Sanjeev Arora M.D.
Professor of Medicine (Gastroenterology/Hepatology)
Director Project ECHO
Executive Vice Chairman
Department of Medicine
University of New Mexico Health Sciences Center,

Tel: 505-272-2808
Fax: 505-272-4628

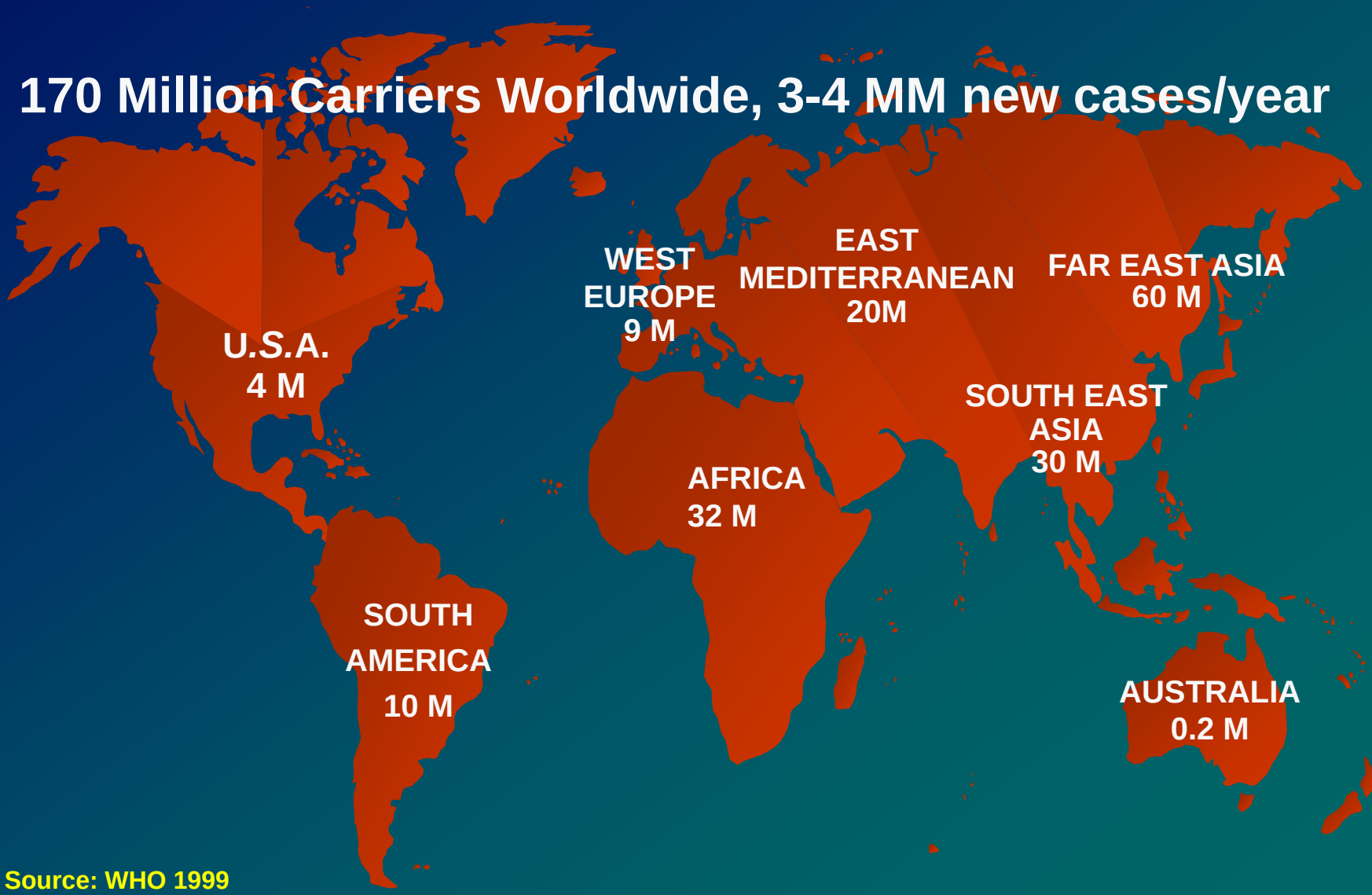
sarora@salud.unm.edu

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.

Supported by NM Dept of Health, Agency for Health Research and Quality HIT grant 1 UC1 HS015135-04, and MRISP, R24HS16510-02 and the New Mexico Legislature, Robert Wood Johnson Foundation

Hepatitis C: A Global Health Problem



Source: WHO 1999

HEPATITIS C IN NEW MEXICO

~ Estimated number is greater than 28,000

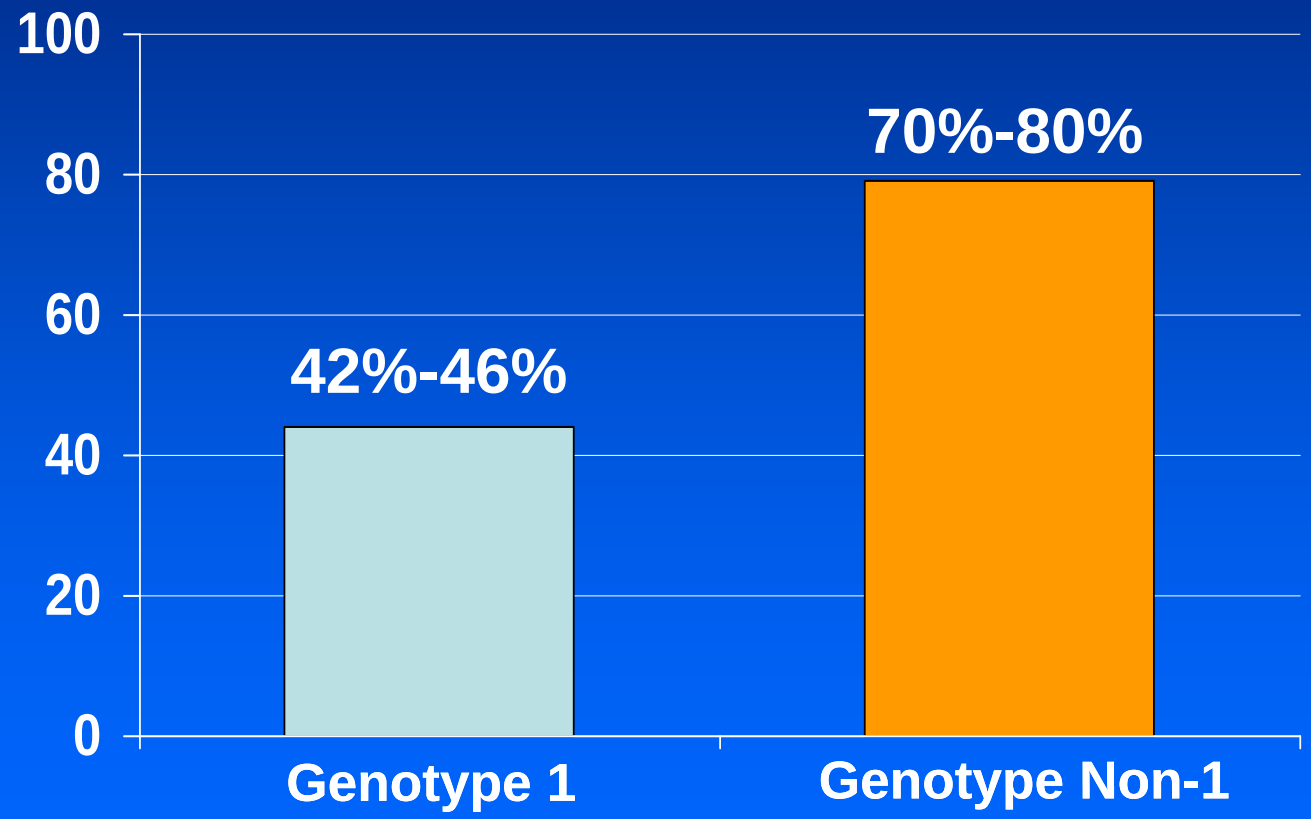
~ In 2004 Less than 5% had been treated

~ Without treatment 8,000 patients will develop cirrhosis between 2010-2015 with several thousand deaths

~ 2300 prisoners diagnosed in corrections system (expected number is greater than 2400) - None treated

~ Highest rate of chronic liver disease/cirrhosis deaths in the nation

Sustained Viral Response (Cure) Rates with PegIFN/RBV According to Genotype



Adapted from Strader DB et al. *Hepatology.* 2004;39:1147-1171.

HEPATITIS C TREATMENT

Good News:

Curable in 45-81% of cases

Bad News:

Severe side effects – anemia (100%), neutropenia >35%, depression >25%

RURAL NEW MEXICO

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 (MUAs)
- 14 counties designated as Health Professional Shortage Areas (HPSAs)

HEALTH CARE IN NEW MEXICO

~20% practice in rural or frontier areas

New Mexico Physician Survey 2001

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

PARTNERS

~ University of New Mexico School of Medicine Dept of Medicine, Telemedicine and CME

~ NM Department of Corrections
~ NM State Health Department

~Indian Health Service

~Community Clinicians with interest in Hepatitis C and Primary Care Association

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

~ HIPAA compliant centralized database to monitor outcomes

STEPS

~ Train physicians, nurses, pharmacists, educators in Hepatitis C

~ Train to use web based software - “ihealth”

~ Conduct telemedicine clinics – “Knowledge Network”

~ Initiate co-management – “Learning loops”

~ Collect data and monitor outcomes centrally

~ Assess cost and effectiveness of programs

BENEFITS TO RURAL CLINICIANS

~ No-cost CMEs and Nursing CEUs

~ 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


Clustering of Poor Prognostic Factors in Heavy Patients
Clustering of Poor Prognostic Factors in Heavy Patients
DRUG INFORMATION HANDBOOK

Technology

~ Videoconferencing Bridge (Polycom RMX 2000)
~ Videoconferencing Recording Device (Polycom RSS 2000)
~ You Tube-like Website (Polycom VMC 1000)
~ Webcam Interfacing Capacity (Polycom CMA 5000)
~ iHealth
~ Webinar
~ Customer Relation Management Solution
~ Software for Online Classes

How well has model worked for Hepatitis C ?

400 HCV Telehealth Clinics have been conducted

- >4000 patients entered HCV disease management program

<u>CMEs/CEs issued:</u>

5100 CME/CE hours issued to ECHO Clinicians for Hep C. Total CME hours 10,000 at no cost

237 hours of HCV Training conducted at rural sites

Project ECHO Clinicians
HCV Knowledge Skills and Abilities (Self-Efficacy)

scale: 1 = none or no skill at all 7= expert-can teach others

Community Clinicians N=25	**BEFORE Participation MEAN (SD)**	**TODAY MEAN (SD)**	**Paired Difference MEAN (SD) (p-value)**	**Effect Size for the Change**
1. Ability to identify suitable candidates for treatment for HCV.	2.8 (1.2)	5.6 (0.8)	2.8 (1.2) (<0.0001)	**2.4**
2. Ability to assess severity of liver disease in patients with Hepatitis C.	3.2 (1.2)	5.5 (0.9)	2.3 (1.1) (< 0.0001)	**2.1**
3. Ability to treat HCV patients and manage side effects.	2.0 (1.1)	5.2 (0.8)	3.2 (1.2) (<0.0001)	**2.6**

Project ECHO Clinicians
HCV Knowledge Skills and Abilities (Self-Efficacy)

Community Clinicians N=25	BEFORE Participation MEAN (SD)	TODAY MEAN (SD)	Paired Difference MEAN/SD (p-value)	Effect Size for the Change
4. Ability to assess and manage psychiatric co-morbidities in patients with Hepatitis C.	2.6 (1.2)	5.1 (1.0)	2.4 (1.3) (<0.0001)	**1.9**
5. Serve as local consultant within my clinic and in my area for HCV questions and issues.	2.4 (1.2)	5.6 (0.9)	3.3 (1.2) (<0.0001)	**2.8**
6. Ability to educate and motivate HCV patients.	3.0 (1.1)	5.7 (0.6)	2.7 (1.1) (<0.0001)	**2.4**

Project ECHO Clinicians
HCV Knowledge Skills and Abilities
(Self-Efficacy)

Community Clinicians N=25	BEFORE Participation MEAN (SD)	TODAY MEAN (SD)	Paired Difference MEAN/SD (p-value)	Effect Size for the Change
Overall Competence (average of 9 items)	2.8* (0.9)	5.5* (0.6)	2.7 (0.9) (<0.0001)	**2.9**

Cronbach's alpha for the BEFORE ratings = 0.92 and Cronbach's alpha for the TODAY ratings = 0.86 indicating a high degree of consistency in the ratings on the 9 items

Clinician Benefits (Data Source: 6 Month Q- 5/2008)

Benefits N=35	Not/Minor benefit	Moderate/Major benefit
Enhanced knowledge about management and treatment of HCV patients.	3% (1)	97% (34)
Being well-informed about symptoms of HCV patients in treatment.	6% (2)	94% (33)
Achieving competence in caring for HCV patients.	3% (1)	98% (34)

Project ECHO Annual Meeting Survey

N=17	**Mean Score** **(Range 1-5)**
Project ECHO has diminished my professional isolation	4.3
My participation in Project ECHO has enhanced my professional satisfaction	4.8
Collaboration among agencies in Project ECHO is a benefit to my clinic	4.9
Project ECHO has expanded access to HCV treatment for patients in our community	4.9
Access to **in general** to specialist expertise and consultation is a major area of need for you and your clinic	4.9
Access to **HCV specialist** expertise and consultation is a major area of need for you and your clinic	4.9

The Hepatitis C Trial

Principal Endpoint

- Sustained viral response (SVR): no detectable virus 6 months after completion of treatment

Treatment Outcomes

Outcome	ECHO	UNMH	P-value
	N=261	N=146	
SAE	6.9%	13.7%	P<0.024
Minority	68%	49%	P<0.01
SVR Genotype 1/4	50%	46%	NS
SVR Genotype 2/3	70%	71%	NS

SAE=significant adverse event

SVR=sustained viral response

Conclusions

- Rural primary care Clinicians deliver hepatitis C care under the aegis of Project ECHO that is as safe and effective as that given in a University clinic
- Project ECHO improves access to hepatitis C care for New Mexico minorities

DISEASE SELECTION

~ Common diseases

~ Management is complex

~ Evolving treatments and medicines

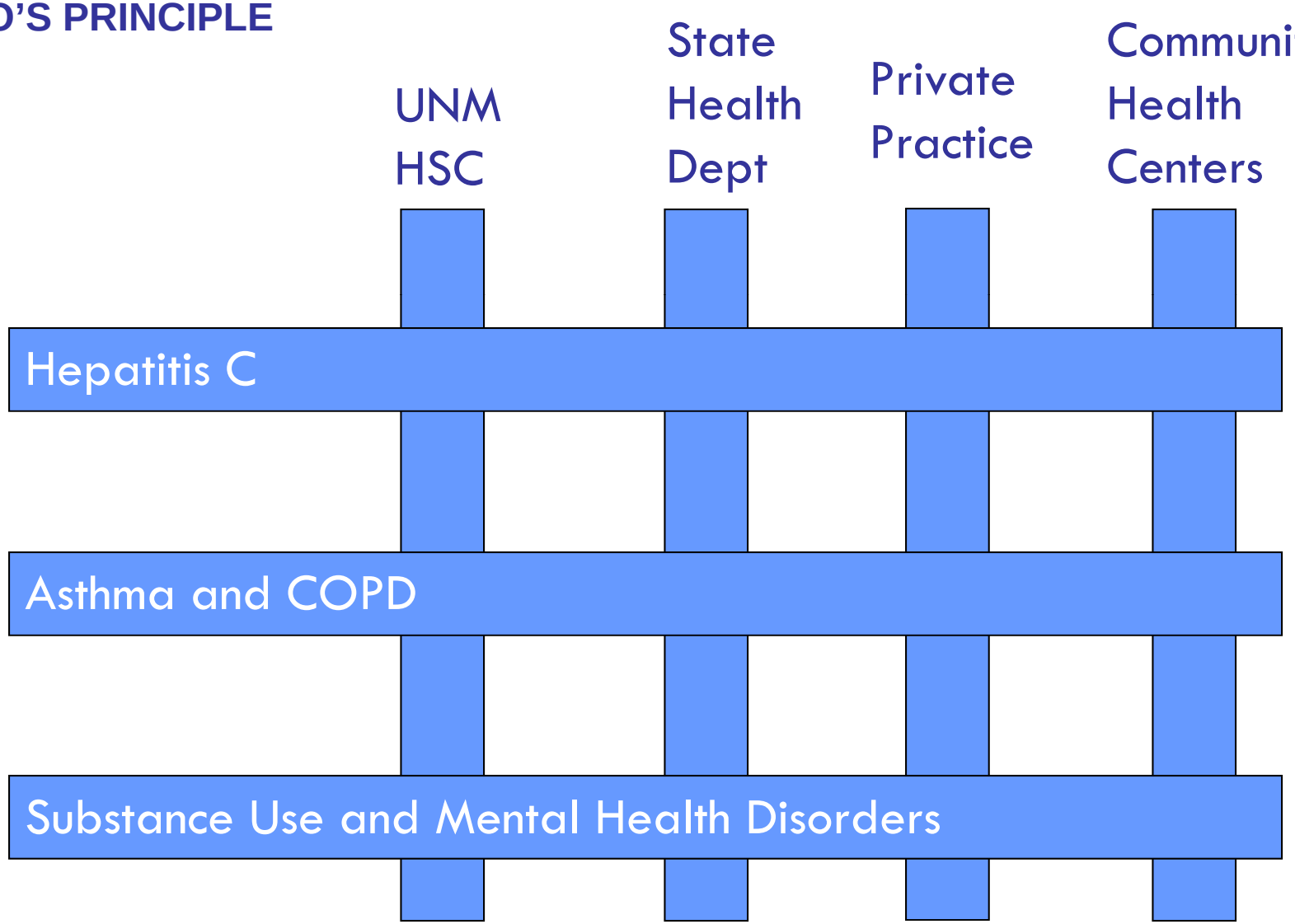
~ High societal impact (health and economic)

~ Serious outcomes of untreated disease

~ Improved outcomes with disease management

BUILDING BRIDGES

PARETO'S PRINCIPLE



FORCE MULTIPLIER

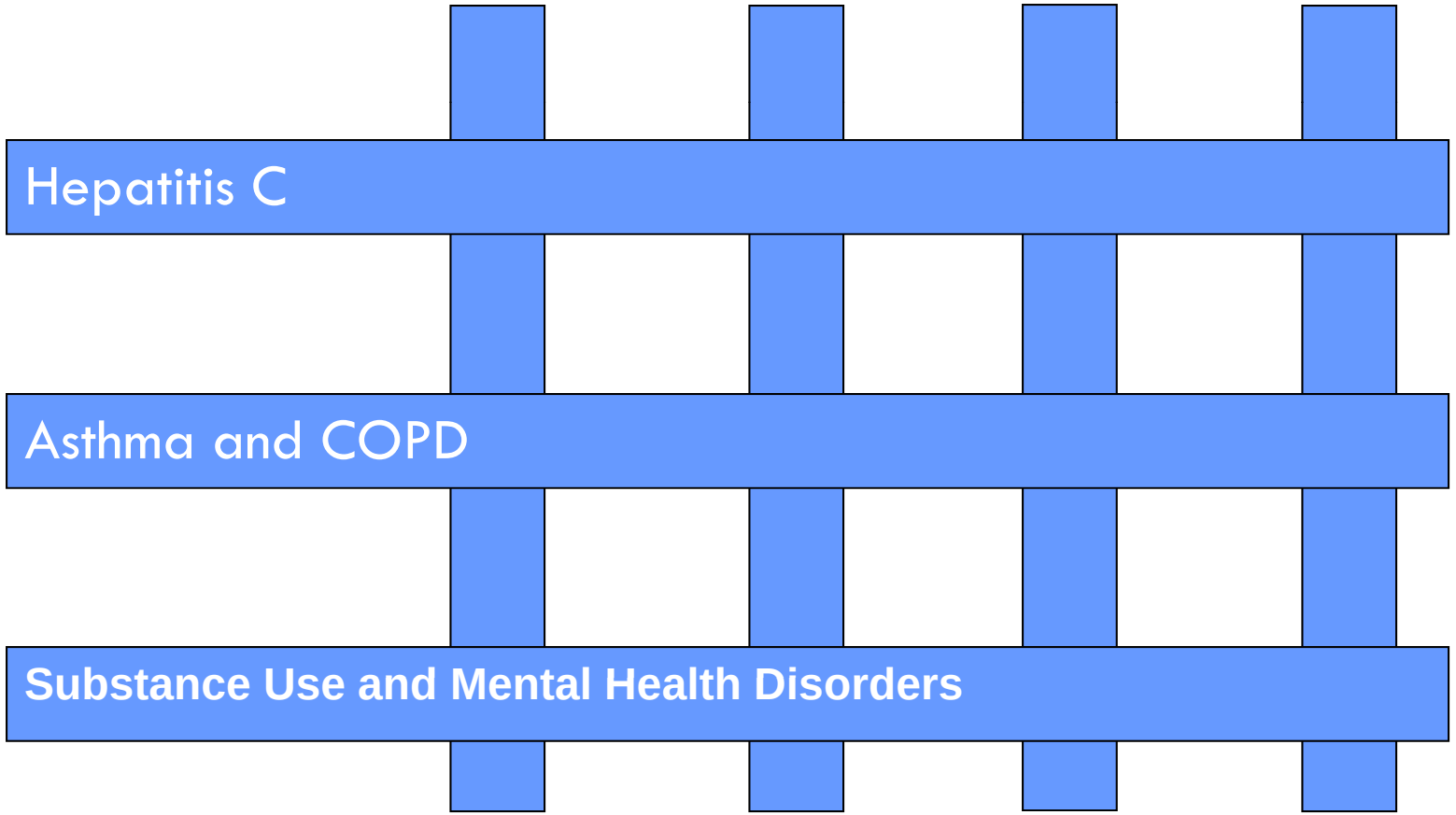
Use Existing Community Clinicians

Specialists

Primary Care

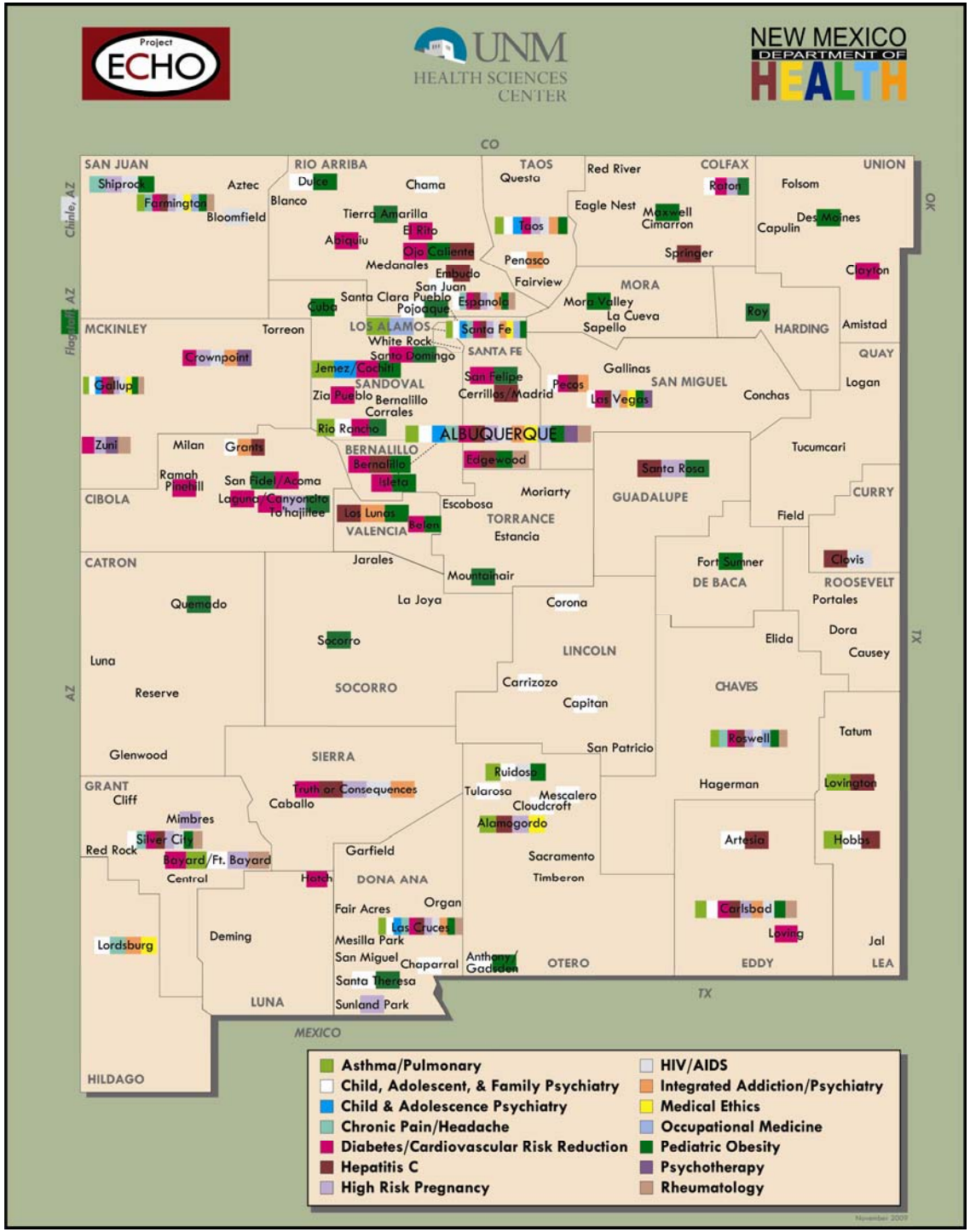
Physician Assistants

Nurse Practitioners

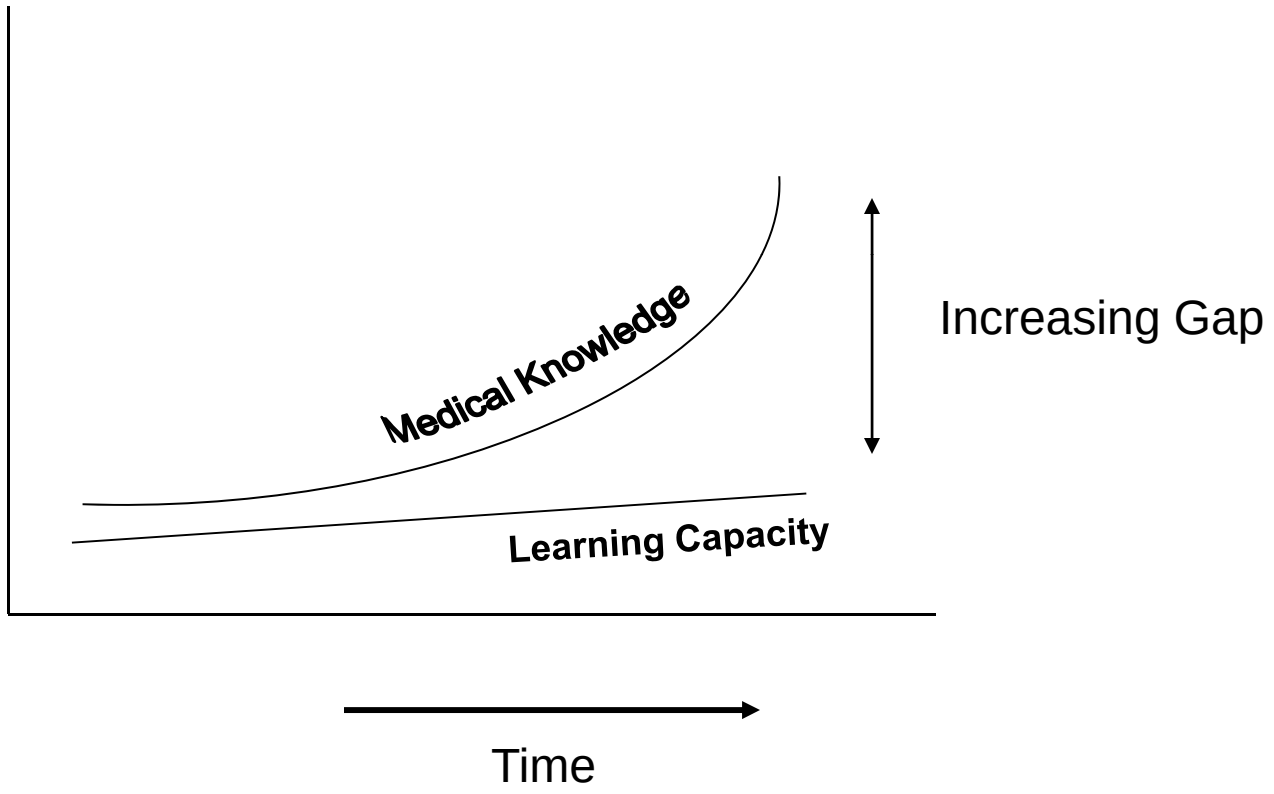


Successful Expansion Into Multiple Diseases

	Mon	Tue	Wed	Thurs	Fri
8-10 AM	Hepatitis C Arora Thornton	Cardiac Risk Reduction Clinic Colleran	Asthma Harkins	Prevention of Teenage Suicide- Kriechman	Child Psychiatry- Graeber
10-12 AM	Rheuma- tology- Bankhurst	Chronic Pain- Katzman	Substance Abuse- Komaromy	High Risk Pregnancy Curet	Psychotherapy Katzman
2-4 PM	Occupational Health-Wagner	Motivational Interviewing- Oetzel	Ethics Consultation Simpson	Childhood Obesity Mcgrath	Resident Teaching Psychotherapy Katzman


Project ECHO
UNM HEALTH SCIENCES CENTER
NEW MEXICO DEPARTMENT OF HEALTH
CO
OK
TX
AZ
Chinle, AZ
Flagstaff, AZ
MEXICO
SAN JUAN
RIO ARRIBA
TAOS
COLFAX
UNION
MORA
HARDING
QUAY
MCKINLEY
LOS ALAMOS
SANTA FE
SANDOVAL
SAN MIGUEL
BERNALILLO
ALBUQUERQUE
CIBOLA
VALENCIA
TORRANCE
GUADALUPE
CURRY
ROOSEVELT
CATRON
DE BACA
LINCOLN
SOCORRO
CHAVES
SIERRA
GRANT
DONA ANA
OTERO
EDDY
LEA
LUNA
HILDAGO
Shiprock
Aztec
Farmington
Bloomfield
Blanco
Dulce
Chama
Tierra Amarilla
El Rito
Abiquiu
Ojo Caliente
Medanales
Embudo
San Juan
Santa Clara Pueblo
Pojoaque
Espanola
Cuba
Questa
Taos
Penasco
Fairview
Red River
Eagle Nest
Maxwell
Cimarron
Raton
Springer
Folsom
Capulin
Des Moines
Clayton
Roy
Mora Valley
La Cueva
Sapello
Harding
Amistad
Logan
Torreon
Crownpoint
Gallup
White Rock
Santa Domingo
Jemez/Cochiti
Zia Pueblo
Bernalillo
Corrales
San Felipe
Cerrillos/Madrid
Santa Fe
Pecos
Las Vegas
Gallinas
Conchas
Rio Rancho
Edgewood
Bernalillo
Isleta
Zuni
Milan
Grants
Ramah
Pinehill
San Fidel/Acoma
Laguna/Canyoncito
Tohajiilee
Los Lunas
Belen
Escobosa
Moriarty
Estancia
Santa Rosa
Tucumcari
Field
Clovis
Fort Sumner
Portales
Dora
Elida
Causey
Jarales
Mountainair
La Joya
Corona
Quemado
Socorro
Luna
Reserve
Carrizozo
Capitan
Roswell
Tatum
Glenwood
San Patricio
Ruidoso
Truth or Consequences
Caballo
Tularosa
Mescalero
Cloudcroft
Alamogordo
Hagerman
Lovington
Cliff
Mimbres
Silver City
Red Rock
Bayard/Ft. Bayard
Central
Hatch
Garfield
Sacramento
Timberon
Artesia
Hobbs
Fair Acres
Organ
Las Cruces
Mesilla Park
San Miguel
Chaparral
Anthony/Gadsden
Santa Theresa
Sunland Park
Deming
Lordsburg
Carlsbad
Loving
Jal
Asthma/Pulmonary
Child, Adolescent, & Family Psychiatry
Child & Adolescence Psychiatry
Chronic Pain/Headache
Diabetes/Cardiovascular Risk Reduction
Hepatitis C
High Risk Pregnancy
HIV/AIDS
Integrated Addiction/Psychiatry
Medical Ethics
Occupational Medicine
Pediatric Obesity
Psychotherapy
Rheumatology
November 2009

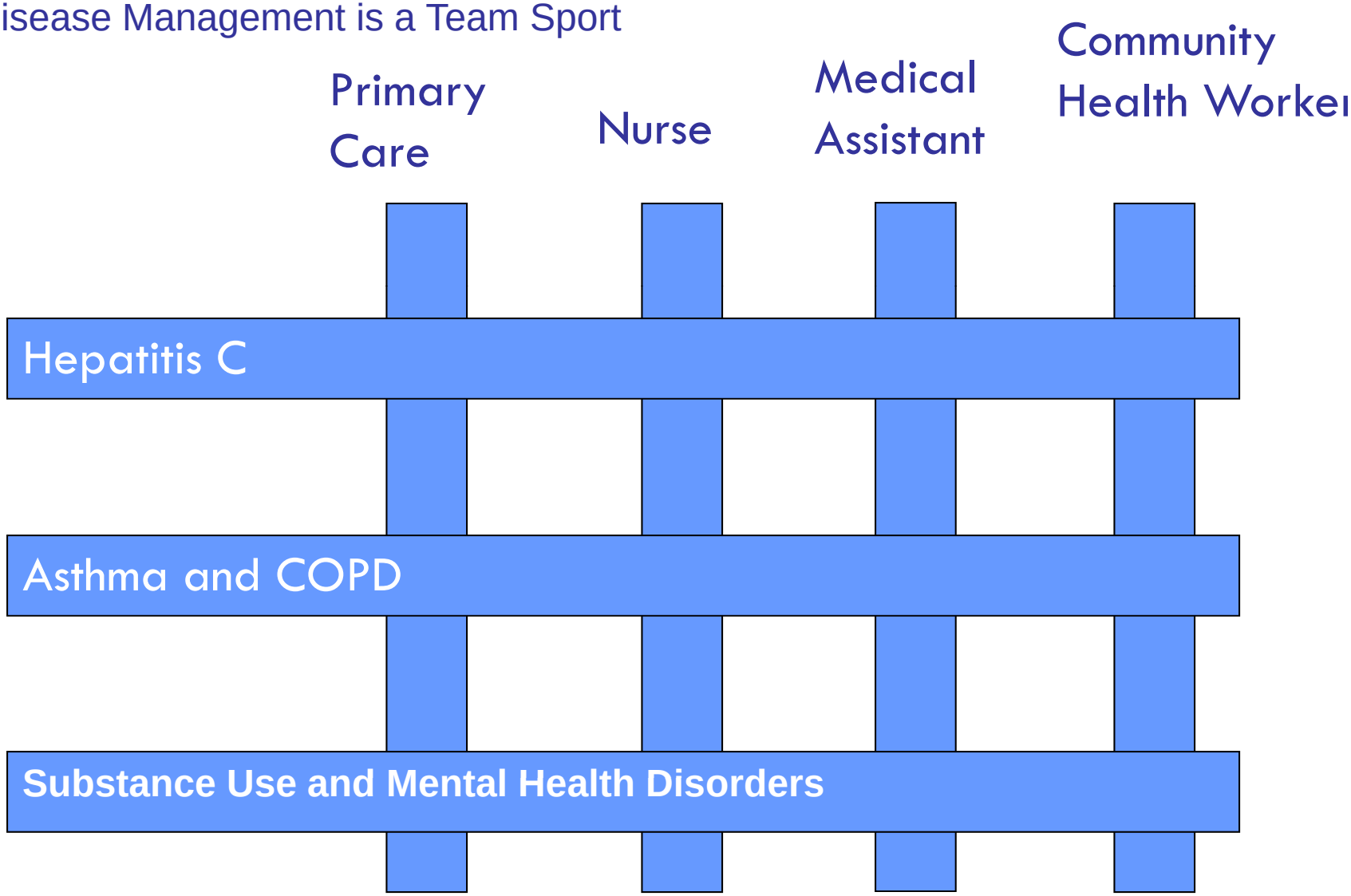
A KNOWLEDGE NETWORK IS NEEDED



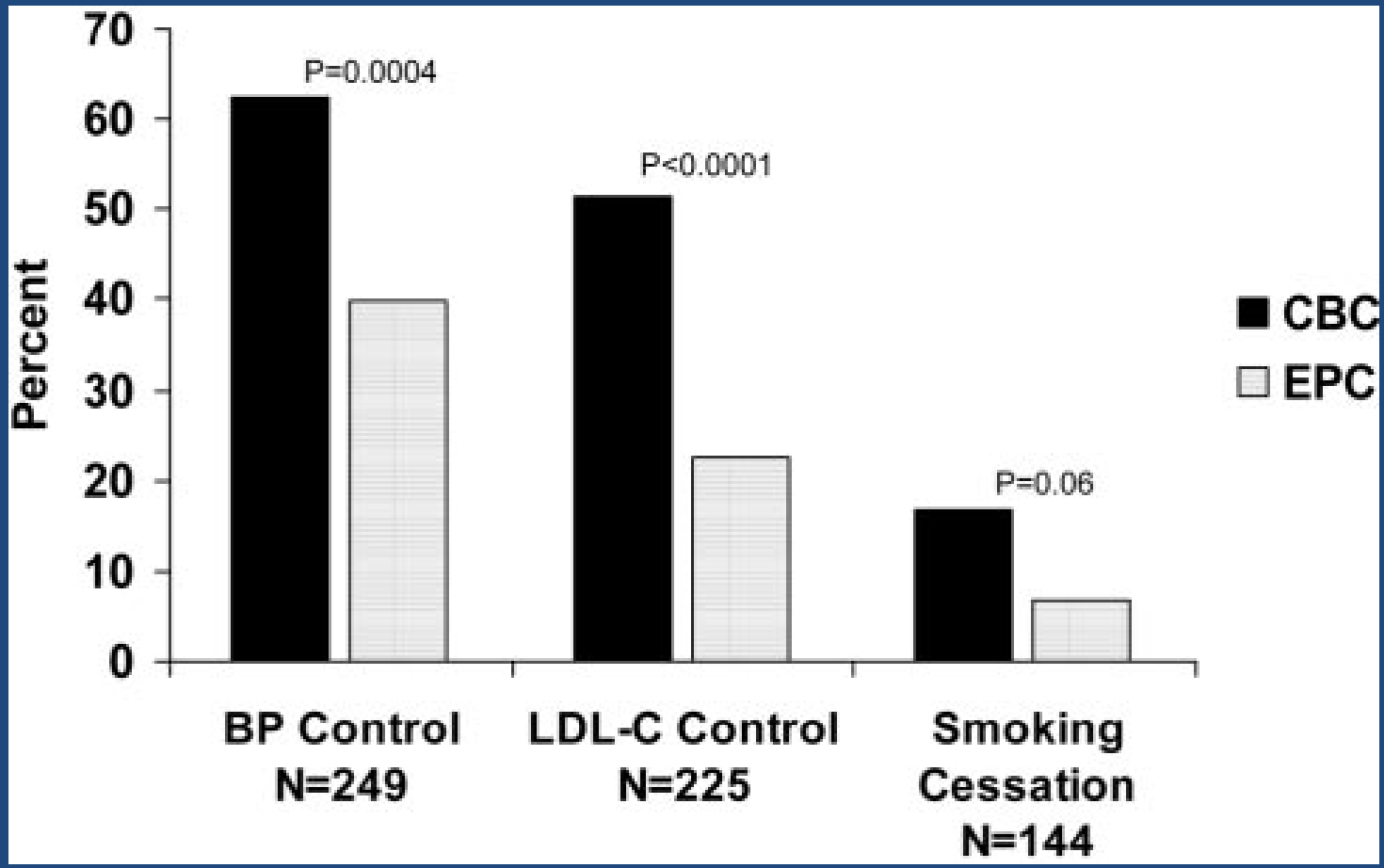
"Expanding the Definition of Underserved Population"

FORCE MULTIPLIER

Chronic Disease Management is a Team Sport



Community Based Care for Cardiac Risk Factor Reduction was More Effective than Enhanced Primary Care



Becker Circulation. 2005;111:1298-1304.

Why is a Community Health Worker (CHW) Intervention Effective?

~ Live in Community

~ Understand Culture

~ “Have Walked Two Moons in The Patient’s Moccasins”

~ Appreciate Economic Limitations of Patient and Know Community Resources Available to Patient

~ Often Know Family and can engage other Social Resources for Patient

~ Spend More Time with Patient

CHW Training – TWO TRACKS

- CHW Specialist Training
  - Diabetes, Obesity, Diet, Smoking Cessation, Exercise
  - Substance Use Disorders

Specialty CHW Program

~ Use Low Cost Technology to Take Specialty Training to the CHWs, Promotoras, CHRs, Medical Assistants Where They Live

~ Narrow Focus- Deep Knowledge

~ Standardized Curriculum

~ Ongoing Support via Knowledge Networks

~ Part of Disease Management Team

~ Warm Handoff

Why Do We Need An Army of CHWs?

~ The Baby Boomers Are Aging

~ There will be a Tsunami of Chronic Disease

~ They Have a High Expectation for Service

~ There is a Severe Shortage of Primary Care Clinicians with No Visible Solutions in the Short Term

~Primary Care Clinicians Need Support

Community Health Workers in Prison

The New Mexico Peer Education Program

Pilot training cohort, CNMCF Level II, July 27-30, 2009

First day of peer educator training

Photo consents on file with Project ECHO and CNMCF

Graduation Ceremony of First Cohort

The New Mexico Peer Education Program

Pilot training cohort, CNMCF Level II, July 27-30, 2009

Graduation as Peer Educators

Photo consents on file with Project ECHO and CNMCF

Potential Benefits to Health System

~ Quality and Safety- Rapid Learning –Reduce Variation in Care

~ Access for Rural and Underserved Patients: Reduce Disparities

~ Workforce Training and Force Multiplier

~ Improving Professional Satisfaction/ Retention

~ Supporting the Medical Home Model

~ Cost Effective Care- Avoid Excessive Testing and Travel

~ Prevent Cost of Untreated Disease (eg: Liver Transplant or Dialysis)

~ Integration of Public Health into Treatment Paradigm


Project

Awards for ECHO Team

- Applications sought for Disruptive Innovations in Healthcare – New Models that would change healthcare nationally and globally (2007)
- Project ECHO selected a winner amongst 307 Applications from 27 countries
- ehealth Inititative award (2008)
- Computerworld Award (2008)
- US Long Distance Education Award (2008)
- Ashoka Foundation Award for Social Entrepreneurship (2009)
- Best Practice Award from US Long Distance Education Association (2010)

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.

Supported by NM Dept of Health, Agency for Health Research and Quality HIT grant 1 UC1 HS015135-04, and MRISP, R24HS16510-02 and the New Mexico Legislature, Robert Wood Johnson Foundation