



UNIVERSITY OF NEW MEXICO HEALTH SCIENCES CENTER
SCHOOL OF MEDICINE

DEPARTMENT OF
INTERNAL MEDICINE



ECHO project
Extension for Community Healthcare Outcomes

Presentation to AHRQ 2006 Annual Conference

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MISSION



The mission of Project ECHO is to develop the capacity to safely and effectively treat chronic, common and complex diseases in rural and underserved areas and to monitor outcomes.

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Underserved Area for Healthcare Services

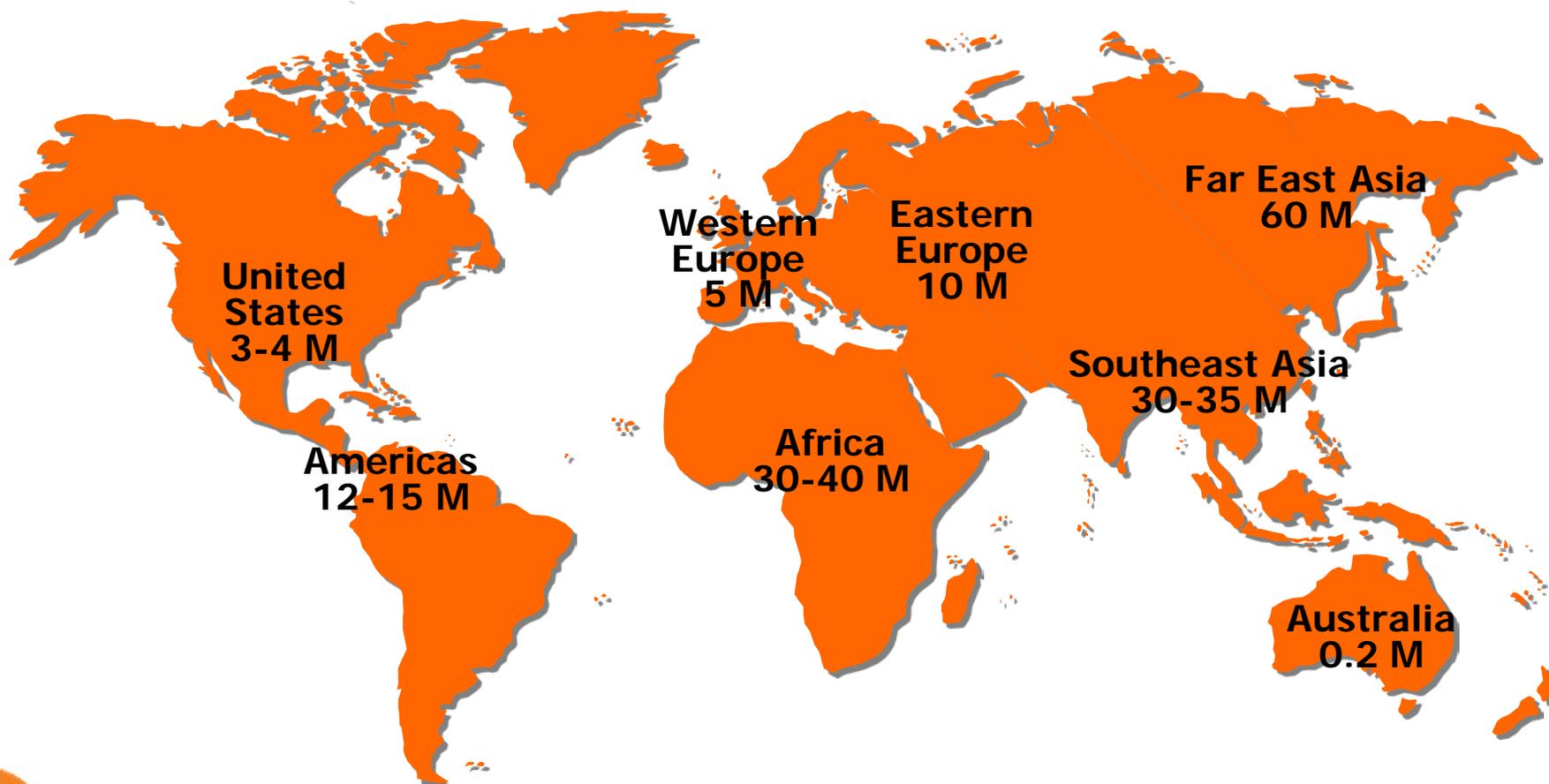
- 121,356 sq miles
 - 1.83 million people
 - 42.1% Hispanic
 - 9.5% Native American
 - 17.7% poverty rate compared to 11.7% nationally
 - >22% lack health insurance
 - 32 of 33 New Mexico counties are listed as Medically Underserved Areas (MUA's)
 - 14 counties designated as Health Professional Shortage Areas (HPSA's)
- 



Hepatitis C: A Global Health Problem



170 to 200 Million (M) Carriers Worldwide



IMPACT OF HCV INFECTION IN THE U.S.



**Approximately 4.0 million persons are
chronically infected with HCV**

10 – 15 years

**20% will develop cirrhosis
(+/- 780,000 patients)**

10 – 15 years

**4% will develop cancer
(+/- 31,000 patients)**



PREDICTIONS FOR 2010 - 2019



- ~ **193,000 HCV deaths**
 - 720,700 million years of advanced liver disease
 - 1.83 million years of life lost
- ~ **\$11 billion in direct medical care costs**
- ~ **\$24.3 and \$54 billion societal costs from premature disability and mortality**



HEPATITIS C IN NEW MEXICO



- ~ **Estimated number is greater than 32,000**
- ~ **Less than 5% have been treated**
- ~ **Without treatment 8,000 patients will develop cirrhosis between 2010-2015 with several thousand deaths**
- ~ **1978 prisoners diagnosed in corrections system (expected number is greater than 2400) - None treated**
- ~ **Highest rate of chronic liver disease/cirrhosis deaths in the nation**





HEPATITIS C TREATMENT



Good News:

Curable in 45-81% of cases

Bad News:

**Severe side effects – anemia, neutropenia,
depression**





HEALTHCARE IN NEW MEXICO



- ~ **2179 allopathic and osteopathic physicians with active practice**
- ~ **Of 1914 who responded to survey 80% practice in an urban or mixed population density area**
- ~ **20% practice in rural or frontier areas**





PROJECT ECHO



- ~ **University of New Mexico School of Medicine Dept of Medicine (Arora, Oesterbo, Scaletti) and Telemedicine (Alverson)**
 - ~ **NM Department of Corrections (Pullara)**
 - ~ **NM State Health Department (since 1996 – Simpson, Stewart)**
 - ~ **Indian Health Service**
 - ~ **Community Providers with interest in Hepatitis C and Primary Care Association (Roddy)**
- 



GOALS



- ~ **Develop capacity to safely and effectively treat Hepatitis C in all areas of New Mexico and to monitor outcomes**
- ~ **Develop a model to treat complex diseases in rural locations and developing countries**





METHOD



- ~ **Use Technology (telemedicine and internet) to leverage scarce healthcare resources**
 - ~ **Disease Management Model focused on improving outcomes by reducing variation in processes of care and sharing “best practices”**
 - ~ **Case based learning: Co-management of patients with UNMHSC specialists**
 - ~ **Centralized database HIPAA compliant to monitor outcomes**
- 



STEPS



- ~ **Train providers, nurses, pharmacists, educators in Hepatitis C**
 - ~ **Install protocols and software on site**
 - ~ **Conduct telemedicine clinics – “Knowledge Network”**
 - ~ **Initiate co-management – “Learning loops”**
 - ~ **Collect data and monitor outcomes centrally**
 - ~ **Assess cost and effectiveness of programs**
- 



COMMUNITY PARTNERS



- ~ **No cost CME's and Nursing CEU's**
- ~ **Professional interaction with colleagues with similar interest**
 - **Less isolation with improved recruitment and retention**
- ~ **A mix of work and learning**
- ~ **Obtain HCV certification**
- ~ **Access to specialty consultation with GI, hepatology, psychiatry, infectious diseases, addiction specialist, pharmacist, patient educator**





DISEASE SELECTION

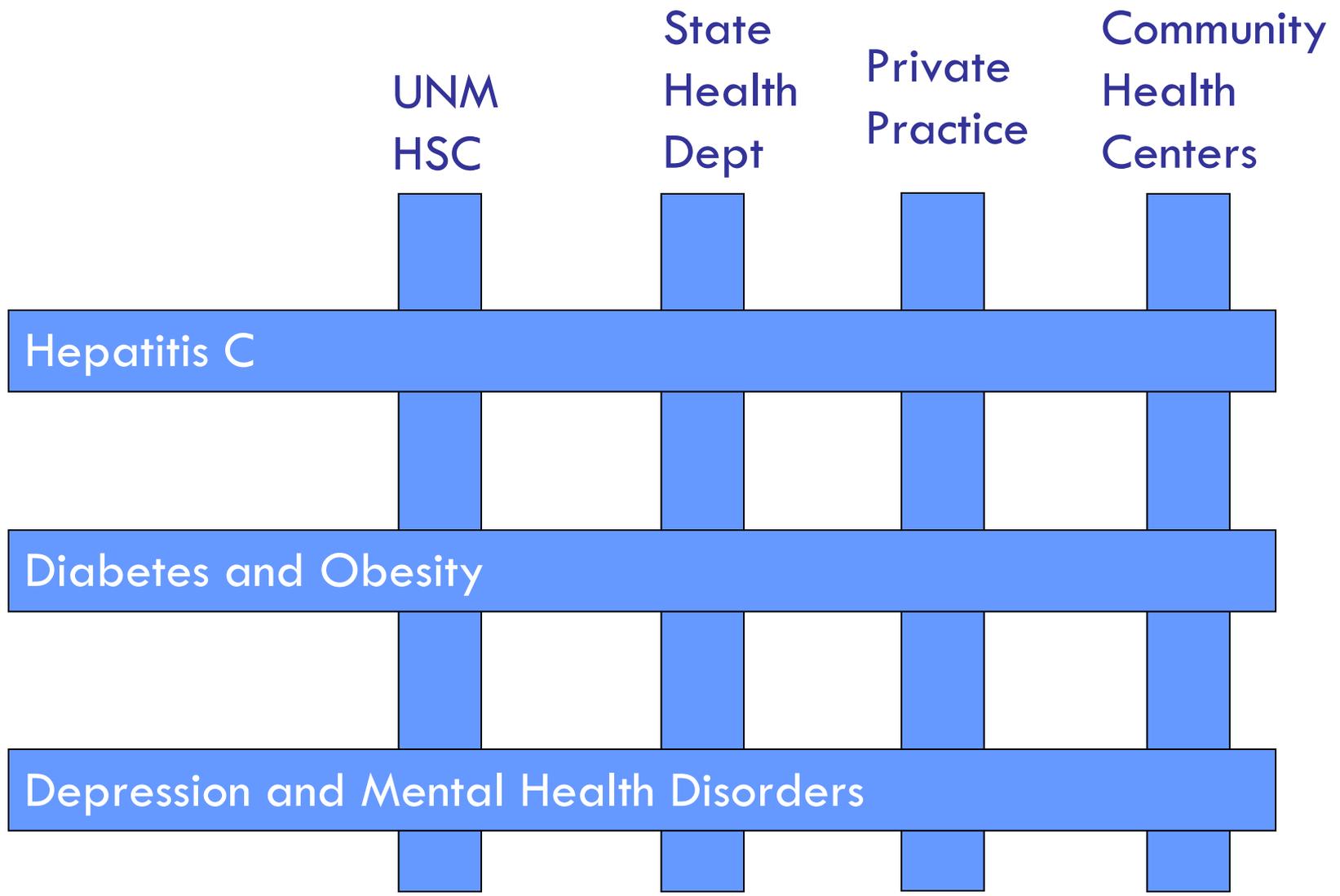


- ~ **Common diseases**
- ~ **Management is complex**
- ~ **Evolving treatments and medicines**
- ~ **High societal impact (health and economic)**
- ~ **Serious outcomes of untreated disease**
- ~ **Improved outcomes with disease management**





BUILDING BRIDGES





KNOWLEDGE IMPORTANT - NOT TITLE



Use Existing Community Providers

Specialists

Primary Care

Pharmacists

Nurse Practitioners

Hepatitis C				
Diabetes and Obesity				
Depression and Mental Health Disorders				





Higher Quality - Lower Cost



- ~ **Less Medical Errors**
- ~ **Avoids Unnecessary Testing**
- ~ **Prevents Morbidity and Mortality of Untreated Disease**
- ~ **Mitigates Cost of Future Care (Liver Transplantation)**
- ~ **Reduces Treatment Related Complications**
- ~ **Improves outcomes with disease management protocols**





PROJECT ECHO BARRIERS



- ~ **Rural physician time**
- ~ **Inadequate nursing resources**
- ~ **Connectivity for rural clinics**





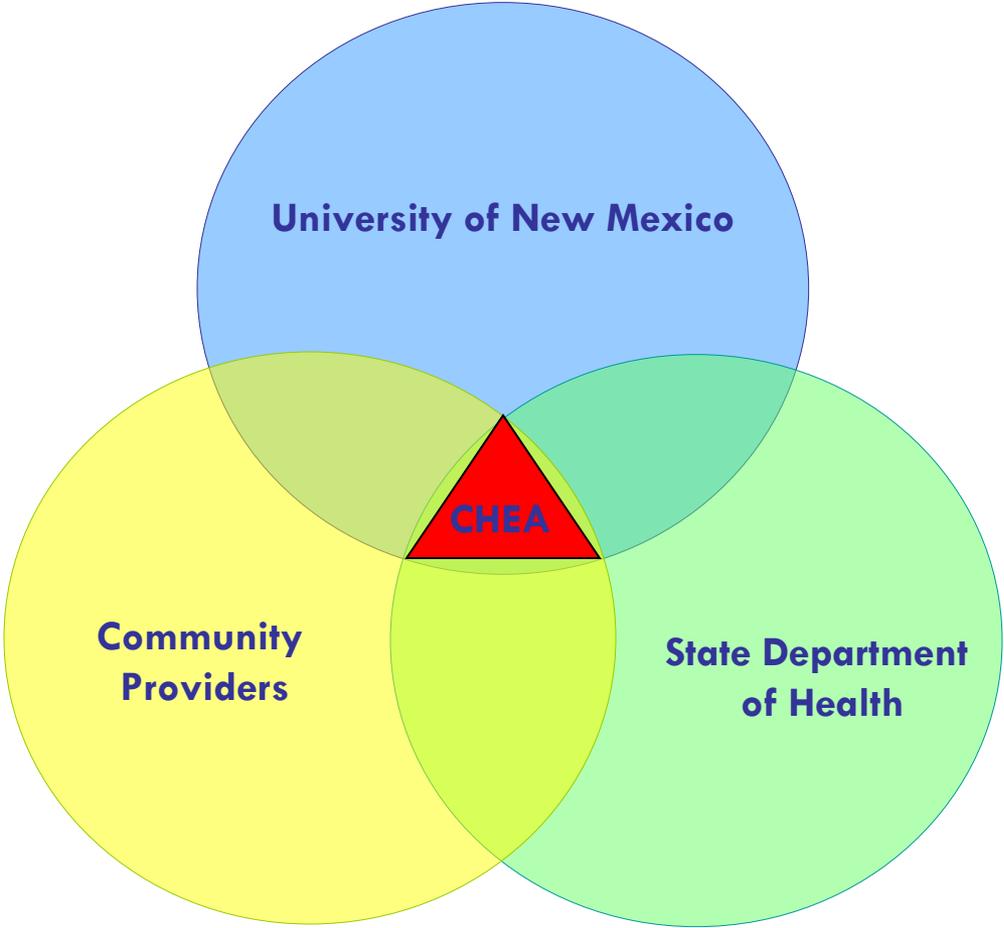
USDA SUCCESS



- ~ **The Hatch Act of 1887 established a network of Agricultural Experiment Stations for research to become the most effective and efficient producer of food in the world**
 - ~ **Smith-Lever Act of 1914 resulted in Cooperative Extension Service to take findings of university research to farmers**
- 

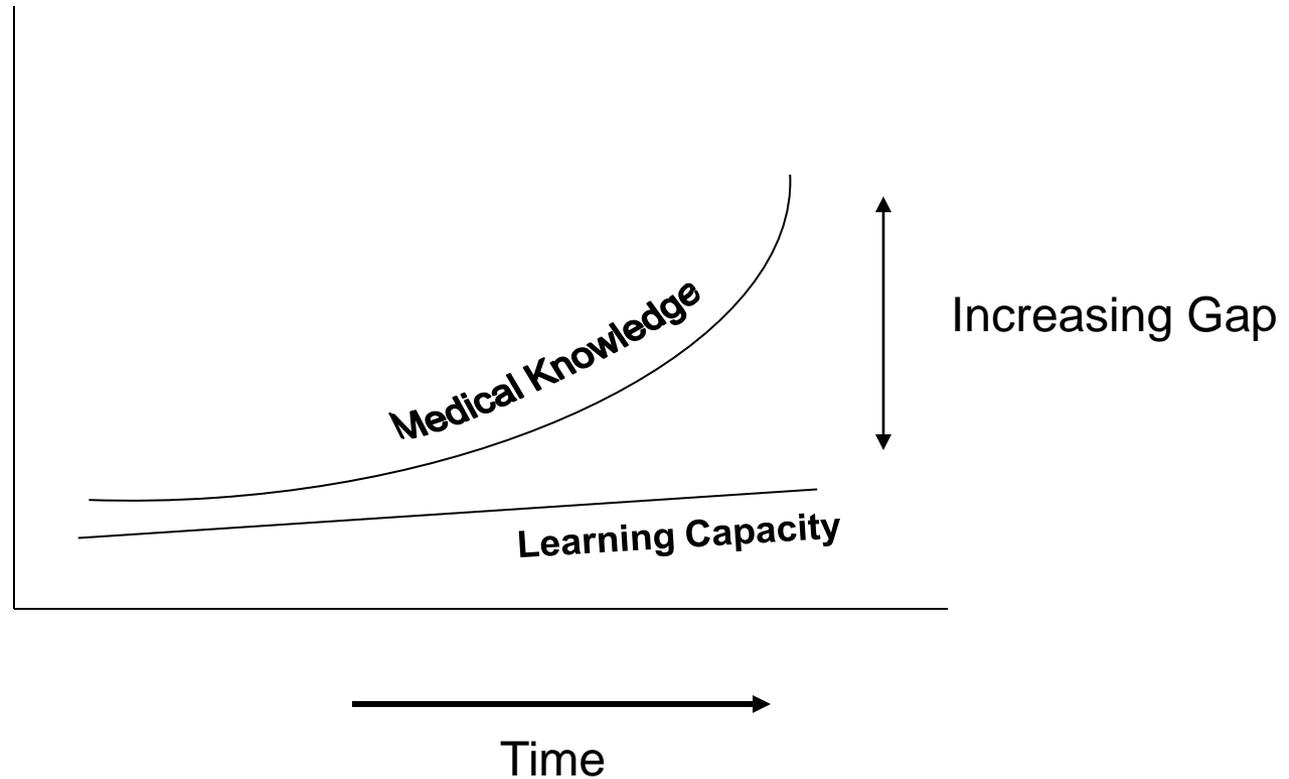


COMMUNITY HEALTH EXTENSION AGENT





ROLE OF KNOWLEDGE NETWORK



“Expanding the Definition of Underserved Population”





KNOWLEDGE MODEL

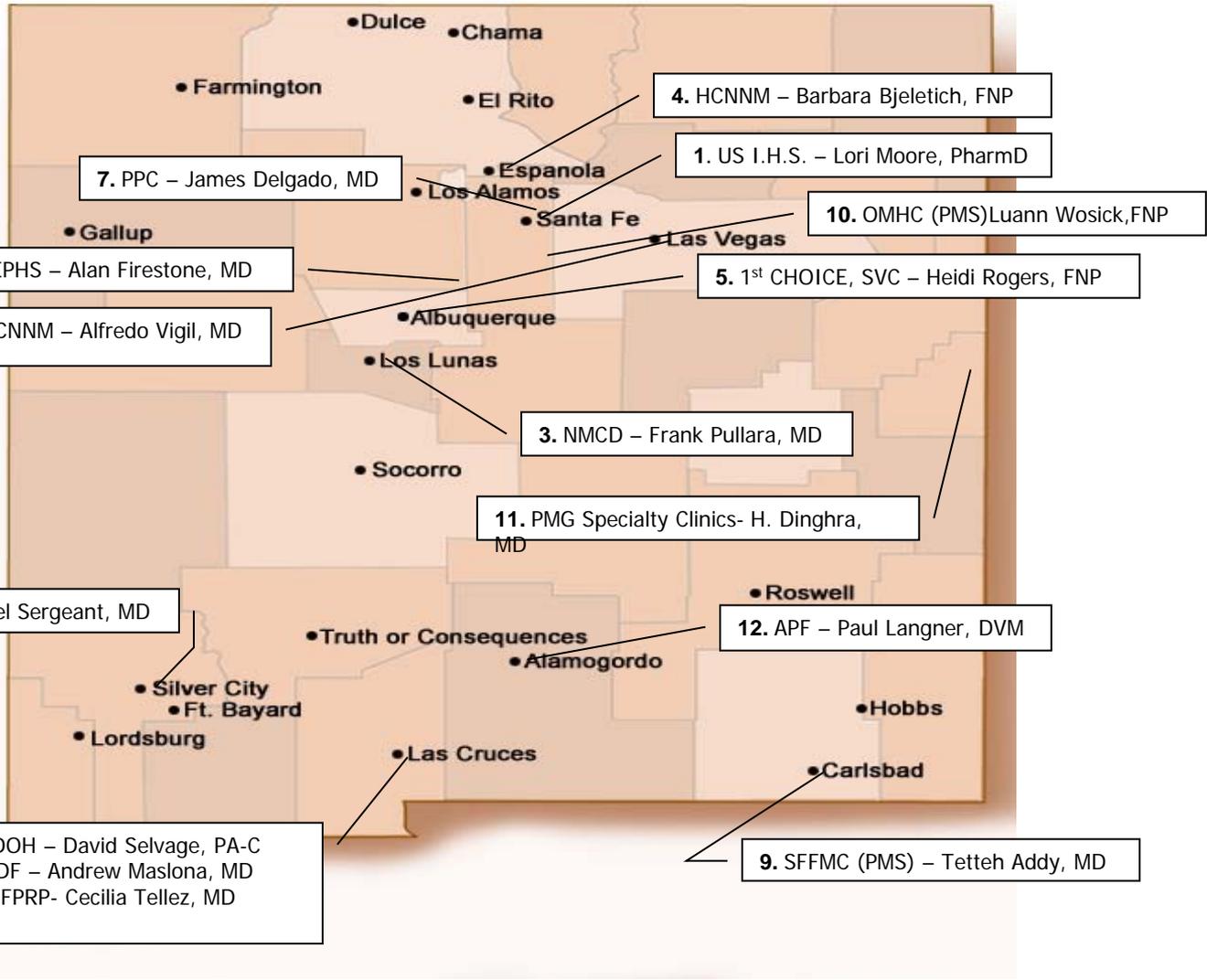


Patient specific knowledge on demand

Access to Case-Specific Information like Access to Electricity



PROJECT ECHO CLINIC SITES



How well has model worked?

115 HCV Telehealth Clinics have been conducted

- 1047 patients received medical management
- 228 patients have been treated with IFN and Ribavirin
- 1581 clinic visits in ECHO sites for Hep C patients in 2005

CME's/CE's issued:

2336 CME/CE hours issued to ECHO providers at no-cost.

162 hours of HCV Training conducted at rural sites.

Project ECHO Provider Education

Six Month Questionnaire Report

August 2004- June 2005

Respondents: 24

Annual Meeting Survey Report

February 2006

Respondents: 29

Six Month Questionnaire Report:

Who Participates?

Physicians, Nurse Practitioners, Physician Assistant,
Pharmacist and Nurses

Years in Practice	No. of Respondents N=24	Average Years in Practice
0-2	3	15 yrs
5-9	3	
10-14	5	
15-20	3	
> 20	6	
NA	4	

Six Month Questionnaire Report: What do participants say?

Reasons providers give for their participation in ECHO HCV Telemedicine Clinics

- Large number of HCV patients and their access to the University's HCV clinic is limited. We believe that more patients will receive care if we can offer it at our site rather than referring all to UNM.
- It's fun. It's interesting and I feel like we are making a difference. I have half-dozen patients who are not quite ready for treatment but all feel it makes a difference knowing the program is here.
- It is the only way we have of treating our patients.

Reasons providers participate....

- To provide appropriate care for Hepatitis C patients at their primary care location and to access subspecialty service for patients who would not otherwise have that service.
- Hepatitis C infection is a major public health problem.
- Up to date clinical treatment support, additional resources for mental health/substance abuse

Six Month Questionnaire Report: Perceived Benefits Associated with HCV Telemedicine Clinic

Perceived Benefits N=24	Not a benefit	Minor	Moderate	Major	NA
Enhanced knowledge about management and treatment of HCV patients		4%		96%	
Being well informed about symptoms of HCV patients in treatment		8%	13%	79%	
Achieving competence in caring for HCV patients			8%	92%	
Self-efficacy: Belief in my ability to manage and treat HCV patients		4%	17%	71%	8%

Six Month Questionnaire Report:

Perceived Benefits

Perceived Benefits N=24	Not a benefit	Minor	Moderate	Major	NA
Access to expertise in behavioral/mental health resources in caring for HCV patients	4%	4%	8%	84%	
Access to expertise in pharmacology.		8%	21%	67%	4%
Enhanced skills in communication with HCV patients and their families	8%	17%	38%	38%	
Collegial discussions with peers about HCV patients.		13%	17%	71%	

Six Month Questionnaire Report:

Sources of Learning

Learning at the HCV Telemedicine Clinic N=24	Not a source	Occasional source	Good, reliable source	Essential source	NA
Self-learning associated with topics raised at the HCV clinic		25%	33%	21%	21%
Learning from peers from my organization in association with the HCV Telemedicine Clinic	8%	25%	25%	17%	25%
Learning from colleagues and specialists from other disciplines who participate in the HCV Telemedicine Clinic		13%	29%	33%	25%

Six Month Questionnaire Report: Sources of Learning

Learning at the HCV Telemedicine Clinic N=24	Not a source	Occasional source	Good, reliable source	Essential source	NA
Learning by returning to topics several times in the HCV clinic		8%	42%	25%	25%
Case-based learning as the focus for discussion and learning at the HCV clinics		5%	17%	53%	25%
Learning from other primary care peers outside my organization in association with HCV Telemedicine Clinic	4%	25%	25%	21%	25%

Project ECHO Annual Meeting Survey Report: Project ECHO's Impact outside the HCV Telemedicine Clinic

Clinic Staff Education	Not at all			To a large degree		
	1	2	3	4	5	
N=29						Mean (SD)
My approach to clinic staff about Hepatitis C has changed since participating in Project ECHO	3%	10%	10%	28%	41%	4.0 (1.2)

Formal In-services, staff training, clinical meetings:

“[We have] in- services, clinic meetings, printed material and special meetings.”

Informal contextualized :

“Education is informal, between patients at lunch, etc. ECHO has prompted more discussion and awareness of our Hep C population.”

Project ECHO Annual Meeting Survey Report: Project ECHO's Impact outside the HCV Telemedicine Clinic

Patient Education	Not at all			To a large degree		
N=29	1	2	3	4	5	Mean (SD)
My approach to patient education has changed since participating in Project ECHO		3%	21%	24%	48%	4.2 (.9)

Awareness, experience, confidence for treatment, describing side effects:

“We are able to describe side effects and management better to patients-also using data from case studies helps.”

Repetition, language, different forms for presentation and more information resources:

“Patients need lots of ongoing education, repetition, more effective than one big “lecture”.

Project ECHO Annual Meeting Survey Report: Project ECHO's Impact outside the HCV Telemedicine Clinic

Access Specialist Expertise	Not at all			To a large degree		Mean (SD)
	1	2	3	4	5	
N=29						
I have access to Project ECHO specialists and their expertise whenever needed.			3%	7%	79%	4.8 (0.5)

ECHO Specialists emails and phone calls:

“ I regularly call Dr. Arora when I have lab results on a Hep C patient and I need to make dosing adjustments. I have called Dr. Geppert many times for advise re: anti-depressants (SE's, titration, choice of drug for both Hep C patients and others.”

Need more specialists:

“ We need this service for other diseases i.e. diabetes, asthma, cardiac, etc. What a wonderful concept.”

Project ECHO Annual Meeting Survey Report: Project ECHO's Impact outside the HCV Telemedicine Clinic

Professional Isolation	Not at all			To a large degree		
N=29	1	2	3	4	5	Mean (SD)
Project ECHO has diminished my professional isolation.	3%	7%	3%	34%	31%	4.0 (1.1)

Increased knowledge:

“Learning loop, sharing of similar cases, challenge is fun. I have planned easy access to GI, ID and Psychiatry every week. I am motivated to learn more about Hep C and am excited to be part of something bigger and similarly excited.”

Interaction with ECHO partners:

“Interesting stimulating educational contact and professional contact with network providers.”

Project ECHO Annual Meeting Survey Report: Project ECHO's Impact outside the HCV Telemedicine Clinic

Community Education	Not at all			To a large degree		
N=29	1	2	3	4	5	Mean (SD)
My clinic organization provides education outside the clinic about Hepatitis C.	34%	7%	14%	38%	3%	2.7 (1.4)

Community activities, health fairs, prevention days:

“Raise community awareness through the following: 1) organizing roundtable discussions by experts on HCV for the community; 2) Hepatitis C Day”

Local agencies: methadone clinics, courts, school based clinics:

“We need to do more in terms of community awareness of this disease, risk behaviors that are causative especially in that we do a large amount of adolescent and young adult care as well as a high school clinic.”

Project ECHO Annual Meeting Survey Report: Project ECHO's Impact outside the HCV Telemedicine Clinic

Collaboration among Agencies	Not at all			To a large degree		
N=29	1	2	3	4	5	Mean (SD)
Collaboration among agencies in Project ECHO is a benefit to my clinic.	3%		7%	14%	62%	4.5 (1.0)
<p><i>Great benefit:</i></p> <p>“Communication among all involved- what a dream!”</p> <p><i>Strengthens multidisciplinary team:</i></p> <p>“I feel that collaboration with each of these agencies will only strengthen the multidisciplinary team approach, providing increased continuity of care among all patients in ECHO based clinics.”</p>						



ECHO Area of Focus



- ~ **Federally Qualified Health Centers provide primary care to uninsured populations**
- ~ **No established system or funding source for Specialty Care**
- ~ **Project ECHO attempts to bridge this gap in a cost effective manner**
- ~ **One specialist can help manage thousands of patients**



Future Plan



~ **Psychiatry Consultation**

~ **Rheumatology Consultation**

~ **Prevention of Teenage Suicide and Depression**

~ **Bupenorphine Treatment**

~ **Prevention of Childhood Obesity and Diabetes**

~ **Gastroenterology and Liver Disease
Consultation**



Use of telemedicine, best practice protocols, co-management of patients with case based learning (the ECHO model) is a robust method to to safely and effectively treat chronic, common and complex diseases in rural and underserved areas and to monitor outcomes.

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