the National Clinical Programme for Palliative Care, for the delivery and evaluation of this project.

Curriculum for ECHO programme

The aim of the curriculum was to provide up-to-date training in palliative care to HCPs so they could use best practices in palliative care. The ECHO team identified 14 topics deemed relevant to occupational therapy and physiotherapy in palliative care. These options were distilled from expert opinion, the Palliative Care Competence Framework document and previous training needs analysis undertaken on the island. Participants then prioritised the topics they wanted the ECHO programme to address prior to the commencement of the ECHO programme (as presented in Figure 3).

ECHO was delivered utilising the already established 'Palliative Hub' designed by the All Ireland Institute of Hospice and Palliative Care (AIIHPC) which hosts an online learning platform with relevant and up-to-date palliative care resources. Each session included a didactic presentation followed by anonymised case-study discussions. Specialist clinicians and academics with relevant clinical experience and knowledge provided brief, focused didactic training on a clinical area, after which spoke members typically presented anonymised cases for discussion. Case studies were presented using a standardised proforma to ensure patient confidentiality. Each clinic lasted 90 minutes and was digitally recorded using audio-video facilities within Zoom technology.

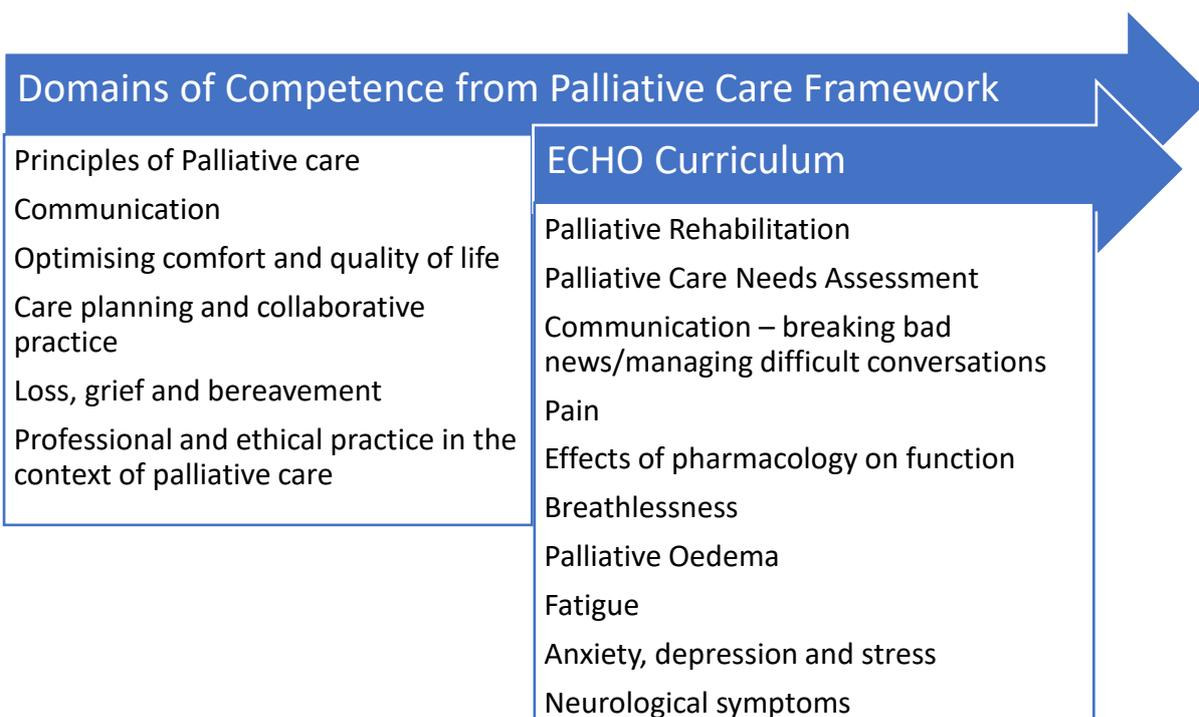


Figure 3: ECHO curriculum mapping using Domains of Competence from Palliative Care Framework

As the domains of competence as set out by the HSE Palliative Care Competence Framework informed the curriculum development for the ECHO programme, they were also used in the evaluation of the programme, where participants rated their confidence in their knowledge and skills in each of these areas before and after participation in the ECHO programme.

Methods

Design

A mixed-methods evaluation of ECHO in improving primary care occupational therapists and physiotherapists confidence in their knowledge and skills to address the palliative care needs of clients they work with in primary care was undertaken, using a combination of quantitative questionnaires and qualitative focus group discussions.

Baseline assessment

Prior to the first clinic, participants were emailed a link to complete a pre-ECHO online questionnaire using Survey Monkey™. This survey collected demographic characteristics of the sample, their reasons for joining ECHO and self-rated confidence in their knowledge and skills regarding key domains of competence in palliative care practice, using a Likert scale where 1 = Not at all confident; 2 = Not very confident; 3 = Neutral; 4 = Somewhat confident; and 5 = Very confident.

Ongoing session evaluation

Participants were invited to complete fortnightly questionnaires for each session in which rated their confidence in their knowledge and skills regarding each topic and identified if and how they might change their practice based on their learning from the session.

Post-ECHO assessment

Each participant completed a survey following completion of the ECHO programme in which they rated their overall confidence in their knowledge and skills regarding key domains of competence in palliative care practice and also rated statements in relation to their experience of participation in the ECHO programme.

Focus groups

Two focus groups were held prior the programme commencement to explore participants experiences of palliative care to date. Three focus groups were held upon completion of the final ECHO clinic to explore participants experience of the overall ECHO programme. A topic guide was used to guide discussion and explored participants experiences of ECHO, how they found the format and technology, how the curriculum addressed their learning needs, how they applied learning gained through ECHO, and how it impacted on their contact with specialist services and ideas for future ECHO clinics. An additional focus group was held with hub members to explore their experiences of participation.

Recruitment

The ECHO programme was advertised through primary care networks, palliative care and oncology advisory group, manager advisory groups, the AIHPC newsletter and the Palliative Rehabilitation Facebook group. A census approach to sampling was undertaken whereby all ECHO participants were invited to complete the evaluation forms and focus group discussion.

Ethics

The study was given approval by the Research Ethics Committee of the School of Medicine, Trinity College Dublin (approval date 19/3/2019, reference number 20190206). Informed consent was sought from practitioner participants.

Data analysis

Due to small sample size, descriptive statistics were used to describe and summarise participant characteristics and nonparametric Mann Whitney U tests were used to explore differences in pre- and post-ECHO evaluations. Statistical significance was set a-priori at $p = 0.05$ and p-values reported to provide an indication of the impact of the model on HCP's self-reported confidence in their knowledge and skills.

Focus group discussions were video-recorded using Zoom® technology and audio data was transcribed verbatim, checked and verified for accuracy. Data was analysed using reflexive thematic analysis (Braun et al, 2018; 2006). Transcripts were initially coded separately and grouped into categories as appropriate. Categories for both Spoke and Hub focus groups were then combined to form overarching themes. Emergent themes were considered in the context of the existing literature. At all times of data abstraction, constant referral back to transcripts and codes was undertaken to ensure that the analysis remained true to, and reflected appropriately, the developing themes.

Results

The ECHO programme took place from April to October 2019. Videoconferences were scheduled to occur fortnightly, using Zoom technology to connect all the participants in the hub and spokes, and ten videoconferences were held during that time. Between 16 and 26 spoke participants attended each session, while 13 Hub members were available, typically five Hub members participated in different sessions. Each session commenced with a didactic presentation from a hub member or invited expert on topic and this was followed by case-based discussions. Over the duration of the programme, 17 spoke participants presented case-studies for discussion.

In total, 26 pre-programme questionnaires were returned. The demographic section of the questionnaire was completed by all participants. Sociodemographic and professional profiles are provided in Table 1.

Demographic profile	%	(n)
Total number of respondents	100	26
Female	96.15	25
Profession		
- Occupational therapist	61.54	16
- Physiotherapist	38.46	10
Years of experience		
- 3-6 years	11.54	3
- 7-10 years	7.69	2
- 11-15 years	19.23	5
- 16-20 years	23.08	6
- More than 20 years	38.46	10
Years of experience working in primary care		
- Less than 3 years	11.54	3
- 3-6 years	15.38	4
- 7-10 years	19.23	5
- 11-15 years	30.77	8
- 16-20 years	3.85	1
- More than 20 years	19.23	5
Highest level of education		
- Diploma	7.69	2
- BSc.	38.46	10
- PG Certificate	3.85	1
- PG Diploma	19.23	5
- MSc.	30.77	8
Prior experience of working with clients with palliative care needs	65.38	17
Further education/training related to palliative care		
- Attendance at seminars and conferences	19.23	5
- Read research articles/journals/books	26.92	7
- Discussion with colleagues	80.77	21
- Peer education	46.15	12
- Formal post-graduate experience	0	0

Table 1: Demographic profile

Participant profile

Twenty-six participants commenced the ECHO programme and one occupational therapist withdrew mid-programme, citing 'work pressures'. The participants 'Spoke sites' represented nationwide geographical spread as presented in Figure 4.

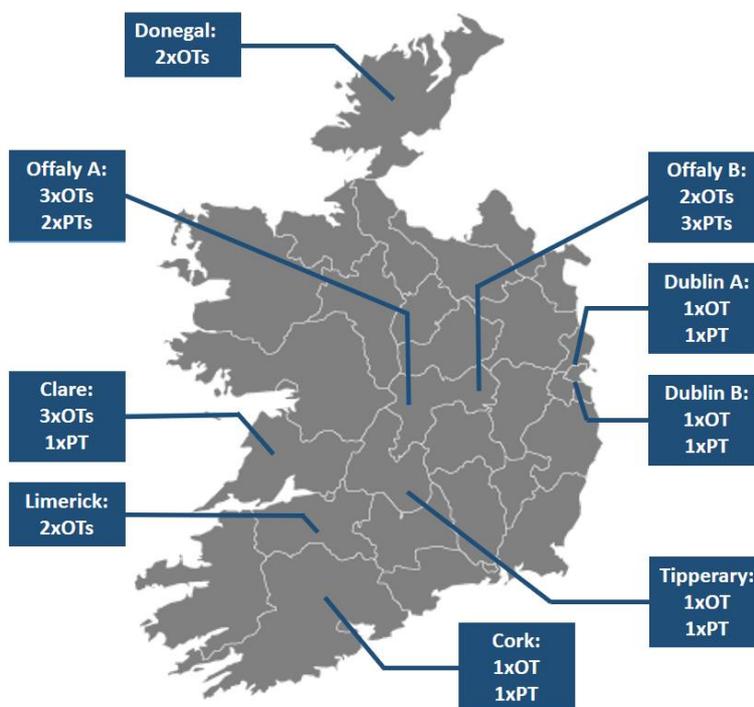


Figure 4: Map showing distribution of spoke sites across the Republic of Ireland

The majority of therapists had more than 10 years of professional experience (80.77%, n=21). Many therapists had been working in primary care for many years, 53.85% (n=14) had over ten years primary care experience. Many therapists (65.38%, n=17) indicated they had previous experience in working with clients with palliative care needs; 15 respondents reported they gained this experience from their work in primary care and two participants had previous experience in acute care.

Most therapists reported that clients with palliative care needs are frequently on their caseloads (76.92%, n=20). Whilst half of respondents (50%; n=13) agreed they were clear on their role or what they can offer clients with palliative care needs, 38.46% (n=10) remained neutral and many participants expressed a desire to expand their role (e.g. beyond equipment provision). An overwhelming majority of therapists (96.15%, n=25) reported that occupational therapists and physiotherapists would benefit from additional training in the area of palliative care. Only 19.23% (n=5) had opportunity to engage in formal education sessions such as attending conferences or seminars. Many therapists had engaged in informal education related to palliative care such as reading academic literature, discussions with colleagues and peer learning. None had participated in formal post-graduate education regarding palliative care. All participants (n=26) reported that they often felt the need to discuss their clients with palliative care needs with other multidisciplinary team members and 65.38% (n=17) reported feeling the need to refer clients with palliative care needs to specialist palliative care services.

Pre-ECHO focus group

Participants reported that between 5-20% of their caseload included people with palliative care needs and usually this was for people in the final phase of their illness. Participants reported working with people with terminal cancer, progressive neurological conditions such as motor neurone disease, multiple sclerosis and Parkinson's disease and many participants reported working with clients with end-stage dementia. Whilst some occupational therapists reported being involved in symptom management, such as anxiety management and energy conservation, most interventions were about compensatory approaches, provision of equipment, pressure care and positioning and carer education. Physiotherapists reported involvement for mobility, strengthening and manual handling. Participants spoke of referring clients onwards and having limited capacity for follow-up with patients which was a source of frustration. Participants reported that they were not very familiar with their palliative care colleagues and they did not have much contact with each other. Participants reported wanting to feel more confident in their skills but also in how they communicate with their clients.

ECHO attendance

Between 16-26 participants joined each of the ECHO sessions as presented in Table 3.

ECHO Clinic	Topic content for ECHO curriculum	Number of attendees
1	Introduction and Overview of Palliative Rehabilitation	26
2	Palliative Care Needs Assessment	22
3	Communication: Common issues in palliative care – breaking bad news/managing difficult conversations	26
4	Symptom management: Pain	19
5	Effects of pharmacology on function	21
6	Symptom management: Breathlessness	17
7	Symptom management: Palliative Oedema	16
8	Symptom management: Fatigue	14
9	Symptom management: Anxiety, depression and stress	16
10	Symptom management: Neurological symptoms	16

Table 3: Attendance at ECHO sessions

Pre- and post-ECHO survey evaluations

Twenty-six HCPs (17 occupational therapists and 9 physiotherapists) completed the pre-ECHO knowledge and skills questionnaires and 21 participants completed the post-ECHO evaluations. The majority of participants (n=21) reported their reason for joining ECHO programme was to improve their clinical knowledge and skills in addressing palliative care needs of their clients in primary care. Four participants identified wanting a better understanding of the referral process and liaison channels with specialist palliative care teams. Two wanted to expand their practice or their current role beyond equipment provision.

Despite the majority of participants in this study having many years of practice experience, levels of confidence in addressing the palliative care needs of clients in primary care was overall quite low. Pre-ECHO questionnaire suggested participants lacked confidence in their knowledge and skills across many domains, indicated by responses of 'Not at all confident' and 'Not very confident'. In particular, participants lacked confidence in their knowledge or skill relating to *Principles of Palliative*

Care; Care Planning and Collaborative practice; Loss, Grief and Bereavement and Professional and ethical practice in the context of palliative care. However, confidence improved significantly in post-ECHO evaluations, with nobody selecting 'Not at all confident' and 'Not very confident' for confidence in their knowledge and skills of *Principles of Palliative Care* and of *Care Planning and Collaborative Practice*. There was also a marked reduction in the numbers who chose such options for all the other domains, with the majority now selecting 'Somewhat confident' and 'Very confident' for all statements (See Figure 5a and 5b).

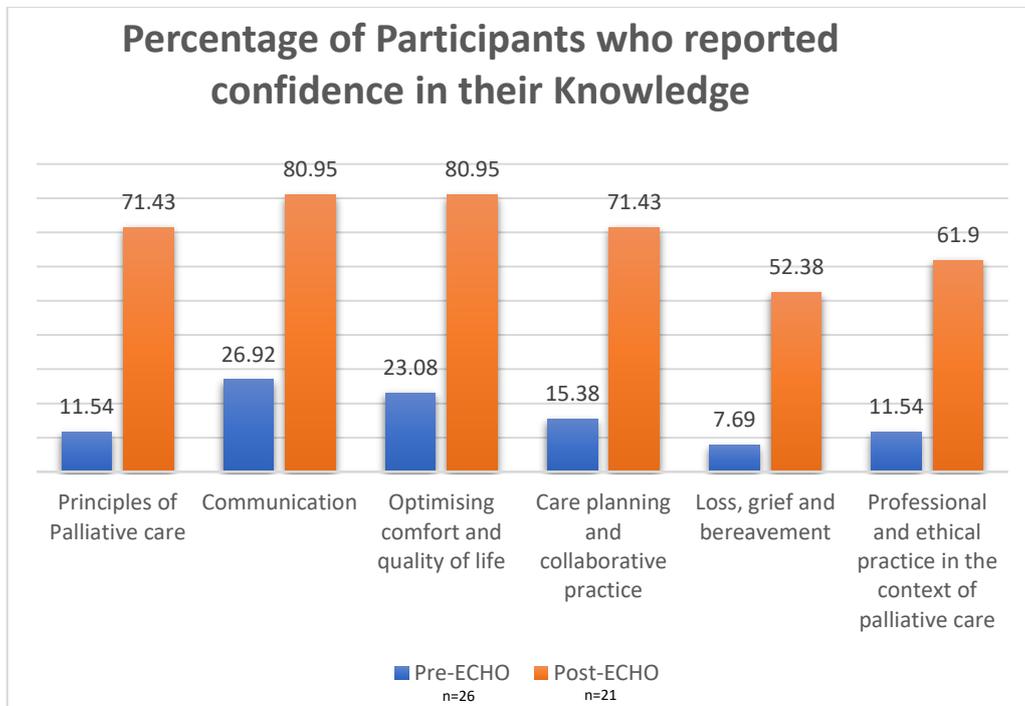


Figure 5a: Self-rated Confidence in Knowledge for each domain

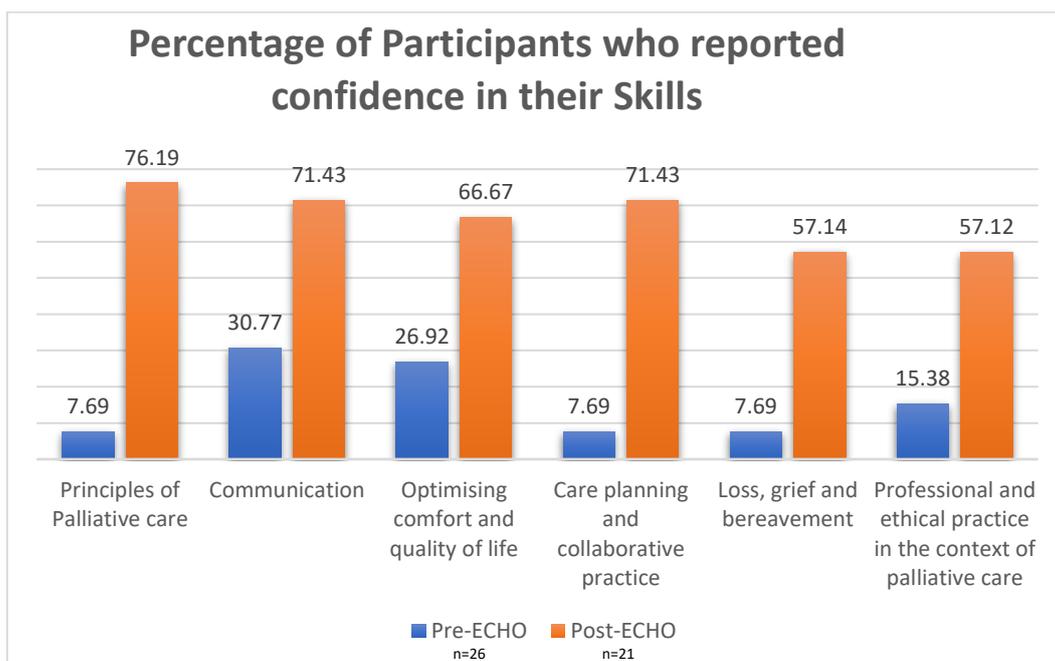


Figure 5b: Self-rated Confidence in Skills for each domain

Statistical analysis of scores in knowledge and skills using a Mann-Whitney U Test demonstrated that overall scores were significantly higher post-ECHO across the six competencies for both knowledge and skill ($p < 0.000$ and $p = 0.001$ respectively). See Table 2 for details.

Domain	Knowledge (p values)	Skills (p values)
<i>Principles of Palliative care</i>	0.000	0.000
<i>Communication</i>	0.000	0.001
<i>Optimising comfort and quality of life</i>	0.000	0.000
<i>Care planning and collaborative practice</i>	0.000	0.000
<i>Loss, grief and bereavement</i>	0.000	0.000
<i>Professional and ethical practice in the context of palliative care</i>	0.000	0.000

Table 2: Mann-Whitney U test significance

The significance level is 0.05

The post-ECHO survey evaluations also revealed that participants valued the learning format ECHO utilises. Many stated the technology used in ECHO had given them access to education that would have been otherwise difficult to access due to geography and time pressures. Overall, post-programme evaluation suggests high satisfaction rates whereby 95% (n=19) of participants felt ECHO met their learning needs and 85% of participants (n=17) would recommend ECHO to colleagues.

Evaluation of session topics

Participants provided feedback on session topics which demonstrated applicability of learning and relevance of topic to clinical practice. Following the session on *Palliative Care Needs Assessment*, many participants (n=17) reported they intended to incorporate the domains of the palliative care needs assessment into their assessments or use the needs assessment template, giving specific examples of how they intended to change practice:

“I will now include the Palliative Care needs assessment guidance in my assessments. I have placed a master copy on display in the office which can easily be copied into charts for easy access”.
Spoke OT Post-session survey

Some felt that it would prompt a more holistic approach to their assessment of clients:

“I will be more mindful of the other areas to address such as psychological and spiritual well-being”
Spoke OT Post-session survey

and also of a multidisciplinary approach:

“I will follow the needs assessment domains as a template and work more collaboratively and liaise with other community resources”.
Spoke OT Post-session survey

This session highlighted issues in the care pathways for clients, as one participant reported they do not receive sufficient relevant information at referral and that *“many of referrals are received too late in client’s journey”*.
Spoke OT Post-session survey

This participant reported plans to disseminate information from this topic within her team:

“I intend to change practice – in-service arranged for physio from palliative care team and will discuss with her what the current needs assessment used by team is and if information from this can be shared and start linking with her on referrals as appropriate. Plan better for

information gathering from other team members if possible, prior to seeing client”.

Spoke PT Post-session survey

The *Communication* session was generally well-received by participants and for some, it was confirmation of current practice:

“Communication skills with clients and other professionals is something I pride myself on It has helped cement things and give me more confidence in my work ...that I am doing things right”

Spoke OT Post-session survey

“it’s good to have issues highlighted again to ensure we’re on the right track”.

Spoke OT Post-session survey

For others, they reported planning to change practice to incorporate more preparation before discussing difficult issues:

“I will plan sessions in a greater detail beforehand, especially if planning on discussing difficult topics/bad news”.

Spoke OT Post-session survey

Following the session on *Pain*, many respondents reported intention to liaise with colleagues regarding pain management and to complete *“a more detailed and comprehensive assessment of pain and meds”*.

Spoke PT Post-session survey

Reflecting on practice, one respondent noted:

“Very informative session and great overview of pain and treatment for same. Has greatly increased my knowledge on the topic. I now feel more confident to discuss pain with client and its impact. I am aware of the signs of opioid toxicity and how to recognise same”.

Spoke OT Post-session survey

Acquiring new knowledge allowed participants identify areas of practice they could improve. Similarly, the session on *Pharmacology and Function* prompted respondents to consider causes of change in function being related to disease progression or medication side effects and therefore to liaise with MDT colleagues:

“Following presentation and case study I can see that I often observe or find out key information re. a client’s symptoms that I now realise could be related to pharmacology. Very useful and helpful tips. I plan to liaise more with [service name] regarding client queries related to symptoms and medications and utilise online resources as outlined.”

Spoke PT Post-session survey

The session on *Neurological Symptoms* prompted some respondents to consider disease trajectory and family involvement:

“I intend to involve the client and family more in the discussion of disease progression and the services OT can provide as a clients condition progresses”.

Spoke OT Post-session survey

This is similar to another respondent who reported *“I think I would be more honest with the family members and give them the options from the onset”*.

Spoke OT Post-session survey

For some of the other symptom management topics such as *Breathlessness, Oedema and Fatigue*, participants reported intending to use practical techniques and assessment tools. For some participants they reported that they *“have more confidence in asking questions and trying techniques”* (Spoke PT Post-session survey) and again it confirmed their existing practice:

Theme 1: Benefits to participants

Participants reported that participation in the Project ECHO programme had increased their ability to manage the palliative care needs of primary care clients as participants improved their knowledge and felt more confident in their skills in working with this client group and also in communicating with key stakeholders.

“I’ve built such a foundation now from this course...It was very new to me, all the aspects of palliative care and all the elements and the symptoms that we would come across especially in primary care...I feel very confident, a lot more confident but I still have a lot to learn but in terms of my knowledge and skills and confidence, I definitely feel that I have grown from doing the ECHO programme.”

OT, Spoke Focus Group 2

“I have more links with the palliative care team...I definitely feel I have more links there, but more so my knowledge and skill set, and I’m better at communicating”.

PT, Spoke Focus Group 2

The programme addressed a gap in participants clinical knowledge and skill and was deemed to be relevant to their practice.

“I feel we are meeting these palliative care clients quite a lot now on our caseloads and it’s one area I don’t have a lot of experience in but now in primary care a lot of people are choosing to be at home for end of life care so I feel it is very relevant and I feel a lot of the lectures were very beneficial for me personally”.

OT, Spoke Focus Group 2

Many participants reported learning a lot from the various topics. In some cases, it was new information and sometimes it was affirming their role and boosting their confidence to continue their practice

“It did highlight to us that we are in a very good position here and we have a very good working relationship with the specialist palliative care team and would be quite confident I suppose in the delivery of our practice here and to the palliative care clients”.

PT, Spoke Focus Group 2

The availability of resources and advice from the ECHO hub was appreciated by participants

“All the resources were available on the platform, it was very interesting anything I dipped into it and anytime I had a question and asked, I was replied to promptly so to me it was a good experience”.

PT, Spoke Focus Group 1

“the resources, the journal articles, the evidence and the stuff like that is huge, there is so much resources”.

OT, Spoke Focus Group 1

Participants described enhanced knowledge about various palliative care approaches, and a desire to further enhance their continual professional development in this area:

“It has inspired me to develop my knowledge further and you know, act on things and read up on things more. I have been already looking around for some courses and some additional things to add on, it has inspired me to learn more, increase my knowledge base and all of that.”

OT, Spoke Focus Group 1

Participants described a desire to “take this to the next level” and to progress their learning in this topic and maintain the peer network they had developed. One participant suggested the group would stay in touch on completion of the programme to have a support network.

“if everyone in the group are interested to share the knowledge and keep this going. But there is no, what platform would we use. I think emails are there but it’s just to have a link or a lead to say this is a group and you can share your thoughts going forward. That would help us to share”.

OT, Spoke Focus Group 1

Theme 2: Expansion of scope of practice

Having learned more about certain topics, such as pain, fatigue and lymphoedema, participants recognised that they could broaden their scope of input with their palliative care patients to address these needs:

“There are things that I wouldn’t address because I think I wouldn’t have expertise but they simplified it in a way that you could do the base line stuff. I think that was quite good”.

OT, Spoke Focus Group 1

“I feel I can go a little bit further and ask more questions and give more advice. Deliver more, I wouldn’t say specialist intervention, but further intervention. Before I started the EHCO programme, I would have been, ‘Oh I’m not really sure, I don’t really know much about this’ and that I’ve really delved more in to it.”

PT, Spoke Focus Group 2

Participants described recognising more opportunity for input and overall having more confidence to engage in palliative care approaches. Participants described a shift in attitude where they recognised opportunity beyond what they would have typically offered and therefore on receiving referral were asking “‘What can we do here’ as opposed to ‘what have we to do here’” (OT, Spoke Focus Group 1).

Participant described having developed a different perspective on what palliative care and primary care can be and reflected on how they can be integrated:

“There would be lots of things that palliative care would need to address on their own and then there would be lots of things that primary care can do without but if everybody knows what everybody is doing...It’s like a zip, you kind of align them both.”

OT, Spoke Focus Group 1

Dissemination of knowledge extended beyond the Spoke participants as some participants stated that they had discussed knowledge that they had acquired through participation in ECHO with other colleagues. Many participants reported sharing the Palliative Care Needs Assessment with a wider network of colleagues so they could incorporate it into their practice. Some participants reported their colleagues who were not involved in ECHO had accessed some of the learning resources and other participants reported having compiled resources and made them available to their wider teams. These resources were useful for continued reading or expanding knowledge in particular topics of relevance but also for sharing with colleagues who were not participating in ECHO.

Hub members reported that it was useful to get to know primary care colleagues and an understanding of “where they are in the palliative care experience and their comfort working around palliative care” (OT, Hub Focus Group). Hub members reported that they had over-estimated they amount of palliative care knowledge their community colleagues had so it was important that they

build awareness of this in order to support them better and to utilise their position in the community to maximise benefit for the client.

“I think that was quite a telling, learning for us just around the scope of practice of the clinicians... but also the scope that they have in delivering some of the interventions because they are in the patient’s own home. And they are actually seeing people in their own environment”.

OT, Hub Focus Group

“For me, the expertise that we have in special palliative care, that’s something we don’t necessarily recognise that we have”.

OT, Hub Focus Group

Spoke participants acknowledged their need for learning in this area of practice:

“I’ve been practising for a number of years now, but I guess my opportunities to work with palliative care clients has been quite limited, so I guess the foundation level I was starting on was very entry level”.

OT, Spoke Focus Group 2

“From an OT perspective, our input for palliative care was mostly equipment provision and has been to date. That is something we would like to expand our role in but we are not there yet...there is so much you can offer ..., fatigue management, pain management, those sort of things.”

OT, Spoke Focus Group 3

Hub members recognised their own level of expertise but also how that could be shared with their community colleagues via ECHO and the importance of that to enhance patient outcomes.

“It’s something that is essential that it runs again... I think there’s a huge amount of parallel working, and this of course offers us an opportunity to be able to upskill a whole host of clinicians out there who are working on their own who are really very scared of working with dying patients”.

OT, Hub Focus Group

“They don’t know how to do the palliative care needs assessment, understanding what is complex and non-complex. Then that flow of the patient from one service to the other isn’t going to happen.”

OT, Hub Focus Group

Theme 3: Benefits to patients

Participants reported that clients attending their centre had benefited from the Project ECHO programme.

Overall, participants reported that it had re-instilled in them the need for client-centred practice and to adopt a *“holistic approach, listening to the client rather than me starting the intervention process and listening carefully and planning treatment based on their wish”* (OT, Spoke Focus Group 2). Participants reported that they had already changed their practice to ensure they adopted a more thorough approach to assessment of the needs of the palliative care patient.

“I am asking more questions and getting more information. I feel more confident to deliver more advice, signpost more services. I feel I can offer more now following that course”.

PT, Spoke Focus Group 2

Also, the information they had learned through the ECHO programme had enhanced their understanding of client’s presentations. One participant described how she had benefited from the session on *Effects of pharmacology on function* and her enhanced understanding of medication side effects had impacted on her practice:

"I had a few clients with palliative needs and my approach has changed since because of this information".

PT, Spoke Focus Group 1

Many participants cited their commencement of using the Palliative Care Needs Assessment Framework as beneficial in that it allowed them to obtain a "deeper understanding of the client" and to address specific palliative care issues arising for the client.

OT, Spoke Focus Group 1

"Now I have a better tool which I am following for a palliative care client, rather than just an elderly client, you know, someone who is not palliative care. Some aspects are similar but they are very special, personalised to a palliative care client. The assessment tool and the resources from that were fantastic...I have a reminder to have a look at them before I go out to somebody who is receiving palliative care."

OT, Spoke Focus Group 2

One participant gave an example of having increased confidence and conviction to fulfil a client's wish to come home and how they felt more confident in their skill to facilitate this having adopted a more thorough assessment. This was similar to another participants description of the impact of a more comprehensive assessment that specially considered palliative care needs:

"It did lead to me setting goals that might have been missed otherwise and I wasn't afraid of it and you know, before it might have been something I might have avoided because of feeling uncomfortable myself".

OT, Spoke Focus Group 2

Another participant described how she has become more of a key worker for palliative care clients and how this has led to better patient outcomes:

"I am the lead person there once a week and I obviously have a rapport; a better understanding and the outcomes are better of the client... Before, in advance I would have gone in, done my equipment, said 'Look I'm gone now, you can ring me'. Whereas I have changed that outlook now. I think, I hope it is better for me and the client and the service".

OT, Spoke Focus Group 1

This enhanced confidence to broach issues relating to palliative care was echoed by another participant, particularly in relation to facilitating difficult conversations.

"Having got the information through this programme, I feel more comfortable more engaging with the family and the client with regards to their prognosis... or end of life place. As before if people would start talking to me, I would certainly not feel as confident to engage in that conversation".

OT, Spoke Focus Group 2

Participants described the benefit of enhancing their knowledge of interventions and practical techniques, such as use of fans in breathlessness management. Participants reported better awareness of various techniques and greater appreciation of the significant impact of these techniques for patients:

"You didn't know how effective it was with the people, like was there an evidence base for this."

PT, Spoke Focus Group 1

The resources available via the Palliative Hub were seen as an "amazing toolbox" where participants could access journal articles. Participants greatly appreciated being brought up to speed on current best practice and evidence. They had not been aware of more recent developments in palliative care such as palliative rehabilitation. This learning was influencing their attitudes and subsequently the treatment approaches they were taking as they recognised "there is potential for people to do better longer or for them to still participate as before they would have been" (OT, Spoke Focus Group 1).

Participants described having a better sense of the potential impact they have, having more confidence in assessment and treatment approaches and better awareness of community resources. Therefore, they saw greater scope and potential for their practice, beyond what they would have typically engaged in such as equipment provision. Participants reported that prior to joining the ECHO programme, they had tended towards a more “hands off” approach to patients on their caseloads with palliative care needs. Since completing the programme, participants reported being more confident to engage in a more comprehensive assessment and treatment approach and to being more comfortable with their roles. They also had better awareness of how to navigate and liaise with various community services and agencies:

“we have this understanding that we need to step back, they are palliative, they don’t want us...you are tending to back off... I have more input in terms of getting to know them and the family and the person... assessing more, linking in with some of the community resources...to find out who is going in and what they are doing and feeding back into it a bit better”.

OT, Spoke Focus Group 1

Theme 4: Community of practice

Participation in the Project ECHO programme allowed liaison between professionals and was effective in establishing a network of contacts of people working in palliative care which was valued by participants.

“It influenced my practice, it made me more open to communication with other people and members of the team and now I find I am communicating with the physio and the palliative care team more even if it is just email”.

OT, Spoke Focus Group 2

Some Hub members reported that the multidisciplinary nature of Project ECHO *“was really helpful in developing their working relationships with their fellow team members and creating those conversations on the ground”*

OT, Hub Focus Group.

Even within primary care teams, it may have enhanced team working but also it was important to emphasise a multidisciplinary approach to ensure more holistic care:

“I think there is more a richness if its multidisciplinary as we all know, no one discipline can solve the palliative care needs. I think it’s interesting to know what other services are out there because in the community they know they can refer on”.

OT, Hub Focus Group

Participants reported that they found the hub members from the specialist palliative care services to be very approachable:

“I feel if there is a specific thing I need now, I know who to access and how to access”

OT, Spoke Focus Group 1

“I’m not afraid to pick the phone up now, not that I was beforehand but I suppose I’m clearer in relation to that specialist role that is there, that is available to us”.

OT, Spoke Focus Group 2

However, participants also wanted to establish more local support links. Participants had varied experiences of establishing links with their local palliative care specialist services. Some participants reported it can be difficult to access the community palliative care teams however they recognise the value of making these connections and so reported they would *“make more of an effort to find out who else is calling”* [to a patient’s home] (PT, Spoke Focus Group 1).

Some participants still felt the relationship between primary care and palliative care services needs more work:

“I have left messages and they haven’t been responded and I have tried, and I won’t necessarily give up, but that link there is definitely not strong. They don’t have a contact or a link to primary care”.
PT, Spoke Focus Group 1

Other participants had found that through their participation in ECHO, they had forged better links with local community palliative care teams. They reported this has led to improved continuity of care for patients. They felt there was a better understanding of their role by their colleagues and also a better understanding of how and when to access specialist services:

“Now I have a little bit of understanding and they knowing that I have this course, they are more open to speak to me about the process of what intervention has to be completed with the client”.
PT, Spoke Focus Group 1

“We are going to do a meet and greet with them tomorrow. I think it is as a result of Project ECHO, so we are all going to have a better understanding of each other’s services. While it has always been good, it is only going to get better because of Project ECHO”.
OT, Spoke Focus Group 3

Because of these enhanced links with specialist palliative care services, participants reported having more confidence in liaising and negotiating a plan of action with the referring source when they received a palliative care referral.

“If I got a palliative care referral I would be more inclined to liaise with them or whoever, the lead person to say, ‘what is the plan here, what are we doing, how are we liaising with palliative care, which member of our team is liaising with palliative care’.”
OT, Spoke Focus Group 1

Participants reported intentions to further exploit the relationships they can began to foster through participation in ECHO and to use these as ways of further enhancing client pathways and address areas for improvement. One Hub member spoke of a meeting with primary care colleagues which had been planned prior to ECHO but which she expected to be more productive now with better links established between the services:

“It’s really to look at the ongoing service improvement that we can make between our two services and also then any potential knowledge gaps as well...it probably was separate originally from project ECHO, but it can only be enhanced by project ECHO”.
OT, Hub Focus Group

In discussing the development of a community of practice, one Hub member spoke of how participation in ECHO was valued by primary care networks and the format was appealing:

“I met the three primary care managers that would serve this area...and I suppose the constructive piece out of that meeting was that they wanted to know when we were running another session of project ECHO. And they would be keen to release more staff to that”.
OT, Hub Focus Group

Theme 5: Barriers to implementing practice changes

Participants described how community resources are under never-ending pressure with lack of time, lack of funding, reduced staffing and heavy caseloads and their colleagues in primary care do not

have much capacity to support practice changes and may hold more fixed attitudes in terms of HCPs role with palliative clients:

“The more traditional view that palliative is palliative and you know, don’t try anything new just let them keep going. Because GP services are very stretched at the moment, PHN’s are very stretched at the moment and trying to introduce something new sometimes is hard, you know within that team”.
OT, Spoke Focus Group 1

One participant remarked that despite what they had learned through ECHO, they could not offer

“a different service or an additional service, we just do not have the resources, time wise and staffing wise for that”.
PT, Spoke Focus Group 3

Participants acknowledge that some of these perennial issues regarding resourcing were unlikely to change but that as palliative care clients will always be given priority, they recognise the importance of *“giving more input there”*. Participants reported that they were now advocating for their palliative care clients, however sometimes their colleagues did not share the same understanding of the patient’s palliative care needs so they may be reluctant to engage:

“We are asking for co-operation from other members of the team to give a little bit more of their time whereas traditionally they might have said ‘Palliative care, do ABC and then just that’s it’. We are asking them to give a bit more of their time, but they might not be on the same page with you on it or for other reason they might not be able to give their contribution to make it happen.”
OT, Spoke Focus Group 1

The structure of how services are currently set up may not allow much interdisciplinary working which may hamper input in this area. Some primary care teams do not have a physical shared space, which can negatively impact on multidisciplinary liaison and collaboration:

“A problem for us is that we are not based in a Health centre, all the different members of the team not under the same roof...so that is barrier because we are all working off different pages”.
PT, Spoke Focus Group 1

Participants reported this was a difficult barrier to overcome. Multidisciplinary team meetings may only be held monthly so HCPs would have to make more concerted effort to follow-up with their MDT colleagues to liaise with the client and refer onwards. Participants also reported that they do not receive sufficient information from referring sources and often the nature of the referrals is quite limited, often for equipment provision with little other detail:

“We get very little information on client’s, it like ‘Provide a walking stick’. ‘A person’s coming home, please give them a walking stick’.”
PT, Spoke Focus Group 1

This was frustrating for participants, but they reported that now they would be more inclined to probe deeper and find out more details, given they have a sense of a wider scope of practice and recognise more potential for input. Participants were more open to liaising with palliative care services to discuss the overall plan to ensure their intervention would fit within that. One participant suggested that a designated key worker system might be beneficial to this client group to co-ordinate their various and changing needs:

“There are overlapping roles, so we don’t all have to be doing certain things, but that we could co-ordinate so the family know who to turn to and are not having to tell all the different history to all the different people, that’s a stressful enough time. It could be co-ordinated differently.”
OT, Spoke Focus Group 1

Due to variation in how services are set up across the country, ECHO participants did not feel like they had clarity on how services were structured and which specialist disciplines were involved in service provision. This was further compounded by the overlapping role of primary care and palliative care services, which was perceived to be a barrier to effective or efficient service provision by some participants. They described the need for better understanding of how services are structured and cross-service strategic planning to ensure clarity on roles and scope of practice:

“They have a different team, day care, palliative care and hospice at home. We, on the perimeter, need to understand their roles so that we know how their structure is.”

OT, Spoke Focus Group 1

Participants also reported that sometimes the use of professional terminology is different between services and this can contribute to the lack of shared understanding:

“They use terminology in a different way, that is their bread and butter...we have a very basic understanding or using one terminology for all, rather than recognising the different stages of palliative care.”

OT, Spoke Focus Group 1

The need for a shared understanding of terminology was seen as key to ensure clarity of patient needs and likely trajectory and ensure primary care HCPs are *“taking necessary action in a timely basis”*. This need for enhanced communication and understanding would improve client outcomes.

Theme 6: ECHO format

Overall, most participants reported a positive experience of the ECHO format. Having the programme run over a number of months was preferable to *“a one or two day intensive course and it’s so much information at the time that you cannot really process”* for the majority of participants. Participants reported that the more protracted format allowed deeper engagement with the course content and allowed time for reflection on practice.

“You had the presentations and you had all the online information... I dipped back in and out of it and read about it, think a bit more and think about clients I had worked with...it prompted reflection in practice and also to get the really up to date information going forward was hugely beneficial”.

OT, Spoke Focus Group 2

Participants embraced the novel format of this education programme. They particularly valued the ease of accessibility an online format offered and spoke enthusiastically about the benefit of not having to travel and still benefiting from the programme content and the interactive nature. Participants also reported being able to watch sessions back was helpful if they missed attending a session. In resource constrained environments, this accessibility that ECHO offered was very important from a time-use perspective, as participants highlighted,

“we are all a bit time poor...you could get the knowledge fairly quickly and precisely, succinctly”.

OT, Spoke Focus Group 3

“There was no travel time or anything needed to be allotted to this. It was purely the learning time was the time I had to put aside so that was perfect with me. I felt that the platform was really good, unfortunately for me, we have had a really, really busy time in our primary care because we are down to one third of our regular staff”.

OT, Spoke Focus Group 1

"I suppose in the grand scheme of things it was very cost effective with regard to time, patient time that we would have lost out on" OT, Spoke Focus Group 1

Another participant further elaborated on the ease of access which was enabled by the provision of equipment and support that was given to participate in this online format:

"We were sent a webcam and everything, it couldn't have been easier for us to participate to be honest". PT, Spoke Focus Group 1

Participants were asked to consider if the online format had impacted on their interactions or group dynamics. Some participants did not feel that it impeded the group discussion. One participant reported that due to the nature of the videoconferencing technology, they still felt *"the effect of being in a classroom"* and could interact accordingly. As one participant stated, *"I found that if I wanted to talk, I could talk, if I wanted to find information I could"*. PT, Spoke Focus Group 1

Most participants did not feel they lacked opportunity to interact or that the virtual nature of discussions impacted on the experience:

"I never felt at loss that you couldn't physically meet people through the course." OT, Spoke Focus Group 1

Most participants valued this interactive element and found it lent itself to peer learning:

"We were encouraged to leave comments, leave questions if someone had asked a question and obviously we would be discussing things here between us and we work together". OT, Spoke Focus Group 1

Participants who were joining in dyads or with colleagues reported that they enjoyed participating with colleagues and that they could apply their learning to clients on their caseloads:

"I had a colleague who was in my own team so we extended our thoughts...Its more beneficial" PT, Spoke Focus Group 1

"It was something we did together, that we would have prioritised...we were in the office to coordinate the same times to come in and use the same computer and talk about our case studies and who we would use and clients we had seen together". PT, Spoke Focus Group 1

Participants reported it was useful to hear about practice across the country, and they were reassured that HCPs in different counties were experiencing similar challenges, were adopting similar approaches in their efforts to provide quality services but also that this allowed sharing of ideas:

"It was great to be able to say that we are all in somewhat similar boats everyone, and that they wanted to provide the best possible service to this client group and we are all doing what we can and there was great ideas generated through the format". OT, Spoke Focus Group 1

Theme 7: Future improvements for ECHO programme

While most participants were satisfied with the overall format, there were some suggestions for improvement. One participant described the online interactions as being *"very chaotic"* and suggested it may be more efficient to present the lecture content in pre-recorded lecture with discussion boards or online chats. There was some frustration with the weekly setup and

introductions, *“repeating ourselves and explaining where you were from every time”*, which participants found tedious. This was also further exacerbated by the request to complete session evaluations. Some participants found these administrative tasks required too much time and suggested more efficient ways of taking attendance be sought. Some participants felt an initial face-to-face meeting of all participants would have been useful to establish group cohesion and reduce the need for introductions at the start of every session. Other participants were reluctant to have to travel of an initial meeting, as this was contrary to the notion of it being an online programme that was accessible without the need for travel.

Suggested future developments of the programme included *“advancing the level or grading up”* the content now that a basic level had been achieved, specialising in one of the areas to develop deeper understanding and skills. In post-ECHO surveys, a number of spoke members had suggested practical experience and opportunities to visits hospice settings to observe practice as a means to improve the programme in future. However, there was acknowledgment that this may not be feasible:

“Hospice contact that could enable participants to actually see hands on what it is like to work with clients in hospice setting ..not sure if this is a “do-able ” within the hospice setting”.

Spoke OT Post-session survey

Although another participants suggested that the network established among Spoke members could be capitalised on by

“establishment of working group for Primary care meeting via webcam”.

Spoke OT Post-session survey

Some participants suggested a change in the fortnightly structure as due to clinical pressures there was insufficient time to complete follow-up reading and it was also difficult to disrupt clinical work every fortnight. There were some suggestions to condense topics into blocks which may be easier for clinicians to engage with from a time-management perspective. Others were content with the existing fortnightly structure and felt if sessions occurred on a monthly basis *“you might lose momentum”*.

The use of case studies was a contentious issue as while some participants described some benefit from engaging in the process of presenting their case studies, others found this an ineffective learning method. Getting participants to come forward to present case studies was one of the challenges identified by the Hub participants. Participants reported to have found the initial prospect of the case study presentations as *“quite daunting”*. As one participant explained, *“We didn’t know anything to start”* and therefore participants were reluctant to engage in this aspect of the course. However, as the course progressed, they found they could contribute more as they learned more content. The process of presenting the case study was more beneficial for the person presenting than for the rest of the group.

“The case study was useful to do because it made you focus on a template and had you covered all the different options when you worked with somebody which you may not have reflected that intensely on otherwise”.

OT, Spoke Focus Group 2

However, one participant explained that she did not know *“what is the goal outcome was for clinicians who were listening to case study presentations”*. Some participants described the format of the case study presentation as quite limiting and restrictive and did not always fit with the topic. One of the critiques of the case study discussion was that it was repetitive and *“just generic discussion”* and that *“at the end sometimes the questions were unanswered”*. Participants expressed preference for more reflexive discussions with more practical application where people would share

practice examples about what worked such as *“the ideal interventions could be XYZ and the ordinary ones that worked could be ABC”*. Participants acknowledged that they did not necessarily address the question at the end of the case studies however, they reported the prompt to reflect on what they could have done better or what they could do now was useful. However, participants reported there was limited time for engagement in this aspect, *“You were kind of galloping through your presentation”*. Participants suggested integrating the case study aspect into the session topic from the outset rather than a presentation at the end:

“The case studies, while I thought they were interesting, I don’t know did I gain a lot from them either. I would probably like a little bit more discussion because I do think we have all these people on our caseloads, that maybe prior to the session could reflect on that topic and see you know have we questions around it in relation to specific clients - that might have been useful as well”. OT, Spoke Focus Group 2

“The case presentation took a good chunk of each session and maybe some of other issues, a time to discuss, reflect or try and problem solve issues or sharing of I suppose more practical hands on advice on how to manage conditions rather than just presenting the condition, you know so maybe we would have got more out of it as clinicians”. PT, Spoke Focus Group 2

Hub members had been surprised that Spoke members did not engage in more discussion around the case studies and speculated this related to a lack of confidence:

“I definitely thought there was quite a reluctance for discussion and questions to be asked from the participants. I didn’t know if maybe there was a lack of confidence in their palliative care knowledge”. OT, Hub Focus Group

“Sometimes it felt like that if they said they didn’t know or they didn’t understand that it was like they were demonstrating a gap and there was a reluctance of demonstrating a competency deficit”. OT, Hub Focus Group

“The information that the participants got from the sessions, the education session and the case studies, I think that that may have been all of the information that the participants could have taken on board at that time. Because it was so much information for them, because their base level was so low. And therefore, they couldn’t participate as actively in the case studies.” OT, Hub Focus Group

Nonetheless Hub members did report observing an improvement in case studies over the duration of the programme whereby case studies appeared to adopt a more holistic approach. Some Hub members did suggest that the remote access may have impeded case study discussion and also the natural flow of discussion was disrupted.

“For some people technology can disable people from maybe communicating and discussion”. OT, Hub Focus Group

One Hub member with previous experience of an ECHO project suggested an initial meeting of all participants may have been useful to build group cohesion and encourage active participation:

“We didn’t bring all of the participants together as a group for the first session or the introductory one. And other versions of project ECHO do that. I would wonder if we did that it would have created a group bond... and therefore emphasising then the importance that actually when we are talking about the case study the more you contribute, this is a safe environment, the better it would be.” OT, Hub Focus Group

Other Hub members agreed with this idea of an initial face-to-face meeting to establish ground rules and also trust was important as participants might be more inclined to share their limitations and engage more in discussion.

“I feel you need to have everybody in the room at the start. It’s almost like setting the ground rules...this is a safe place to expose the fact that actually I’ll just listen to thirty minutes of pharmacology and ‘Oh my god I didn’t know any of that. I’ve never come across that in my practice’. And that can be very exposing for people...we don’t always like admitting that you don’t know things”.

OT, Hub Focus Group

Hub members thought an initial meeting might allow expectations on the need to active participation be clearly established. It would also allow discussion of the topics and the order in which topics needed to be addressed.

“Prioritise which ones they felt they needed to know immediately, which ones were next and actually went right down through the list. So there was buy-in, there was automatically an engagement from the participants that took on to take those case studies as well. So I feel that already generated to the feeling of ‘yes they were ready to participate and discuss this’”.

OT, Hub Focus Group

Hub members suggested a more consistent Hub membership may also support better engagement, *“a small expert panel where you have really three support experts and your external speaker that that creates more security for the participants”.*

OT, Hub Focus Group

In terms of further improvements, a Hub member suggested

“What possibly would need to change is how the discussion is facilitated and how an expectation may be set around giving a turn to each participant group to have questions may be ready at the end of the session or maybe some reflection back on their area of practice within that topic area”.

OT, Hub Focus Group

Hub members discussed allocating case study topics to Spoke participants but felt this may discourage participation where confidence is low or where primary care HCPs do not recognise what is within their scope of practice. Hub members suggested it might be effective to present the case study before the presentation to generate more group discussion. Hub members considered the difficulties in pitching the information at the right level for participants:

“My reflection on that is we need to lower the pitch lower than we thought we needed to. So, if we had a specialist service doing the case study we are going to put in too much information for them.”

OT, Hub Focus Group

Discussion

Improving access to palliative care is high priority for people with life limiting conditions. Many participants reported they frequently encounter clients with palliative care needs, however they also reported they were not confident in their role, indicating need for accessible training such as ECHO. Some expressed a desire to know how to liaise with the specialist palliative care team, indicating a need for a stronger network or community of practice between specialist services and community colleagues. This programme suggests significant potential for improving access to palliative care in rural areas or communities without local hospice services. HCPs in rural areas face numerous barriers to obtaining education including geographic isolation, distance from tertiary care services,

lack of financial support for travel and difficulty taking time away from clinical work due to staffing shortages which impacts on their professional development (Curran et al, 2006; Doorenbos et al 2011; Sinclair et al 2015; Tilleczek et al 2005). Prior to ECHO, only 5 participants in this study had opportunity to engage in formal palliative care education sessions such as attending conferences or seminars. Many participants worked in rural areas and would likely have to travel long distances to attend training. This may indicate difficulty in taking time to attend such training and demonstrates the need to access education in alternative ways, such as ECHO.

ECHO encompasses core elements of integrated palliative care implementation in that it involves a multidisciplinary team approach, including links between community services and palliative care specialists, and such collaborations facilitate dissemination of palliative care expertise (den Herdervan der Eerden et al, 2017). Similar to findings from Carlin et al (2018), participants reported disseminating information to non-participating colleagues through informal information sharing and distribution of resources and materials and through formal in-service education sessions. This concept of 'force multiplication' (Furlan et al, 2019) whereby ECHO enables wide sharing of best practices reduces variation in care and improves outcomes. Participants suggestions for future iterations of ECHO to build on foundation or recently acquired knowledge and skills and address more specialised areas reflects the ethos of Project ECHO to develop and sustain communities of learning, following the initial course. Project ECHO is a lifelong learning and guided practice model (Harding, 2018) and participation in ECHO reduces feelings of isolation as it provides a virtual community to interact with around patient care and feeling supported and encouraged by ECHO experts (Dearing et al, 2019).

There are many online education and knowledge-sharing platforms, such as massive online courses (MOOCs), online continuing education resources, and long-distance education. Maloney et al (2013) found HCP students welcomed online learning resources because of their convenience and usability which represents a move from traditional learning styles towards technological learning supports. that many participants indicated a desire to continue using this type of model suggests much potential for ECHO type programmes in continuing professional development of time and resource restricted HCPs. Technology has allowed virtual communities of practice develop in various healthcare areas, despite temporal and geographic issues. A key feature of ECHO compared to other online education is the interaction between hub specialist and spoke participants in discussing complex cases and enhancing learning. This interaction fosters and sustains development of communities of practice. Project ECHO goes beyond a virtual classroom by developing knowledge networks that promote real-time multi-directional peer learning and sharing, where knowledge delivery is combined with mentoring and live discussion (Struminger et al, 2017). That one participant had expressed preference for a MOOC type format may reflect the challenge in adapting to the non-hierarchical, participatory and dynamic model that ECHO requires, which may be unfamiliar to participants. Although some participants had suggested visiting specialist palliative care services, this may be impractical and resource-prohibitive for the majority of participants. Nonetheless, having established the connection and relationships with local specialists, there may be potential to explore further learning opportunities with these sites which may have otherwise not been possible.

ECHO serves as a community of practice for HCPs to receive support and develop knowledge and skills (Zhou et al, 2016). The success of ECHO model depends on the quality of relationship between the Project ECHO team and participating clinicians (Johnson et al, 2017). Some focus group participants suggested that an initial meeting would have allowed initial rapport to develop and may have allowed for more fruitful discussions. Other ECHO programmes (e.g. Bouchonville et al 2018)

have facilitated an initial training session to focus on technology use, team-building and clinical skills. This may allow subsequent online sessions to be more productive.

In terms of the content delivery, most participants placed huge value on the didactic part of the sessions – it may have been more effective way to acquire knowledge and resources in time-pressured practice. Some participants felt the case studies did not contribute to their learning. The reticence of participants in sharing cases for discussion may reflect the low level of recognition of numbers of patients with palliative care needs on the caseloads of primary care therapists and their subsequent level of confidence in this area of practice. Hub members had observed the reluctance to participate in discussion and interpreted this as not wanting to expose gaps in knowledge and professional competence. Case-based training is predictive of meaningful behaviour change by clinicians (in Johnson et al, 2017) therefore this case study discussion component of ECHO requires further development.

Some participants expressed concerns that patients do not necessarily receive the optimal care and support they require from primary care occupational therapists and physiotherapists as they are referred too late in patients' journey. Ensuring patient receive timely and appropriate palliative care requires clear communication and education regarding the role of these HCPs. Palliative care should not only include people at end stage of life but should be considered earlier for people with serious illness (Tavemark et al, 2019). The increased awareness of palliative rehabilitation and palliative needs assessment coupled with the increase in confidence gained by participating in the ECHO programme may lead to primary care therapists seeking earlier referrals and advocating for their potential role with clients at earlier stages of their disease trajectory.

Limitations

There were limitations in both the delivery and evaluation of ECHO which must be considered in interpreting our findings and developing future programmes. As Furlan et al (2019) acknowledge, it is difficult to identify how ECHO participants change their practice or delivery of care. While participants reported to find the programme beneficial and expressed intention to change practice, it is difficult to evaluate patient benefit. Also, while ECHO seeks to be a 'force multiplier' by transferring specialist skills to primary care HCPs, it's success will be limited in areas where primary care teams are under-resourced or not staffed. Furlan et al (2019) suggest ECHO would be most effective in the context of improved access to primary care.

Sinclair et al (2015; 2016) caution that e-learning is not an educational panacea and that we need to evaluate more than knowledge acquisition and user satisfaction but consider how it influences HCP behaviour, and crucially, patient outcomes and whether these changes are sustainable. This level of evaluation was beyond the scope of this study as such changes take time to embed into practice and were therefore unlikely to be realised within the timescale of this study. While we did attempt to explore intention to change behaviour, through use of self-report questionnaires, we do acknowledge that intention to change may not actually translate into behaviour change. Further research may consider how learning was contextualised into clinical practice and whether it led to sustained clinical behavioural change and influenced patient outcomes, using objective measures, informed by behaviour change theories.

One issue that requires further consideration for future ECHO programmes is the difficulty participants had in contributing towards case study development. Despite sharing of case examples being communicated as a core component of ECHO, participants in the programme appeared

reluctant to share cases which impacted on case discussions. Participants made suggestions for making the case studies more effective and more reflective which may require consideration, such as revising the case study preparation proforma or adjusting the session format to incorporate case study questions.

Initially, it was intended to recruit dyads of occupational therapists and physiotherapists from the same primary care setting for this programme. However, this approach was not feasible due to staffing in services and expressions of interest from therapists.

At times, technical issues due to unstable internet connections leading to subsequent sound quality issues impacted on ECHO sessions and also on focus group participation. These issues are possibly an inevitable consequence of using internet-based videoconferencing technology as many participants were located in rural areas, internet connections may have been less reliable. Nonetheless, as this technology provides the means of facilitating the programme, it is worth investing sufficient time and resources from the outset to ensure full participation of all involved.

Financial sustainability is an important consideration for future developments of this programme. The HSE funding supported the delivery and evaluation of this programme. Further resourcing will be necessary if the programme is to be sustained and a cost-effectiveness analysis may help in this regard.

Conclusion

Given projected demographic changes, more people with life-limiting conditions will live in the community, requiring a palliative approach to their care. As ECHO addresses some of healthcare's most intractable issues such as disparities in access to care and slow diffusion of best practices, using existing resources, it offers much potential to expand capacity in current climate of financial austerity within Irish healthcare. Overall, results from this study support the use of Project ECHO for HCP palliative care education in primary care. The utility of this format was confirmed as an effective and accessible model. Findings demonstrate positive impact on confidence in self-rated knowledge and skills and on establishing a network of practice between hospice care settings and primary care, between disciplines and across geographical areas. Future developments to nurture local relationships formed to ensure sustainable practice change were highlighted and are required to ensure ECHO directly impacts service delivery and improve the capacity to provide quality palliative care.

Planned dissemination outputs related to this report

The findings of this study will be disseminated through peer reviewed journal publication and presentation of papers and posters at peer reviewed scientific meetings. The consolidated criteria for reporting qualitative research checklist will be used to guide reporting (Tong et al, 2007).

- Potential journals to submit manuscript for publication
 - *Journal of Interprofessional Care* (if choosing open access, levies an Article Publishing Charge of €2395)
 - *Irish Journal of Occupational Therapy* (open access) Short Report 1,500 words, Practice Report 3,000 words
 - *Physiotherapy Practice & Research Journal*

- Potential scientific meetings and conferences to submit abstracts for peer review
 - European Association for Palliative Care 2021 (20 – 22 May) Helsinki, Finland “*Exploring new dimensions*” Completed parallel session proposals must be received by latest 5pm on 31st January 2020
 - National Forum on Integrated Care in Ireland (NFICI) 2020 (6 May) UCD “*Transforming Health and Social Care in Ireland: Delivering Lifelong People-centred Care*” 500 word Abstract due Friday, 28 February
 - HSE National Health and Social Care Professions (HSPC) Conference TBC
 - Association of Occupational Therapists Ireland (AOTI) Conference 2020 (9-10 October) “*AOTI 2020 Vision: Excellence in Professional Practice*” 300 word Abstract due Monday 2nd March
 - Irish Society of Chartered Physiotherapists (ISCP) Conference November 2020 (TBC)
 - Irish Association for Palliative Care (IAPC) Conference 2021 (TBC)

References

- Alschuler, K. N., Stobbe, G. A., Hertz, D. P., Johnson, K. L., von Geldern, G., Wundes, A., ... Scott, J. D. (2019). Impact of Multiple Sclerosis Project ECHO (Extension for Community Healthcare Outcomes) on Provider Confidence and Clinical Practice. *International journal of MS care*, 21(4), 143–150. doi:10.7224/1537-2073.2018-014
- Arora, S., Geppert, C. M., Kalishman, S., Dion, D., Pullara, F., Bjeletich, B., ... Scaletti, J. V. (2007). Academic health center management of chronic diseases through knowledge networks: Project ECHO. *Academic Medicine: Journal of the Association of American Medical Colleges*, 82(2), 154–160. doi:10.1097/ACM.0b013e31802d8f68
- Arora, S., Thornton, K., Murata, G., Deming, P., Kalishman, S., Dion, D., ... Qualls, C. (2011). Outcomes of treatment for hepatitis C virus infection by primary care providers. *The New England Journal of Medicine*, 364(23), 2199–2207. doi:10.1056/NEJMoa1009370
- Arora, S., Smith, T., Snead, J., Zalud-Cerrato, S., Marr, L., Watson, M., Yennu, S., Bruce, A., Piromalli, C., Kelley, S., Vallath N, Píriz G, Sehabiaga G, Méndez A. (2017) Project ECHO: An Effective Means of Increasing Palliative Care Capacity *Evidence-Based Oncology* Jun;23(7 Spec No.):SP267-SP271.
- Bennett, K. A., Ong, T., Verrall, A. M., Vitiello, M. V., Marcum, Z. A., & Phelan, E. A. (2018). Project ECHO-Geriatrics: Training Future Primary Care Providers to Meet the Needs of Older Adults. *Journal of Graduate Medical Education*, 10(3), 311–315. doi:10.4300/JGME-D-17-01022.1
- Bouchonville, M.F., Hager, B.W., Kirk,J.B., Qualls, C.R. and Arora, S. (2018) Endo ECHO improves primary care provider and community health worker self-efficacy in complex diabetes management in medically underserved communities. *Endocrine Practice*, 24 (1), 40-46. doi: 10.4158/EP-2017-0079.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2) 77–101.
- Braun, V., V. Clarke, G. Terry, and N. Hayfield. (2018). “Thematic Analysis.” In *Handbook of Research Methods in Health and Social Sciences*, Edited by Liamputtong, P. pp.843–860. Singapore: Springer.
- Burpee, E., Yennu, S., Piromalli, C., Mikus, M., Leff, V., Amos, C., Hooper, R. N. (2019) Project ECHO: A Disruptive Innovation to Expand Palliative Care (SA503). *Journal of Pain and Symptom Management*, 57(2), 442.
- Carlin, L., Zhao, J., Dubin, R., Taenzer, P., Sidrak, H., & Furlan, A. (2018). Project ECHO Telementoring Intervention for Managing Chronic Pain in Primary Care: Insights from a Qualitative Study. *Pain medicine (Malden, Mass.)*, 19(6), 1140–1146. doi:10.1093/pm/pnx233
- Curran, V.R., Fleet, L., Kirby, F. (2006) Factors influencing rural health care professionals’ access to continuing professional education. *Australian Journal of Rural Health*, 14(2), 51–55.
- Dearing, J.W., Cruz, S., Kee, K., Larson, R.S., Rahm, A.K. (2019) *Project ECHO Review and Research Agenda*. Technical Report. Diffusion Associates.
https://www.researchgate.net/publication/331321004_PROJECT_ECHO_Review_and_Research_Agenda
- Department of Health and Children (2001) *Report of the National Advisory Committee on Palliative Care*. Stationary Office, Dublin 7.

- den Herder-van der Eerden, M., Ewert, B., Hodiament, F., Hesse, M., Hasselaar, J., & Radbruch, L. (2017). Towards accessible integrated palliative care: Perspectives of leaders from seven European countries on facilitators, barriers and recommendations for improvement. *Journal of integrated care (Brighton, England)*, 25(3), 222–232. doi:10.1108/JICA-03-2017-0006
- Doorenbos, A. Z., Kundu, A., Eaton, L. H., Demiris, G., Haozous, E. A., Towle, C., & Buchwald, D. (2011). Enhancing access to cancer education for rural healthcare providers via telehealth. *Journal of cancer education: the official journal of the American Association for Cancer Education*, 26(4), 682–686. doi:10.1007/s13187-011-0204-4
- Furlan, A.D., Pajer, K.A., Gardner, W., MacLeod, B. (2019) Project ECHO: Building capacity to manage complex conditions in rural, remote and underserved areas. *Canadian Journal of Rural Medicine* 24(4) 115-20
- Harding, E. (2018) *Project ECHO (Extension for Community Healthcare Outcomes) Connect with Expert Medical Specialists to Build Capacity in Primary Care and Reduce Health Disparities*. American Medical Association Steps Forward. <https://edhub.ama-assn.org/steps-forward/module/2702692>
- HSE (2017) *Palliative Care Services: Three Year Development Framework (2017 – 2019)*. HSE Primary Care Division, Dr. Steeven’s Hospital, Steevens’ Lane, Dublin 8.
- IHF, ICGP, HSE (2011), *Primary Palliative Care in Ireland: Identifying improvements in primary care to support the care of those in their last year of life* <http://hospicefoundation.ie/wp-content/uploads/2012/05/Primary-Palliative-Care-in-Ireland.pdf>
- Johnson KL, Hertz D, Stobbe G, Alschuler K, Kalb R, Alexander KS, et al. (2017) Project extension for community healthcare outcomes (ECHO) in multiple sclerosis: Increasing clinician capacity. *International Journal of MS Care* 19(6):283-289. doi: 10.7224/1537-2073.2016-099.
- Jünger, S., Pestinger, M., Elsner, F., Krumm, N., Radbruch, L. (2007) Criteria for successful multiprofessional cooperation in palliative care teams. *Palliative Medicine* 21(4) 347–354.
- Kane, P.M., Daveson, B.A., Ryan, K., McQuillan, R., Higginson, I.J., Murtagh, F.E. (2015). The Need for Palliative Care in Ireland – a Population-based Estimate of Palliative Care Using Routine Mortality Data, Inclusive of Non-malignant Conditions. *Journal of Pain and Symptom Management* 49(4) 726–733.e1.
- Katzman, J., Comerchi, G., Boyle, J., Duhigg, D., Shelley, B., Olivas, C., Daitz, B., Carroll, C., Som, D., Monette, R., Kalishman, S., Arora, S. (2014). Innovative Telementoring for Pain Management: Project ECHO Pain. *Journal of Continuing Education in the Health Professions* 34(1), 68–75
- Maloney, S., Chamberlain, M., Morrison, S., Kotsanas, G., Keating, J.L., Ilic, D. (2013) Health Professional Learner Attitudes and Use of Digital Learning Resources. *Journal of Medical Internet Research* 15(1):e7 DOI: [10.2196/jmir.2094](https://doi.org/10.2196/jmir.2094)
- Marciano, S., Haddad, L., Plazzotta, F., Mauro, E., Terraza, S., Arora, S., et al. (2017) Implementation of the ECHO® telementoring model for the treatment of patients with hepatitis C. *Journal of Medical Virology* 89(4) 660-4
- Marr, L. and Neale, D. (2012) Project ECHO: bringing palliative care consultation to rural New Mexico through a novel telemedicine format. *Journal of Pain and Symptom Management*. 43(2) 448-449. doi: <http://dx.doi.org/10.1016/j.jpainsymman.2011.12.226>.

National Advisory Committee on Palliative Care. (2001) *Report of the National Advisory Committee on Palliative Care* <https://assets.gov.ie/9240/1a34b770c7ee43afbf1c69a81c4391e2.pdf>

National Clinical Programme for Palliative Care (NCPCC) (2019) *Adult Palliative Care Services, Model of Care for Ireland* <https://www.hse.ie/eng/about/who/cspd/ncps/palliative-care/moc/ncp-palliative-care-model-of-care-24-04-0219.pdf>

Nowels, D., Jones, J., Nowels, C.T. and Matlock, D. (2016) Perspectives of Primary Care Providers Toward Palliative Care for Their Patients. *The Journal of the American Board of Family Medicine* 29 (6) 748-758; DOI: <https://doi.org/10.3122/jabfm.2016.06.160054>

Palliative Care Competence Framework Steering Group. (2014). *Palliative Care Competence Framework*. Dublin: Health Service Executive <https://aiihpc.org/wp-content/uploads/2016/02/Occupational-Therapy-Complete.pdf>

Radbruch L, Payne S. and EAPC Board of Directors (2009). White paper on standards and norms for hospice and palliative care in Europe: part 1 – recommendations from the European Association for Palliative Care. *European Journal of Palliative Care* 16(6) 278-289.

Radbruch L, Payne S. (2010). White paper on standards and norms for hospice and palliative care in Europe: part 2 – recommendations from the European Association for Palliative Care. *European Journal of Palliative Care*. 17(1) 22-33.

Sinclair, P., Kable, A., Levett-Jones, T. (2015) The effectiveness of internet-based e-learning on clinician behavior and patient outcomes: a systematic review protocol *JBIR Database of Systematic Reviews and Implementation Reports* 13(1), pp.52 - 64

Sinclair, P., Kable, A., Levett-Jones, T. (2016) The effectiveness of Internet-based e-learning on clinician behaviour and patient outcomes: A systematic review. *International Journal of Nursing Studies* 57, 70-81

Sockalingam, S., Arena, A., Serhal, E., Mohri, L., Alloo, J., Crawford, A. (2018) Building provincial mental health capacity in primary care: An evaluation of a project ECHO mental health program. *Academic Psychiatry* 42(4), 451-7

Struminger, B., Arora, S., Zalud-Cerrato, S., Lowrance, D., Ellerbroack T. (2017). Building virtual communities of practice for health. *The Lancet* 390(10095):632-634. doi: 10.1016/S0140-6736(17)31666-5.

Tavemark, S., Hermansson, L.N. & Blomberg, K. (2019) Enabling activity in palliative care: focus groups among occupational therapists. *BMC Palliative Care* 18(1)17 doi:10.1186/s12904-019-0394-9

Tong, A., Sainsbury, P., Craig, J. (2007) Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups, *International Journal for Quality in Health Care*, 19(6) 349–357, <https://doi.org/10.1093/intqhc/mzm042>

Tilleczek K, Pong R, Caty S. (2005) Innovations and issues in the delivery of continuing education to nurse practitioners in rural and northern communities. *Canadian Journal of Nursing Research* 37(1):146–162

Watson, M. (2017) At the hub of things. *European Journal of Palliative Care* 24(6) 246-247.

White, C., McIlpatrick, S., Dunwoody, L., Watson, M. (2019) Supporting and improving community health services—a prospective evaluation of ECHO technology in community palliative care nursing teams *BMJ Supportive & Palliative Care* 9:202-208.

World Health Organization (2002) WHO Definition of palliative care/WHO Definition of palliative care for children. Geneva: WHO <http://www.who.int/cancer/palliative/definition/en/>

World Health Organization (2004). *Better palliative care for older people*. Copenhagen: WHO. http://www.euro.who.int/_data/assets/pdf_file/0009/98235/E82933.pdf

World Health Organization (2016) *WHO Framework on integrated people-centred health services*. <https://www.who.int/servicedeliverysafety/areas/people-centred-care/en/>

World Health Organization (2018) *Why palliative care is an essential function of primary health care* <https://apps.who.int/iris/bitstream/handle/10665/328101/WHO-HIS-SDS-2018.39-eng.pdf accessed 21/11/2019>).

Yennurajalingam, S., Amos Jr, C.E., Weru, J., Opare-Lokko, E.B., Arthur, J.A., Nguyen, K., Soyannwo, O., Chidebe, R.C.W., Williams, J.L., Lu, Z., Baker, E., Arora, S., Bruera, E. and Reddy, S. (2019) Extension for Community Healthcare Outcomes-Palliative Care in Africa Program: Improving Access to Quality Palliative Care *Journal of Global Oncology* 5, 1-8 doi: 10.1200/JGO.19.00128.

Zhou C, Crawford A, Serhal E, Kurdyak P, Sockalingam S. (2016) The impact of project ECHO on participant and patient outcomes: A systematic review. *Academic Medicine*. 91(10):1439–1461, DOI: 10.1097/ACM.0000000000001328