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# PRIMARY CARE & HEALTH SERVICES SECTION

## Original Research Article

# Project ECHO Telementoring Intervention for Managing Chronic Pain in Primary Care: Insights from a Qualitative Study

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## Abstract

**Objective.** Family physicians in Canada receive little training in chronic pain management; concomitantly, they face increasing pressure to reduce their prescribing of opioids. Project ECHO Ontario

Chronic Pain/Opioid Stewardship (ECHO) is a telementoring intervention for primary care practitioners that enhances their pain management skills. This qualitative study reports participants' experiences and assessment of ECHO.

**Design.** An opportunistic sample of multidisciplinary primary care providers attending one of three residential weekend workshops participated in focus group discussions.

**Setting.** University or hospital facilities in Toronto, Thunder Bay, and Kingston, Ontario, Canada.

**Subjects.** Seventeen physicians and 20 allied health professionals.

**Methods.** Six focus group discussions were conducted at three different sites during 2014 and 2015. Transcripts were analyzed using a qualitative-descriptive approach involving analytic immersion in the data, reflection, and achieving consensus around themes discerned from transcribed discussions.

**Results.** Findings resolved into five main themes: 1) challenges of managing chronic pain in primary care; 2) ECHO participation and improvement in patient-provider interaction and participant knowledge; 3) the diffusion of knowledge gained through ECHO to participants' colleagues and patients; 4) ECHO participation generating a sense of community; and 5) disadvantages associated with participating in ECHO.

**Conclusions.** Managing patients with chronic pain in primary care can be difficult, particularly in remote or underserved practices. Project ECHO offers guidance to primary care practitioners for their most challenging patients, promotes knowledge acquisition and diffusion, and

**stimulates the development of a “community of practice.”**

**Key words. Chronic Pain; Pain Management; Telehealth; Opioids; Education; Continuing**

### **Background**

Chronic pain is a significant public health problem, in which the burden of patient management falls heavily on primary care services [1,2]. In Canada, approximately 20% of adults suffer from chronic pain [2,3]. Most patients rely on family physicians, who in Canada and the United States spend relatively few hours learning about pain and its management [4,5]. Treating chronic pain has been identified as a particularly challenging topic among medical students [6], with low confidence levels continuing into professional practice [1]. Lacking adequate knowledge leads to primary care providers (PCPs) generating excess referrals to specialists and pain clinics. Average wait times to visit a pain specialist or multidisciplinary pain clinic in Canada are estimated to range from six months to five years [7–9]. In addition to the frustration entailed in long delay, there is also added expense: the cost of care for patients on waiting lists for pain clinics has been estimated at C\$1,462/month (US\$1,200) [10].

Opioid therapy for chronic pain requires judicious, responsible management by prescriber, pharmacist, and patient in order for the benefits to outweigh harms. Opioid prescription rates in Canada and the United States are notoriously high compared with other countries, with concomitant high levels of opioid-related harm [11,12]. Canadian prescribers face public and governmental pressure to reduce the quantity of opioids prescribed and to employ other nonopioid modalities of managing chronic pain. Ideally, multidisciplinary care teams should manage such patients and offer them various treatment strategies, of which pharmaceuticals might be one [13,14]. Access to this “gold standard” of care in Ontario, however, is often limited by economics or by geography. Meanwhile, PCPs struggle to make accurate pain diagnoses, to suggest effective, affordable treatments, and to prescribe opioids safely and appropriately.

The Extension for Community Healthcare Outcomes Project (Project ECHO) [15] is an innovative telemedicine-based mentoring strategy that seeks to help PCPs in remote, rural, or underserved communities to manage their patients with chronic, complex, and common conditions [16]. ECHO’s “hub-and-spoke” design uses video-conferencing to connect an interdisciplinary team of experts (the “hub”) with multiple PCPs (the “spokes”) during weekly sessions. This model subjects specialists’ expertise to “force multiplication,” a dynamic that dramatically increases knowledge-sharing beyond one-to-one teaching or consultation [17]. The hub-and-spoke design further promotes multiway interaction in an “all-teach-all-learn” environment. Each weekly session consists of a lecture presented by one

of the experts, and up to three de-identified cases presented by PCPs seeking guidance for patients with chronic pain. The case discussions start with a round of questions, followed by a round of suggestions for differential diagnoses, investigations, referrals, nonpharmacological management, and pharmacology with and without opioids. ECHO differs from traditional telemedicine by amplifying access to specialists and by building capacity within primary care. ECHO has been replicated worldwide for the management of many diseases and conditions [16,18].

In response to the need for more and better chronic pain management, the Ontario Ministry of Health and Long-Term Care (MOHLTC) funded the first replication of ECHO in Canada in 2014. PCPs include family physicians, nurse practitioners, registered nurses, social workers, occupational and physical therapists, pharmacists, physicians’ assistants, and other allied health workers [19]. The ECHO experts include practitioners of psychiatry, neurology, psychiatry, nursing, pharmacy, psychology, social work, physical therapy, occupational therapy, chiropractic, addiction medicine, and family medicine. In addition to weekly sessions, ECHO includes periodic face-to-face residential weekend workshops that bring together specialists and community participants to practice “hands-on” skills. ECHO Ontario provides free continuing professional education credits for attending the weekly ECHO sessions and the weekend workshops. The qualitative data presented here were collected during three such residential workshops.

### **Methods**

We conducted six one-hour focus group discussions (FGDs), with 37 PCPs enrolled in ECHO. Two FGDs took place in Toronto (November 2014), one in Thunder Bay (April 2015), and three in Kingston (September 2015). Participants included 17 physicians (i.e., prescribers) and 20 nonprescribing allied health professionals (data were collected prior to nurse practitioners being granted prescribing privileges in Ontario) (Table 1). Nine participants were men, and 28 were women. All gave informed consent and were remunerated for their time. Groups consisted of five to eight participants plus a moderator and a note-taker. They were audio-recorded and transcribed.

Topics of inquiry included 1) the experience of participating in ECHO sessions, 2) personal “takeaways,” or valued lessons, from the sessions, both for patient care and for professional development, 3) dissemination of knowledge acquired through ECHO to nonparticipating colleagues and to patients, and 4) perceived benefits or drawbacks of the ECHO model for continuing professional education. (See the Supplementary Appendix for the discussion guide.)

We employed Sandelowski’s qualitative-descriptive method [20] in analyzing the data. The data coders (LC and JZ) familiarized themselves thoroughly with the data

**Table 1** Participants

ID	Profession	Gender
1	MD	F
2	PA	F
3	SW	M
4	MD	F
5	NP	F
6	NP	F
7	RN	F
8	NP	F
9	MD	F
10	MD	M
11	PA	M
12	PC	F
13	MD	F
14	MD	F
15	MD	F
16	MD	F
17	MD	F
18	MD	M
19	MD	F
20	MD	M
21	SW	F
22	MD	M
23	PT	F
24	PC	F
25	NP	F
26	SW	F
27	RN	F
28	OT	F
29	OT	F
30	OT	F
31	NP	M
32	NP	F
33	PC	F
34	MD	M
35	MD	M
36	MD	F
37	MD	F

MD = physician; NP = nurse practitioner; OP = occupational or physical therapist; PC = pharmacist; RN = nurse; SW = social worker.

prior to beginning thematic coding, with the agreed aim of identifying common threads in the multiple voices, and also of noticing singular and enlightening comments within the transcripts. Coders read all transcripts and compared notes and themes. Discrepancies prompted further assessment of the data by reading more of the surrounding text and, through dialogue, achieving consensus. In the discussion that follows, we use these themes as an organizing framework with verbatim contextualized quotes as illustration. Finally, process notes maintained by the first author during data collection and throughout analysis provided another lens on the focus

groups and their participants; these have contributed to the paper's discussion and conclusions.

This study operated under research ethics approval from the University Health Network, Research Ethics Board No. 14-7415.

## Results

### *Challenges of Managing Chronic Pain in Primary Care*

PCPs used terms such as “heart-sink” and “dread” to describe how they might feel when seeing their patients with chronic pain. “I would say that my chronic pain patients—I don’t have a huge number—they are my most challenging patients and I’ve got their faces in my brain. And my top three probably take more brain and mental energy than the next 500 most challenging people. And so, I often felt quite helpless before ECHO,” said one doctor (MD04). Physicians, both younger and older, spoke of having received little training about pain management in general, and about opioid prescribing in particular. MD35 described himself as “the old guy” and said, “Nobody ever really taught me about them [analgesics], except, well, we’ll use this medication, okay. And, we’ll use that one, okay.” Younger practitioners also felt they received inadequate education: “We went through training and I feel like I got ‘opioids are bad’ but I didn’t get ‘this is what else you do’” (MD37). Many PCPs knew the importance of monitoring patients’ use of prescribed opioids but felt challenged putting such oversight into practice, such as having conversations about urine drug testing, having patient “agreement contracts,” and conducting pill counts. These interactions were seen to create, or to risk creating, tension in the provider-patient relationship. A nurse practitioner said, “I have lost one patient that tested positive for things. . . . This is a process; we are going to work on this” (NP32). Legacy patients, those who were “inherited” by their current PCP already on high doses of opioids prescribed by another practitioner, presented particular difficulties and discomfort.

Access to resources such as physical therapy can be limited, particularly given the remote or underserved nature of the participants’ practices. Both geographic location and patients’ economic constraints posed limitations. “One of the things that I think I find challenging. . . is with the expert panel in Toronto: they have, it seems, like the universe at their beck and call. Whereas, in a rural community where we practice, it’s us and maybe a little bit of massage, maybe a little bit of physio depending on the patient, but nothing that’s covered by any program” (NP08).

Some participants reported joining ECHO in part out of frustration with the province’s specialist referral system. “We know that the referral system is completely broken in Ontario, completely busted. So, we can’t rely on that. We have to develop the expertise ourselves. . .” said a nurse practitioner (NP08). Long waits for appointments

could be followed by “unhelpful” consult reports. “And then where are you left with your patient?” asked MD14 in frustration. “I can count on one hand or less the reports I’ve got back that actually answered the question I asked,” said another doctor (MD20). Specialists, according to these ECHO participants, too often proved unhelpful in terms of reducing opioid use. A number of PCPs talked about problems they encountered with pain specialists who had added to patients’ opioid dosages. “I guess my takeaway is that I think our specialists don’t understand pain medication,” said MD22. In addition to frustration with specialist referrals, ECHO participants wanted the ability to manage their own patients. “I think chronic pain has to be treated in primary care. It’s just too huge a problem to not treat in primary [care]. It’s 20%, 25% of our patients, right? So, if we’re not treating it in primary care, it’s not going to get treated,” said an allied health practitioner.

### *Impact of ECHO Participation on Patient Care and Professional Development*

Participants talked of gaining confidence along with knowledge through joining ECHO. “[I]t’s confidence. . . . If I don’t know it, I know where to go to try to get some ideas. And I feel that it’s with me a little bit more and—this is silly—but I don’t know a lot of stuff and I’m starting to feel more confident about the fact that I don’t know it all and that’s okay” (NP32). With greater levels of confidence, PCPs found their clinical encounters around chronic pain to be less stressful. “Even going into a room with a chronic pain patient, I noticed already an increase in my empathy. I used to. . . be fairly defensive and trying to protect my energy somehow and not be dragged in or dragged down or overwhelmed. I think I went in defensively, and now I go in feeling prepared to engage,” said MD13.

Appreciating newly acquired knowledge involved accepting preexisting deficits. MD04 said, “I’ve certainly gained knowledge but I’ve also realized that there are a lot of gaps that I didn’t recognize before.” This physician had been practicing for over a decade and described to the group feeling discouraged by her realization, while also expressing her commitment to improvement. MD22 reflected on his dawning awareness of the scope of the problems of treating chronic pain: “I look back now on a lot of the people I had, and they had chronic pain, and they always had chronic pain. Well, they took their Tylenol 3, but they took a lot of ‘Wisers’ [a type of Canadian whisky] as well, and you know, there’s ‘VO’ [a type of vodka] that went down and a lot of beer. And, I think that’s how a lot of these people cope with their pain, and I never really realized, oh, you’re drinking!”

Many participants joined ECHO particularly to learn more about responsible opioid prescribing: “What I found was helpful was being educated more about the opioids. Then when my clients talk about that ‘I just need stronger medication’ or ‘I don’t know why this

medication isn’t working,’ now I have all that backup of evidence about how there’s a tolerance, and then how you have to switch it” (OT28). Practitioners described changes they had made since joining ECHO. One pharmacist said, “Well, I thought I was going to go and learn how to solve all the problems in the world. And I came out going, okay, if we can make them functional, I think that’s the most important thing.” Some changes to treatment strategies happened very quickly. A nurse practitioner said, “I even feel more confident deciding what is going on with the patient, and I can be a lot more solid about my opioid use and choices. And I weaned somebody off and I think a lot of it comes because of the education that I have had here” (NP32).

Learning occurred via both the didactic lectures and the case presentations. The case-based component of learning in ECHO depends on participants agreeing to present cases, a task some describe as “daunting,” “time-consuming,” and also “beneficial.” One commented, “It was very nerve-wracking at first because we’re presenting to experts, and I’m just a lowly nurse practitioner in my little clinic. . . . And so you are going back to the beginning and saying, what did I do for this patient? So by the time you are actually presenting, you actually have some new ideas yourself” (NP31). Thus the learning occurs both from the preparation and from the live feedback during the ECHO session. Participants talked about “energy” in the learning process: “And that energy, we get to pass on to the clients so it’s like that wave effect, the pebble in the pond kind of thing; it just keeps going and then it comes around again. And that energy, too, you always feel like you are going to miss something if you don’t go to ECHO because it’s something good and you can’t miss it. Highlight of my week!” (SW21).

Changes in patient management occurred not only in those cases presented in the telementoring sessions, but for other patients in the presenters’ practices. One physician said, “And the ripple effect is not the people that I’ve actually presented but other people that came in that I think I caught earlier in their course of disease that I’ve managed to turn around faster because of what I presented” (MD16). PCPs recounted stories of reducing patients’ opioid consumption and of increasing function. A pharmacist, PC12, said, “I find that with this particular patient that we presented, six to eight weeks after that case, we’ve been able to successfully switch him over, and he actually had a couple of days where he had no pain. And, he woke up and he said, ‘I’ve never felt like this in the last four years.’ And, it was just such an amazing rewarding thing to hear about. So, it’s incredible.”

### *Diffusion of Knowledge Gained from ECHO Participation*

Dissemination of ECHO knowledge by participants to their patients and to nonparticipating colleagues



occurred in a variety of ways. Several participants told of engaging in “corridor consulting” or passing on knowledge informally to a colleague. For example, a pharmacist attending ECHO was asked by a physician in her team for an opinion about a particular patient. “I had just come from the urine ethics class [a lecture on managing urine drug testing],” said the pharmacist, “and... I said, well how about doing a random urine test, and he was in the next week and he refused, and now he’s not her patient anymore” (PC33). This participant went on to say that the doctor later learned that the patient in question had indeed been acquiring other medication from a separate prescriber. Another pharmacist used a systematic approach to disseminate new knowledge. After developing a Fentanyl deprescribing clinic in her own rural community, she shared the idea with a second clinic in a different location, whose staff had not participated in ECHO.

Further dissemination occurred through the sharing of new knowledge from clinician to patient, either in the form of practice change or via direct education. OT28 reported that she had shared the *Opioid Manager* tool [14] with a patient. “I printed one for him. He read it, and it was really eye-opening for him, and especially that long-term opioid use can actually cause pain, right?” One PCP said that after ECHO was publicized in her community, patients themselves wanted to “be presented.” “They’re actually coming to their physicians and ask, like listen, I don’t want to take medication anymore. Can you help me? Can you present my case? And usually they come to see me so I can explain what ECHO is about” (PA02).

### *ECHO Participation and Community*

ECHO participants, although mostly physically distant from one another, developed a sense of communal endeavor and collective support. “I feel less isolated,” said MD20, who runs a solo practice outside a major city. MD16, a rural family physician, lamented the fact that she had “graduated” from ECHO. “I really enjoyed that community. I met a whole bunch of people in different places that I wouldn’t necessarily ever see and may never see again but it was still interesting.” A physical therapist said, with enthusiasm, “[T]his is my world, so hearing that there are lots of people out there either struggling or excelling in what they’re doing...it’s going to be a sense of community” (PT23). Several participants felt the ECHO community validated their current practice; for example, “It’s really affirming that...the practice that we have is in line with what other people are doing and that they concur” (SW21). Being a member of the ECHO community helped to counter isolation that some practitioners experienced. “It’s been reassuring to hear that there are other practices that are experiencing the challenges of chronic pain and opioid prescribing,” said a physician assistant, who went on to say that working in isolation can be “a little bit frightening” (PA11).

### *Disadvantages of ECHO*

Negative comments about participating in ECHO included 1) complaints about the amount of time allocated to the didactic vs case presentation components of the weekly sessions; 2) time constraints, and 3) issues around the virtual connection. Almost all the PCPs argued for a greater amount of time to be devoted to the didactic lectures by specialists. Even those who presented cases and described the benefits accruing from both the preparation and the feedback declared that they preferred to spend more time listening to a lecture: “[S]ometimes I feel that we have these experts sitting there and that we’re getting very little of their expertise for two hours of time. So I would much rather—the cases are great—but have longer, more in-depth didactics,” said a doctor (MD4). Many PCPs had trouble attending the two-hour mid-day sessions every week. In some locations, attendance was “delegated” to allied health practitioners, who complained that lack of “physician buy-in” reduced the potential benefits of ECHO. Finally, the distance format of the sessions posed occasional technical issues, some of which were resolved by the project switching to a different video-conferencing system. For those PCPs in solo or remote practice, participation via telecommunication offered a means of joining a community; at the same time, paradoxically, seeing others gathered genially around tables at the experts’ hub also highlighted their own isolation. “There is such comfort at your table,” said an allied health practitioner.

### **Discussion and Conclusions**

Managing chronic pain in primary care is difficult, both because chronic pain is not “fixable” and also because it is invisible and “unprovable,” giving rise to potential tensions between patient and practitioner [21] and troubling the notion of trust within “patient-centered” care [22]. The increasing restrictions in Ontario on the use of prescription opioids adds a further stress; Crowley-Matoka and True describe the “demanding, desiring, disruptive pain patient” who is to some extent created by the regulatory system in which the clinical encounter occurs [23]. In remote or underserved practices, where effective alternatives to pharmaceutical treatment are often scarce or lacking, this problem is exacerbated. Primary care practitioners (especially in a single-payer system such as Canada’s) may end up struggling to identify evidence-based treatment that is covered or that their patients can afford without provincial insurance [24–26].

Participants reported feeling supported in managing their own specific difficult patients and, at the same time, valuing the acquisition of knowledge about treating chronic pain more generally. Presenting a case, while described as challenging or even “nerve-wracking,” may provide particular learning benefits [27]. In this qualitative study, we do not report objectively assessed measures of knowledge acquisition but rather describe

participants' sense of satisfaction with what they have learned. The discussions of increasing mastery often merged into descriptions of growing confidence. In line with other research on ECHO for chronic pain management [28], greater confidence led to a better relationship with "difficult" patients and to a reduction in the feeling PCPs described as "heart-sink" regarding patients suffering from chronic pain.

Project ECHO's theoretical foundation involves "democratizing" or "demonopolizing" specialized knowledge with the aim of sharing expertise widely [29]. Our participants described sharing their own newly acquired knowledge to educate both colleagues and patients. Another facet of ECHO is the idea of building "communities of practice," defined as "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" [30,31]. Such communality reinforces the telementoring intervention. Arora et al. [15] describe ECHO as "a community of learners who are "in practice" building technical knowledge and skill associated with the care of patients with complex diseases." Our data suggest that for these ECHO participants, it is this combination of education and community that proves helpful in coping with the challenge of managing patients with chronic pain.

#### ***Strengths and Limitations of the Study***

Well-organized and moderated focus group discussions are an effective and dynamic tool for exploring both thoughts and feelings, with multiple participant points of view enriching the conversation of the subjects covered. This method proved highly appropriate for answering our research questions. The focus group discussions had a momentum and a level of engagement that made them difficult to bring to a timely close. Limitations of the method include the relatively public, open nature of the discourse, so that participants might hesitate to reveal deeply held feelings and concerns among their peers; some self-censorship probably occurred. The participants volunteered to join both ECHO and the FGDs, and as such constitute a self-selected group. Knowledge acquisition was self-reported rather than assessed independently, although studies in other ECHO projects have utilized a "pre/post" evaluation to demonstrate learning through ECHO participation [28,32]. Finally, the data are cross-sectional in nature and do not reflect change over the participants' time in ECHO.

#### ***Future Research***

Further qualitative research is underway to evaluate the impact of ECHO on patient outcomes. Another topic for future research is the role and experience of the inter-professional experts who comprise the ECHO "hub."

#### **Supplementary Data**

Supplementary Data may be found online at <http://pain.medicine.oxfordjournals.org>.

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