



## Project ECHO: Bridging the Gap in Health Care for Rural and Underserved Communities

Specialists and primary care providers jointly manage complex illness through videoconferencing

### INTRODUCTION

*Project ECHO—the acronym is short for Extension for Community Healthcare Outcomes—builds capacity to treat chronic, complex health conditions in rural and underserved communities that lack ready access to clinical specialists. Funded by the Robert Wood Johnson Foundation (RWJF) since 2009, and now widely replicated across the country and around the world, Project ECHO links primary care clinicians with specialists through a real-time learning model made possible by inexpensive videoconferencing technology. See [Appendix 1](#) for a complete list of replication sites and their ECHO clinics as of April 2014. The “bridging the gap in health care” approach allows physicians, nurse practitioners, and other clinicians to jointly manage complex illness and promotes the use of best practices in care, while enabling patients to receive treatment in their home communities.*

*Founded and directed by Sanjeev Arora, MD, distinguished professor of medicine at the University of New Mexico Health Sciences Center in Albuquerque, Project ECHO initially trained primary care clinicians to treat patients with hepatitis C. Project ECHO clinics have broadened to address HIV, chronic pain, mental illness, complex care, endocrinology, and other common, costly health issues. The model is being replicated at academic medical centers, community health centers, military health centers, prisons, and elsewhere. See [Appendix 2](#) for a list of people interviewed for this report.*

## WHAT PROBLEM IS PROJECT ECHO ADDRESSING?

Project ECHO is ambitious, according to Arora. It takes on core problems of the American health care system—those conditions that are “high cost, have poor quality outcomes, and where access to health care in rural and underserved populations is limited.”

### A Monopoly on Medical Knowledge

Underlying the problem is what Arora sees as a “monopoly” in American medicine. Specialized medical knowledge has been largely confined to academic medical centers (i.e., teaching hospitals) or tertiary care centers in major cities. It has been disconnected from primary care clinicians on the front lines.

Traditionally, patients who need specialty treatment get referred to academic medical centers, if they are available. “If you are living in a city and you are very affluent and have adequate health insurance, then you are able to get specialized care in a reasonable amount of time,” Arora explains. “If you are living in a rural area where there are very few specialists or you don’t have health insurance or you only have Medicaid,” then the care is often inadequate or nonexistent.

This situation is not only a potential calamity for patients, it is immensely upsetting to specialist and primary care clinician alike. “Many specialists are very frustrated,” says Arora. “They have developed a tremendous amount of expertise, but they can only help the patients they see directly.” Meanwhile, primary care clinicians including physicians, nurse practitioners, physician assistants, and community health workers, often labor with dedication but without the in-depth specialty knowledge, experience, or peer support needed to manage the complex conditions they are being asked to treat. Project ECHO provides primary care clinicians with case-based learning delivered via video conference and mentoring to provide them with the skills they need.

### The Need to Expand Treatment for Hepatitis C

Hepatitis C highlights the pitfalls of the medical monopoly. Some 3.2 million people living in the United States are infected with the hepatitis C virus, and all are at risk for cirrhosis and liver cancer. The infection is the most common reason for a liver transplant and it kills some 10,000 people in the United States every year. Yet “most people don’t know that they are infected, because of the silent nature of the infection,” says John W. Ward, MD, director of the Division of Viral Hepatitis at the Centers for Disease Control and Prevention (CDC).

While the condition can often be cured with the right therapies, the highly complex treatment involves aggressive management with interferon and ribavirin. “Most infected

people never get that kind of help,” Ward says. Nationwide, according to Ward, only 12 percent of the infected population receives treatment, and only about 6 percent achieve viral clearance, meaning that the hepatitis C virus can no longer be detected in the blood.

In 2003, before Project ECHO was launched, the situation was even worse in New Mexico. Some 34,000 New Mexicans had hepatitis C infection, but fewer than 1,600 had been treated.

*Arora, an expert in the disease, realized that patients were waiting eight months to see him and then sometimes driving 250 miles to keep the appointment. To maintain their treatment schedule, that trip might have to be repeated 18 times. “I treated as many as I could,” he recalls. “But people were basically dying from lack of expertise.”*

## WHAT IS PROJECT ECHO?

Arora knew something had to change. American medicine had to be “demonopolized,” and he saw Project ECHO as the way to do it. “ECHO bridges the disconnect between specialist and front line practitioner by using technology to create a platform for collaboration among all clinicians,” according to Arora and his colleagues in a 2014 article in *Academic Medicine*.

### Telemedicine Redesigned

Project ECHO uses telemedicine but departs from the traditional approach, in which a specialist provides 1:1 care to a patient in a remote area. That does little to increase the overall capacity of the system, says Evan Klass, MD, an endocrinologist and associate dean for the Office of Statewide Initiatives at the University of Nevada School of Medicine. “It is like moving the chairs on the Titanic. Doing the same old thing in a slightly different way doesn’t make it any smarter.”

Project ECHO does things very differently—by developing specialist expertise where it previously did not exist. “It is not one to one, but one to many,” Arora explains in the *Academic Medicine* article. But while ECHO uses technology to deliver medical knowledge in a new way, it “is not a new concept. It has been around for thousands of years—if you have good knowledge, if you share it with other people, more people will benefit.” It’s what Arora likes to call “a force multiplier”—the specialists mentor the primary care clinicians who treat many more patients than a single specialist ever could.

The initiative uses inexpensive videoconferencing technology to link a specialty care team at a “hub” site, generally an academic medical center, to primary care clinicians in

isolated communities, or in clinics in urban settings that can be equally isolated from specialists, so that they can co-manage patients. A typical hepatitis C team of specialists, for example, might include a hepatologist, a psychiatrist, and a clinical pharmacist.

Regularly scheduled virtual teleECHO clinics, conducted as interactive, case-based discussions between a team of specialists and a primary care provider, emphasize case presentations and best medical practices. Case-based learning “resonates with anyone who has had medical training,” says Nancy Barrand, MPA, senior advisor for program development at RWJF, who is the program officer for Project ECHO.

Typically, the one to two-hour teleECHO clinics open with an evidence-based clinical update from the specialists—for example, about a new drug therapy or a strategy for managing adverse treatment effects. Then, from scattered, remote and usually rural locations, clinicians describe their challenging cases and exchange ideas with expert colleagues and with their peers. Each clinician presents his or her patient case in five to seven minutes using a standard case format and then the interdisciplinary team of specialists makes treatment recommendations. Participants are often eligible for continuing medical education (CME) credits.

*“The genius,” says the CDC’s John Ward, “is in its simplicity.” But it is a “deceptive simplicity,” emphasizes Nancy Barrand, and it depends on specialists who see themselves as mentors eager not only to share their own expertise, but to learn from primary care clinicians in the field.*

### **A Solution for Underserved Communities—Urban or Rural**

Although Project ECHO began as a way to deliver specialized care to people living in rural often isolated areas of New Mexico, it can be used as well in underserved urban communities. In these settings, community-based health clinics and primary care clinicians are called upon to provide specialized medical care to low-income, often uninsured patients who present with complex, chronic conditions.

TeleECHO clinics offer all participating primary care clinicians a way to update their skills and foster a network of professional ties. “The beauty is that it empowers primary care docs who have real talent and real capability,” says Klass. “If we just support them and raise the bar for them, care gets better across their entire patient population.”

Daren Anderson, MD, is vice president and chief quality officer of Community Health Center, a health system that operates clinics in underserved cities throughout Connecticut. He agrees with Klass. “A patient from an underserved environment is better being cared for by a primary care provider.” He ticks off advantages of community-based

care, including co-located behavioral health services, convenient transportation, and the cultural and linguistic competence of the staff. “That is what we do best.”

Klass and Anderson share more thoughts about the ECHO model and how it empowers primary care clinicians in the sidebar, [Replicating Project ECHO: Stories From Three Sites](#), at the end of this report.

## Disruptive Innovation

Project ECHO came to RWJF’s attention in 2007, when it won the “[Disruptive Innovations in Health and Health Care](#)” award.<sup>1</sup> The online competition sponsored by RWJF and [Ashoka Changemakers](#) invites social entrepreneurs worldwide to share their ideas.

A disruptive innovation is a product or service that generates change “so big that it eventually replaces, or disrupts, the established approach to providing that product or service,” according to Harvard Business School professor Clayton Christensen, MBA, DBA, who coined the term. However, the initial proposal that Project ECHO submitted to RWJF after winning the competition did not highlight its potential to meet that definition.

To RWJF’s Nancy Barrand, it was “too safe”—an incremental expansion rather than an innovative new model. Only after travelling to Albuquerque to watch a teleECHO clinic in action and seeing the quality of the interactions among clinicians, recalls Barrand, did she realize the power of the ECHO model.

Moments before heading back to the airport, she turned to Arora and said, “We want to fund your vision.” RWJF subsequently did just that, awarding the University of New Mexico School of Medicine two major grants totaling about \$10 million.<sup>2</sup>

## WHAT ARE THE MOST SIGNIFICANT RESULTS TO DATE?

RWJF support helped Project ECHO expand, starting in New Mexico, then spreading around the country, and eventually finding a global reach.

### Bringing ECHO to ‘Industrial Strength’ in New Mexico

In New Mexico, teleECHO clinics rapidly expanded to new regions and took on six additional complex health issues. In addition to hepatitis C, clinics in New Mexico now address chronic pain, integrated addictions and psychiatry, rheumatology, HIV/AIDS,

---

<sup>1</sup> Grant ID# 57515 (\$752,642, August 1, 2006 to January 31, 2008). See the [Program Results Report](#) on the Ashoka project and the winners of the competition.

<sup>2</sup> ID# 63945 (\$4,996,530, February 15, 2009 through February 14, 2012); ID# 70562 (\$5,000,000, May 5, 2013 through May 14, 2015)

dementia, complex care, palliative care, women’s health/genomics, as well as endocrinology.

These initiatives enabled Project ECHO to reach “industrial strength” in the state, according to Barrant. By January 2014, it was providing “more than 57,000 hours of continuing medical education to health care clinicians in more than 300 clinical teams in 74 communities across New Mexico,” according to Arora.

## Replicating Project ECHO in Washington State

As Project ECHO expanded in New Mexico, the University of Washington began testing the model to determine how readily teleECHO clinics could move beyond state borders. The goal was to replicate the New Mexico “gold standard” and determine what systems, tools, and resources other sites would need to create their own teleECHO clinics.

As the only medical school serving five states in the western United States—Alaska, Idaho, Montana, and Oregon, in addition to its home state—the University of Washington pulls in patients from a vast territory. “I have patients driving, flying, taking ferries, going over mountaintops in the winter to come see me,” says John D. Scott, MD, MSc, medical director of the University of Washington’s telehealth and an expert in liver disease.

After launching with five sites focused on hepatitis C in 2009, the University of Washington team phased in teleECHO clinics on addiction, chronic pain, HIV, and multiple sclerosis, attracting funding from the National Institutes of Health, the Health Resources and Services Administration, and the National Multiple Sclerosis Society. The Washington Department of Health also funded the initiative in 2013 and 2014 to engage new sites.

Paralleling the medical education strategy of “see one, do one, teach one,” the University of Washington team has also provided technical assistance to expansion efforts in Utah and Arizona, as well as in Australia, where Scott spent a recent sabbatical. As a participant in the Western States ECHO collaboration (which brings together hub sites in Albuquerque, N.M., Phoenix, Salt Lake City, and Seattle), it is also part of efforts to pool data, share common problems, and identify research opportunities to assess outcomes of the clinics.

“The beauty of this is that it takes advantage of a lot of things we already do in medicine,” says Scott, comparing the case conference model with the “morning report” that is embedded in most teaching hospitals. “Also, ECHO brings to the table this idea of using best practices, having quality control, monitoring outcomes. It really brings together some disparate streams of medicine that work.”

And, he adds, it's "just plain fun. It is fun to develop relationships with these docs and see how hard they are working and feel like I am encouraging them and helping them. And I learn a lot from my colleagues in rural areas and at the medical center."

### **The Impact of an Article**

On June 9, 2011, the *New England Journal of Medicine* published an article by Arora and his team—"Outcomes of Treatment for Hepatitis C Virus Infection by Primary Care Providers." The article summarizes the results of a prospective cohort study by Arora and colleagues, partly supported by RWJF, which demonstrated that treatment for hepatitis C virus using the ECHO model is as safe and effective as treatment at an academic medical center.

Using the ECHO model, 261 patients were treated in rural settings and prisons across the state by primary care clinicians. They were compared to 146 patients who received treatment at the University of New Mexico specialty clinic. The patients received identical drug therapy, lasting either 24 or 48 weeks, depending on the type of infection, with extended treatment for those who seemed to be responding slowly.

The study results showed an almost identical response, regardless of where the patients were treated—24 weeks after treatment ended, the hepatitis C virus could not be detected in about 58 percent of participants.

*"The results of this study show that the ECHO model is an effective way to treat hepatitis C infection in underserved communities," the researchers conclude.*

The article, which RWJF named one of "the most influential RWJF research articles of 2011," ignited the interest of specialists and primary care clinicians around the country. For the Community Health Center's Daren Anderson, Arora's article was an epiphany. As he sat on his couch reading it in the spring of 2011, his first thought was "We need this."

By January 2014, the Community Health Center, which uses its own specialists as mentors when they are available, was offering teleECHO clinics on, hepatitis C, HIV, and buprenorphine (a pharmaceutical used to treat opioid addiction) to clinicians at its own primary care sites. Pain management was a different matter. It's a huge need for health centers, one that "dwarfs others," Anderson said, but it requires "a multidisciplinary approach with expertise that we didn't have internally, so we partnered with an innovative, highly respected specialty team located in Tucson, Ariz., the Integrative Pain Center of Arizona.

“We use internal experts when we have them—outside experts when we don’t. That’s the beauty of ECHO. It doesn’t matter where specialists are because of the teleconferencing.” In fact, Anderson added, the Community Health Center has “gone far outside our walls in the case of a new quality improvement ECHO clinic,” finding specialists with the right expertise in Sheffield, England.

Project ECHO’s reputation also began to spread by word of mouth, prompting clinicians to travel to New Mexico to find out what the excitement is all about. The University of Nevada’s Evan Klass is one physician who made the journey. After moving to Nevada from New York, Klass recalls being “blown away ... by the difference between practicing in areas that were overrun with physicians and practicing where there were clearly not enough physicians to provide needed care.”

After learning about Project ECHO from a colleague, Klass took a team to New Mexico for a site visit and recalls, “We came back as changed people. When I got back my wife said she had never seen me so excited about medicine in at least 20 years. It seemed to me this was the ideal approach for dealing with the problems of delivering care in Nevada.”

Not to be outdone by civilians, the U.S. Department of Defense is introducing Project ECHO pain management clinics worldwide. Colonel Kevin Galloway, director of the Army Pain Management Program in the Department of Defense, recognized the opportunity to make changes across the entire Army Medical Command (MEDCOM). “Anything we can do to synchronize care, to develop a common understanding of what ‘right’ looks like, is incredibly important at a time when we are wrestling with this across the nation,” Galloway says. For more detail about how the ECHO model is being adapted at these hubs, see [Replicating Project ECHO: Stories from Three Sites](#), at the end of this report.

### Scaling Project ECHO Nationally and Globally

Other national and global expansions have moved forward rapidly. By January 2014, partners had launched Project ECHO clinics at a total of 31 U.S. sites and 38 locations around the world, with guidance and support from the New Mexico parent project. These include:

- **Academic medical centers**—in Boston, Chicago, Seattle, Phoenix, Salt Lake City, Los Angeles, Davis, Calif., New Orleans, Middletown, Conn., Laramie, Wyo., Las Vegas, Reno, Nev., Waco, Texas, and Tampa, Fla. While hepatitis C, HIV, and chronic pain remain the most common ECHO clinic topics, others address diabetes, cardiovascular risk factors, breast cancer, attention deficit hyperactivity disorder, mental health, and more. See [Appendix 1](#) for a list of replication sites and their clinics.

- **The Veteran’s Health Administration**—in mid-2011, began developing 11 hubs across the United States. These hubs each have four to eight specialty teams that provide teleECHO to more than 600 community-based primary care clinics with participating primary care clinicians.

The specialists cover chronic and complex conditions for which there are ECHO sessions across the country—on chronic pain, diabetes, heart failure, hepatitis C, chronic kidney disease (nephrology), and women’s health. Primary care clinics in rural areas participate in this program in conjunction with the VA Office of Rural Health training and education—often obviating the need for veteran travel, potentially at significant distances.

- **Sites in India**—including the Institute of Liver and Biliary Sciences, Maulana Azad Medical College, and an autism program, which has hubs in three cities.

And Project ECHO continues to grow. As of mid-April 2014, there were 20 new projects in various stages of the replication process; 10 new partners in the United States located in seven new states, and 10 new partners around the world, in five new countries.

### “Let a Hundred Flowers Bloom”

With the University of Washington pilot well underway and interest in the model continuing to build, Project ECHO needed a business plan to guide its own growth and to ensure some degree of consistency among replication sites.

RWJF asked Roger King, MBA, a San Francisco-based management consultant with an expertise in the spread and scaling up of projects, to help develop the business plan, in close cooperation with Arora.<sup>3</sup> Ultimately, they concluded that a light touch—a so-called “hundred flowers bloom” approach—was the best way to support emerging hubs around the country.

### The ECHO Institute

In June 2013, Arora launched the ECHO Institute at the University of New Mexico Health Sciences Center as a hub for teleECHO clinics across the state. It also provides training to numerous partners interested in replicating the initiative in other states and countries to help those flowers bloom.

As of spring 2014, ECHO offers a basic set of technical assistance at no cost to all replicating partners. If programs desire a higher level of assistance, that can be provided for a modest fee. These hub-and-spokes sites become well-versed in the New Mexico

---

<sup>3</sup> ID# 69723 (\$155,975, December 15, 2011 to May 14, 2012) and ID# 70487 (\$51,900, November 15, 2012 to September 30, 2013)

approach, but they raise their own funds and retain flexibility in how they operate their own teleECHO clinics.

That strategy carries some risk in terms of “controlling the brand,” says King, but it is also the fastest way to a large-scale rollout. The institute is also connecting ECHO programs around the world in order to establish best practices and mine data for disease patterns.

Arora speaks widely about his work, and as word spreads, interested clinicians are making a pilgrimage of sorts—journeying from across the country to Albuquerque for “replication visits.” There, they have the chance to watch teleECHO health clinics in action, and discuss the next steps needed to replicate the model at their own institutions.

## **ADAPTING ECHO IN NOVEL WAYS**

As RWJF continues to fund Project ECHO’s expansion in New Mexico and its capacity to provide technical assistance to replicators across the country and around the world, other funders are supporting opportunities to use the model in novel ways.

### **Health Care Innovation Award: An Intensivist Approach to Primary Care**

Always on the lookout for new ways to adapt Project ECHO, Arora applied for a Health Care Innovation Award from the federal Center for Medicare & Medicaid Innovation<sup>4</sup> and won the award in May 2012. The three-year, \$8.5 million grant will fund the development and testing of ECHO Care, which trains teams of “primary care intensivists” to provide high levels of coordinated community-based care to individuals with severe and costly health problems in New Mexico.

The rollout began in the fall of 2013. Each five-person ECHO Care team is typically headed by a primary care physician or nurse practitioner. A community health worker, a social worker, and often a behavioral health professional or addiction counselor are among others on the team.

Each team will be responsible for 100–150 patients depending on disease severity and will provide “concierge medicine for high-end Medicaid beneficiaries,” according to Allison Hamblin, MSPH, vice president for Strategic Planning at the Center for Health Care Strategies in Hamilton, N.J. The center used RWJF funds to help Project ECHO plan the project.<sup>5</sup>

---

<sup>4</sup> The Center for Medicare & Medicaid Innovation, within the federal Centers for Medicare & Medicaid Services, supports the development and testing of new payment and service models of health care delivery.

<sup>5</sup> ID# 69313 (\$15,000, September 1, 2011 through February 29, 2012). The nonprofit Center for Health Care Strategies in Hamilton, N.J., works with public and private organizations to improve health care access and quality.

In what Hamblin calls “an amazing feat,” all of the Medicaid managed care plans in New Mexico have agreed to pay the full costs of ECHO Care services for their members during the pilot phase. That includes reimbursing both for specialty providers consultation time in teleECHO clinics and for the much more significant cost of outpatient intensivist services.

“It’s an expensive model,” Hamblin acknowledges, “but the potential for return on investment is significant. Each plan is making a massive commitment. I think they are all highly motivated to help make it work.” New York University will lead an evaluation to see if a business case can be made for the model.

### **GE Foundation Funds TeleECHO Clinics in Mental Health**

In another illustration of its flexibility, Project ECHO is also being used to develop new approaches to mental health services, which is a huge unmet need, especially in rural and underserved areas. The absence of adequate behavioral health services has serious consequences for both mental and physical well-being.

*“Unless you treat the behavioral health component, you are not going to move the needle on the corresponding chronic disease. Mental health is like the foundation of a house—if it’s strong, the house will stand for many years.” says Asha Varghese, Director of Global Health at the Chicago-based GE Foundation.*

In the spring of 2013, the GE Foundation gave the ECHO Institute \$4.6 million to fund a three-year pilot to integrate mental health and substance abuse treatment into primary care. Eight community health centers will be participating in the project. A unique feature of the model is its use of community health workers, who provide support to every patient receiving behavioral health services.

“These eight sites will be the centers of excellence for this model,” says Asha Varghese. “They will be learning from each other, building a network and sharing best practices.” If the strategy proves successful, the clinics will be replicated at other Project ECHO sites around the country.

Staff at GE Foundation first met Arora at a conference in India, and was drawn to his passion for wanting to make a difference. “When we are looking to partner, we look for someone who can bring expertise, leadership and passion, and we can bring in the business component. That combination definitely attracted us.”

## WHAT ARE THE CHALLENGES AND LESSONS LEARNED?

### Pursuing Sustainability at the Hubs and in the Spokes

For the hubs, developing the financial streams to sustain their teleECHO clinics remains the biggest challenge. “Our center is not an ACO [accountable care organization], it is not capitated, we have no access to shared savings, no ability to take reimbursement for this,” says the Community Health Center’s Anderson. “This costs us money to take part in ECHO and to manage and to host the teleECHO clinics.”

At the primary care spokes, which generate revenue by seeing patients, it has sometimes been difficult to convince clinic administrators to free up clinicians to participate in teleECHO clinics. “It is really the administrative personnel that need to be convinced of the value,” says the University of Nevada’s Evan Klass, MD. “We try to make the case that making their providers better and happier is the answer to their long-range problems.”

Sanjeev Arora, MD, believes the challenge reflects skewed reimbursement incentives. “It would definitely be better if we didn’t think of our doctors and nurse practitioners as piecemeal workers who only get paid every time they produce a visit,” he says. If the system instead compensated clinicians “to provide better health care, while learning more, and developing themselves [which] would be a natural thing to do as part of that.”

*For now, most hubs are cobbling together grants and revenue streams as best they can to cover the time of participating clinicians. “The fact that it is moving forward without a consistent revenue stream tells you something about its value,” points out RWJF’s Nancy Barrand.*

Arora is characteristically optimistic that teleECHO clinics can be sustained through state and federal financing. As an example of the potential, he noted that New York state spends \$54 billion annually on Medicaid. “If the state decided to spend \$5.4 million, or 0.1 percent of its total [Medicaid] budget on sustaining ECHO projects, and if Project ECHO could improve the functioning of the system by even 1 percent, they would get a \$54 million return on that investment,” Arora points out.

The decision by Medicaid managed care plans to reimburse for the ECHO Care model in New Mexico suggests other third-party payers may also eventually pay for improved care to generate long-term savings, believes Allison Hamblin, MSPH, of the Center for Health Care Strategies.

The [Medicaid Leadership Institute](#), an RWJF fellowship program designed to enhance the leadership capacity of state Medicaid directors, is helping to broker relationships between

Project ECHO in New Mexico and state Medicaid leaders. To learn more about the Medicaid Leadership Institute, read the [Progress Report](#).

*Discussions with Medicaid center on how the ECHO model “should be incorporated into the financing of health care for Medicaid populations,” says Sanjeev Arora. “We haven’t gotten the answer yet, but they are tremendous thought partners.... There are many ways the ECHO model can save a tremendous amount of money for the Medicaid system.”*

### **Generating Support and Promoting Two-Way Learning**

Beyond reimbursement issues, carving out time to participate in teleECHO clinics is difficult for clinicians because of the many other demands on their time.

To build local support in primary care settings, the University of Washington’s John Scott, MD, MSc, emphasizes the importance of a clinical champion who can push back against resistance. Likewise, he says that a physician champion at the specialty site is imperative—“someone who really wants to be the leader, who has the energy and persistence to make it happen.”

Another challenge has been taming the specialists to ensure that they don’t dominate the clinics. “I have learned that sometimes I talk too much,” said Klass candidly. “We noticed early on that there is a tendency for providers to be passive, and the more our clinic leaders talk, the less valuable the sessions become. I have really worked with the other clinic leaders to cut back on their didactic presentations.”

That lesson has been learned across the entire initiative, says Arora. What he calls “learning loops” are a key strength of Project ECHO.

*“In the beginning, we found there was a uniflow direction of knowledge,” Arora says, “but after a little while it became bidirectional. These primary care clinicians are creating new knowledge that specialists can learn from. It became obvious that we should learn from each other.”*

### **WHAT DOES THE FUTURE HOLD?**

All indications are that Project ECHO will continue to generate excitement as it expands to new settings and addresses more medical challenges. “It has the opportunity to transform American medicine,” says CDC’s John Ward, MD, speaking without hyperbole.

Building links between community health centers and academic medical centers is an obvious way to keep expanding, says RWJF's Nancy Barrand. Indeed, she expects that any community health center "worth its salt" will eventually connect to at least one ECHO clinic. Barrand sees the Echo model becoming "the operating system for health care" in the future. Broadening the reach into urban areas, where isolation is less about geography and more about socioeconomic factors, is also an area of interest. The University of Washington and the CDC are among those looking at opportunities to add an urban focus.

The CDC and Project ECHO in New Mexico have applied for another grant from the Center for Medicare & Medicaid Innovation, this one to expand hepatitis C teleECHO clinics in eight states. Ward is especially interested in trying to involve public health departments more fully in the work. "One of our jobs is to help bring the health departments into the knowledge networks being created in these eight states, along with the academic centers and primary care centers," he says.

If the proposal is funded, the CDC will guide an evaluation to determine the impact on the "cascade" of care, by measuring how many people know they are infected, how many have been placed on treatment, and how many clear the virus from their bloodstream.

In the fall of 2013, Sanjeev Arora, MD's team began building a "Meta-ECHO" hub to connect the projects the New Mexico initiative has spawned. "With different ECHO projects starting all over the world, it became obvious to us that we should learn from each other. All of our partners are very eager to share," he says. "Get-to-know-you" videoconference calls are now scheduled monthly, and participants will eventually be divided into special-interest groups that focus on specific diseases.

Project ECHO in New Mexico is becoming a powerful repository of data shared by sister clinics around the world. Eventually, Arora expects the aggregated data to help identify disease patterns, establish best treatment practices, and possibly to generate significant revenue from public and private sectors organizations who want access to it.

Asked where he sees all of this going, Arora offers a concise, if ambitious, answer: "The ultimate vision is to change the world and do it fast and improve health care for underserved patients all over the world... It still takes many years, but it is possible to reach some kind of tipping point where this becomes accepted."

---

## REPLICATING PROJECT ECHO: STORIES FROM THREE SITES

ECHO training clinics are “proliferating wildly,” says RWJF’s Nancy Barrand.

Here is a glimpse of three efforts to replicate the Project ECHO model—at a community health center, an academic medical center, and throughout the military health system. Each hub-and-spoke model has drawn on the expertise and technical assistance available through Project ECHO, while tailoring its approach to its own circumstances. All the expansion sites are responsible for identifying their own funding

### Community Health Center of Connecticut

For Daren Anderson, MD, happening on the “proof of concept” article by Sanjeev Arora, MD, and his colleagues in the *New England Journal of Medicine*, was serendipitous.

The health center network had some 1,000 patients with hepatitis C, but fewer than 10 percent of them had received treatment and even fewer had achieved a reduction in viral load. Only three health centers were providing specialty care and they clearly weren’t reaching many of the people who needed it. “Issues of language, and transportation, and time off, and culture, make it difficult for our patients to engage in the standard specialty care model,” said Anderson.

He put down the journal article convinced that “this would be a great way for us to leverage the skills and abilities of our treatment team.” Not long afterwards, he headed to New Mexico to learn more about replication.

Seven months later, the Community Health Center launched its first clinic, offering training in hepatitis C and HIV on alternate weeks. “We didn’t have a specialty hospital chomping at the bit [to join us] so we got the audacious notion that we could do it ourselves,” he says. “We had the existing infrastructure, technology and expertise.” In lieu of specialists at an academic medical center, Community Health Center uses internal specialists to guide the teleECHO clinics when they are available.

Adding much-needed clinics on pain management required a different approach. The center contracted with the Integrative Pain Center in Arizona, which was uniquely qualified to provide the multidisciplinary expertise needed. Pain management has become its biggest clinic, with some 18–20 participating sites at any given time, including federally qualified health centers in California, Arizona, and Delaware—in addition to the center’s own sites in Connecticut. Centers in Maine and New Jersey will be joining the network soon, Anderson reported in March 2014. Pain clinics are the one area the

Community Health Center is “aggressively spreading outside its walls. We are growing by leaps and bounds.”

In Anderson’s view, community health centers are often a better resource for certain patient populations, not merely “second best” when specialty care is not available.

*“There are a whole host of reasons why underserved patients don’t do well when seeking to engage in the traditional health care system,” Anderson says. “Community health centers are uniquely set up and staffed and expert in dealing with their issues.”*

### **University of Nevada School of Medicine**

The University of Nevada’s Evan Klass, MD, knew that many of his patients were driving hours to see him, and he frankly wasn’t sure it was worth the effort.

“I had real concerns about the time that was involved in their travel, the cost in their travel, and the relatively little value I often added,” he acknowledges. Klass believed another model of care might meet their needs more appropriately, but he didn’t know what it would look like.

It turned out to look like Project ECHO. “It seemed to me this was the ideal approach for dealing with problems of delivery of care in Nevada,” he said.

After his 2010 visit to Albuquerque, Klass and his colleagues spent 18 months assembling a team, soliciting funding, visiting with rural clinicians across the state, and building a videoconference broadcast site where specialists could gather. Based on their needs assessment and conversations with local primary care clinicians, the first clinic focused on diabetes. Hepatitis C did not seem to have a significant patient load in rural Nevada, but clinics in antibiotic stewardship, sports medicine, and mental health, among others, have since been added.

The well-received mental health clinic is being expanded from a bi-weekly offering to a weekly one, and a suicide prevention clinic is planned. “We are just overwhelmed with sites that want to participate,” says Klass.

*“We have enormous needs, not only for garden variety mental health, but we are in a suicide belt here,” says Klass. “And there is a whole area of co-occurring illness. That is a huge problem for primary care providers, how to manage the impact of mental health issues on their patients’ physical well-being.”*

Fundamentally, Project ECHO is a way to re-imagine health care delivery, according to Klass. “The beauty is that it empowers primary care docs who have real talent and real capability. ... We have these primary care docs who are really quite good and incredibly dedicated. If we just support them and raise the bar for them, care gets better across their entire patient population.”

## Department of Defense

Colonel Kevin Galloway, of the U.S. Army Medical Command’s (MEDCOM) Pain Management Program wasn’t particularly interested when a colleague at the University of Washington first urged him to visit Project ECHO in New Mexico. Army Medicine had been using traditional telemedicine for years and Galloway assumed it was more of the same—one specialist consulting remotely with one patient.

Then he got another call, this time from the Veterans Administration, who also told him to take a look. Galloway bowed slightly to the pressure, and agreed to send down a senior medical officer, but he still wasn’t paying much attention.

When his phone rang again, his medical officer was on the line saying, “You have to come down here.” Galloway didn’t make the trip then either, but when the man came back to their Virginia office he said, “I won’t talk to you until you go down and look at this.” Finally, Galloway agreed to do just that.

Almost immediately, he understood all the enthusiasm.

“I was really just knocked over,” he said. The most striking feature to him was the energy of often-isolated primary care clinicians.

*“It was observing the folks at the other end of the camera who generally feel disenfranchised from medicine,” says Galloway. “Their morale seemed so high, they were so engaged, they were excited. It seemed that they were tracing a lot of this job satisfaction ... to their support from ECHO and their passionate interest in taking care of patients.”*

Galloway quickly became a determined advocate. Project ECHO, he decided, offered an innovative way to implement many of the 100-plus recommendations contained in the 2010 *Pain Management Task Force Final Report*. Galloway had served as chief of staff to the task force, which had been chartered by the Army Surgeon General to develop a comprehensive, multidisciplinary pain management strategy.

Army Medicine embarked on a two-year initiative to adapt the Project ECHO model for use in the MEDCOM’s Pain Management Program. While some features of the military

health system are unique, many others are not. “We had the same problem of remote providers wanting more information, wanting to feel connected to the specialty mother ship, feeling isolated and underutilized and not part of the big leagues,” said Galloway. The challenge: “How do you make them part of it?”

Some of the specialty clinicians did not immediately embrace the idea that they could help answer that question. “We took on the challenge of converting people. Some of them were skeptical and initially failed to see the value in raising the competence and confidence of those remote providers,” Galloway said.

But, the skeptics appear to be coming around. For example, physician specialists in one of the larger Army Medicine regions moved from an early resistance to enthusiastic embrace of the ECHO model of telementoring.

*“Our specialists say, ‘Now I have a better appreciation of the needs of the people who are providing the care,’ ” says Galloway, with obvious satisfaction.*

With clinics fully operational in three of the five MEDCOM regions, next steps include expanding out to the remaining two regions, identifying opportunities to use the same strategy for other medical challenges, and, he hopes, creating an office within the U.S. Department of Defense to insure that the model becomes institutionalized.

Says Galloway, “I will retire next summer and this is one of the things I am proud of, that I was around when the Department of Defense was smart enough to see this.”

---

**Prepared by: Karyn Feiden**

Reviewed by: Jayme Hannay and Molly McKaughan

Program Officer: Nancy Barrand

Grant ID#: 63945, 70562

Project Director: Sanjeev Arora (505) 272-2808; sarora@salud.unm.edu

Grant ID#: 69723, 70487

Project Director: Roger King (415) 771-4668; rogpking@aol.com

Grant ID#: 69313

Project Director: Stephen A. Somers (609) 647-3250; sasomers@chcs.org

---

## APPENDIX 1

### List of Project ECHO Replication Sites (current as of April 2014)

(As Provided by Project ECHO; not verified by RWJF.)

#### **University of Washington**

Hepatitis C, Chronic Pain, HIV, Addiction

#### **University of Chicago**

Hypertension, Breast Cancer, ADHD,  
Childhood Obesity

#### **Department of Defense—Worldwide Initiative**

Chronic Pain

#### **Veteran’s Administration Health System—11 regions**

Chronic pain, Diabetes, Heart Failure,  
Hepatitis C, Women’s Health, Nephrology

#### **University of Nevada**

Diabetes/Cardiovascular Risk Reduction,  
Sports Medicine, Thyroid & Diabetes,  
Antibiotic Stewardship, Mental Health

#### **University of Nevada, Reno**

Rheumatology

#### **University of Utah**

Hepatitis C, Advanced Liver Care

#### **University of South Florida, ETAC and Florida/Caribbean AETC**

General HIV, Adolescents/Pediatrics HIV,  
Hepatitis C/HIV Co-Infection, Psychiatry &  
HIV, Spanish Language HIV

#### **Harvard Beth Israel Deaconess Medical Center**

Hepatitis C, Gerontology—ECHO AGE

#### **St. Joseph Hospital and Medical Center—Arizona**

Hepatitis C

#### **Community Health Center, Inc.—Connecticut**

HIV, Hepatitis-C, Chronic Pain, Opioid  
Addiction—Buprenorphine

#### **LA Net, Project ECHO LA**

AAPA Preventive Care, Nephrology, Adult  
Psychiatry

#### **St. Luke’s Medical Center—Texas**

Hepatitis C

#### **University of New Mexico: Envision New Mexico**

Childhood Overweight Medical Management,  
Pediatric Nutrition, Psychiatry,  
Asthma/Pulmonary

#### **University of New Mexico: Center for Development and Disability**

Autism

#### **University of California, Davis**

Pain Management

#### **University of Wyoming—Wyoming Institute for Disabilities**

Assistive Technology

#### **India—Maulana Azad Medical College—New Delhi**

Hepatitis C

#### **India—Institute of Liver and Biliary Sciences—New Delhi**

Hepatitis C

#### **Uruguay**

Liver Disease

#### **Ireland—West/North West Hospitals Group—Galway**

Rheumatology, Endocrinology

#### **Canada—University of Toronto—Ontario**

Chronic Pain

## APPENDIX 2

### People Interviewed for this Report

*(Affiliations current as of the time of the interviews, January 2014)*

**Madhulika Agarwal, MD, MPH**

Deputy Under Secretary for Health for Policy and Services  
Department of Veterans Affairs  
Washington, D.C.

**Daren Anderson, MD**

Vice President and Chief Quality Officer  
Community Health Center  
Director  
Weitzman Quality Institute  
Middletown, Conn.

**Sanjeev Arora, MD**

Director  
Project ECHO  
University of New Mexico Health Center  
Albuquerque, N.M.

**Nancy Barrand, MPA**

Senior Advisor for Program Development  
Robert Wood Johnson Foundation  
Princeton, N.J.

**Kevin Galloway**

Colonel, U.S. Army  
Director of the Army Pain Management Program,  
Office of the Army Surgeon General,  
Department of Defense  
Falls Church, Va.

**Allison Hamblin, MSPH**

Vice President for Strategic Planning  
Center for Health Care Strategies  
Hamilton, N.J.

**Roger King, MBA**

Management Consultant  
San Francisco, Calif.

**Evan M. Klass, MD**

Associate Dean  
Office of Statewide Initiatives  
Director, Project ECHO Nevada  
University of Nevada School of Medicine  
Reno, Nev.

**Ben Milder**

Senior Vice President and Director  
Public Policy Team  
Burness Communications  
Bethesda, Md.

**John D. Scott, MD, MSc**

Medical Director  
UW Telehealth  
Assistant Professor Medicine  
Harborview Medical Center  
Seattle, Wash

**Asha Varghese**

Director of Global Health  
GE Foundation  
Chicago, Ill.

**John W. Ward, MD**

Director, Division of Viral Hepatitis  
Centers for Disease Control and Prevention  
Atlanta, Ga.