Project ECHO Northern Ireland 2018-2020

hospice UK

Project ECHO® Northern Ireland

HSC Health and Social Care Board

Cover image: Project ECHO Northern Ireland in Action. This collage is a visual representation of the connecting nature of ECHO, linking colleagues across the health and social care system, and across geography. From right (front cover) to left (back cover): C Ekambar E Reddy and Mary Donnelly leading a session on Front Facial Pain and Rhinitis for the ENT Network at Daisy Hill Hospital Newry. Richard Whitehouse joins a session from the Braid Valley Hospital in Ballymena on Restrictive to Positive Practice within the Positive Behaviour Support Network. David Rodgers, a GP in Tandragee, participates in a session on Diabetes from the Tesco car park in Craigavon. Sheila Seaton, a Healthcare Assistant in the Community with Marie Curie, joins a session on mouth care in actively dying patients. Ruth Gray, from the Prisons Healthcare Network, joins a session from Hydebank Wood College Young Offenders Centre and Prison in Belfast. And, Riona Santiago facilitates a session on COVID-19 vaccines with the Working Safely in COVID Network from Altnagelvin Hospital in Londonderry/Derry. **Collage produced by Savannah Dodd.**

Executive Summary

Project ECHO has strongly demonstrated a positive impact across the health system in Northern Ireland. This report presents the results from an in-depth evaluation of the impact of 34 Project ECHO Networks in Northern Ireland from both before and during the COVID-19 pandemic. With few exceptions, healthcare providers from these Networks describe Project ECHO as contributing to improved knowledge, skills, confidence, self-efficacy, and satisfaction across all disciplines and levels of the health system. They report the ECHO model as being an important tool for building connections within the health system and reducing the isolation of health and social care providers, particularly those working in rural, remote and/or community roles.

Project ECHO (Extension of Community Health Outcomes) has been described as an evidence-based guided-practice model capable of transforming healthcare systems and reducing healthcare disparities. Having been implemented in over 45 countries, systematic reviews of evidence indicate that Project ECHO is an effective way of addressing knowledge gaps that healthcare professionals face due to the exponential growth in medical knowledge. Using video conferencing technology, and through the modelling of effective online professional collaboration, ECHO has the potential to remove barriers to training and increase access for practitioners in remote locations, while building virtual communities of practice.

Across all evaluated Project ECHO Northern Ireland Networks, 93% of survey respondents stated that ECHO had supported improvements to their practice and management of patients, with 89% reporting that their clinical knowledge, confidence and self-efficacy had also improved through their participation. 82% reported better relationships between levels of the health system, improved collaboration between healthcare providers, and improved knowledge about different services offered within their area.

Most importantly, qualitative evidence gathered within this evaluation suggests strong interconnectivity and correlation between improved healthcare provider outcomes, knowledge and confidence, and a positive impact on patients. Participants within the programme described learning from ECHO sessions directly supporting patient outcomes such as accessing new treatments or more efficient referral. Evidence presented within this report equally suggests strong interconnectivity between improved provider outcomes, increased confidence in managing patients at primary level, and reduced referrals to secondary or tertiary levels of the health system. The Optometry and Neurology Networks, included as case studies within this report, demonstrate the potential of the ECHO model in supporting such service transformation.

The ECHO methodology demonstrably breaks down barriers, supports the development of communities of practice, and facilitates a safe space for learning, sharing and collaborative problem-solving between colleagues. Networks such as the Prison Healthcare ECHO demonstrate the novel ways that ECHO can support relationship building not just within the health sector, but also between health and social care providers, other statutory agencies, and the community and voluntary sector.

While this evaluation focused on the period 2018-2020, COVID-19 has dramatically

disrupted and challenged all aspects of healthcare provision over the past 18 months. This report's preliminary analysis of the impact of Project ECHO during the COVID-19 response equally shows the strong impact of ECHO across domains of training, adaptation and staff wellbeing. Significantly, in a world now saturated with online learning options, the ECHO methodology was judged more effective and supportive than other online training and webinars accessed by healthcare providers participating in this evaluation.

Beyond evaluating the direct impact of ECHO on health and social care providers, patients and the health system, this report also explores what factors and variables determine the success of an ECHO network. Factors such as leadership and the wider ECHO infrastructure were described as being essential in supporting the success of different networks. The learning from this section of the report has implications for the creation of future ECHO Networks, strengthening existing Networks, and will help ensure resources are efficiently and effectively targeted.

Project ECHO in Northern Ireland is leading the way across the NHS in supporting novel and integrated ways of working. Healthcare providers describe ECHO as adding value to their practice, and it is likely that long term participation in networks has a positive impact on wider goals of establishing integrated care systems and improving patient care, as well as building stronger and equitable relationships across different levels of the health system. ECHO is a proven approach to building communities of practice in a respectful, safe, and accessible learning environment. This report should contribute to informing future resourcing decisions, particularly within the context of COVID-19 in which virtual and online training, as well as building virtual communities of practice and peer-support, are necessitated by ongoing social distancing requirements. Significant time and energy has been invested into supporting Project ECHO. Data from this evaluation strongly suggests positive impact facilitated by the project and that Networks operating for extended periods of time are most capable of integrating long-term service transformation.

Recommendations

1. Given the demonstrable benefits for healthcare providers, ensure that appropriate support for ECHO Networks exists across Northern Ireland to ensure equity of access and opportunity for healthcare providers should they wish to participate. Networks need to be supported over time to achieve long-term impact.
2. Given evidence of ECHO in improving relationships, connections and collaboration within the health system, further utilise the methodology to support leaders to achieve strategic goals in establishing integrated health care systems.
3. Networks need to have clear aims and objectives, a pathway to achieving these targets, and strong leadership. Networks should identify measurable ways that they can contribute to long-term service transformation.
4. Explore opportunities and options for integrating and embedding ECHO approaches sustainably into the NHS and HSC Quality Improvement.
5. Further develop evaluation and reporting processes to capture long-term data on impact of ECHO Networks for healthcare providers, patients, and in transforming the health system. Consider conducting a robust economic analysis of the cost-benefit of Project ECHO in Northern Ireland.

Report Contents

Author

This report was written by Chris Jenkins, Evaluation Fellow at Hospice UK.

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Contact and Further Information

Dr. Chris Jenkins
Evaluation Fellow

Hospice UK
2nd Floor, The McCune Building
1 Shore Road, Belfast
BT15 3PG

T: 028 95 582 390
E: c.jenkins@hospiceuk.org

Further information on all aspects of the report is available upon reasonable request from the author.

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Dr. Tom Esmonde

October 14, 1960 – July 24, 2021

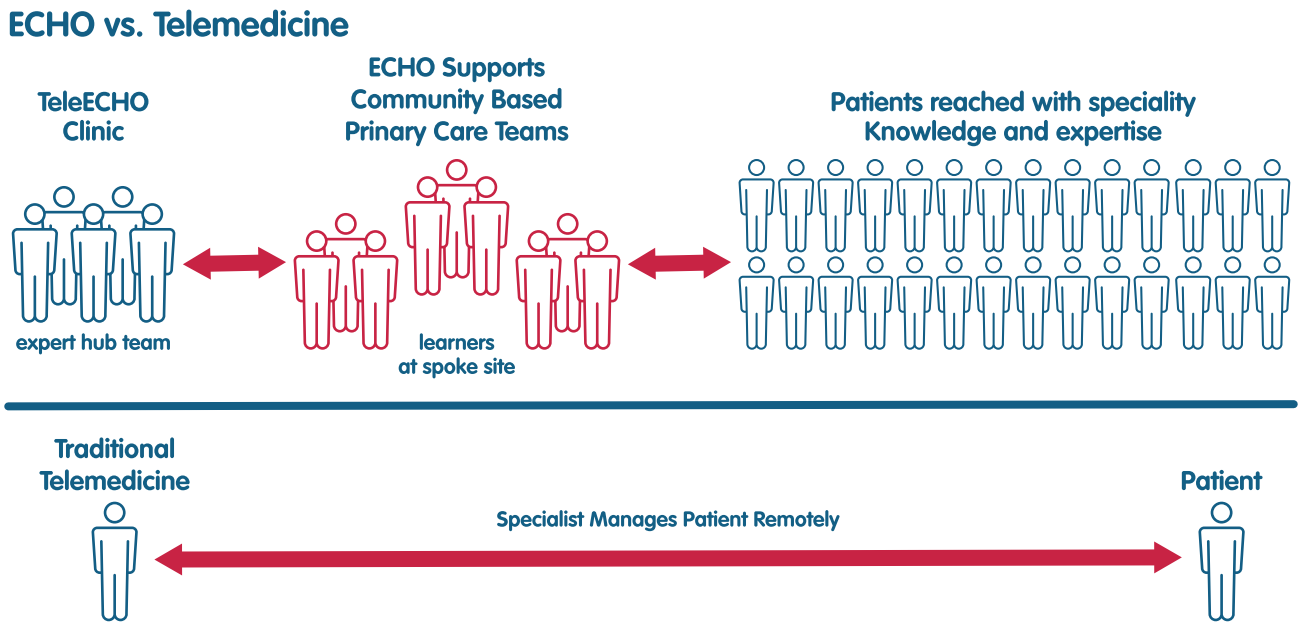
Dr. Esmonde was a dedicated member of the Neurology ECHO network. His considered advice and support for GPs based on years of experience as a senior neurologist was much valued and appreciated, for both his wisdom but also his quiet humility and encouragement.

Background and Introduction

What is Project ECHO?

Project ECHO (Extension for Community Healthcare Outcomes) is a pioneering tele-mentoring programme which was developed in the School of Medicine at the University Of New Mexico (UNM)[1]. Using easily accessed platforms such as ZOOM, Project ECHO aims to connect healthcare providers to share learning and experience in order to increase capacity for safe and effective treatment of chronic, common, and complex diseases especially in rural and remote areas. The ECHO model is designed to address the growing demand for secondary care services and is focused on increasing capacity within primary care, through de-monopolisation of specialist knowledge and improving relationships across primary and secondary care[2].

A typical ECHO session is 60- 90 minutes long. Normally, a 20 minute teaching session is delivered by a specialist healthcare provider followed by discussion. Participants then discuss and share any current issues or experiences they face and determine the best course of action together through one or two 'case presentations'. As of July 2021, Project ECHO has been implemented across 45 countries, with 317 hubs[3]. Peer-reviewed research across different countries and contexts suggest that Project ECHO is an effective way of addressing knowledge gaps that all healthcare professionals face due to the exponential growth in medical knowledge. With the use of video-conferencing technology,



1 Project ECHO. University of New Mexico, School of Medicine. https://hsc.unm.edu/echo/
2 Eaton L. Hierarchy disruptors: bringing specialist knowledge from hospital to community care BMJ 2019; 365 :l4376 doi:10.1136/bmj.l4376
3 Project ECHO Data Marketplace. https://hsc.unm.edu/echo/data-marketplace/interactive-dashboards/ (accessed 07 July 2021)

participants benefit by receiving evidence-based, best practice guidance from specialists, case-based learning from presentations, along with opportunities for questions and answers.

Project ECHO differs from many other online training programmes and webinars in that it is specifically intended to build relationships and communities of practice and encourage open discussion between participants. It is explicitly non-hierarchical and participatory in nature, with Network participants involved during all aspects of programme delivery including curriculum development, case presentation, discussion, and evaluation.

Two systematic reviews[4,5] have been conducted that assess the outcomes of studies evaluating the impact of the Project ECHO methodology across different health conditions and networks. Both reviews indicated positive results regarding the impact of ECHO on increased participant knowledge, competence, confidence, and satisfaction. Positive impacts have also been demonstrated for patient outcomes such as improved care and reduced waiting times, as has been seen in networks focusing on chronic liver disease[6], and declines in opioid prescribing to manage pain[7].

Project ECHO in Northern Ireland

In 2015-16 the Health and Social Care Board (HSCB) in Northern Ireland was awarded £403,000 from the Executive Change Fund to work in partnership with Northern Ireland Hospice to pilot the use of the Project ECHO model in the following 5 areas; (i) GP Trainees – Dermatology; (ii) Palliative Care – Nursing Homes; (iii) Optometry/Ophthalmology; (iv) Diabetes and Palliative Care; (v) Carers. With ever-increasing demands and focus on value-based healthcare delivery, the HSCB identified Project ECHO as an innovative methodology capable of developing the knowledge and skills of health and social care professionals, transforming service delivery, and ultimately improving patient care. Key evaluation findings from the pilot project included increased self-efficacy and knowledge, with participants reporting that they felt the care they provided to patients had improved.

Based on the success of the initial pilot the Project ECHO NI programme was awarded a further £474,000 from the Transformational Fund in 2016-2017 to establish 19 Project ECHO networks across a range of specialities. The main objectives of the 2016-2017 evaluation were to ascertain if Project ECHO had been effective in Northern Ireland and to measure an increase in knowledge and self-confidence of HCP's involved in the Project. Each network was required to complete an evaluation of their network on factors such as upskilling staff through increased knowledge and confidence, relationship building between primary and secondary care, and whether Project ECHO created opportunities to share best practice and changes in practice.

4 Zhou C, Crawford A, Serhal E, Kurdyak P, Sockalingam S. The Impact of Project ECHO on Participant and Patient Outcomes: A Systematic Review. Acad Med. 2016 Oct;91(10):1439-1461. doi: 10.1097/ACM.0000000000001328. PMID: 27489018.

5 McBain RK, Sousa JL, Rose AJ, Baxi SM, Faherty LJ, Taplin C, Chappel A, Fischer SH. Impact of Project ECHO Models of Medical Tele-Education: a Systematic Review. J Gen Intern Med. 2019 Dec;34(12):2842-2857. doi: 10.1007/s11606-019-05291-1. Epub 2019 Sep 4. PMID: 31485970; PMCID: PMC6854140.

6 Glass LM, Waljee AK, McCurdy H, Su GL, Sales A. Specialty Care Access Network-Extension of Community Healthcare Outcomes model program for liver disease improves specialty care access. Dig Dis Sci. 2017;62(12):3344–9. doi: 10.1007/s10620-017-4789-2

7 Anderson D, Zlateva I, Davis B, Bifulco L, Giannotti T, Coman E, et al. Improving pain care with Project ECHO in community health centers. Pain Med (Malden, Mass.) 2017;18(10):1882–9. doi: 10.1093/pm/pnx187.

The 2015-2017 evaluation identified that Project ECHO had the potential to be a key enabler to deliver system change and transformation of services within Northern Ireland. Following an EU-wide tender exercise in 2018, Hospice UK was commissioned by the Health and Social Care Board in Northern Ireland to deliver services for the provision and facilitation of 30 Project ECHO knowledge networks across Northern Ireland. This Report evaluates the period from 2018-2020, as well as providing a preliminary analysis of the role of ECHO in Northern Ireland during the COVID-19 pandemic.

Project ECHO is frequently examined as a research project and not in 'real world' settings. This evaluation addresses this gap by evaluating the impact of ECHO as an integrated service within the health system. Additionally, while most global research on ECHO focuses solely on healthcare providers, the 34 Networks in Northern Ireland represent a mix of clinical and social care, providing insights on the impact of ECHO across different disciplines.

Evaluation Objectives

The Evaluation aims to describe and assess the activity and impact of Project ECHO networks in Northern Ireland between 2018-2020. The evaluation seeks to identify:

- the outcomes that each ECHO network hoped to achieve and how successful they were in achieving these;
- trends and patterns regarding impact across all 34 Networks
- if participation in the ECHO programme added value to service delivery and patient and carer experience and outcomes;
- the effectiveness of the ECHO network hub delivery.

These evaluation objectives are based on the key measures and outcomes identified by the HSCB in their service specification and monitoring requirements for Project ECHO[8]. Beyond the delivery of 30 high quality Knowledge Networks, the HSCB sought to demonstrate key outcomes related to:

- the impact of ECHO in supporting participant's knowledge and support needs;
- impact on increasing confidence of participants to treat patients;
- impact on increasing skills and capacity to treat patients;
- evidence that Project ECHO is embedded in network plans for service transformation and is contributing to the transformation agenda.

8 Tender for the Provision and facilitation of Project ECHO® (Extension for Community Healthcare Outcomes) knowledge networks across Northern Ireland working in partnership with HSC ECHO Support Infrastructure. CFT 1098558

Approach to Evaluation

Project ECHO: a Case Study Approach

A case study approach[9] allows multiple data sources to be analysed in order to assess the impact and outcomes of the Project ECHO networks. Each network is evaluated as both a stand-alone case study, and as integrated case study of Project ECHO as a whole. The metrics of evaluation were related to each Network's individual and specific key objectives, short-term and long-term goals. Common and recurrent themes, patterns and trends were then identified from multiple data sources and highlighted in the Overview of Impact section of the report.

What is a Case Study and why is it an appropriate approach to evaluating ECHO?

A case study is often described as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2003). It allows for practical, real-time evaluation and the flexibility to evaluate multiple interconnected objectives. These different and complex data sources and types (quantitative and qualitative) can then be triangulated to identify themes, patterns and trends in the data, as well as improving rigour and confidence in results. A case study approach allows both the analysis of individual networks with Project ECHO, as well as themes, patterns and trends across all the networks as a whole.

Three in-depth case studies are presented to provide further insight into the impact and outcomes of the ECHO methodology in three different areas. The Optometry/Ophthalmology network highlights the role of the ECHO methodology in supporting service transformation over a long period of time; the Neurology Network highlights the possibilities that ECHO offers in a clinical environment, supporting improvement of clinical knowledge, confidence, and reducing referral; while the Prisons Healthcare Networks shows the role of ECHO in facilitating multi-agency working in a complex environment.

Data Sources Included within the Evaluation

Multiple and diverse data sources are included with the evaluation. Data were collected on each network's activities and outputs (e.g. quantity and quality of sessions), processes (how the Project ECHO methodology was used within different health and social care contexts), and outcomes (the impact on participants, patients and healthcare system).

Data Collection Methods

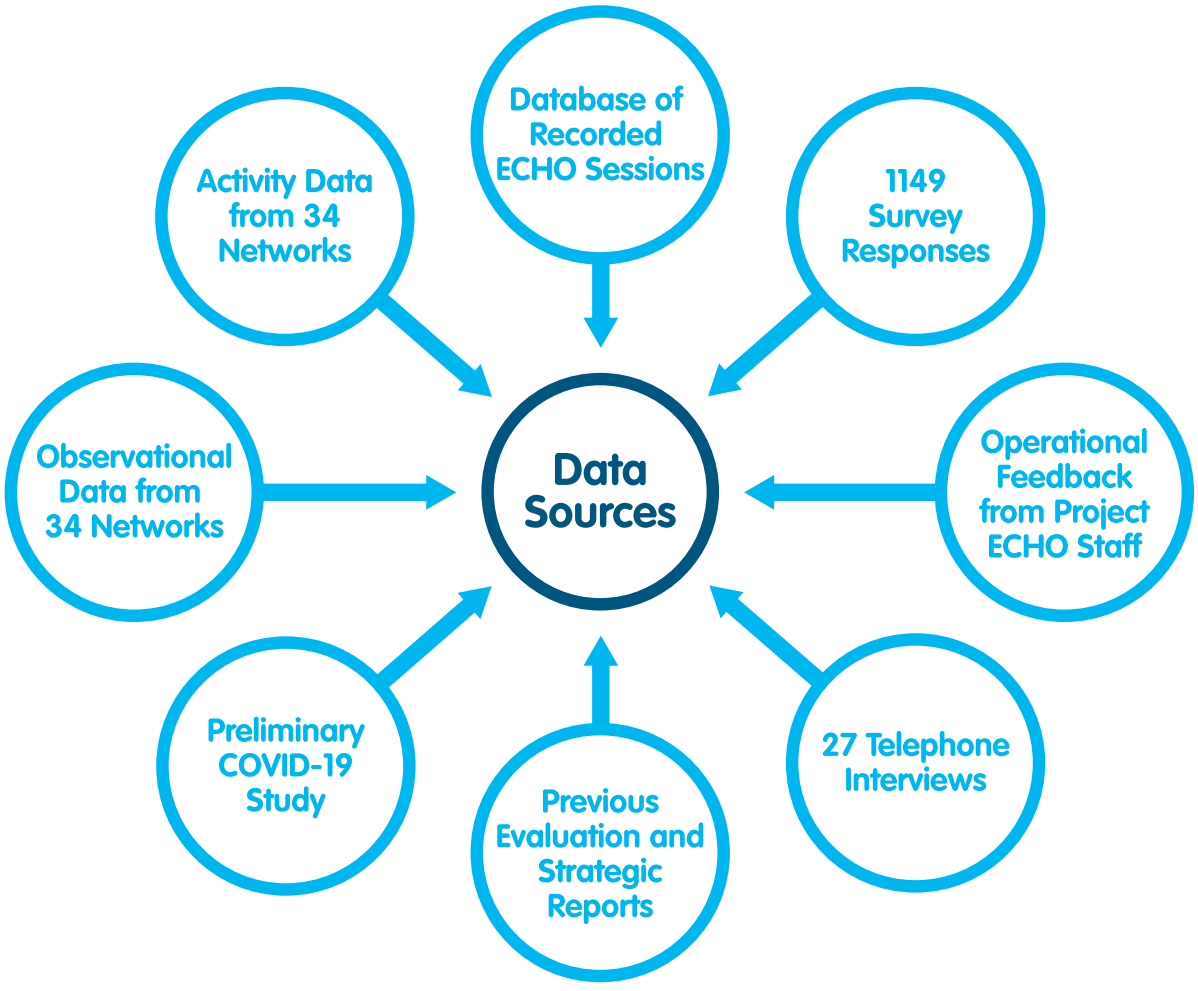
Co-designed and individually tailored surveys were issued to each network's registered participants. Participants were sent one reminder to complete the survey and the survey was open for between 2 weeks – 1 month. Additionally, a participant satisfaction survey was issued to all registered network participants on two occasions in 2018 and 2019. Observational data were collected at each ECHO session by the network administrator, who assessed the quality of the session and completed an observation form.

9 Yin, R. K. (2003). Case study research: Design and methods (3rd ed.). Thousand Oaks, CA: Sage.

Interviews were conducted with network leads and participants. Purposive sampling was used to identify a range of network leads, facilitators and educators across different health and social care contexts. Both high and low attending participants were selected in order to capture a wide range of perspectives across Project ECHO networks. Interviews lasted between 15 and 45 minutes, were digitally recorded and transcribed verbatim. Data was analysed thematically according to Braun and Clarke (2006)[10] (Familiarisation; coding; generation of initial themes; reviewing; refining and defining). A flexible approach incorporating both inductive and deductive approaches (Fereday, 2006)[11] was used, with deductive categories and codes identified from the ECHO 101 Evaluation Guide[12] (Processes and Outcomes) developed by the New York Academy of Medicine.

Note on Data Collection and Analysis

Given the participatory nature of the Project ECHO methodology, each network had co-ownership of the evaluation of their own networks. As such, surveys and survey questions issued to each network were specifically tailored to the needs of that network. This report, therefore, presents findings using multiple metrics, in order to best reflect the survey questions asked to different networks.



10 Virginia Braun & Victoria Clarke (2006) Using thematic analysis in psychology, Qualitative Research in Psychology, 3:2, 77-101, DOI: 10.1191/1478088706qp063oa

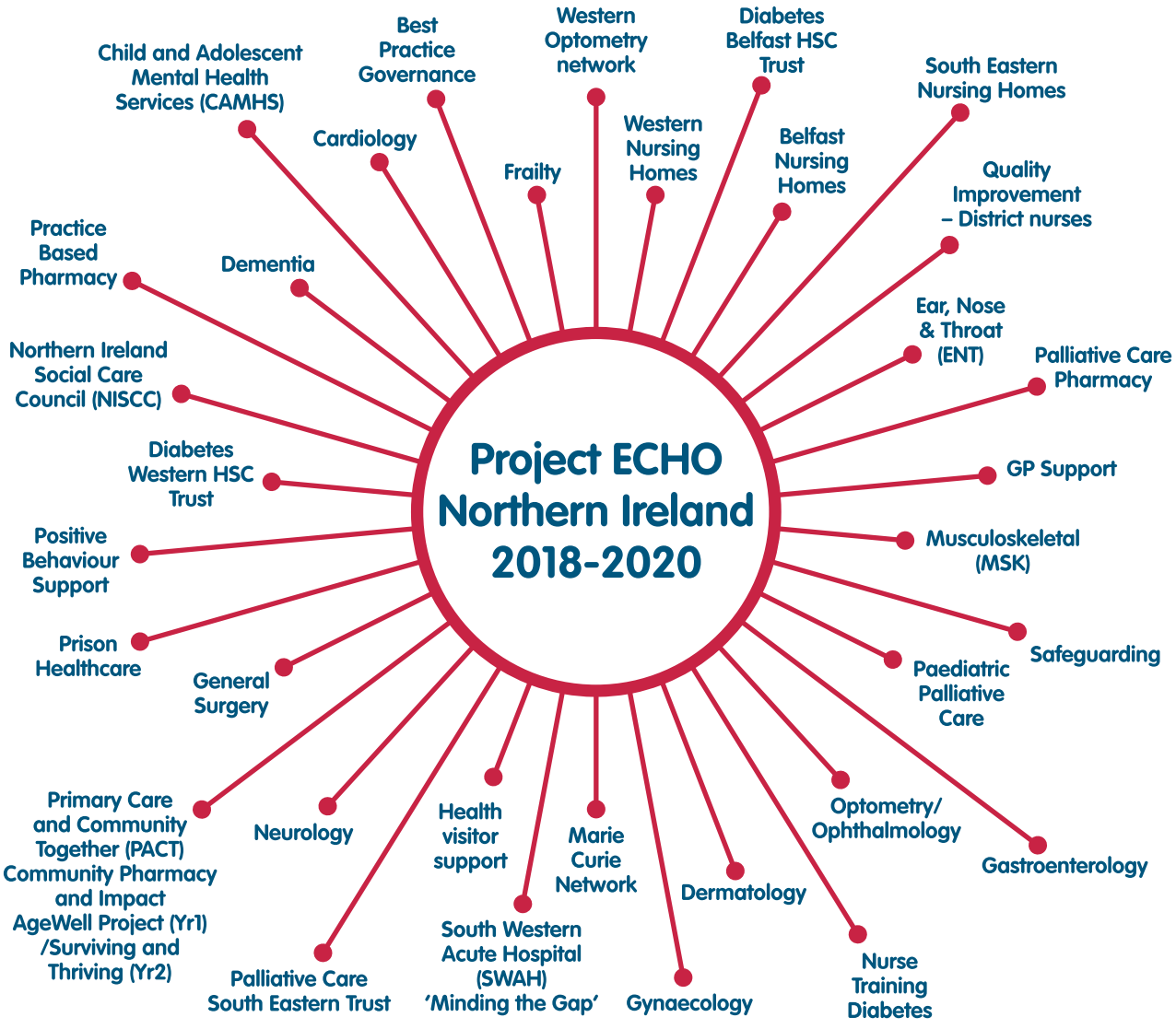
11 Fereday J, Muir-Cochrane E. Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. International Journal of Qualitative Methods. March 2006:80-92. doi:10.1177/160940690600500107

12 Project ECHO® Evaluation 101: A Practical Guide For Evaluating Your Program. NYS Health Foundation. https://nyshealthfoundation.org/resource/project-echo-evaluation-101/

Results of Project ECHO Northern Ireland, 2018-2020

Overview of Networks and Activity

A total of **34 ECHO networks** operated during the Evaluation period of 2018-2020. Over the course of the Evaluation period, these ran **357 ECHO sessions** attended by **2101 individuals** (number of individuals attending at least one session). The median number of participants per session was 13. A full breakdown of attendance per network is provided in Appendix Item 1. These figures represent a significant increase in ECHO activity from 19 knowledge networks supported by Project ECHO NI in 2016-17. A lack of individual data on participation between 2016-2017 means it is not possible to directly compare participant numbers, but these have also likely increased significantly. Two Networks (Best Practice Governance and Diabetes Western) did not complete their programmes due to challenges in recruitment, sustainability and the impact and disruption of COVID-19 (detailed in the Appendix section).



Network's Goals and Objectives

Each network set their own goals and objectives following individual curriculum setting days at the beginning of the year. A key objective, short-term, and long-term goals were identified within a logic model in order to focus activities and track progress. The majority of networks (80%), as they were at the initial stages of their ECHO journeys, focused their key objectives on improving outcomes for health and social care providers, such as improved knowledge, confidence or self-efficacy. 53% identified a key objective that included health system outcomes such as improving referral pathways and including the development of networks, collaboration and integrating care. Only 13% of Networks identified a key objective that specifically mentioned patient outcomes.

As networks progress, objectives are intended to evolve towards supporting embedding ECHO in service delivery models. Examples of the objectives identified by different networks are included below and a full list of objectives, short-term goals and long-term goals is provided in the Appendix (Item 2).

Examples of Networks' Key Objectives

To develop the capacity to effectively identify common ENT conditions, instigate treatment and manage these long term conditions within primary care, with appropriate specialist input when required.
Ear, Nose & Throat (ENT) Network

To improve the overall quality of patient care and the efficiency of training delivery to registered nurses.
Marie Cure Network

To create a regular virtual meeting place to share key learning, provide support to isolated practitioners and improve communication and understanding between primary and secondary care.
South Western Acute Hospital (SWAH) Network

Short-term outcomes focused on improving provider knowledge, awareness, confidence and self-efficacy, as well as improving professional satisfaction, support and improved relationships and communication between different levels of the health system. Short-term targeted outcomes included:

- Improved knowledge: of a condition, symptom management, medication management, red flags.
- Improved confidence: to diagnose or manage a condition, prescribe, manage patients without making a referral or making a more informed referral.
- Improved awareness: of guidelines or pathways, referral procedures (when to refer).
- Improved relationships and communication: between primary and secondary care and other professional boundaries, and/or across sectors
- For participants to feel more supported and less isolated: through access to peer support and the opportunity to network and build relationships with colleagues.

Longer-term outcomes and impact that networks hoped to achieve focused predominately on health system factors including reducing referrals and improved management on waiting lists. Longer-term targeted outcomes included:

- Increased capacity to manage patients within primary care.
- Improved management of patients whilst on waiting lists.
- Reduced demands for secondary care where appropriate / prevention of unnecessary admissions to hospital.
- Improvement in the quality of referrals to secondary care.
- Improvement in the quality of care delivered to patients, service users, and/or carers.
- Improvement in communication with patients and carers.
- Scoping of opportunities to innovate and transform care.

Overview of Levels of ECHO Networks

Year 1
- New to ECHO. Establish applicability of ECHO to chosen topic-area.

Year 2
- Develop the knowledge network/ community of practice, involving more disciplines & members.

Year 3
- Well established network and starting to consider how to embed ECHO in their service delivery model. i.e. building into srvice model, job plans, getting ready to be self-sustainable.

Descriptive Overview of Impact across Networks

The Project ECHO Evaluation 101 guidelines highlight three main domains for impact analysis: impact on **Providers**, **Patients**, and the **Health System**. Across all three domains, Project ECHO demonstrated positive impact related to the key objectives of increasing knowledge, confidence and self-efficacy of health and social care providers. Analysis of both quantitative and qualitative data pertaining to these domains indicates the highly interconnected nature of outcomes. Patient and health system outcomes often stemmed from increased knowledge, confidence and capacity gained by health and social care providers. Evidence suggests positive benefits for patients linked to health and social care provider's participation in ECHO, as well as reduced referral and increased confidence to manage patients at primary level.

Analysis of each Network's progress related to self-identified goals and objectives (see Appendix for detail) indicates that most networks demonstrated a high degree of success in achieving short term goals. Progress towards achieving long term goals was more varied across Networks, with higher Level Networks demonstrating most success.

Improved Knowledge, Confidence and Satisfaction

Health and social care providers reported improved knowledge relating to a range of areas including clinical knowledge, symptom recognition, patient management, awareness of up-to-date best practice guidelines and new treatments.

Twenty-four ECHO networks reported results across a Likert-type scale of agreement with statements relating to the impact of ECHO. Participants described benefiting from both access to specialist knowledge, as well as from sharing experiences and peer-learning. **93%** (n=102/110)[13] participants reported improvements to their practice and management of patients as a result of ECHO, while **89%** (n=252/283) reported that ECHO had improved their levels of clinical knowledge, and **89%** of healthcare providers (n=186/208) stated that ECHO had improved their self-efficacy and confidence in managing patients. **89%** (367/413) said they had applied knowledge gained from ECHO in their practice.

Participants across the ECHO networks reported that the information they gained through the sessions would be useful and they had/would apply it within their own practices. The sessions were described as having helped to improve confidence in managing patients and in improving providers' self-efficacy. Positive outcomes described by healthcare providers are likely to be interconnected to positive patient and health systems outcomes such as improving patient experiences and reducing unnecessary referral.

Beyond having access to specialist knowledge and the opportunity to benefit from peer-learning, participants across the networks described the benefits of being part of a community of practice. Particularly for participants working in isolated and remote areas, or working in roles in the community, this virtual community was described as being important in terms of improved practice, improved professional satisfaction, and learning across disciplines and levels of

13 As described in the section on Data Collection, different evaluation questions and metrics were used by different Networks. Number of respondents therefore differed for each metric and are presented in the text.

the health system, and developing a feeling of support and connection between colleagues. **81%** of participants (225/279) reported improved satisfaction, reduced isolation and feeling more supported in work.

Five networks evaluated the impact of the Programme using a retrospective pre/post survey. Across all Networks and metrics participants reported a positive impact of ECHO, ranging from 0.25 point difference to 1.86 point difference, with an average increase of 0.89 across the different networks and metrics.

Quotes from ECHO Participants – Impact on Healthcare Providers

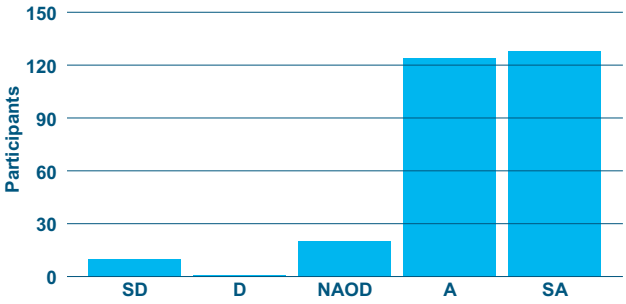
"I wouldn't have felt either confident or competent enough to provide that service if I hadn't have gone those 3 years with the continual knowledge building and that gradual increase of knowledge that I built through ECHO"

"I gained a lot from it, probably more from the experts, but also from hearing other people's problems and how they solved those problems"

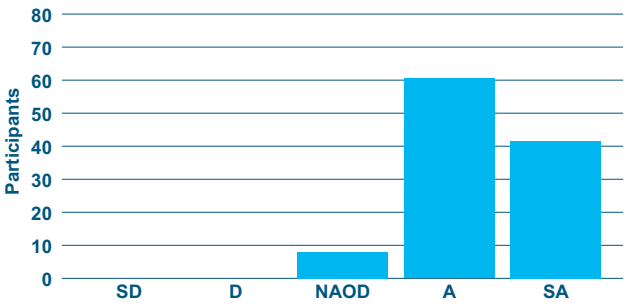
"Speaking with other members in different areas, dealing with the same situation and coming up with solutions whether it be symptom management or breathlessness, bowel obstruction or whatever. It was really honing in on patients similar to mine and maybe things that I hadn't thought about."

"The people we invited to join Project ECHO where the most remote District Nurses teams, with regards to the Peninsula, Donaghadee and Mourne Areas, people at the edge of the trust that still need support"

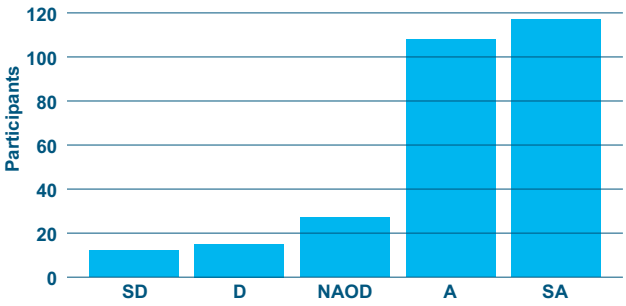
Impact of ECHO: Improved Knowledge



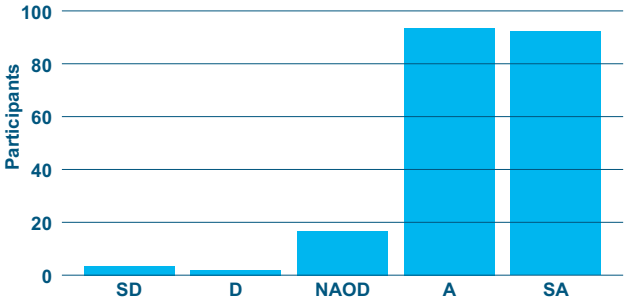
Impact of ECHO: Improved Treatment and Practice



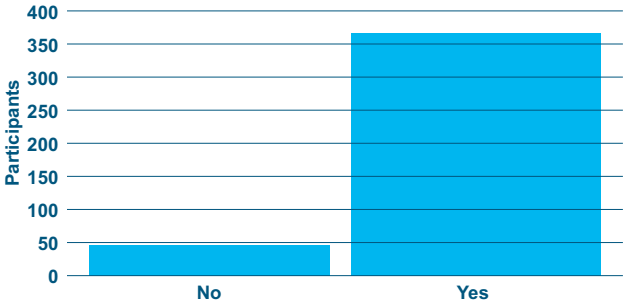
Impact of ECHO: Confidence and Self-efficacy



Impact of ECHO: Improved Satisfaction and Support



Impact of ECHO: Application of Knowledge and Skills



SD – Strong Disagreement/No D = Disagree/No
NAOD = Neither Agree/Disagree A = Agree/Yes SA = Strongly Agreement/Yes

Network	No. Participants	Scale	Metric	Pre-ECHO Weighted Average	Post-ECHO Weighted Average	Point Difference
Diabetes Belfast	11	7 point	Knowledge and Skills	4.18	5.18	+1.00
Diabetes Belfast	11	7 point	Confidence	3.00	4.09	+1.09
Neurology	11	5 point	12 measures related to Knowledge, Skills and Confidence[14]	3.05	4.12	+1.07
Nurse Training Diabetes	4	5 point	Knowledge and Skills	4.25	4.50	+0.25
Nurse Training Diabetes	4	5 point	Confidence	3.75	4.00	+0.25
Positive Behaviour Support	23	5 point	Knowledge	3.50	4.30	+0.80
Positive Behaviour Support	23	5 point	Skills and Practice	3.64	4.16	+0.52
Positive Behaviour Support	23	5 point	Self-Efficacy	3.56	4.10	+0.54
Quality Improvement District Nurses	8	7 point	9 measures related to Knowledge & Skills	2.88	4.74	+1.86
Quality Improvement District Nurses	8	5 point	9 measures related to Confidence	1.94	3.49	+1.55

Benefits for Patients

The impact of Project ECHO on patients was described in terms of improved patient care and experiences. Increased clinical knowledge, self-efficacy and confidence enabled healthcare providers to access to new treatments and therapies, and allowed patients to be managed within their own locality, and to experience reduced waiting times.

Outcomes for patients were described in varied terms. For example, members of the Optometry network described improved outcomes for patients through connecting ophthalmologists and GPs. This enabled GPs sign off on a patient receiving a new treatment in order to prevent sight loss.

One participant described being able to more efficiently access a brain scan for a patient with migraines and other potential 'red flag' symptoms. Through efficiently accessing referral, the patient was seen quickly and avoided a long and potentially worrying waiting period. Participants working in end-of-life care described learning and applying knowledge on best practice regarding managing side effects of pain treatments, as well as how to adapt the physical space around the patient to improve experience and comfort.

Available data only includes feedback from healthcare providers on the perceived benefits for patients. Research involving patients under the care of a healthcare provider participating in ECHO may enable stronger conclusions in the future.

Improved Networks, Relationships and Referral, but limited impact on Changing Policy and Processes

A number of impacts on the **health system** were described. Improved confidence in providers' skills, knowledge and management of patients, resulted in participants describing being more confident and efficient in their use of referrals. At times this was described at helping to reduce unnecessary referrals and ensure patients were treated in primary care, and in other examples this was described as having a better understanding of referral pathways thus allowing more efficient referral and reducing waiting times for patients. **73%** (114/156) of participants said that ECHO had supported them across a range of metrics

14 See Case Study for Further Detail

Quotes from ECHO Participants – Impact on Patients

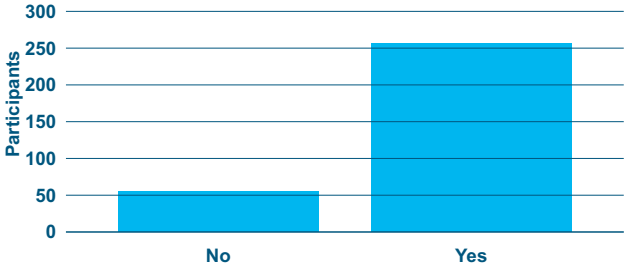
"I had a guy who had experienced exercised induced headaches, which I was putting down to a form of 'migraine'. But through asking questions (I found) there is a potential that this guy could be leaking fluid in his brain. He wouldn't be a true 'red flag' but he definitely needs a brain scan. The thing is I can't access brain scans without a consultant's approval, which meant a referral to the hospital, but anyway (the educator) informed me of the specific guideline that would fit within the Trust which meant I could contact the hospital. Anyway we got the scan done and he has been reassured, I was literally speaking to him 2 hours ago and he is completely fine, but he was looking at going privately or going on a long waiting list".

"It has been very timely for us and really relevant to issues that we are having, things like 'blended diets'. We had a child around the time the ECHO was done and their family had just asked us if we could provide a 'blended diet'. The educator doing the presentation at the session was able to give us some guidance on where to get advice about our policies around 'blended diets' and since then we have done that, our policy is in place that is going through our local government at the moment and then we are going to start doing blended diets".

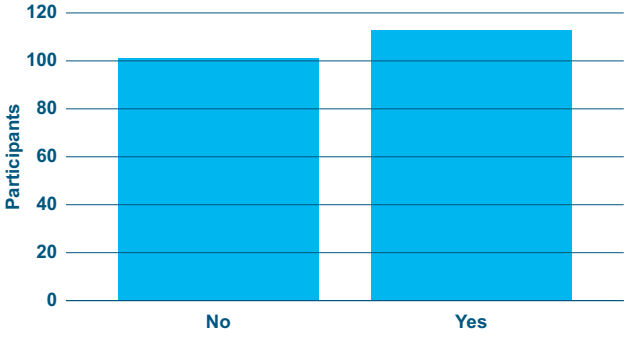
relating to referral, such as being more timely, efficient, and confident in managing patients at primary levels. A total of **82%** (257/312) reported better relationships between levels of the health system, improved collaboration between healthcare providers, and improved knowledge about different services offered within their area.

Results varied on whether ECHO helped to contribute to long-term changes in processes, guidelines or policy, and perhaps reflects the limited embedding of wider systemic changes driven by Project ECHO. A total of **53%** (113/214) stated that ECHO had contributed to changing processes, guidance and policy. For some networks, for example, the Prisons Healthcare Network (see Case Study), long term changes to processes, guidance and policy were described in detail. It should be noted that for some Networks, changing processes, policy or guidance may not have been an explicit objective.

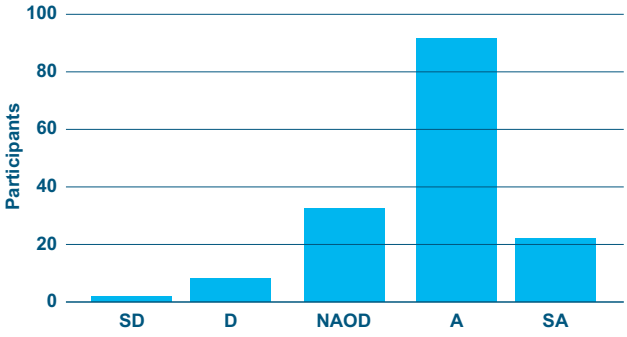
Impact of ECHO: Improved Relationships and Collaboration



Impact of ECHO: Changing Processes, Policy and Guidance



Impact of ECHO: Improved Referral



SD – Strong Disagreement/No D = Disagree/No
NAOD = Neither Agree/Disagree A = Agree/Yes SA = Strongly Agreement/Yes

Quotes from ECHO Participants – Impact on Healthcare System

"It made practitioners more relaxed in their own clinical primary care setting and probably raised the bar for referrals. I imagine a lot of people feel that way as well more responsibility and monitoring situations rather than straight to referral."

"One scenario in particular (was getting) direct access through a specific pathway, which meant that I was able to get things arranged, reassure a patient and he is now no longer on a waiting list."

"Our Minister of Justice at the time had asked for a review of vulnerable prisoners and so that review was on going and documentation was being developed around the pathway for the vulnerable people. Our ECHO fed into that and the educators would bring "Best Practice and Guidelines" themselves the manifestation of that was there was learning and as a result difficult conversations that happened within the ECHO. Then we produced the self-harm framework and that was the time we had collectively looked at what where we doing and what can we do."

Case Study: Optometry/ Ophthalmology Network

The objective of the Ophthalmic Network was to build capacity and capability within primary care optometry to assist in the monitoring and review of patients, with defined clinical conditions, within a robust and quality assured model of service provision; to improve patient experience with regards access to care; and to increase knowledge and self-efficacy of participants. In the long term, the Network sought to embed ECHO into a service specification to provide governance and support for the clinicians involved in co-management schemes delivering enhanced care in the optometric primary care setting. This ECHO supported the development of the Primary Care Optometry Ocular Hypertension (OHT) Review and Monitoring Service provided by primary care optometrists.

The Network has been operating in some form as an ECHO Network for a number of years, initially set up as a pilot to investigate how ECHO could support Glaucoma and Macular pathway reform and decision making in order to reduce referrals to secondary care. Following evaluation of the initial pilot ECHO was adopted as a model and platform to support ophthalmic service transformation. HSCB commissioned the Ocular Hypertension Review and Monitoring regional Optometry-delivered enhanced service. A key component of this service accreditation required attendance and participation at ECHO sessions.

The current optometry/ophthalmology ECHO provides the training, governance and networked approach which underpins service reform and transformation around new models of care in the glaucoma pathway. Without the ECHO knowledge network this transformation would not likely have been possible and may not have been sustainable.

This Level 3 Network delivered 9 sessions within the evaluation period and was attended by 28 participants. 14 participants responded to the evaluation survey, in which they provided feedback on their perceived most significant changes from their involvement in the Network. Participants described increased knowledge, confidence and understanding of pathways, including confidence on referral and reducing unnecessary referral and better understanding between colleagues. 100% of participants said they would like to continue within the network.

A number of participants highlighted most significant change relating to the use of ECHO in supporting the development and implementation of OHT Review and Monitoring service. Participants described feeling more confident in managing patients, and that

patients described the benefit of being treated closer to home. Participants, for example, described having better knowledge of OHT and being more confident in knowing how to differentiate it from Glaucoma, as well as being able to provide earlier referral for patients with suspected OHT and Glaucoma and, fewer unnecessary referrals.

This Network demonstrates significant success in both achieving short term and longer terms goals. A post-project review (at the end of the first year, 2019) of the Primary Care Optometry Ocular Hypertension Review and Monitoring Service stated that the project "demonstrates that overall the OHT Review and Monitoring Service is a safe and accessible service for patients". A total of 450 patients were invited to use access the service by the Belfast HSCT between Jan-Dec 2019, of which 271 patients (60%) took up the offer and were been discharged to access their ongoing review in primary care. In the first year of the service 129 patients accessed their review and clinical care via the OHT Review and Monitoring Service in primary care. From initial implementation in January 2019 to date approximately 1,000 patients have had their care transferred from the hospital eye service to primary care Optometry and, in the time period February 2019 – July 2021, 974 episodes of clinical care have been provided by Optometrists through the OHT Review and Monitoring Service and supported by ECHO.

Through the Network's support for the OHT Review and Monitoring Service, it demonstrates the impact ECHO can have on integrating new pathways and systems into the health service, supporting more effective referrals and better connections between different areas of the health service. Within this Network, ECHO demonstrates that it can provide the opportunity support the learning elements required in new models of care, while also creating an environment which develops a culture of safe learning, psychological safety, and practitioner support and well-being, all of which are essential to supporting service transformation.

"For most of my 28 year career I felt I was talking a different language from Ophthalmologists with regard to Glaucoma- now I have a much better understanding. Thanks to ECHO, I now (mostly) understand why secondary care make the decisions they do. Also I feel that the Ophthalmology specialists involved have been very generous with their time and knowledge and we are more like a team now with a continuum between community optometry and secondary care."

"Our practice can now offer OHT management. All our Optoms benefit from what we discuss in ECHO sessions and would be happy to participate if we could work out how to include more Optoms across the province."

"Confidence- I hated trying to detect glaucoma for years; now I feel I know what I am doing in detection and talking to patients about their eye health."

Equally, ECHO provided a space in which practitioners felt supported and in which relationship development and shared learning were frequently reported.

"Much more open conversation and asking of others opinion. Often subtle change can be hard to pick up and second opinions can be invaluable."

"It's changed the relationship where many of us work in isolation to encourage active discussion of cases in a safe environment."

"I feel more open to ask questions and advice of peers and learn from each other's experiences"

Case Study: Neurology Network

The Neurology network sought to build capacity of GPs to manage more patients within the community and provide higher quality of care through education and improved access to specialist neurological advice. The current neurology service model is largely focused on outpatient delivery. At the end of March 2017 there were 13,522 people on the waiting list for a first outpatient appointment with 5055 waiting more than one year. The Network was initiated within the strategic context of the development and piloting of the Non-Contact Assessment Service (NCAS) in Southern Trust area. NCAS is a method of virtual triage, by a Neurologist, of new GP referrals. An estimated 30% of referrals could be managed in an alternative way at the primary care level. However, preparatory work to develop additional capacity and knowledge at the primary care level is required. ECHO was initiated as a mechanism to support such capacity-building.

In this context, the aim of this network was to improve GP's knowledge of neurological conditions; to improve GP's confidence in the management of neurological conditions; and to improve relationships between primary and secondary care. The intended short-term outcomes included to improve the confidence of GPs to manage neurological complaints and implement first steps in investigation; and to more effectively manage patients while on waiting lists. Long-term outcomes for this network if the objectives were achieved were to review changes in referral patterns: reduce outpatient secondary demand; improve outcomes for patients; and to inform best practice locally through the Development of a GP practice protocol.

The Neurology Network ran for two years during the Evaluation period, delivering 17 ECHO sessions (9 in Year 1, 8 in Year 2), and was attended by 60 participants in Year 1 and 51 participants in Year 2. Of the 11 participants who responded to the final survey, 64% (n=7) had participated in the Network over the two years, while 36% (n=4) had participated for one year. 91% of survey respondents (n=10) had attended nine or more ECHO sessions. Survey respondents worked in the Belfast Trust (n=3), the Northern Trust (n=3), The South Eastern Trust (n=1) and the Southern Trust (n=4). No respondents to the survey worked in the Western Trust.

Results from the Network were overwhelmingly positive regarding short-term of aims of increasing GP knowledge and confidence in managing neurological complaints. 100% of participants reported that participation in the network had helped in their assessment of patients with neurological conditions/symptoms; and 91% saying it had positively impacted on their ability to appropriately refer patients. Participants stated more confidence in diagnosis and management of patients, and improved relationships between primary and secondary care. Retrospective analysis of knowledge on a Likert scale (1-5) indicated improved knowledge and confidence across all 12 assessed domains by +1.07 point (average weighted average prior to participation in the network = 3.05; average weighted average post network = 4.12).

Participants described the most significant changes to their practice as increased confidence in managing patients, as well as understanding and using referral more effectively. Some participants reported improved understanding, knowledge and recognition of different neurological conditions, and that relationships between primary and secondary care had been improved through ECHO. Most significant impact on patients included less referral and better and faster treatment at primary level meaning patients did not have to wait to be seen at secondary level.

These results suggest the benefit of ECHO in supporting management of neurological conditions at primary level and developing stronger relationships between primary and secondary level. The extent to which referral has been reduced would be an important area of further research, as would research on

Domain. Comfort Managing Patients in.	Pre-ECHO Weighted Average	Post-ECHO Weighted Average	Point Difference
Daytime Surgery with chronic headache	3.36	4.27	+0.91
Out of Hours with chronic headache	3.09	4.27	+1.18
Daytime Surgery with dizziness	3.00	4.09	+1.09
Out of Hours with dizziness	3.00	4.09	+1.09
Daytime Surgery with tremor	2.82	4.09	+1.27
Out of Hours with tremor	2.91	4.00	+1.09
Daytime Surgery with transient loss of consciousness	3.09	4.09	+1.00
Out of Hours with transient loss of consciousness	3.00	4.09	+1.09
Daytime Surgery with numbness	2.91	4.09	+1.18
Out of Hours with numbness	2.82	4.00	+1.18
Daytime Surgery with new onset headache	3.27	4.18	+0.91
Out of Hours with new onset headache	3.27	4.18	+0.91
Average Weighted Average	**3.05**	**4.12**	**+1.07**

the degree to which ECHO has supported the development of a Non-Contact Assessment Service (NCAS) and whether this approach and learning from this experience can influence service changes in other areas.

Feedback on the value of ECHO:

"It's great to have this forum to participate in distance learning with our specialists in Northern Ireland."

"The course was excellent. The speakers were excellent teachers and I thoroughly enjoyed the presentations and discussions. It was also very well facilitated."

Case Study: Prisons Healthcare Network

In 2008, the South Eastern Health and Social Care Trust (SEHSCT) started providing the healthcare in Northern Ireland's three prison sites, Magilligan, Maghaberry and Hydebank Wood College. Participants in the Network included frontline staff, management and clinical specialists in SEHSCT and the Northern Ireland Prison Service, a team from the Criminal Justice Inspectorate Northern Ireland, HMP Whatton, a collaboration from the Cardiff Prisons and representation from Health and Justice England.

9 sessions were held and were attended by 90 individuals with a median attendance of 19 attendees per sessions. The ECHO Network set out to provide teaching on the following four themes: Palliative Care; Blood Borne Viruses; Chronic Respiratory Diseases; Sexual Health and Harm Reduction. Focus groups and interviews were held with members of the Network in order to evaluate its impact.

Participants described outcomes that demonstrated changes and improvement for both individuals in the networks and for wider service delivery. Participants reported improved knowledge, upskilling, and an increased awareness of trauma informed practice through having access to both specialised training and to membership in the network. Self-efficacy, confidence, reduced anxiety of prison staff in managing self-harm, and access to new information were all described as beneficial, and participants described broad changes in attitude towards being more supportive for approaches such as harm minimisation.

Wider changes and outcomes in service delivery, catalysed through the relationships developed within ECHO, were described as encouraging a greater focus on client-centred planning, a person centred approach to care and rehabilitation, and a greater recognition of the limitations of a one-size-fits-all approach. An increased emphasis on tailored care, user input, and the need to appreciate individual's specific lived experiences were described by participants across the network.

The ECHO approach was considered effective by participants in terms of sharing knowledge, new information, best practices and experiences. Participants reported benefiting from the conversation, debate and sharing that was generated throughout the network, while also recognising the potential for the network in bridging knowledge gaps between different levels, service providers, and institutions involved in delivering health services in prisons. Access to the knowledge shared by community health providers during sessions was reported as equally beneficial. Relationships developed through the networks allowed participants to better appreciate perspectives of different organisations and to develop a shared language in order to address challenges collaboratively.

The ECHO network, and the relationships developed through it, helped to catalyse the development of a new referral pathway between the Northern Ireland Prison Service and the South Eastern Health and Social Care mental health team, as were new operating procedures for keeping people safe in custody. Health promotion days were initiated, and trauma training was rolled out to all prison and healthcare staff. ECHO was described as important in shaping quality improvement work of the mental health team within the prisons, as well as providing a space to co-produce future aims and objectives. This case study provides an example of the ECHO methodology facilitating a multi-agency approach to collaborating within a complex environment.

The ECHO Approach:

Is the ECHO Model effective; Factors Affecting Impact and Success of Networks; and What makes a 'Good' ECHO?

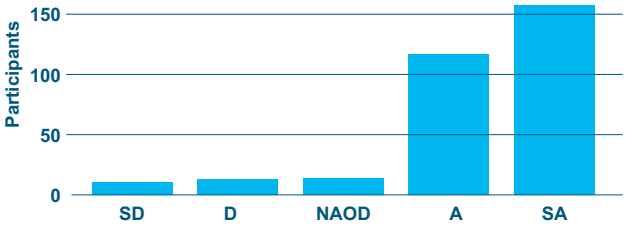
The ECHO approach was considered effective and high quality by participants. Case-based learning, collaborative and facilitated discussion and the ability to meet other healthcare providers in similar fields were described as important and useful approaches to improving outcomes for healthcare providers, patients and the health system more broadly.

88% (274/311) of participants responding to the surveys found that ECHO was an effective approach and that case-based learning was effective in improving levels of knowledge, confidence and support. **96%** (209/217) reported ECHO sessions as either high quality (49%) or very high quality (47%). **96%** (277/290) reported that content delivered in the sessions were relevant to their practice, **92%** (317/343) said they would recommend ECHO to colleagues and **96%** (234/243) said they would participate again if given the opportunity.

Semi-structured interviews were additionally conducted with each member of the Project ECHO Northern Ireland Team to understand and learn from their experiences regarding the implementation of the ECHO programme; to allow team members to describe what factors contribute to a successful ECHO; to enable team members to discuss possible areas for strengthening; and to incorporate this feedback into this 'Lessons Learned' section of the Evaluation Report. This exercise was conceptually informed by Fleming's (2007) typology of reflective practice in health promotion, which focuses on the three domains of the self (individuals and teams)[15], the influence of the planning context (socio-economic and other environmental and political factors) and issues related to the process of planning/ delivery of health promotion programmes.

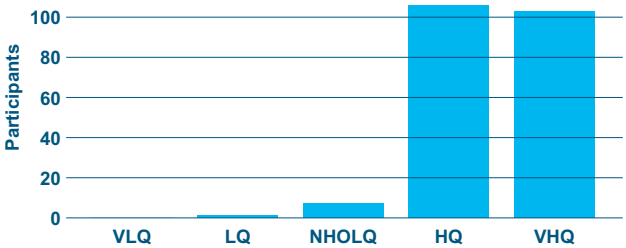
Reflections from the Project ECHO team were complimented and triangulated with observational data, ethnographic observations from the Report's author, and interview data from Network Leads. Following an analysis of the data, five interconnected common and recurrent reflections emerged:

Is the ECHO Methodology & Case-Based Learning Effective?



SD – Strong Disagreement/No D = Disagree/No
NAOD = Neither Agree/Disagree A = Agree/Yes SA = Strongly Agreement/Yes

Quality of ECHO Sessions



VLQ – Very Low Quality LQ = Low Quality NHOLQ = Neither High or Low Quality
HQ = High Quality VHQ = Very High Quality

15 Reflection—a neglected art in health promotion | Health Education Research | Oxford Academic (oup.com)

Reflection 1:
The Importance of Leadership within each Network

Leadership within networks was seen as critically important. A lot is asked of Project ECHO Network leads, including but not limited to the facilitation of sessions, organising speakers, and helping to set curriculum. They provide the anchor within each Network and session. Networks in which participation was greatest and outcome data strongest had leaders who were engaged, open, willing to learn, committed to the principle of fostering a non-hierarchical approach towards building communities of practice, and who had established networks which they were able to utilise for the benefit of the network. Network leads were important for facilitating, keeping to time, encouraging participation, and dealing with any challenges that arise during the sessions. They need to know when to step in, but equally when to step out and leave space for others to contribute. Network leads are able to avail of facilitation training to support them manage these roles, but evaluation on whether additional support would be beneficial Network leads may be useful. Network Leads also have described the challenges on their time and the difficulties of completing the role when coupled with other clinical responsibilities. All these factors have important implications when recruiting Leads for new Networks.

Reflection 2:
The Need for Content to be Relevant

Good speakers presenting information that was relevant and engaging to the Network was deemed essential. Interesting presentations and case studies lead to engaged discussion and participation. Speakers often do not have access or time to avail of the same training and support provided by ECHO to facilitators and Network leads, which may be useful to support presentations being dynamic, engaging and relevant. Delivering relevant content could be challenging in very diverse networks with a large range of levels of expertise and previous training. Curriculum setting days, in which all participants within the Network are invited to join and discuss what topics they would like to see covered, were seen as essential. It was noted, however, that there was a lack of evaluation regarding what worked well or poorly within these important sessions. Reports of Curriculum days being rushed and/or participants feeling flustered or overwhelmed were reported, indicating the need to think creatively about how to adapt the delivery of these sessions if required. Curricula can't be controlled by Leads, but must be co-designed and owned across the whole Network.

Reflection 3:
Getting the 'Right People' in the Room, On boarding and Initiation

On-boarding and Network initiation is an essential part of the process. Networks need to have a shared sense of purpose, a strategic fit, and linked to programmatic change. Leads need to understand the wider context and integrate that into the Network and its curriculum. Recruitment and registration are essential components. It's important to ensure the 'right people' are in the Room. If only managers are in the curriculum setting, but other staff attend the sessions, the Network is unlikely to be successful. If people are told to be there and not interested or engaged it is also unlikely to work effectively. Time needs to be invested to integrate people from the start, make it relevant, and to connect it to their interests and needs. Curriculum setting days allow the participatory development of the network, development of trust and relationships, communication about what ECHO is and what the model is, and identifying relevant topics.

Reflection 4:
The Value of the ECHO Infrastructure and Support

The Project ECHO team and infrastructure is essential and is one of the main elements separating this approach from other types of online and virtual webinars and training. Positive results and impact evidenced within this Evaluation would not be possible without the team (Network coordinators, IT support, managers and research officers) providing support to each Network. The team are essential in supporting the Lead, in developing good relationships, and in injecting informality, lightness and fun into the beginning of sessions. They set the rules clearly in the Introductions section of each session, which in turn allows them to be direct in asking people to turn on cameras and in asking participants direct questions. The ECHO team is there to support Leads who are often busy with many clinical commitments, to provide necessary administrative support, circulating agendas and links to meetings, technological support, and background support such as ensuring registration, recording and uploading sessions onto the online Moodle platform, and providing guidance on important issues such as data security. Zoom and online meetings remain intimidating for many participants; the Team are essential in supporting participants to navigate and use the technology and to ensure everything runs smoothly. Hospice UK staff have provided the operational backbone of the programme as per the HSC contract while the HSC ECHO team have provided the crucial interface with HSC staff to ensure that ECHO networks meet HSC goals.

Reflection 5:
The Development of Trust in Networks

For the type of sharing needed for Networks to be effective, a Network must represent a safe space in which participants feel trust in both other participants, Network Leads and the ECHO team. Trust is developed slowly by ensuring opinions are respected, that the models and principles of non-hierarchical learning are implemented and realised. Having cameras turned on, and this being enforced by the ECHO Team, is one important mechanism for building community, trust and accountability. Smaller networks were described as being easier spaces to develop both trust and participation, with ideal network sizes described as ranging between 15-40 participants (pre-COVID-19). In reality, much of the NHS is not non-hierarchical, and this can be a barrier to achieving trust and participation in Networks. If participants feel their opinions, knowledge and experiences are inferior to other members of the Network this may affect participation. Network Leads and the ECHO are important in actively working to make people feel comfortable and that their engagement is necessary.

Summary

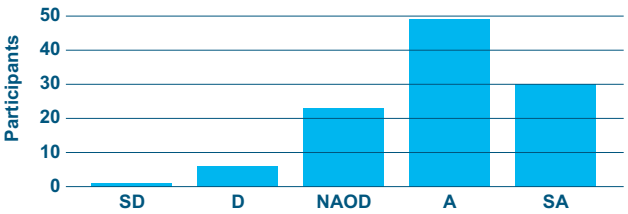
Results from participant surveys suggest that ECHO is both an appropriate and high quality programme to support healthcare providers. There are multiple factors that support ECHO in achieving these results. ECHOs need to be appropriately and collaboratively supported and developed, utilising the diverse knowledge and skills of Network Leads, participants, and the Project ECHO team. The learning from these groups is valuable not just for strengthening Project ECHO Northern Ireland Networks, but also in modelling effective approaches and documenting lessons learned that may be valuable and useful for the ECHO community globally.

Project ECHO and COVID-19: Preliminary Analysis

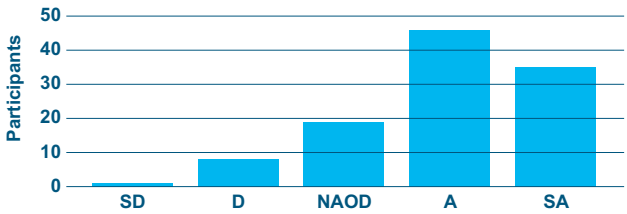
Project ECHO expanded significantly to meet demand during the COVID-19 pandemic. Approximately 15,000 participants took part in an ECHO session between March 2020-March 2021 (against an anticipated number of 7,200) with a total of 350 ECHO sessions delivered (against 240 planned). Preliminary analysis of the impact of ECHO during COVID-19, involving survey responses from 109 ECHO participants across six networks[16], focus group data from 6 networks and 7 in-depth surveys with network leads, indicates the significant benefit of ECHO for supporting healthcare providers during the pandemic. ECHO allowed connections and communities of practice to be developed and maintained when social distancing and remote working may have increased feelings of professional isolation. Participants stated that ECHO "was a brilliant experience to be able to feel supported" and that it was "a good way to keep up with other services and trusts".

Networks that existed prior to COVID described how ECHO had prepared them for online working. Existing networks were already used to online and virtual spaces and were able to quickly adapt to use these to support their response to COVID-19. Participants stated that "ECHO was ahead of the pandemic, and in many ways it was great to know that I could already use the technology and feel confident" and that they "felt it was a real advantage to have involvement in ECHO pre-COVID so we could continue uninterrupted with our network despite the pandemic".

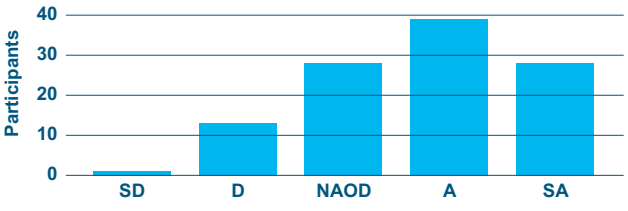
Did participation in this Network support the quality of practice and the care to patients and/or service users during the course of the pandemic?



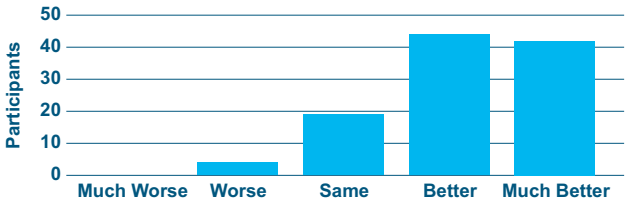
Did participating in ECHO help improve your confidence in keeping up-to-date with the evolving guidelines, processes and changes to practice during the Pandemic?



Did ECHO support adaptation of your practice during the COVID pandemic?

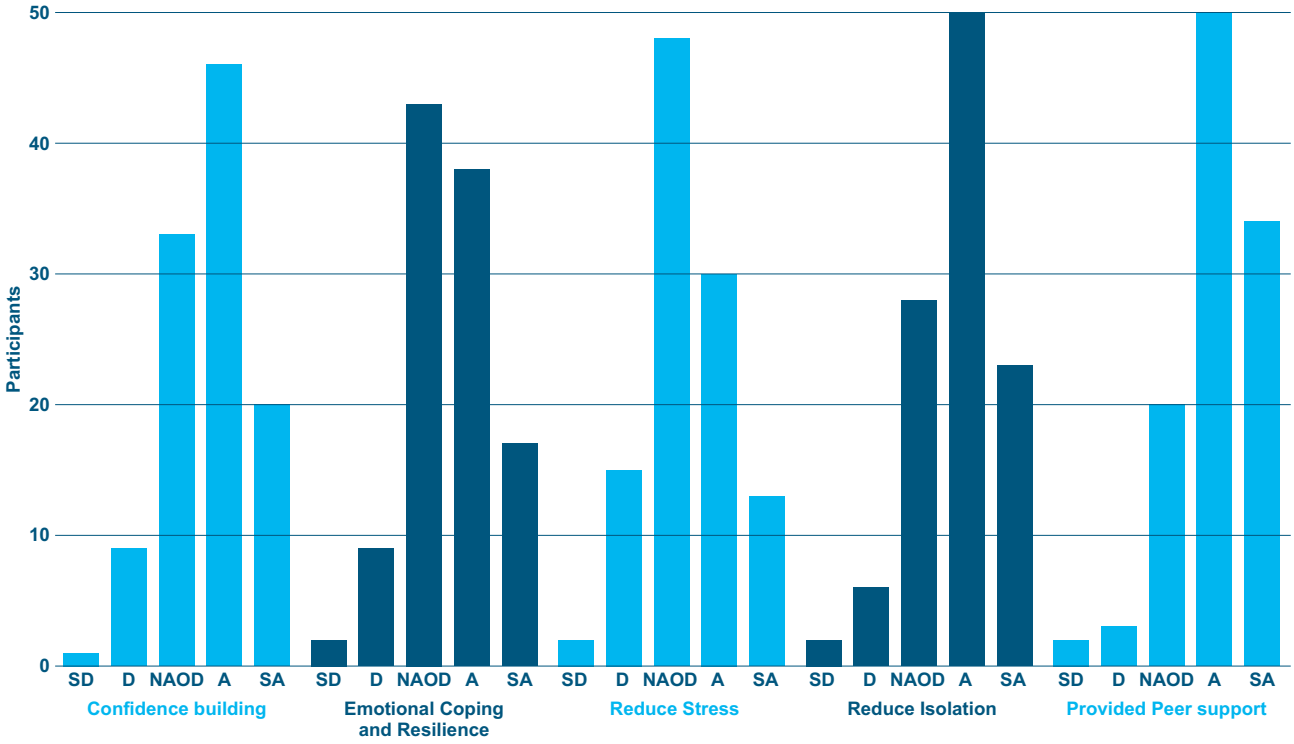


How would you compare ECHO to other online and virtual approaches to learning that you may have encountered during the course of the pandemic (e.g. webinars)



16 SA = Strongly Agreement/Yes; A = Agree/Yes; NAOD = Neither Agree/Disagree; D = Disagree/No; SD – Strong Disagreement/No

Did participating in the ECHO network support your personal/professional wellbeing during COVID pandemic?



There was variation across our sample within this preliminary analysis, suggesting the networks more directly affected by COVID benefited from it to a greater extent. The South Eastern Care Homes Network, for example, reported very strong results suggesting the benefit of ECHO, with 92% strongly agreeing/ agreeing that ECHO supported quality of practice during COVID; 92% strongly agreeing/ agreeing that ECHO supported confidence in keeping up-to-date with changing guidelines; 83% stating that it supported adaptation; and 100% stating that ECHO was more effective compared to other online training platforms.

The challenges experienced by healthcare providers during the pandemic have been well documented. This evaluation indicated that ECHO had a strong impact in supporting staff particularly in terms of reducing isolation and providing peer-support. Given that forms of remote practice are going to be with us for a long time this preliminary analysis demonstrates an evidence base for ECHO supporting practitioners and building communities of practice during a time when providers were physically distanced from each other. Results were less strong regarding the impact of ECHO in reducing stress or supporting emotional coping and resilience, indicating the limits of ECHO in addressing significant workplace stress caused by the pandemic.

Further analysis across on the impact of ECHO in supporting healthcare providers during COVID would be vital across all networks. COVID-19 has demonstrated the importance of having flexible and adaptable systems to support healthcare staff, and has highlighted the value of investing in key supportive infrastructure in advance of a crisis, rather in response to it. Further evidence and analysis from across all ECHO Networks would provide essential information from which to inform future decisions in how to ensure the healthcare system is prepared, flexible and mobile enough to support healthcare providers during COVID-19 and future crises. Understanding variables between Networks and areas for growth would also be of benefit, further necessitating a full review of the impact of ECHO during COVID-19.

Implications of the Report, Strengthening ECHO in Northern Ireland, and Conclusions

Evaluated against the key measures, outcomes and metrics identified by the HSCB, ECHO has demonstrated impact across the vast majority of the Networks initiated in Northern Ireland. Hospice UK fulfilled its contractual obligations to implement and evaluate over 30 Project ECHO Networks across the evaluation period, and those Networks have demonstrated impacts for health and social care providers, patients, and the health system. Using multiple metrics and data sources, this evaluation suggests that the ECHO methodology contributes to key strategic objectives regarding integration of health and care systems, improving quality of care for patients, and supporting the learning and wellbeing of health and social care providers. The diverse case studies presented in this report also highlight the versatility, flexibility, and adaptability of the ECHO methodology to support healthcare providers working in different areas and across various disciplines.

The vast majority of Networks within this evaluation achieved their short term goals, demonstrating the immediate benefit of ECHO for health and social care participants. Networks that had operated for a longer period of time, and were at Levels 2 and 3, tended to demonstrate better progress towards longer term goals of service transformation and integrating systemic changes for service provision. This finding demonstrates the importance of providing long-term support to ECHO Networks in order to enable such long term goals to be achieved.

Networks operating outside of the Evaluation period, and therefore not discussed extensively within this Report, also highlight many of these themes. The Social Prescribing Network, for example, strongly demonstrates the non-clinical application of ECHO with positive results. In recent evaluations, participants reported that the Network improved knowledge, confidence, adaptation, and partnership building, with high levels of agreement across all evaluated domains. Strong results following the Evaluation period continue to indicate the relevance and benefit of the ECHO approach.

Within the context of COVID-19, preliminary evidence suggests the value of the ECHO methodology in supporting health and social care providers and building communities of practices within a complex and disruptive emergency, and during a time of ongoing social distancing. Further analysis and research on the impact of ECHO during the pandemic would be valuable for future emergency planning and for embedding changes as the health service builds back and recovers from the impact of COVID-19. Operational feedback and learning included within this report, highlighting the importance of factors such as strong leadership within Networks, should be rigorously applied to future applications to ensure impact is achieved across all Networks.

Future strengthening may include integrating the ECHO approach within HSC Quality Improvement to support quality and innovation across the HSC system in Northern Ireland. The ECHO methodology and model is a Quality Improvement tool and has demonstrated its value in supporting shared learning, collaboration, building relationships; empowering health and social care staff, and encouraging innovation and systematic change (as demonstrated by the case studies presented within this report). The ECHO methodology has equally shown its value in providing safe and collaborative environments to solve complex problems, all of which link closely to the approaches and key objectives within HSC Quality Improvement. Given the demonstrable

benefits for healthcare providers, appropriate support should be considered in the future to ensure equity of access and opportunity for healthcare providers to participate in Project ECHO Networks.

Strengthening approaches to evaluation may allow more confident assessment of some of the key measures and outcomes of Project ECHO. More Networks may consider developing pre-post surveys. Data may be gathered at multiple time points e.g. during the curriculum setting days and during final sessions, rather than gathering retrospective data at a single time point. Systematic reviews evaluating other ECHO networks highlight that "evidence is generally low-quality, retrospective, non-experimental, and subject to social desirability bias and low survey response rates"[17]. This evaluation provides a unique insight into how the ECHO methodology can be implemented in a 'real-world' context as opposed to within a research project, but further steps could be implemented to collect high-quality, long-term data which may inform future decision-making. Further data on geographical spread of the programme and the diversity of participants would be valuable in identifying gaps in service provisions and future focus areas. In-depth case studies mapping longitudinal change over time would help in assessing the transformative potential of ECHO.

17 McBain RK, Sousa JL, Rose AJ, Baxi SM, Faherty LJ, Taplin C, Chappel A, Fischer SH. Impact of Project ECHO Models of Medical Tele-Education: a Systematic Review. J Gen Intern Med. 2019 Dec;34(12):2842-2857. doi: 10.1007/s11606-019-05291-1. Epub 2019 Sep 4. PMID: 31485970; PMCID: PMC6854140.

Appendix 1: ECHO Network Attendance and Activity

Network	Network level at time of evaluation	Number of ECHO sessions delivered	Number of 'attenders' (spokes who attended at least 1 session)	Number of 'attenders' registered to network	Median attendance per ECHO session
Belfast Nursing Homes	1	5	21	29	18
Best Practice Governance	1	5	19	11	6
Child and Adolescent Mental Health Services (CAMHS)	1	8	44	24	12
Cardiology	2	9	44	20	13
Dementia	1	13	140	52	22
Dermatology	2	9	36	21	13
Diabetes – Belfast HSC Trust	1	9	37	16	12
Diabetes – Western HSC Trust	1	9	29	30	12
Ear, Nose & Throat (ENT)	1	9	41	28	14
Frailty	1	6	36	45	15
Gastroenterology	1	9	27	15	12
General Surgery	1	5	13	12	13
GP Support Year 1	1	9	32	24	12
GP Support Year 2	1	7	15	19	11
Gynaecology	2	10	48	25	13
Health visitor support Year 1	1	8	74	21	18
Health visitor support Year 2	2	6	33	58	28
Marie Curie Network	1	10	15	12	8
Musculoskeletal (MSK)	1	9	23	14	13
Neurology Year 1	1	9	60	21	22
Neurology Year 2	2	8	51	46	36
Northern Ireland Social Care Council (NISCC)	1	11	59	37	13
Nurse Training Diabetes	1	9	37	17	9
Optometry/ Ophthalmology	3	9	28	28	21
Primary Care and Community Together (PACT) Community Pharmacy and Impact AgeWell Project (Yr1) / Surviving and Thriving (Yr2)	1	8	33	19	10
Paediatric Palliative Care Year 1	1	9	172	63	33
Paediatric Palliative Care Year 2	2	6	30	34	15
Palliative care pharmacy	1	9	20	18	10
Palliative Care South Eastern Trust Year 1	1	9	83	27	11
Palliative Care South Eastern Trust Year 2	2	8	35	43	18
Positive Behaviour Support	1	9	59	51	19
Practice Based Pharmacy Year 1	1	19	174	122	27
Practice Based Pharmacy Year 2 (new cohort)	1	15	115	148	6
Prison Healthcare	2	9	90	19	17
Quality Improvement – District nurses	1	8	32	19	9
Safeguarding	1	8	21	60	12
South Eastern Nursing Homes	1	5	17	26	13
Surviving & thriving in community pharmacy (network renamed for Year 2)	2	8	52	92	12
South Western Acute Hospital (SWAH) 'Minding the Gap'	1	8	113	119	31
Western Nursing Homes	1	8	31	37	19
Western Optometry	1	10	62	58	41
Totals		**357**	**2101**	**2458**	**651**
Average (median)		**9**	**36**	**27**	**13**

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Belfast Nursing Homes	To enable nursing home staff to become more independent in the clinical care of their residents	1. Nursing home staff have increased knowledge, confidence and competence to enable them to make more informed decisions in relation to the care of their residents. 2. Increased number of trained staff 3. Improved relationships between health and social care staff and nursing home staff/ 4. An established community of practice for Nursing homes which encourages learning from each other. 5. ECHO viewed as a suitable model for nursing home education: sustainable and accessible.	1. To improve safety, quality and standards within Nursing Homes, and thus reduce unnecessary unscheduled admissions to hospital and use of Trust services through provision of clinical advice and support	Survey data from the Reporting period was not available. This Network commenced in May 2019 and transitioned in March 2020 to a Covid-19 programme. At the point of their transition they had completed 7 sessions within their original programme. Survey data was completed by the Network in 2021, and has been included in this report due to its relevance and that it was the first data collected since the end of the reporting period. 60 responses were gathered, with 95% stating that the quality of sessions was high or very high, 90% stating that topics covered were relevant, 98% stating that they'd applied knowledge gained through the Network to their practice, and 92% stating that they've shared knowledge with other colleagues. 93% stated that participation had increased their knowledge of other service initiatives across the sector and 77% stated that case-based learning was an effective mechanism for learning and that they'd recommend ECHO to other colleagues. Results indicate progress towards achieving key objectives, however more targeted evaluation metrics to assess progress on key indicators would be beneficial.
Best Practice Governance	To identify what best practice in the HSC looks like	None	None	Evaluation data not available for Network. The Best Practice Governance Network was set up to provide a space for non-Executive Directors within the Belfast Trust to discuss and guide decisions on a range of challenges such as communication and consultation of services. Case study scenarios were presented in 5 different ECHO sessions, but due to challenges with recruitment the Network ceased to continue. Important learning may be taken from this network regarding on-boarding and initiation processes (further highlighted by themes discussed in the main Report).

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Child and Adolescent Mental Health Services (CAMHS)	To help build capacity across children services thereby ensuring safer and more effective interventions for children, young people and their families.	1. Knowledge transfer and the building of capacity across the steps of care in the Stepped Care Model and with key interface services.	1. Effective assessment of young people presenting with complex and high risk behaviour who may need and benefit from the input from an expert panel, thus avoid unnecessary escalation and ensuring more effective management at a local practitioner level.	A total of 18 participants responded to the final survey. Of those who responded 56% (10/18) attended 1-3 ECHO sessions, 33% (6/18) attended 4-6, and 11% (2/18) attended ≥7 sessions. 100% enjoyed participating and would participate in the future. 94% would recommend ECHO to colleagues. Participants cited shared learning and having the opportunity to hear about and discuss complex cases as particular benefits of the sessions. Outcomes of the Network are positive regarding participant enjoyment and engagement with the sessions. Short term goals such as successful knowledge transfer within the network were likely achieved through case presentations and discussion. In this regard, the Network likely has to some extent achieved its key objective of building capacity across children's services, of establishing wider clinical networks and expertise across the region, and in providing advice and support to general practitioners and local practitioners. There is little data on whether the network achieved the longer-term objectives it set out achieve regarding reduced referral and increased management at local practitioner level, or whether the network has supported the development of more standardised approaches to management across the region. It is recommended that more thorough evaluation in relation to knowledge gained through the network and application of that knowledge in practice should be the focus of future evaluation.
		2. Work towards standardisation of practice and more equitable levels of service.	2. Safer and more effective interventions for children young people and their families.	
Cardiology	To build capacity of GPs to manage more patients with Heart Failure within the community	1. Network established & curriculum of relevance to participants.	1. Improved quality of care for patients with HF in the community.	11 participants completed a survey; 91% responded that the network had improved knowledge (over 4 domains/questions); 88% that their confidence had improved (over 4 domains/questions); 77% that they were more likely to seek timely specialist advice and support (over 2 domains/questions); with 100% stating that they had applied knowledge gained from the network in everyday clinical practice (1 domain/question)
		2. Increase in knowledge of management of HF within SPC.		Results related to the key objectives and goals relating to clinical knowledge and capacity were positive, with strong self-reported improvements across multiple domains. Relationship development and the multidisciplinary nature of the network were cited as positives by participants. Further evaluation is needed to determine if increased knowledge and confidence has impacted positively on the quality of the care provided to patients, thus achieving the long-term goals of the network, Little data exists regarding whether patients were being managed in general practice, however survey results indicated participants felt more confident and more likely to seek timely advice.
		3. Increased confidence in management of patients with HF.		
		4. Increased GP contact with cardiologists and palliative care specialists for advice.		

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Dementia	To improve the diagnosis and management of patients with dementia	1. A network established with content that is relevant to participants. 2. Improved partnership working between primary care and secondary care. 3. Improved primary care confidence in managing patients with a diagnosis of dementia. 4. Improved primary care knowledge and confidence to diagnose dementia in non-complex presentations.	1. Improved service user experience. 2. Improved carer experience. 3. Reduced waiting time for assessment, diagnosis and follow on care.	A total of 21 participants responded to the survey. Results indicated that 7 'strongly agree' and 12 'agree' that participation had improved their clinical knowledge of dementia. 5 'strongly agree' and 12 'agree' that participation had developed their clinical skills. 6 'strongly agree' and 12 'agree' that participation had developed their confidence in managing patients with dementia. 81% said they had applied knowledge gained from the network and that their professional satisfaction had increased. Increased knowledge and sharing information and experiences were frequently cited as benefits of the network. This Network achieved goals of successful establishing a relevant Network for participants and progressing short term goals. Little data is available regarding progress towards long term objectives.
Dermatology	Increase confidence in clinical decision making	1. Improved GPs knowledge of dermatological conditions. 2. Improved confidence of GPs to manage dermatological complaints. 3. Enhanced communication between primary and secondary care. 4. To increase awareness of local services and referral procedures.	1. Reduced demand for secondary dermatological care and reduced waiting lists.	13 respondents completed the evaluation survey. 85% felt their knowledge had improved through participation in the network, and that their confidence in managing patients had also improved. 92% felt access to specialist expertise in dermatology benefited their clinical knowledge and practice. 92% applied knowledge gained form the network to other patients. 54% said they were more likely to seek timely specialist advice or input from a dermatology specialist (38% neither agree/disagree; 8% disagree). 46% felt participation helped reduce their referrals to secondary dermatology care (38% neither agree/disagree; 15% disagree). 77% stated participation improved their professional satisfaction; 1 participant (8%) stated strongly disagree). This Network demonstrates positive progress towards short term goals of improving knowledge, but limited impact on whether ECHO has contributed towards reduced demand and referral to secondary services.
Diabetes Belfast	To enhance knowledge of both diabetes and pre-diabetes management and support	1. Participants have increased knowledge in relation to the management of diabetes 2. Participants have increased confidence in relation to the management of diabetes 3. Participants have improved awareness of referral diabetes services available to General Practice and local procedures.	1. Delivery of improved care to patients with diabetes.	11 respondents. Participants stated level of confidence in managing diabetes increased from 3.00-4.09 weighted average prior/post participation in the network (5 point scale). Level of skills, knowledge or competence in managing diabetes increased from 4.18-5.18 (7 point scale). 100% felt their understanding of the local referral processes for diabetes and the services available had improved, and that content delivered through the network was relevant and would recommend to colleagues. This Network demonstrates consistent results, captured in a retrospective re/post survey that indicates success regarding achieving key objectives and goals.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Diabetes Western	To enhance the capacity of GPs, practice nurses and practice pharmacists to deliver diabetes care in the community	1. Participants have increased knowledge and confidence to manage patients with diabetes and have applied lessons learned to practice	1. Improved care provided to patients with diabetes	No survey data available as the Network was paused in March 2020 due to the COVID-19 pandemic and was not completed.
		2. Better and more informed communication within clinical teams and between team members and patients	2. Improved uptake of newer medication groups	
		3. Participants feel more supported and have feelings of reduced isolation		
		4. Increased membership in network compared to original pilot		
Ear, Nose & Throat (ENT)	To develop the capacity to effectively identify common ENT conditions, instigate treatment and manage these long term conditions within primary care, with appropriate specialist input when required	1. GPs have improved confidence with the clinical assessment, diagnosis and treatment of ENT symptoms and conditions through improved knowledge and support.	1. Improved patient experience and overall health through earlier intervention	9 respondents. 56% strongly agree and 44% agree that participation has improved their knowledge of symptoms. 56% strong agree, 33%, 11% naod that their confidence in treating common ENT symptoms had improved. 67% strongly agree and 33% agree said access to specialist experience had improved their skills and practice. 56% felt colleagues in secondary care were more approachable (44% neither agree/disagree). 100% felt ECHO provided them with access to information they otherwise would not have had access to. 78% felt more able to manage patients without referral, and that they understood referral pathways better. Results indicate positive outcomes regarding key objectives and goals of knowledge and confidence in managing patients without referral. Long term goals regarding cost and patient experience were not evaluated.
		2. GPs feel more able to manage patients without the need for a referral.	2. Reduced cost to the system by avoiding expensive secondary care referral where it is clinically appropriate to do so.	
		3. Improving communication between primary and secondary care to include improved awareness of referral criteria.		

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Frailty	To raise awareness of frailty and share knowledge, learning and best practice across a range of disciplines and sectors within Northern Ireland	1. Increased awareness of frailty amongst professionals involved in the network. 2. Sharing of knowledge, learning and best practice within ECHO sessions helps inform development of the frailty pathway in Northern Ireland. 3. A community of practice for frailty which encourages learning and collaboration across sectors is established. 4. ECHO viewed as a suitable model to enhance skills and create a learning environment across a range of disciplines and sectors each with a key role in providing care for our more frail population	1. Increased awareness of frailty amongst the public 2. Development of an end to end pathway for frail older people 3. Improved care and outcomes for patients who are identified as being frail, or who are assessed as being at risk of frailty	10 respondents completed the survey. 100% stated that the sessions were worthwhile and relevant. 20% experienced problems participating the sessions (time and technical problems). 50% have implemented learning from the sessions. 90% felt learning through ECHO was effective in increasing their knowledge (10% strongly disagreed); 70% learned from case presenters (20% neither agree/disagree, 10% strongly disagree). 80% would recommend ECHO to other colleagues (10% neither agree/disagree, 10% strongly disagree). 60% said participation enhanced their working understanding of best practice care in frailty (30% neither agree/ disagree; 10% strongly disagree). 80% said collaboration with other professionals had been beneficial. 60% said there had been no changes to policy, practice guidance, or processes within their work place from the sessions, indicating limited progress towards some long term goals. Shared learning and clinical discussion were cited as benefits of the sessions. Key objectives of raising awareness and learning were achieved by the Network.
Gastroenterology	Improve the delivery of education in the management and referral patterns of Gastroenterology patients	1. Improved GPs knowledge of gastroenterology conditions. 2. Improved confidence of GPs to manage gastroenterology complaints. 3. GPs make better informed referrals to secondary care. 4. Enhance communication between primary and secondary care.	1. Better management of patients on waiting lists.	9 respondents to the survey. 66.67% and 33.33% respectively stating 'strongly agree' and 'agree' that the sessions had improved their clinical knowledge. 55.56% and 44.44% respectively stating 'strong agree' and 'agree' that sessions had improved confidence in managing gastroenterology patients. 100% of respondents had applied knowledge gained in the sessions strongly indicating progress towards key goals. 89% and 67% respectively felt their knowledge of appropriate referral processes had improved, and that they were more likely to seek timely specialist advice. This likely resulted in progress towards the key long term goal of better management of patients on waiting lists, however this was not explicitly evaluated. Participants noted improved clinical knowledge and knowledge of referral pathways in qualitative responses, with 100% responding that learning through Project ECHO is an effective way to enhance clinical knowledge and skills. 100% said they'd recommend ECHO to other colleagues and 100% stated they would like to attend future networks.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
General Surgery	To improve access to timely surgical procedures in general practice	1. Improved GP knowledge and confidence in management of general surgical conditions 2. Improved GP confidence and knowledge in when to refer patients, including red flags, to General Surgery	1. To improve overall patient heath by improving access to timely surgical procedures in general practice earlier, which helps improve the patients journey and may prevent an unnecessary referrals.	13 respondents. 92% felt that the sessions had improved their clinical knowledge; 80% felt participation in the network had improved their confidence in managing general surgical conditions. 92% felt they had increased confidence on when and how to refer patients and more confident to manage patients in primary care both pre- and post-operatively. 46% 'strongly agree' and 46% 'agree' that learning through ECHO is an effective way to enhance clinical knowledge and skills (1 participant, 8% 'strongly disagree' - no reasons given). 92% applied knowledge from the sessions and 100% felt that the network had improved relationships between primary and secondary care. These results indicate success in achieving short term goals, but little explicit evaluation was conducted regarding key objectives and long term goals of improving access to timely surgery, however participants did strongly indicate increased confidence in managing patients and in referral.
GP Support	None	1. GPs have more confidence in their ability to deal with difficult circumstances 2. GPs feel less isolated and more supported. 3. ECHO identified as an educational tool for new GPs/ interested (isolated GPs) who find it difficult to make teaching via traditional model.	1. GPs feel more supported and better able to cope with difficult situations.	16 respondents. 93.75% rated sessions as high quality or very high quality. 87.5% responded that the sessions had reduced professional isolation, and 81.25% said that they had enhanced their professional satisfaction, both indicating good progress towards both short term and long term goals. Positive qualitative feedback included that the sessions allowed networking, communication and experience-sharing; had high quality content; and included practical content and advice. All respondents would recommend ECHO to other GPs. Few negative comments were recorded, although a number of respondents mentioned challenges in making time and sessions being scheduled at inconvenient times.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Gynaecology	To enhance the gynaecology skills and knowledge of GPs	1. GPs have increased knowledge, confidence and skills to manage common gynaecological conditions. 2. GPs improved understanding of what can be achieved in primary care and what should be referred for secondary care. 3. Improved communication between primary and secondary care.	1. GPs have improved capacity to manage primary care gynaecological problems at a local level. 2. Patients receive a higher quality of gynaecological care.	18 participants completed the final survey. 89% either agreed or strongly agreed that their clinical knowledge had improved through participation in the network (5% neutral; 5% strongly disagreed). 94% felt more confident in treating gynaecological conditions. Results from both metrics indicate success regarding key objectives and short term objectives. 78% felt they better understood referral pathways (22% neutral), while 50% stated that their referrals to secondary care had reduced (33% neutral; 17% disagreed), indicating progress towards long term objectives of managing patients at primary care level. 39% of participants reported felt their secondary colleagues were more approachable as a result of participation in the network (56% neutral, 5% disagreed). 100% had applied learning from the sessions to clinical practice and 94% said the ECHO approach allowed them to access learning they otherwise would have been unable to access due to time and/or geography. No explicit evaluation was conducted regarding whether patients received higher quality of care, however other connected metrics indicates progress was likely achieved regarding this goal.
Health visitor support	Increase capacity of Health Visitors to manage patients on waiting lists for child development, ADHD and autism services	1. Health visitors have increased knowledge and confidence in the management of children with developmental, emotional, behavioural and social communication needs 2. Health visitors feel more supported in the management of children on waiting lists 3. Health visitors make more appropriate referrals to specialist services	1. Children have improved access to appropriate levels of care according to their needs	14 respondents completed the survey. 100% felt content was relevant with 86% stating quality of the session was either high quality or very high quality. 86% had applied knowledge gained through the network. 57% stated there had been no changes to policy, practice guidance, or processes within their work place because of the learning through this ECHO network, suggesting limited progress towards long term goals. Participants noted that their knowledge, confidence and understanding of other services in the area had increased, and that they enjoyed and had benefited from the shared-learning approach. Little data was collected on whether referral was improved and whether children had improved access to appropriate care.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Marie Curie	To improve the overall quality of patient care and the efficiency of training delivery to registered nurses	1. An established ECHO network with a curriculum of relevance to registered nursing staff. 2. Increased clinical knowledge of palliative care. 3. Increased confidence in managing patients at end of life. 4. Reduced feelings of isolation amongst staff.	1. Improvements in the quality of the service through improvements in patient care.	11 respondents. 64% 'strongly agree' and 27% 'agree' that participation in the ECHO network developed their clinical knowledge in palliative care; 55% 'agree' and 36% 'strongly agree' that it increased had confidence in dealing with end of life care scenarios; and 55% 'strongly agree' and 36% 'agree' that it helped improve the service provided to palliative care patients and their carers. 100% felt ECHO was an effective way to enhance clinical knowledge and skills and that they would apply learning from the network. 82% felt the network had helped diminish professional isolation and that the network had given them access to learning that would have otherwise been difficult to access due to geography. Participants highlighted the benefits of shared learning, network creation and sharing experiences. All metrics indicate success towards short term goals, and likely improvements to quality of service delivered, however further evaluation on long-term impact would be beneficial.
Musculoskeletal (MSK)	None	1. MSK network echo set up: good level of engagement with participants, and content of value to participants. 2. Increased confidence in managing MSK conditions in primary care.	1. Participants demonstrate engagement with MSK pathways. 2. Improved communication and relationships with SC and AHPs.	10 respondents. 90% felt their understanding of common MSK conditions in primary care has improved as a result of participation in MSK ECHO Network and that it has enhanced understanding between primary, secondary care and allied health professionals taking part. Participants cited increased confidence in diagnostics and in management. Evaluation approaches could be strengthened to provide clearer indications of the long term outcomes of the Network, however survey results indicate that short terms goals have been achieved.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Northern Ireland Social Care Council (NISCC)	To provide support to domiciliary care managers through sharing of knowledge and experience	1. ECHO identified as a suitable model of education and support for domiciliary care managers. 2. Improved engagement and connections between domiciliary care managers. 3. Domiciliary care managers feel better supported. 4. Clear definition of the remit domiciliary care/ support is established. 5. Shared understanding of what is best practice.	1. Improved leadership for domiciliary care managers. 2. Dissemination of knowledge gained to front line staff . 3. Improved experience for service users.	18 respondents. 61% stated that sessions were high quality and 39% very high quality. 94% said sessions were relevant and 67% they had been able to implement learning, indicated success in establishing a relevant Network. 50% agree, 33% strong agree (11% strongly disagree and 6% naod) that participation enhanced understanding of 'good practice' in domiciliary care. 89% would recommend ECHO to other colleagues (11% strong disagree). 67% responded that ECHO helped them feel more supported in their role (28% naod, 6% strongly disagree). 44% felt the network has helped facilitate the development of relationships between domiciliary care managers (33% naod, 11% disagree, 11% strongly disagree), indicating only limited progress in achieving short term goals of improving connections. 83% responded that there had been no changes to policy within their work place because of the learning through this ECHO network, suggesting areas for strengthening the Network. 56% said participation had influenced the strategic direction within their team. Long term goals regarding leadership were not explicitly evaluated, as were metrics regarding experience for service users.
Nurse Training Diabetes	To improve the care provided by practice and district nurses to patients with diabetes	1. Practice nurses and DNs increased confidence and knowledge in management of diabetes 2. Practice nurses and DN increased understanding of medical prescribing for patients with diabetes 3. Change in DNs self-reported referral pattern to speciality services 4. Improved communication between district nurses and primary care	None	4 respondents. 100% felt the felt format and organisation was good, would recommend ECHO to colleagues and would felt content was relevant. 100% felt understanding of the local referral processes for diabetes and the services available improved as a result of participation in this ECHO Network, however the degree to which this improved may have been better highlighted using the pre/post evaluation approach used for other metrics. Skills, knowledge and competence in managing diabetes increased from weighted average 4.25 prior to participation to 4.5 post participation. Confidence increased from 2.75 - 3 pre/post. Both metrics indicate some improvement, but the levels of increase are limited. Some feedback suggested content was pitched at the wrong level and further engagement in curriculum setting days may allow for a more appropriate curriculum to be designed. Communication was not evaluated, and should be an area for future focus.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Nurse Training Diabetes	To improve the care provided by practice and district nurses to patients with diabetes	1. Practice nurses and DNs increased confidence and knowledge in management of diabetes 2. Practice nurses and DN increased understanding of medical prescribing for patients with diabetes 3. Change in DNs self-reported referral pattern to speciality services 4. Improved communication between district nurses and primary care	None	4 respondents. 100% felt the felt format and organisation was good, would recommend ECHO to colleagues and would felt content was relevant. 100% felt understanding of the local referral processes for diabetes and the services available improved as a result of participation in this ECHO Network, however the degree to which this improved may have been better highlighted using the pre/post evaluation approach used for other metrics. Skills, knowledge and competence in managing diabetes increased from weighted average 4.25 prior to participation to 4.5 post participation. Confidence increased from 2.75 - 3 pre/post. Both metrics indicate some improvement, but the levels of increase are limited. Some feedback suggested content was pitched at the wrong level and further engagement in curriculum setting days may allow for a more appropriate curriculum to be designed. Communication was not evaluated, and should be an area for future focus.
Primary Care and Community Together (PACT) Community Pharmacy and Impact AgeWell Project (Yr1) / Surviving and Thriving (Yr2)	To support the education of the community pharmacy network; to support the resilience of the community pharmacy network through shared learning and collaborative problem solving	1. A network established with content that is relevant to participants. 2. Better experience for pharmacists including improved access to training and peer support. 3. Interest in joining network from other pharmacists across NI. 4. Participants accessed Moodle resources.	1. To make older people's lives better and empower a healthier older population. 2. Campaign (e-zine) to share positive news.	14 participants completed the survey. 93% enjoyed participating in the network and would recommend ECHO to other colleagues. 36% experienced some barriers to participation (time, internet speed etc.). Benefits cited included shared learning, opportunities to connect with colleagues and specialists and reduced barriers (e.g. travel) to participation, suggesting success towards achieving short term goals. Some participants reported that content was beyond their comfort-level/capacity. Some participants suggested a preference for evening meetings and suggested participation and membership of the network should be broadened. Evaluation was limited on key objectives regarding resilience.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Palliative Care Paediatrics	Improve collaboration around children approaching end of life	1. Participants have improved knowledge on how to manage complex symptoms. 2. Participants have increased confidence in managing complex symptoms. 3. Participants have a shared understanding of the disparities in care. 4. Participants feel more supported and less isolated. 5. Moodle is a useful resource for participants.	1. Standardisation of pathways across the region. 2. Equality of access to services. 3. To reach more families who are not in receipt of services.	16 respondents. 56% and 44% respectively rated sessions as very high quality or high quality. 94% said sessions were relevant to their practice. 88% said they'd applied knowledge gained from the sessions to the care of their patients (communication, end of life plans, information on blended diets and/or cannabinoids), suggesting success in achieving short term goals. 94% stated increased knowledge of service initiatives across other organisations, related to the key objective of improving collaboration, however this was not explicitly evaluated. 69% stated no changes to policy, practice guidance, or processes within their work place, indicating limited progress towards long term goals of standardisation. Further benefits cited included having space to reflect and learn, confidence in communication, and awareness of new approaches to care. Participants also highlighted reduced isolation and opportunities to network and build relationships. 88% wanted to continue with network. Connectivity problems cited as one reason for not wanting to continue. No evaluation was completed on progress towards long term goals regarding equality of access.
Palliative Care Pharmacy	Reduce pharmacist's anxieties around dealing with EOL care scenarios and patients	1. Improved knowledge in palliative care guidelines and palliative medicines/ treatments for pharmacists. 2. Improved confidence for pharmacists in communicating with patients/carers receiving palliative care. 3. Improved networking opportunities. 4. ECHO viewed as a useful model for community education.	1. Improved communication between pharmacist and patients/carers	12 respondents. 58% strongly agree and 33% agree that participation has improved their clinical knowledge and their confidence in dealing with end of life care, indicating success in achieving short term goals. 67% strongly agree and 33% agree that participation has improved the service they provide to end of life patients. 83% strongly agree and 17% agree that ECHO was an effective tool for enhancing clinical skills. 67% strongly agree and 17% agree that ECHO gave them access to information they otherwise would not have had. 100% stated they would use the learning gained from the network and would recommend ECHO to colleagues. Participants described being more knowledgeable and confident in their approach to care, and benefiting from networking and meeting and learning from colleagues indicating success in progressing towards long term goals.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Positive Behaviour Support	None	1. Evidence of change in: Knowledge, Skills, Confidence, Competence 2. Evidence of practice leaders emerging in PBS. 3. Networking and peer support for staff implementing PBS practice.	1. Improve quality of care provided for people with learning disability.	23 respondents. 96% felt content delivered through the network was relevant to their work. Knowledge in caring for people with behaviours of concern increased from weighted 3.50 - 4.30 prior/post participation in the network. Skills to care for people with behaviours of concern increased from 3.64 - 4.16 prior/post. Confidence increased from 3.56 - 4.10 prior/post. All metrics indicate success regarding short term goals. 61% had been able to implement learning gained from the network. 91% said there had been no changes to policy within their work place because of the learning through this ECHO network, and 61% said it had not influenced the strategic direction of their team. However, 87% stated that participation in the network met their original expectations. Participants reporting benefiting from the networks and relationships created, and from learning from shared experiences.
Practice based Pharmacy	To develop the knowledge and capacity of practice based pharmacists	1. PBPs have increased confidence in management of a wider range of clinical issues and ability to carry out a range of different tasks 2. PBPs have improved knowledge and capacity in relation to prescribing optimisation and discharge prescribing 3. PBs feel better supported 4. Improved working relationships between PBPs & GPs 5. Use of Moodle resources by PBPs as educational resource	1. GPs released to take on different and more complex care	18 respondents. 61% stated that sessions were high quality and 39% very high quality. 100% said content was relevant and 89% said they had been able to implement learning from the networks. 72% said there had been no changes to policy, practice guidance, or processes within their work place because of the learning through this ECHO network. 66% strong agree, 22% agree and 22% disagree that ECHO provided opportunities to access education that they otherwise would not have had. 50% strongly agree, 33% agree and 17% naod that participation improved their knowledge. 56% strongly agree, 33% agree, 6% naod and 6% disagree that their confidence in managing a wider range of clinical issues had improved, demonstrating success in achieving short term goals and key objectives identified by the Network. 44% strong agree, 44% agree, 6% naod and 6% disagree that they felt more supporting in their roles. Participation was restricted due to time and other commitments. No data was collected to allow assessment of progress towards long term goals.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Quality Improvement	Enhance district's nurses knowledge of QI methodology	1. District nurses will have improved knowledge of QI methodology 2. District nurses will feel more confident in initiation/ management of QI projects 3. District nurses will feel more supported	1. Improve patient care	8 respondents to the survey answered retrospective pre/post questions related to 9 measures on Knowledge and Skills, and 9 measures related to confidence. On measures related to Knowledge and Skills there was an increase from 2.88 to 4.74 representing a +1.86 increase on a 7 point scale; while on measures related to Confidence there was an increase from 1.94 to 3.49 representing a +1.55 increase on 5 point scale. Measures included knowledge/skills/confidence on developing and setting aims for QI work; competence in relation to diagnostic tools (process mapping, fishbone etc.); competence in relation use of driver diagrams; in developing measures for QI work; and Communication among others. These results strongly suggest the benefit in achieving both key objectives and short term goals set by the Network. Whether these benefits have extended to patient care has not been assessed or evaluated.
Safeguarding	To standardise practice and responses to neglect across the network	1. Increased communication between participants across multiple agencies with regards neglect 2. Increased understanding of the roles and responsibilities of professionals across multiple agencies 3. Increased understanding of the latest guidelines and resources in relation to neglect. 4. Increased working knowledge of the neglect strategy 5. Knowledge transfer: participants share new learning with colleagues 6. Participants feel more supported and have increased confidence in making difficult decisions, including decision to refer to social services 7. Case based learning identified as a suitable model of provision of education	1. To standardise practice and responses to neglect across the network and create a trauma informed workforce 2. A community of practice which advocates for service improvement 3. To improve outcomes for children and young people by ensuring prevention, early recognition and improving agency responses to children, young people and families affected or potentially affected by neglect	69% (9/13) felt their levels of knowledge regarding neglect had improved through participation in the network. 46% (6/13) felt better supported because of the network. 85% found the sessions relevant to their practice, 46% said they'd share learning with other team members, and 62% had implemented learning gained from ECHO in their practice. These results suggest a moderate success in achieving short term goals. 100% said they'd recommend ECHO as an online learning tool and that case-based learning and presentations were an effective way of learning. No data, however, was collected on most of the objectives set by the Network, e.g. standardising practice; creating a community of practice, representing areas for future focus and evaluation.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
South Eastern Nursing Homes	To enhance the knowledge, confidence and competence of those managing Palliative and End of Life Care within the nursing home setting	1. Nursing home staff have increased knowledge, confidence and competence to enable them to make more informed decisions in relation to the care of their residents. 2. Hub members have increased understanding of the learning needs of nursing home staff 3. An established community of practice for Nursing homes in the Southern trust area which encourages learning from each other. 4. ECHO viewed as a suitable model for nursing home education: sustainable and accessible.	1. To improve safety, quality and standards within Nursing Homes, and thus reduce unnecessary unscheduled admissions to hospital and use of Trust services through provision of clinical advice and support.	Survey data from the Reporting period was not available however data collected in 2021 was included within this report as the most recent and relevant data related to activities occurring within the reporting period. 13 participants responded to the survey. All respondents to the survey had participated in 7 or more ECHO sessions. Responses were universally with positive with all respondents responding either strongly agree or agree to metrics on the impact of ECHO related to the ECHO approach and methodology; its impact on improving knowledge; and its impact on improving support and satisfaction. Further benefits were qualitatively described related to improving patient care in the community and developing greater understanding of the needs of palliative care patients. 70% described changes to policy or practice concerning safeguarding and care planning. Progress was reported related to key objectives and long term objectives, but specific evaluation questions on e.g. safety, community of practice, may enable more thorough evaluation.
South Eastern Palliative Care	Improved patient care and staff support	1. Increased knowledge of community nurses in relation to management of complex conditions 2. Increased confidence of community nurses in relation to management and decision making around complex conditions 3. ECHO identified as suitable model for delivering education – to include moodle as a resource.	1. Increased capacity of community nurses to safely manage patients with complex conditions in the community. 2. Help prevent unnecessary admissions to hospital.	37.5% (3/8) of the 8 respondents to the survey 'strongly agreed' and 62.5% (5/8) 'agreed' that participation in this ECHO network developed their clinical knowledge in palliative care. 62.5% (5/8) of respondents indicated they were 'strongly likely' and 37.5% (3/8) indicated they were 'likely' to use the new information they learned in their ECHO network within the next 3 months. 25% (2/8) of respondents 'strongly agreed' and 75% (6/8) 'agreed' that participation in this ECHO network increased their confidence in dealing with end of life care scenarios. 37.5% (3/8) of respondents 'strongly agreed' and 62.5% (5/8) 'agreed' that participation in this ECHO network helped improve the service they provide to palliative care patients and their carers. These positive responses suggest success in achieving short term goals. Further research and monitoring of progress towards long term goals and reducing hospital admissions would be useful.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
South Western Acute Hospital (SWAH)	To create a regular virtual meeting place to share key learning, provide support to isolated practitioners and improve communication and understanding between primary and secondary care	1. Participants have improved understanding of the services within the hospital 2. Participants have improved understanding of referral and discharge processes 3. Primary care staff report improved relationships with hospital care staff 4. ECHO identified as suitable model for education for rural staff and as a means for bringing primary care staff and secondary care staff together to learn 5. Participants use ECHO sessions in CPD portfolio 6. Isolated participants feel more supported in their role	1. Build a community of practice – Through sharing real life examples it is hoped the community of practice will form and recognise the need for collaboration	31 participants responded to the survey, 100% said content was relevant and sessions were enjoyable. 23% noted challenges to participating in the sessions (mainly related to time commitments). 83.87% had applied knowledge from the networks. Weighted average of 4.48 for feeling more supported in their role, and 4.45 for enhancing relationships between primary and secondary care. 42% reported changes to policy, practice guidance, or processes within their work place because of the learning through this ECHO network, suggesting areas for future strengthening particularly related to referral and/or discharge processes set out in short term goals. Data strongly suggests that this network achieved its goals of reducing isolation of practitioners and improving relationships and building a community of practice.
Western Nursing Homes	To enhance the knowledge, confidence and competence of those managing Palliative and End of Life Care within the nursing home setting	1. Nursing home staff have increased knowledge, confidence and competence to enable them to better manage people with Palliative and End of Life needs. 2. Nursing home staff feel more supported to manage people with Palliative and End of Life needs. 3. A community of practice for Nursing homes which encourages learning from Specialist Palliative Care services and each other is established. 4. ECHO viewed as a suitable model for nursing home education: sustainable and easily accessible	1. A reduction in unnecessary hospital admissions for residents of Nursing Homes, especially those nearing End of Life, through improved education and support	10 respondents completed a survey. 40% 'strong agree' and 50% 'agree' that participation has improved their knowledge, while 50% 'strongly agree' and 40% 'agree' that participation has improved the care they provide to patients. 70% felt more supported in their roles (30% neither agree/ disagree)/ 100% would recommend ECHO to other colleagues and said it had impacted on their daily practice. Only 30% had accessed resources through Moodle and 40% experienced technical difficulties (e.g. sound quality). 90% rated their ECHO experience as good or excellent, and 10% as fair. 100% would participate in future sessions. These results suggest success in achieving short term goals such as improving knowledge, however there is little data on the impact or progress of the network in achieving long term goals of reducing unnecessary hospital admissions.

Appendix 2: Evaluation Results and Assessment of each ECHO Network (excluding Case Studies presented in main Report)

Network	Key Objective	Short Term Goals	Long Term Goals	Evaluation Results and Assessment
Western Optometry	To optimise the value and input of Primary Care Optometry in the care provision for patients across all eyecare pathways through improved knowledge and confidence and a reduction in professional isolation.	1. Enjoyable, relevant and valuable interaction at each ECHO session with 50-60 participants.	1. Improved knowledge about the wider HSC system, transformation and the integration of Ophthalmic services within the HSC system, including scoping of opportunities to innovate and transform care.	44 respondent to the surveys. 68% of respondents 'strongly agreed' and 27% 'agreed' that participation in this ECHO network improved their clinical knowledge in ophthalmic assessment and clinical decision-making. With regards the application of this new knowledge, 55% 'strongly agreed' and 41% 'agreed' that they applied knowledge learned through the ECHO sessions. 56% 'strongly agreed' and 43% 'agreed' that their confidence in assessing and managing a range of ophthalmic conditions improved as a result of participation in this ECHO Network. 43% 'strongly agreed' and 36% 'agreed' that they feel more connected to their Optometry peers within the ECHO network. Across all these metrics, success was therefore evident and shows progress towards key objectives and goals. 93% of respondents agreed that the topics covered with the ECHO sessions were useful to their clinical practice. 100% would like to continue to be involved in this ECHO network and 100% would recommend participation in this network to other community optometrists. Data was not collected on longer terms goals related to service transformation and reducing waiting lists, representing areas for future focus.
		2. Strengthened relationships and improved communication between Optometrists in primary care and with secondary care Ophthalmology.	2. Formation of foundations on which opportunities can be developed and built through the network and Community of Practice – reduce waiting lists and demand, increase capacity.	
		3. Quality Improvement in eye care provision – better informed clinical decision making, management and in referrals.		

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Project ECHO® Northern Ireland

HSC Health and Social Care Board

www.hospiceuk.org

t: 028 95 582 390 @hospiceuk /hospiceuk

Hospice UK, 2nd Floor, The McCune Building, 1 Shore Road, Belfast BT15 3PG