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Project ECHO: Linking University Specialists with Rural and Prison-Based Clinicians to Improve Care for People with Chronic Hepatitis C in New Mexico

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SYNOPSIS

Project Extension for Community Healthcare Outcomes (Project ECHO) is a telemedicine and distance-learning program designed to improve access to quality health care for New Mexicans with hepatitis C. Project ECHO links health-care providers from rural clinics, the Indian Health Service, and prisons with specialists at the University of New Mexico. At weekly clinics, partners present and discuss patients with hepatitis C with specialists. Partners can receive continuing education credits for participating. Since June 2003, 173 hepatitis C clinics have been conducted with 1,843 case presentations. Partners have received 390 hours of training and 2,997 hours of continuing education credits. And in 2006, the State Legislature approved \$1.5 million in annual funding for the project. Project ECHO has increased access to state-of-the-art hepatitis C virus care for patients living in rural areas or prisons. Because of its success with hepatitis C, this project is being expanded to other chronic medical conditions.

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Estimates of the number of people in the U.S. living with chronic hepatitis C caused by hepatitis C virus (HCV) range from approximately 3.2 million¹ to about 4 million.² To help identify individuals with this potentially fatal chronic condition, serologic testing for HCV antibodies is recommended for groups at high risk for HCV infection—particularly injection drug users (IDUs)—seen in public health settings, such as sexually transmitted disease (STD) clinics, human immunodeficiency virus (HIV) counseling and testing sites, substance abuse treatment programs, and prisons.^{3,4}

The goals of HCV screening include: (1) identifying individuals who have evidence of HCV infection, (2) informing them that they may have a potentially serious health condition, (3) helping them avoid transmitting HCV, (4) advising them to avoid alcohol, and (5) advising them to seek medical evaluation of and appropriate care for chronic HCV infection. A pervasive problem encountered by public health programs implementing these screening recommendations is the limited availability of medical evaluation, follow-up, and treatment (including treatment with antiviral medications) for clients who have a positive HCV screening test and little or no health insurance.⁵⁻⁷ The inability of many individuals with HCV infection to obtain recommended medical evaluation and care has stirred debate about the appropriateness of HCV screening.⁸

This article describes an innovative program⁹ that has substantially improved the availability and quality of care for New Mexicans living with hepatitis C. This program, Project Extension for Community Healthcare Outcomes (Project ECHO) (see <http://hsc.unm.edu/medicine/echo.shtml>), is a partnership of academic medicine, public health departments, corrections departments, and rural community clinics in New Mexico.

WHAT IS PROJECT ECHO?

Project ECHO is a pioneering telemedicine and distance-learning program based in an academic medical center, the University of New Mexico (UNM) School of Medicine. The project is designed to improve patient care by developing and supporting the competence of primary-care providers in prisons and in underserved rural areas to manage the complex health problems of people living with hepatitis C. Project ECHO was designed to expand New Mexico's limited health-care resources, particularly in rural areas where 32 of the 33 counties in New Mexico are listed as medically underserved and 14 counties are designated as health professional shortage locations. Only 20% of New Mexico physicians practice in rural or frontier areas.¹⁰

By helping primary-care providers offer safer and more comprehensive care for complicated disorders, such as hepatitis C, Project ECHO aims to reduce the need for specialist referrals, which may result in long wait times, increased cost, and fragmentation of care.

Project ECHO was established to expand access to quality care for people with hepatitis C. The initial work with hepatitis C was intended to test the potential value of the ECHO model to improve the care available for people with other common, chronic health conditions. Hepatitis C was selected because an estimated 32,000 New Mexicans (unpublished data, New Mexico Department of Health) and a substantial number of New Mexico state prisoners are infected with hepatitis C. Although there is a need for hepatitis C care in rural New Mexico, most infectious disease specialists, gastroenterologists, and hepatologists trained in hepatitis C management practice in the academic health center at the UNM Health Sciences Center in Albuquerque. As a result, both insured and uninsured rural patients have extremely limited access to hepatitis C care.

OPERATION OF PROJECT ECHO

Project ECHO uses teleconferencing and videoconferencing; Internet-based assessment tools; online presentations; and telephone, fax, and e-mail communications to connect specialists with primary-care providers in prisons and rural areas and to promote the use of identified best practices. Telemedicine and Internet connections enable specialists and primary-care providers to co-manage patients with hepatitis C, increasing the capacity of rural and prison-based clinicians to provide safe and effective treatment for hepatitis C. Project ECHO creates centers of excellence in hepatitis C care in areas that previously had limited options for such care.

Project ECHO participants must, at a minimum, have access to the Internet and telephone service (including a fax machine and a speaker phone), and the ability to view word processing documents and presentations. Videoconferencing capability enhances the interaction between the partners and specialists and requires broadband access and a video camera. In addition, partners can use HCV Care Manager, a software program designed specifically for Project ECHO.

Project ECHO network partner organizations are recruited through statewide health-care conferences, presentations, and partner contacts. Once a provider organization joins the Project ECHO network, members of the UNM HCV team visit the site to conduct a one-day training workshop. In addition, clinicians from the network partner organization spend one to

two days at the UNM Hepatitis C Clinic shadowing the core Project ECHO team to experience the dynamics of a hepatitis C clinic. Current Project ECHO network partner organizations include the UNM Health Sciences Center Department of Internal Medicine, eight prisons in the New Mexico Corrections Department, the Indian Health Service hospital in Santa Fe, NM, the New Mexico State Health Department, 10 clinics of federally qualified health centers, and three other health-care providers. The 13 health centers include qualified health centers (i.e., Health Centers of Northern New Mexico [two clinics], Presbyterian Medical Services, First Choice Clinics [three clinics], Hidalgo Medical Services, La Casa Family Health, Ben Archer Clinics, and La Clinica De Familia) and other health-care providers (i.e., Pojoaque Primary Care, El Pueblo Community Health, and Memorial Medical Center Family Practice Residency Program).

Project ECHO network clinicians include pharmacists, nurse practitioners, primary-care physicians, and physician assistants. After completing orientation and training, network clinicians present and discuss their hepatitis C patients during weekly two-hour telemedicine clinics. The clinics use a standardized, case-based format that includes discussion of treatment complications and psychiatric, medical, and substance abuse issues. During these clinics, network clinicians collaborate with specialists in gastroenterology, infectious disease, psychiatry, substance abuse, and pharmacology, as well as with other network clinicians.

Project ECHO is designed to develop network clinicians' skills so that they can deliver the highest-quality hepatitis C care with less need for specialist assistance. Because specialists have limited time available, a project based only on consultations with the UNM specialists would have limited ability to expand hepatitis C care. Project ECHO uses patient case-based educational experiences to develop the skills of community providers through three main routes: (1) longitudinal co-management of patients with specialists, (2) shared case-management decision making with other primary-care providers in the network, and (3) short didactic presentations on relevant topics, such as hepatitis A and B vaccination. Project ECHO calls these training approaches "learning loops," which create in-depth understanding of hepatitis C care (deep domain knowledge) that allows the network clinicians to care for patients with hepatitis C with less need for specialist support. For example, network clinicians who manage 20 patients through a year of antiviral therapy and demonstrate competence become eligible for certification of their hepatitis C treatment expertise.

PROJECT ECHO PERFORMANCE

Prior to Project ECHO, none of the project participants had treated patients for chronic hepatitis C. Between the first Project ECHO hepatitis C telemedicine clinic held in June 2003 and a later clinic in December 2006, 173 clinics have been conducted with a total of 1,843 case presentations of patients enrolled in the hepatitis C disease-management program. In 2005 alone, there were 1,581 patient visits for hepatitis C disease management at Project ECHO network partner sites. As of December 2006, 226 patients have received interferon and ribavirin treatment for hepatitis C via Project ECHO in New Mexico. In addition, 2,997 hours of continuing education credits have been issued and 390 hours of on-site staff and provider training have been offered over the past two years at no cost to participants. Through indigent drug-replacement programs, pharmaceutical firms have donated more than \$3 million of no-cost pharmaceuticals for patients in Project ECHO.

PROJECT ECHO FUNDING

Project ECHO began in 2003 as a small-scale, volunteer pilot program to test the feasibility of expanding hepatitis C care through this project model. Based on the success of the pilot program, in 2004, Project ECHO received a \$1.5 million federal grant from the Agency for Healthcare Research and Quality (AHRQ), which required \$1.5 million in matching funds. The matching requirement was met through a three-year, \$900,000 grant from the New Mexico State Legislature and a three-year commitment of \$600,000 in in-kind services from the UNM School of Medicine. In addition, indigent Project ECHO patients can benefit from free medications donated by pharmaceutical companies and free viral-load testing and HCV genotyping donated by TriCore Reference Laboratories. In March 2006, the New Mexico State Legislature provided permanent, recurring funding of approximately \$1.5 million per year for Project ECHO.

A key part of Project ECHO has been providing limited funding to some of the participating centers of excellence in hepatitis C care. As of October 2006, Project ECHO provides \$30,000 per year to 11 participating centers and \$100,000 per year to the New Mexico Corrections Department. These funds are used to support staff participation in Project ECHO activities and clinical services for patients with limited or no health insurance.

The AHRQ grant includes two assessments of Project ECHO. The first assesses the safety and efficacy

of Project ECHO-based treatment in rural areas and prisons by comparing the outcomes of antiviral treatment of patients with chronic hepatitis C managed by Project ECHO participants to outcomes of patients managed by UNM medical center specialists. The second is a qualitative assessment of how Project ECHO participants feel about various project components, e.g., how much they have learned. These assessments are underway.

APPLYING THE PROJECT ECHO MODEL TO OTHER HEALTH PROBLEMS

Because of the success of Project ECHO in improving access to hepatitis C care, the Project ECHO model is being applied to help strengthen the ability of primary-care physicians to provide their patients with high-quality care for a variety of other chronic medical conditions. In April 2006, the Project ECHO team started separate clinics for substance abuse disorders, and in July 2006, new clinics for rheumatology consultation and management of mental health disorders throughout New Mexico were begun.

CONCLUSION

The Project ECHO partnership of academic medicine, the New Mexico Department of Health, the New Mexico Corrections Department, and rural community clinics provides best practices and protocol-driven health care for managing HCV infection among socially isolated populations, such as prisoners and people living in rural New Mexico. The Project ECHO goal is to make health care delivered in these settings equal in safety, efficacy, and outcomes to health care that is delivered in university-based specialty clinics. As a result, Project ECHO has helped increase access to quality health care for New Mexicans living with hepatitis C. Other states and local governments should consider developing telemedicine programs modeled on Project ECHO to improve and extend hepatitis C care.

Although Project ECHO has improved access to hepatitis C care in New Mexico and would likely help improve access to such care in other parts of the U.S., the large number of people—estimated to be about 3 to 4 million—living with hepatitis C in the U.S. suggests that multiple strategies to improve access to care will be needed. Furthermore, the success of federally funded programs in improving care for the substantially smaller number of people (approximately 900,000) living with human immunodeficiency virus (HIV) suggests that

policy makers should consider creating comparable hepatitis C-oriented programs or expanding the mandates of the Ryan White CARE Act¹¹ and the acquired immunodeficiency syndrome (AIDS) Education and Training Centers¹² to include hepatitis C.

The Project ECHO model is an innovative approach with great promise to improve care for people living in underserved areas who might otherwise not receive care for a number of chronic conditions. In New Mexico, in 2006, the project was expanded to include rheumatology, substance abuse disorders, and mental health services. In addition, the Project ECHO model appears to have good potential to help improve health care in developing countries. For example, the Project ECHO approach could help expand access to HIV treatment in countries with high HIV prevalence and limited health-care resources, where telephone and Internet connections are available to potential program participants.

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