Project ECHO at the University of Virginia
Implementation Profile

"There's expertise that community-based providers have that speaks to cultural norms or challenges with access or affordability. We don't know any of that sitting in the UVA campus. But we can learn and that's how we can help make a difference on the ground for communities."

ECHO work at the University of Virginia's School of Medicine (UVA ECHO) and two of its ECHO programs, the Hepatitis C ECHO (Hep C) and Pulmonary ECHO, were included in a study led by Diffusion Associates and funded by the Robert Wood Johnson Foundation. The purpose of this study was to document and share how ECHO is adopted, implemented and sustained across ECHO hubs and programs in the United States and Canada. This study was separate from, but endorsed by, the ECHO Institute.

Kimberly Albero, DNP, the ECHO program director in the Department of Psychiatry at the University of Virginia (UVA), was a 2021 implementation fellow and worked with 14 other fellows alongside Diffusion Associates in conducting research for this study until she left UVA (November 2021). Kathy Dodsworth-Rugani, PhD, executive director, Rutgers Project ECHO and Telehealth, was also a 2021 implementation fellow, and conducted interviews in August and September 2021, along with R. Sam Larson, PhD, director of Diffusion Associates, which are the basis of this profile.

We begin this profile by sharing unique implementation insights from the University of Virginia's School of Medicine (UVA ECHO) and its Hepatitis C ECHO (Hep C) and Pulmonary ECHO programs.

ECHO Implementation Insights

Sustainability in a Decentralized Model

The ECHO Model has a low cost of entry, and a large staff is not necessary to offer several high-quality programs. So, it was not surprising to see a decentralized model in place during ECHO adoption at the University of Virginia. The decentralized ECHO model benefited from having a champion who was highly connected within the institution. This point-person helped connect workstreams by knowing who was doing what and communicating this across ECHO stakeholders. The decentralized model connected ECHO efforts by having one person provide training and assistance in the initial implementation phase of an ECHO program. The operational coordinator in a decentralized model may be well served by taking time to clarify their scope of work. This may keep help a single coordinator in a decentralized system from overcommitting to operational activities and empower them to say "no" or "not now."

ECHO + Consulting

The Hep C ECHO was part of a larger Hep C telehealth initiative funded by the state. The larger initiative coupled ECHO with ongoing consultations for HepC medication assisted treatment. The two leads were funded 5-10 percent time to support ECHO and had another part of their time bought out to provide consulting, answer questions between ECHO sessions, and provide updates on new developments. This financial support and consulting activities enabled the team to create a community of practice and take full advantage of the ECHO Model to build and train the community. As a result, it was easy to find and encourage case presentations and to recruit participants. Having ECHO integrated with consulting and patient care was a unique model that warrants further exploration as telehealth continues to gain traction.

Build from What Works

The Hep C ECHO program at UVA was successful with minimal ECHO-specific support because it was building on a pre-existing program. Relationships were already established and content already generated. The only change required was the use of technology – which was hastened by COVID – and the inclusion of cases, which were easy to solicit given the pre-existing work. In a decentralized model where ECHO support was sparse, adapting pre-existing programs required less effort than creating a wholly new program.

ECHO as a "Tool"

In a decentralized model with limited staff, ECHO may be positioned as a "tool" and opportunistically included in training or education components in grant submissions. Such an approach may require fewer staff and less commitment to assessment and impact measurement to ensure continued funding.

ECHO Model Adoption

The Virginia Department of Health encouraged the UVA School of Medicine to adopt the ECHO Model. Lisa Wooten, chair of the Injury and Prevention Program, and Hughes Melton, MD, then associate commissioner, were especially influential. They encouraged Karen Rheuban, MD, the senior associate dean for Continuing Education (CE) and External Affairs and the co-founding director for the Center for Telehealth, and Richard Merkel, MD, a faculty member in the Department of Psychiatry and Neurobehavioral Sciences, to apply for an Opioid Use Disorder (OUD) grant from the state. The grant was awarded and the OUD ECHO was then initiated and led by Merkel. Rheuban continued to champion ECHO and to look for opportunities where Project ECHO was a good fit as the training component of a grant proposal.

The initial focus on OUD led to the Department of Psychiatry and Neurobehavioral Sciences taking a leadership role for ECHO in the School of Medicine. Merkel hired Kim Albero to become the program director for Project ECHO. She had completed a nursing dissertation on ECHO and had participated in the immersion training offered by the University of New Mexico and was regarded as the local expert for ECHO. In addition to the OUD ECHO, Albero worked with other programs and departments in the School of Medicine to help them write ECHO-related content to include in grant proposals. She also provided consultation and implementation support to ECHO programs within and outside of the department. Rheuban said of Albero, "She has graciously supported Project ECHO programs across other disciplines, which has been invaluable, even absent of funding she was willing to do that because it was the right thing to do."

Hepatitis C (Hep C) ECHO

The Hepatitis C (Hep C) ECHO was led by Rebecca Dillingham, MD, a professor of medicine at UVA who specialized in infections disease and international health, and Terry Kemp Knick, MPH, a registered nurse and clinical research coordinator with UVA. The Hep C ECHO had its basis in the Virginia HEPC outreach program started in 2014 by Dillingham and Kemp Knick. The Virginia HEPC outreach program was developed to respond to limited access to care, especially specialists, in the far southwest of the state. Dillingham said, "A lot of our referrals were coming from the far southwest and we had a very high non-show rate because that's a big trip." The program included a one-day training course in tandem with a

telehealth "shadowing" option. The program was not as successful as they had hoped and they decided to modify who was being trained. They added in "support staff such as nurses, medical assistants, office managers – whoever needs to be involved in actually getting Hep C treatments to individuals." COVID forced more changes in the Virginia HEPC outreach program and this was when ECHO was adopted as part of the larger outreach initiative.

Dillingham "was excited when UVA decided to start a formal ECHO program, especially because we were already really working hard to create this community of practice, of people who were interested in treating uncomplicated HepC in primary care and substance use disorder clinics." Dillingham was familiar with ECHO prior to the start of the HepC ECHO. She had watched part of the immersion training offered by the ECHO Institute, used some of their resources, and attended an ECHO session led by the ECHO Institute. Albero provided start-up ECHO consultation and was "very helpful in getting everything started and set up, and then it transitioned over to us being able to manage it." Dillingham and Kemp Knick drew on previous experience in adult learning to inform their work and to create a community of practice.

The ECHO Hep C program was offered monthly. It was a partnership between the University of Virginia and the Virginia Department of Health. Funding from the Virginia Department of Health supported Dillingham's and Kemp Knick's time to prepare and conduct ECHO sessions and time to consult with providers in the community. It also supported in-person training.

Pulmonary ECHO

Drew Harris, a pulmonologist at UVA, learned about ECHO from Albero. The two received a small internal UVA grant to develop a Pulmonary ECHO focused on respiratory disease in Central Appalachia. Harris and Albero delayed implementing the ECHO for three years due to Harris' schedule. At the time they wrote the grant, it was pre-COVID and Harris said he found the novelty of ECHO very exciting. Nearly two years into the pandemic, however, he commented that people had "burned out" and were overloaded. Still, they averaged about 20-25 people per session. Harris attributed participation to the director of the Black Lung Clinic who "made it a priority for staff to join. He didn't schedule patients during that time."

The Pulmonary ECHO consisted of eight sessions that focused on topics that would appeal to general practitioners in rural parts of the state. Participants were recruited from the FQHC where Harris was the medical director of the Black Lung Program. It was a "multidisciplinary audience, respiratory therapist and nurses and practitioners." Didactics were provided by a pulmonary fellow who worked with Harris.

The adoption decision for the Hep C and Pulmonary ECHOs were different. An existing Hep C program was adapted to include an ECHO component, largely driven by COVID restrictions for in-person meetings. The Pulmonary ECHO began as a response to an opportunity to apply for internal funds. They were also different in the role that Albero played. For the Hep C ECHO, she provided initial training and was not involved in the sessions. In contrast, she provided coordination for the Pulmonary ECHO and attended each session.

ECHO Model Implementation

The ECHO Model seeks to build a learning community where "all teach, all learn." UVA ECHO respondents described "all teach, all learn" as bi-directional learning. Albero said that ECHO "is not a

presentation that is meant to educate alone, it's meant to be a conversation. You're meant to learn something from the participants." She encouraged participants to speak out by saying, "You guys are the experts in your practice, in your community and in your part of the state and we would love to hear more about how it is to practice with this patient population in this place.'" Harris expressed a similar view, "There's expertise that community-based providers have that speaks to cultural norms or challenges with access or affordability. We don't know any of that sitting in the UVA campus. But we can learn and that's how we can help make a difference on the ground for communities. We are the content experts and we can share challenging clinical anecdotes and what our practice is like here."

The Hep C ECHO team extended this definition of "all teach, all learn" to include a focus on peer-to-peer learning where you can "see one, do one, teach one." The emphasis was on having the participant come back and teach others. Kemp Knick said, "It's a wonderful thing to watch – a person being able to teach the next group. Each person gains more competence as they're able to tell the next person what they now know." In addition, this team consulted with individual providers to improve care "in the moment" and in between sessions.

According to the ECHO Model, one means for achieving an "all teach, all learn" environment is through case-based learning – a central element of the model. The Hep C ECHO program emphasized the role of cases: "We really try to focus on having people bring their own cases and discuss them. It is a mix of people who are already treating and those who are still pre-contemplated." The Hep C ECHO used participant cases and/or facilitator cases in every session. Kemp Knick shared that when a pre-contemplate practitioner was listening to a peer who was providing treatment, they're thinking, "Oh, okay. Maybe I can do this." The case submission in the Hep C ECHO was simple, with "pretty low barriers." Cases did not need to be written in advance or presented formally. Rather, they were conversational. Dillingham and Kemp Knick also presented cases that were hard for them or unexpected. Some of their cases came from emails, where they see something that was "persistently confusing or that becomes confusing because of changes in guidelines."

The Pulmonology ECHO was more of a lecture series and cases were not presented by participants. Harris felt that participants might see cases as "a homework assignment," especially given work pressures related to COVID. Harris, and in particular the pulmonary fellow who led the didactic discussions, built cases into the presentation. The Pulmonology ECHO sessions were "reserved." Participants were "timid. It's not something they're used to . . . These are people that have been practicing for 20, 30 years and trying to reengage them in something like ECHO is a challenge. I think if we did this for three years, they would get comfortable with it. But over six lectures or eight lectures, they're going to still feel a bit uncomfortable."

The Hep C ECHO was more mature, having started as an outreach program in 2014. Dillingham and Kemp Knick had years to develop a community of practice where participants were comfortable sharing cases. In addition, they had visited with participants in their local clinics. The participants had a network and both leads see themselves as immersed within a community of practice. In contrast, the Pulmonary ECHO was new—it was still in its initial roll-out when we interviewed Harris and Albero. Participants were described as "hesitant to unmute and talk to us, even though they knew us. For the most part it was talking to black boxes with names and phone numbers." Further, Harris said he was "not the type that calls on people in lectures, ever. My style is not to force participation on people." Given time, Harris suggested, people could become comfortable sharing.

Factors Influencing Implementation

Studies of program implementation identify outer and internal contexts that can shape how a program was implemented. Factors in the outer context that can influence program implementation include external leaders or champions, state and federal policies, external funding, and external partnerships or collaborations. The inner context refers to characteristics within an organization such as internal structures and processes, leadership within the organization, monitoring for quality and fidelity, and staffing—including how people were trained and the characteristics of the people leading and supporting the program.

Not all of these factors may play a role in how ECHO was implemented here or elsewhere, and some factors were more important than others. Below, we identify factors that emerged during interviews and appeared to influence how ECHO at UVA and the HepC and Pulmonology ECHO programs were implemented.

Organizational Characteristics

ECHO programs existed in multiple units at UVA. The School of Education ran their own series of Autism ECHOs. The Hep C ECHO was part of a larger outreach program jointly offered by UVA and the Virginia Department of Health and operated somewhat autonomously from UVA. The Pulmonary ECHO was a partnership between the UVA Division of Pulmonary Medicine, the UVA Karen S. Rheuban Center for Telehealth, and Stone Mountain Health Services. The Department of Psychiatry and Neurobehavioral Sciences offered an Opioid Addiction Clinic ECHO and an Addiction Medicine for Non-Psychiatrist ECHO. This decentralized approach to ECHO at UVA encouraged autonomy which may lead to adaptations that make ECHO more effective. That said, a decentralized system can also lead to adaptations that were unknown and that can make the ECHO Model less effective and less sustainable.

Decentralization also impacts the allocation of funds for ECHO work. Multiple programs have received funding for ECHO, but it was not clear how these funds were aggregated and spent on ECHO work. Without an ECHO budget or line item, it was unclear if there were sufficient funds to hire additional staff to assist with the coordination and implementation of ECHO, leaving much of the operational work to Albero alone.

As the School of Medicine increased its interest in using ECHO, conversations surfaced about where an ECHO hub might best fit within the school. ECHO does not fit well within the Center for Telehealth which focuses on direct patient care, but it could be a good fit in “community health or population health or continuing professional education.”

Organizational Leadership

Rheuban was a champion of ECHO, sharing with colleagues that ECHO was an innovative approach to education and something they should consider. Albero says of Rheuban, “People hear ’tele-anything’ in medicine and they think Rheuban. She’s the right person to talk to because she knows everybody and can help to make connections. And that’s how I have become so involved beyond the Department of Psychiatry.” Beyond Rheuban, support for ECHO in the School of Medicine had been hampered by changes in leadership. The executive vice provost for health science left and was “replaced by a new EVP who arrived two weeks before COVID. Our dean has stepped down and we have a new dean arriving in medicine. Our senior associate dean for education has retired.” The changes in leadership generated “a lot of transition and a reticence to make any major decisions about programs or funding.” In addition,

UVA “had to go through a whole year of financial mitigation in a health system with furloughs and salary cuts.”

Organizational Staffing

Albero assisted with the initial start-up of multiple ECHOs by training program facilitators on how to use the technology, components of the ECHO Model, and accessing materials from the ECHO Institute. Outside of the Department of Psychiatry and Neurobehavioral Sciences, ECHO programs were “their own entity. They’ve done the training and run their programs with little input from me.” Subject matter experts created the curriculum, presented, and facilitated the sessions, and apply for continuing education credits. Albero said that others may not have “an appreciation for the man hours and the actual effort required per week to do each of these sessions and evaluations and overall series. And then there's the grant writing and then the report writing and CMEs.” A lack of support, especially not having additional coordinators to assist with daily operations so that she would have more time for strategic planning and developing a business case contributed to Alberto leaving UVA. Rheuban encouraged Albero to keep the door open at UVA, commenting: “You've [Kim Albero] done such an amazing job in a short period of time.”

Quality and Fidelity Monitoring/Support

The UVA ECHO programs in this study had modest, if any, systems in place to ensure adherence to the ECHO Model. Albero was the only person we interviewed who attended ECHO immersion training, thus her role was critical to maintaining fidelity to the model. Albero commented that when she was participating in an ECHO, she would guide the process to ensure fidelity, otherwise maintaining fidelity to the model rested with the subject matter experts.

ECHO Vision and Sustainability

When asked about the future of ECHO at UVA, much of the conversation focused on where an ECHO hub might best fit within the UVA School of Medicine. Rheuban would like to see ECHO “more centralized. Telehealth should be an enabler, but ECHO needs a real home with a real investment.” Rheuban would like to see a business plan that she could share and discuss with her colleagues and the new senior associate dean for education. Albero was working on the business plan with an external consultant who had ECHO experience at multiple institutions. This business plan was intended to show “what a budget should look like, what the investment in the program should look like from an institution level based on the current funding and the future funding that's available.” Rheuban would also like to see ECHO included in the strategic plan for the School of Medicine but did not think that a decision about the placement of ECHO would be made soon due to leadership changes and the financial strain created by COVID.

In November 2021, Albero resigned from her position at UVA. As of January 2022, Samuel Collins, DrPH, Department of Psychiatry and Neurobehavioral Sciences at UVA, led Project ECHO work at UVA that focused on provider and community education related to substance abuse and mental health. Due to the prolonged pause in the program, Collins saw the opportunity to focus on new series development and new partnerships internally at UVA and within the community. This included content developed specifically for the internal UVA PCP audience, with UVA Primary Care input on content and organization. He saw ECHO as part of a larger toolkit of provider education that could be paired with things like eConsults to provide a means of identifying educational needs and also to aid putting into

practice the learning obtained from ECHO sessions. Collins was also leveraging his previous provider education work with the UVA Medical Toxicology Department to create a new series on substance abuse. While his current focus was reestablishing ECHO substance use and mental health series in 2022 for the Department of Psychiatry and Neurobehavioral Sciences, partnership and collaboration on a central UVA ECHO hub may be a future goal.

The Hep C ECHO program team would like to expand their geographic reach. The team was optimistic about securing population health funds from the legislature. They would also like to expand their evaluation efforts and collect data that reflect public health improvements. Dillingham said, "If we don't measure that and think about the continuum that gets us there, then we may just be missing what the real problem is. Because we all know that education is necessary, but not sufficient." Dillingham and Kemp Knick also talked about making evaluation "more user friendly so that this community of practice can feel a part of the effort too." That could involve mapping care gaps or sharing with participants the number of people they've treated. They emphasized that evaluation measures should motivate participants. Additionally, they would like to streamline their referral program.

The Pulmonary ECHO program ended. They lacked funds to continue the program and they lacked momentum to drive it forward. Possibly they'll offer it again "at a time that makes sense to grow." Harris shared a possible path forward: "There's always one or two of the four pulmonary fellows each year at UVA who want to do clinical education. ECHO is a natural fit for them." Working ECHO into a fellow's role, then, could lead to continuing ECHO pulmonary work. If this were to happen, Harris would also like to "figure out a way we can grow beyond this one FQHC to have a broader presence."

Respondents

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