



Scaling up ECHO to address the Opioid Epidemic

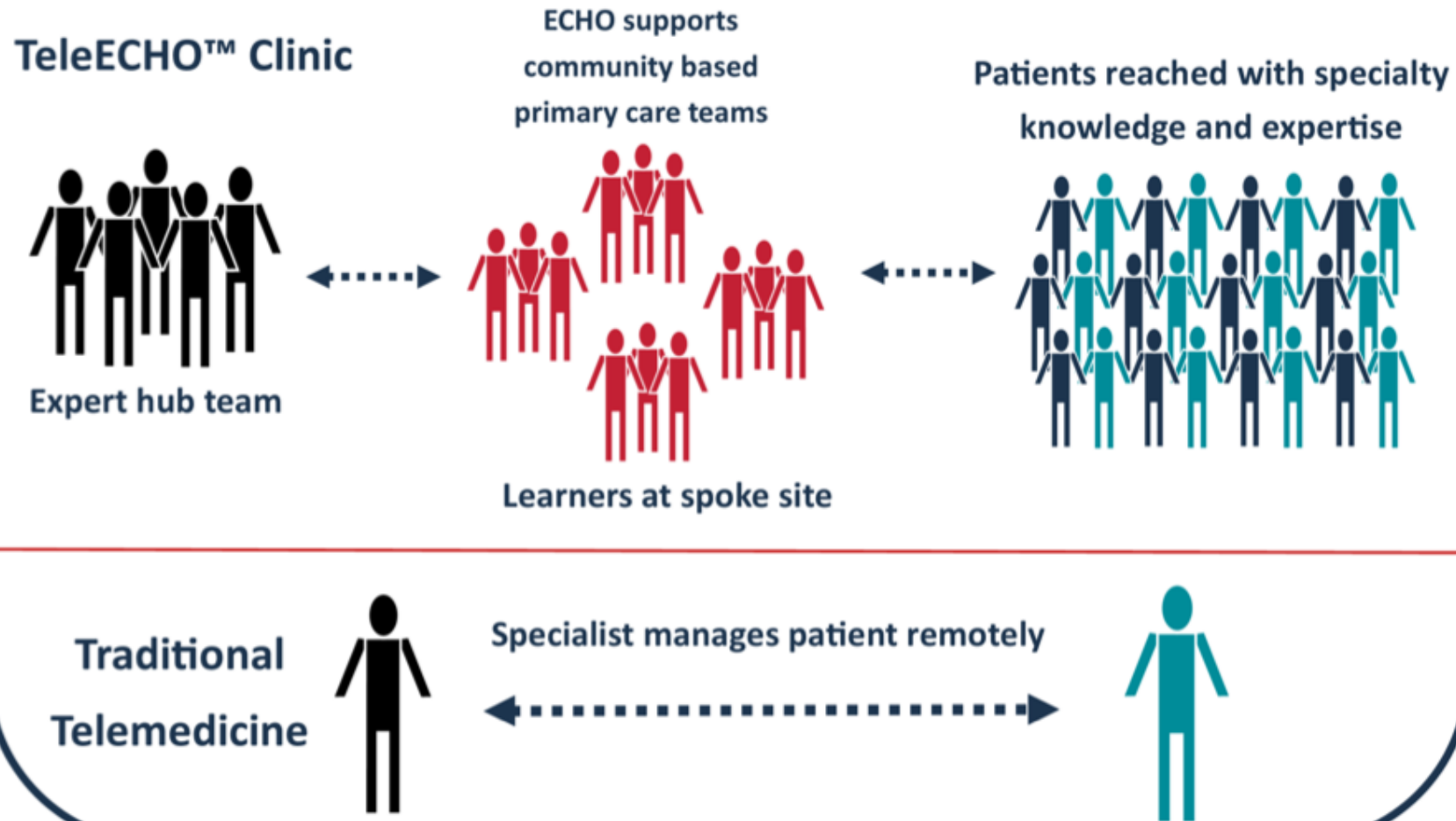
Miriam Komaromy, MD
Associate Director, ECHO Institute
February, 2018



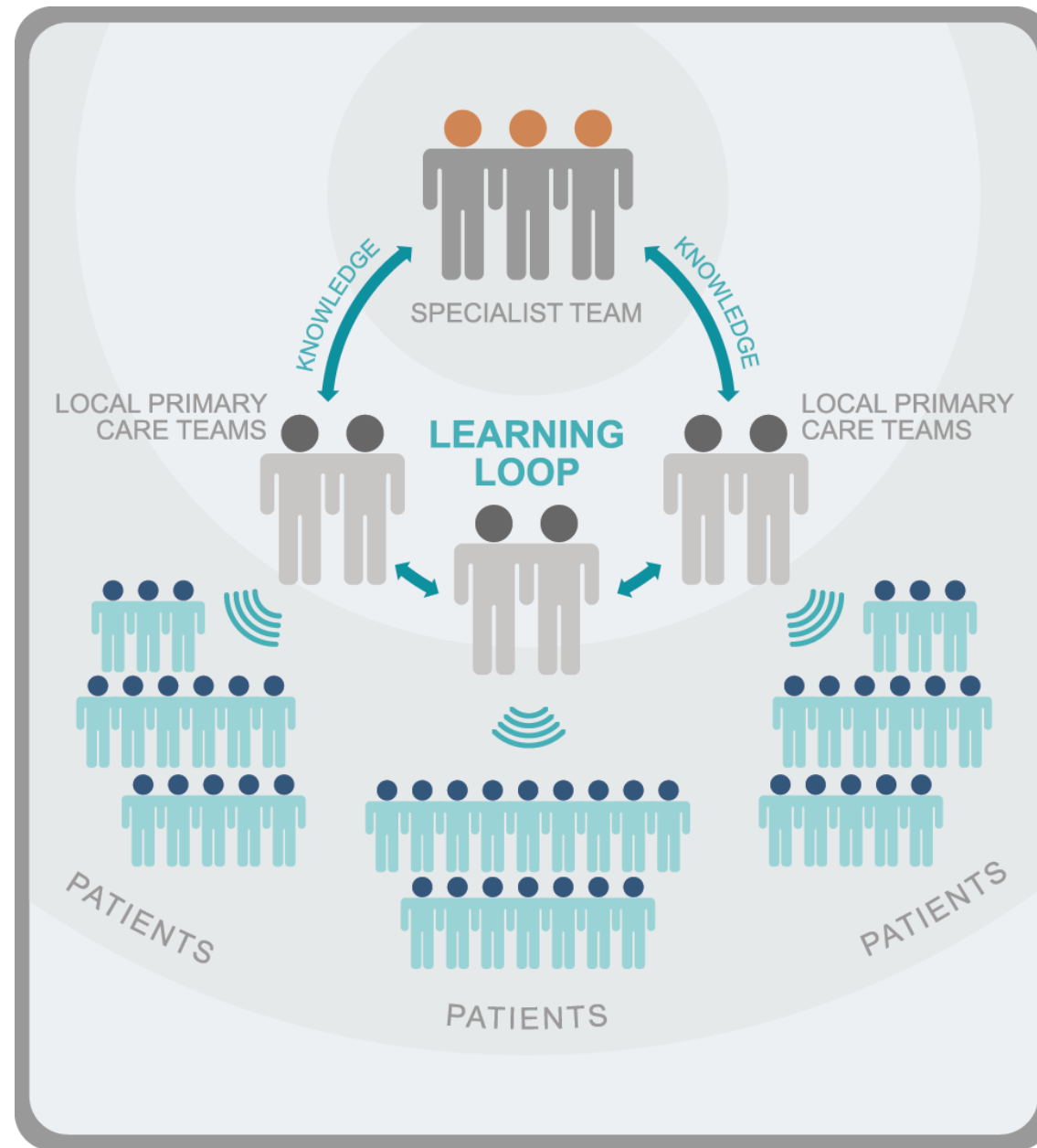




ECHO vs. Telemedicine



ECHO model is not ‘traditional telemedicine’.

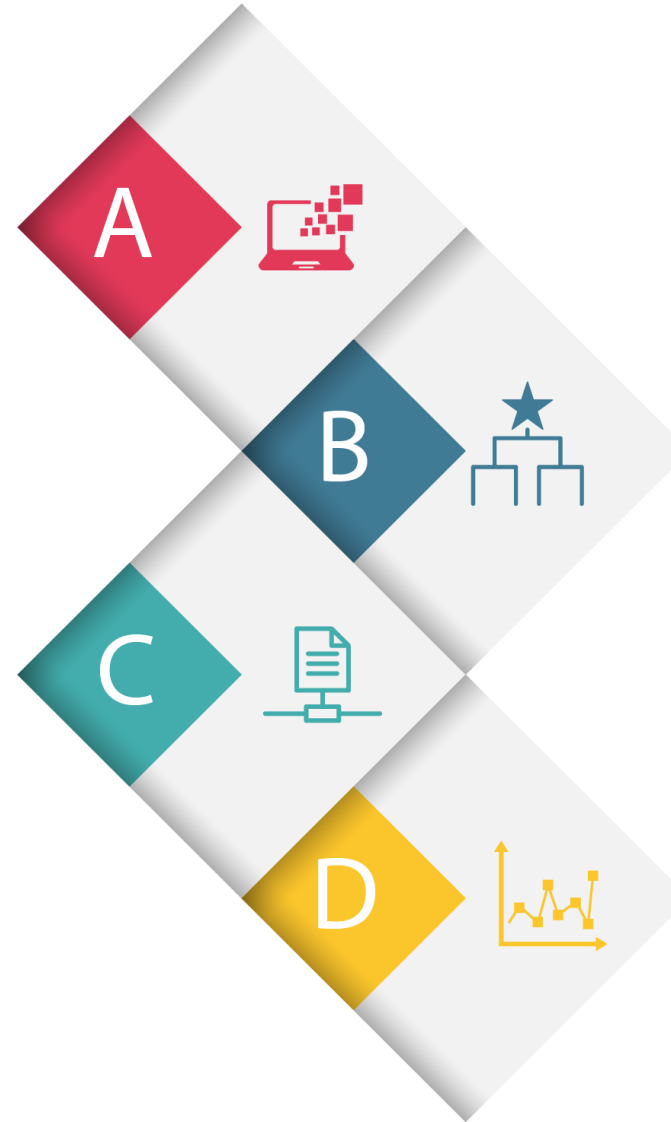


“Hub”

“Spokes”

The ECHO Model

Amplification – Use **T**echnology
to leverage scarce resources



Share **B**est Practices
to reduce disparity

Case Based Learning
to master complexity

Web-based **D**atabase to
Monitor **O**utcomes

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
- Access to specialty consultation

Goals of Project ECHO

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, Department of Medicine, Telemedicine and CME
- NM Department of Corrections
- NM Department of Health
- Indian Health Service
- FQHCs and Community Clinics
- Primary Care Association

How well has model worked?

- 600 HCV teleECHO Clinics have been conducted
- >6,000 patients entered HCV disease management program

CME's/CE's issued:

- Total CME hours 79000 hours at no cost for HCV and 19 other disease areas

Project ECHO Clinicians

HCV Knowledge Skills and Abilities (Self-Efficacy)

Community Clinicians N=25	<u>BEFORE</u> Participation MEAN (SD)	<u>TODAY</u> MEAN (SD)	Paired Difference (p-value) MEAN (SD)	<u>Effect</u> <u>Size</u> 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	<u>BEFORE</u> Participation MEAN (SD)	<u>TODAY</u> MEAN (SD)	Paired Difference (p-value) MEAN (SD)	<u>Effect Size</u> 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.

Arora S., Kalishman S., Thornton K., et al. *Hepatol.* 2010;52(3):1124-33.

ORIGINAL ARTICLE

Outcomes of Treatment for Hepatitis C Virus Infection by Primary Care Providers

Sanjeev Arora, M.D., Karla Thornton, M.D., Glen Murata, M.D.,
Paulina Deming, Pharm.D., Summers Kalishman, Ph.D., Denise Dion, Ph.D.,
Brooke Parish, M.D., Thomas Burke, B.S., Wesley Pak, M.B.A.,
Jeffrey Dunkelberg, M.D., Martin Kistin, M.D., John Brown, M.A.,
Steven Jenkusky, M.D., Miriam Komaromy, M.D., and Clifford Qualls, Ph.D.

ABSTRACT

BACKGROUND

The Extension for Community Healthcare Outcomes (ECHO) model was developed to improve access to care for underserved populations with complex health problems such as hepatitis C virus (HCV) infection. With the use of video-conferencing technology, the ECHO program trains primary care providers to treat complex diseases.

METHODS

We conducted a prospective cohort study comparing treatment for HCV infection at the University of New Mexico (UNM) HCV clinic with treatment by primary care clinicians at 21 ECHO sites in rural areas and prisons in New Mexico. A total of 407 patients with chronic HCV infection who had received no previous treatment for the infection were enrolled. The primary end point was a sustained virologic response.

RESULTS

A total of 57.5% of the patients treated at the UNM HCV clinic (84 of 146 patients) and 58.2% of those treated at ECHO sites (152 of 261 patients) had a sustained viral response (difference in rates between sites, 0.7 percentage points; 95% confidence interval, -9.2 to 10.7; $P=0.89$). Among patients with HCV genotype 1 infection, the rate of sustained viral response was 45.8% (38 of 83 patients) at the UNM HCV clinic and 49.7% (73 of 147 patients) at ECHO sites ($P=0.57$). Serious adverse events occurred in 13.7% of the patients at the UNM HCV clinic and in 6.9% of the patients at ECHO sites.

CONCLUSIONS

The results of this study show that the ECHO model is an effective way to treat HCV infection in underserved communities. Implementation of this model would allow other states and nations to treat a greater number of patients infected with HCV than they are currently able to treat. (Funded by the Agency for Healthcare Research and Quality and others.)

From the Department of Internal Medicine (S.A., K.T., G.M., P.D., S.K., D.D., B.P., T.B., W.P., M. Kistin, J.B., M. Komaromy) and the Clinical and Translational Science Center (C.Q.), University of New Mexico; and Presbyterian Healthcare Services, Adult and Geriatric Behavioral Health Clinic (S.J.) — both in Albuquerque; and the Department of Internal Medicine, University of Iowa, Iowa City (J.D.). Address reprint requests to Dr. Arora at Project ECHO, 1 University of New Mexico, MSC07-4245, Albuquerque, NM 87131, or at sarora@salud.unm.edu.

This article (10.1056/NEJMoa1009370) was published on June 1, 2011, at NEJM.org.

N Engl J Med 2011;364:2199-207.
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Hepatitis C

Treatment Outcomes

Hepatitis C

Outcome	ECHO	UNMH	P-value
	N=261	N=146	
SVR* (Cure) Genotype 1	50%	46%	NS
SVR* (Cure) Genotype 2/3	70%	71%	NS
Minority	68%	49%	P<0.01

*SVR=sustained viral response

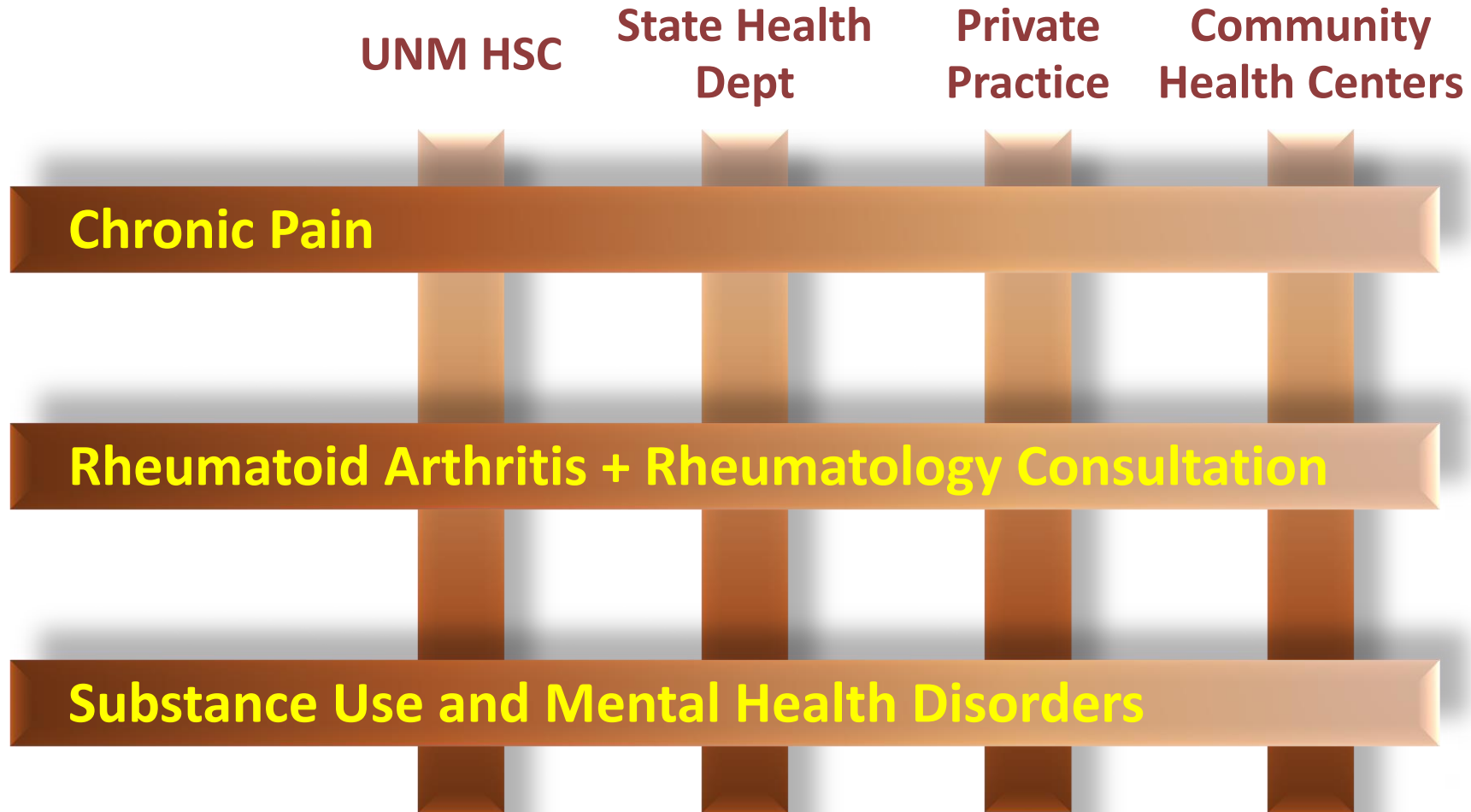
NEJM : 364: 23, June 9-2011, Arora S, Thornton K, Murata G

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

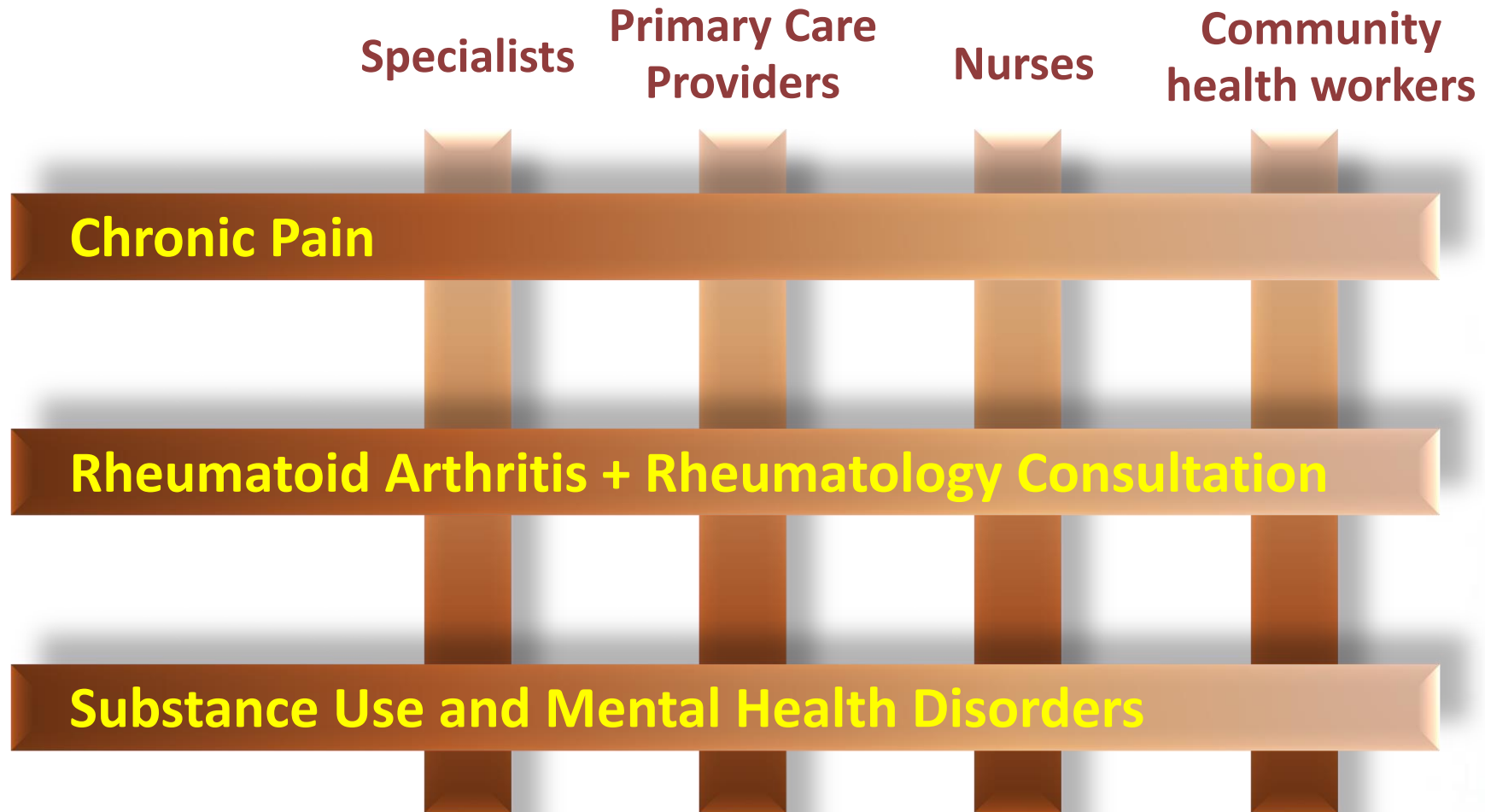
Bridge Building

Pareto's Principle



Force Multiplier

Use Existing Community Clinicians

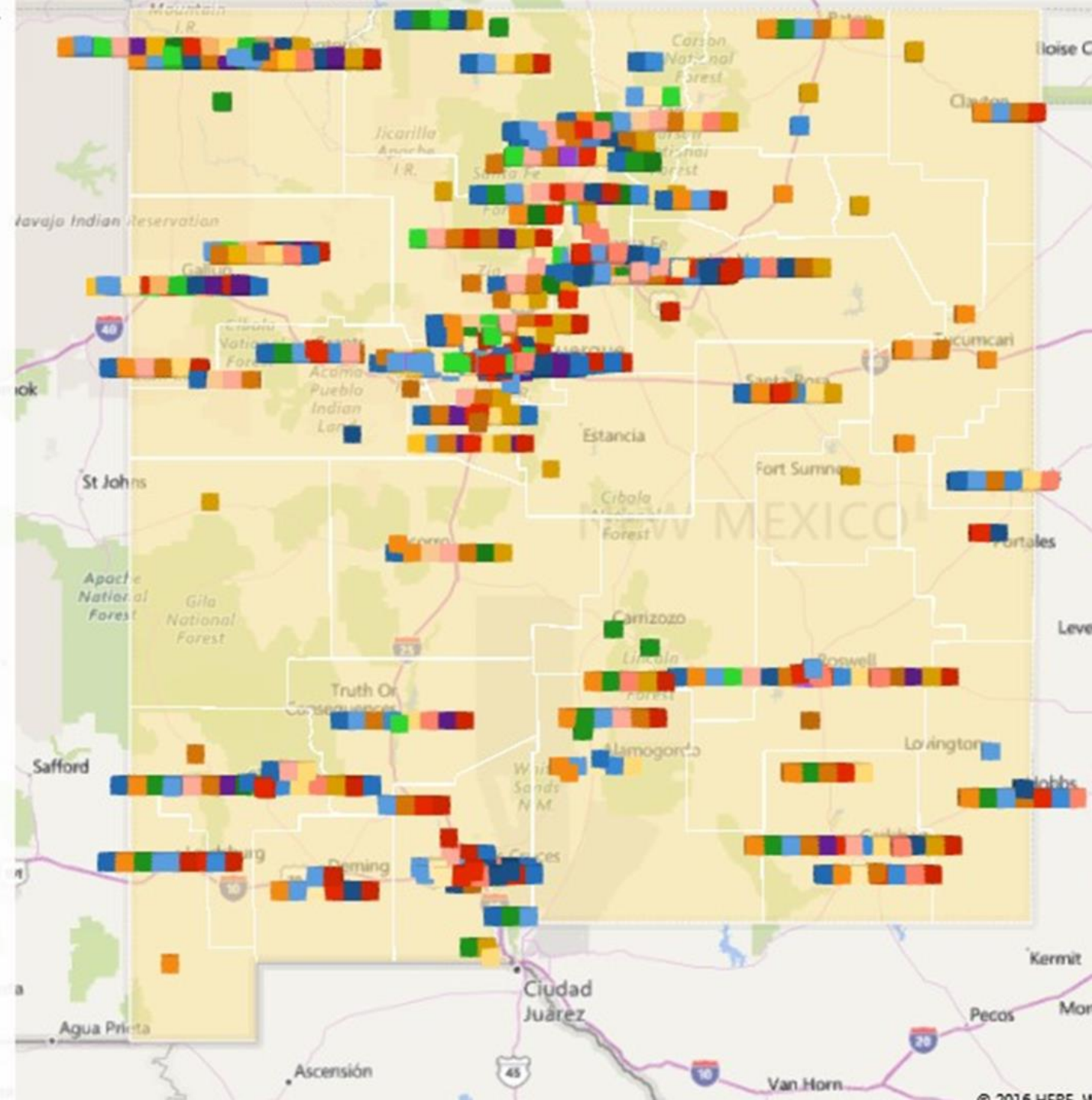


Successful Expansion into Multiple Diseases

MON	TUE	WED	THURS	FRI
<u>Rheumatology</u> • Bankhurst	<u>HBV</u> • Gish	<u>Community Health Workers</u> • CHW Team	<u>CDC Good Health and Wellness in Indian Country</u> • Struminger	<u>Opioid Addiction</u> • Komaromy
<u>Tuberculosis</u> • Burgos	<u>Bone Health</u> • Lewiecki	<u>Endocrinology & Diabetes</u> • Bouchonville	<u>Chronic Pain and Opioid Management</u> • Comerici	<u>Nurse Practitioner/Certified Midwife Primary Care</u> • Van Roper
<u>Cardiology</u> • Achrekar, Anderson & Yatskowitz	<u>Crisis Intervention for Community Policing Agencies</u> • Duhigg	<u>Miners' Wellness</u> • Sood	<u>Prison Peer Education Program</u> • Thornton	<u>Integrated Addictions and Psychiatry (IAP)</u> • Komaromy
<u>Reproductive Health</u> • Singh	<u>Seizures and Spells</u> • Imerman	<u>Hepatitis C (HCV)</u> • Arora	<u>HIV/ HCV Corrections</u> • Iandiorio & Thornton	<u>Antimicrobial Stewardship</u> • Brett, Irizarry & Mercier

ECHO Hubs and Spokes: State of New Mexico

- Addiction/Psychiatry
- Asthma/Pulmonary
- Autism
- Child and Youth Epilepsy Clinic (CYE)
- Child Psychology
- Childhood Obesity
- Chronic Pain and Headache
- CHW Care Competency
- Community Addictions Recovery Specialist
- Complex Care Clinic
- Dementia Care Clinic
- Diabetes and Cardiovascular Care
- Disease Prevention Program
- Endocrinology TeleECHO
- HCV
- HCV-HIS
- Heart Failure
- Hepatitis C - Community
- Hepatitis C - Correctional
- Hepatitis C - IHS
- Hepatitis C -Community
- High-risk Pregnancy
- HIV / AIDS (IHS)
- HIV/AIDS
- Integrated Addiction / Psychiatry
- New Mexico Peer Education Program
- Palliative Care
- Pediatric Obesity
- Psychiatry
- Rheumatology
- Women's Health/Genomics



ECHO-AGE

Beth Israel Deaconess Boston

- 2:1 Matched Cohort Study
- 11 nursing homes received ECHO intervention. Matched with 22 controls
- Residents in ECHO Age facilities were 75% less likely to be physically restrained
- Residents were 17% less likely to be prescribed antipsychotics

Gordon S.E., Dufour A.B., Monti S.M., et al. *J Am Med Dir Assoc.* 2016;17(6):553-6.

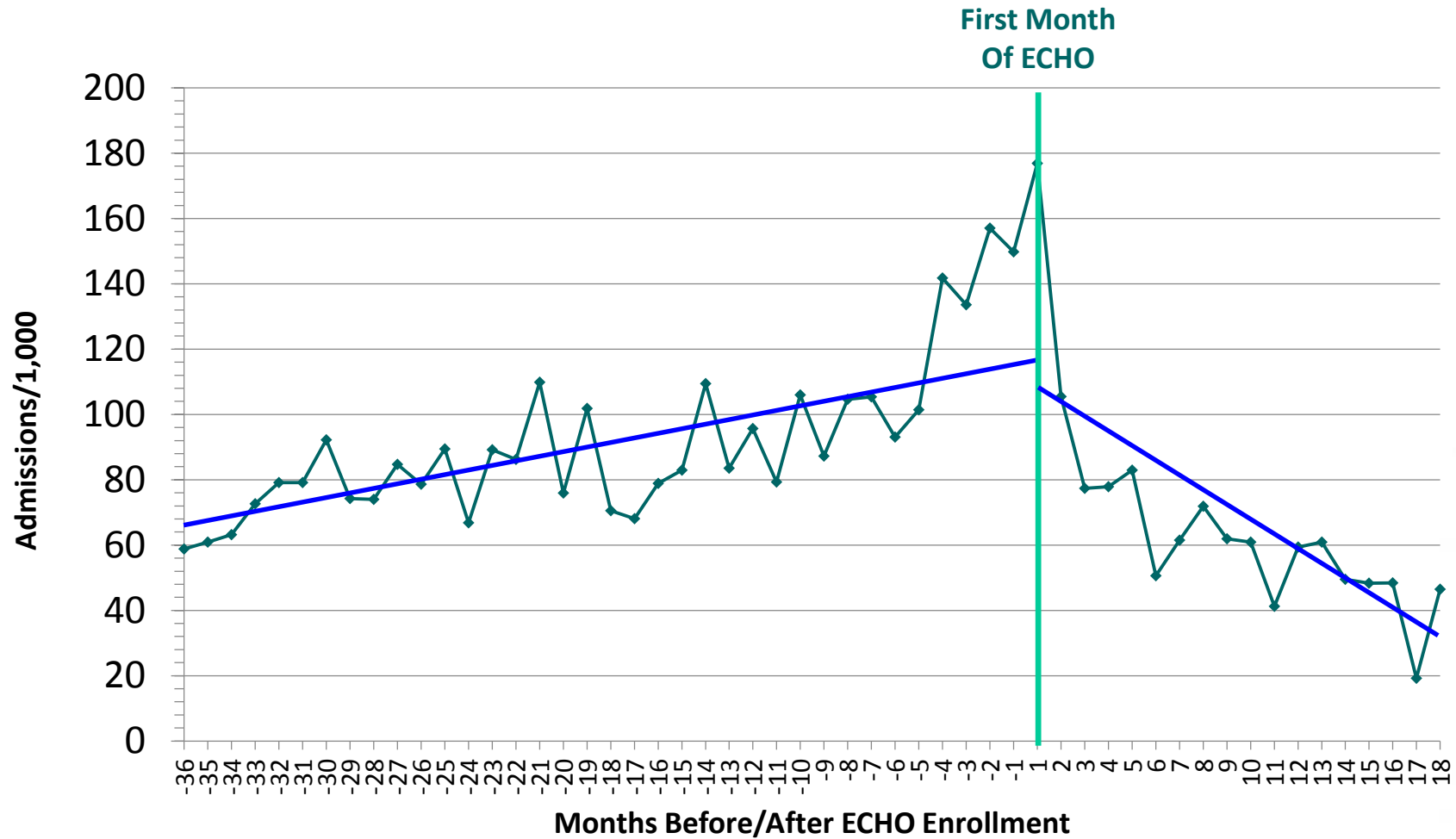
Geriatric Mental Health ECHO

University of Rochester NY

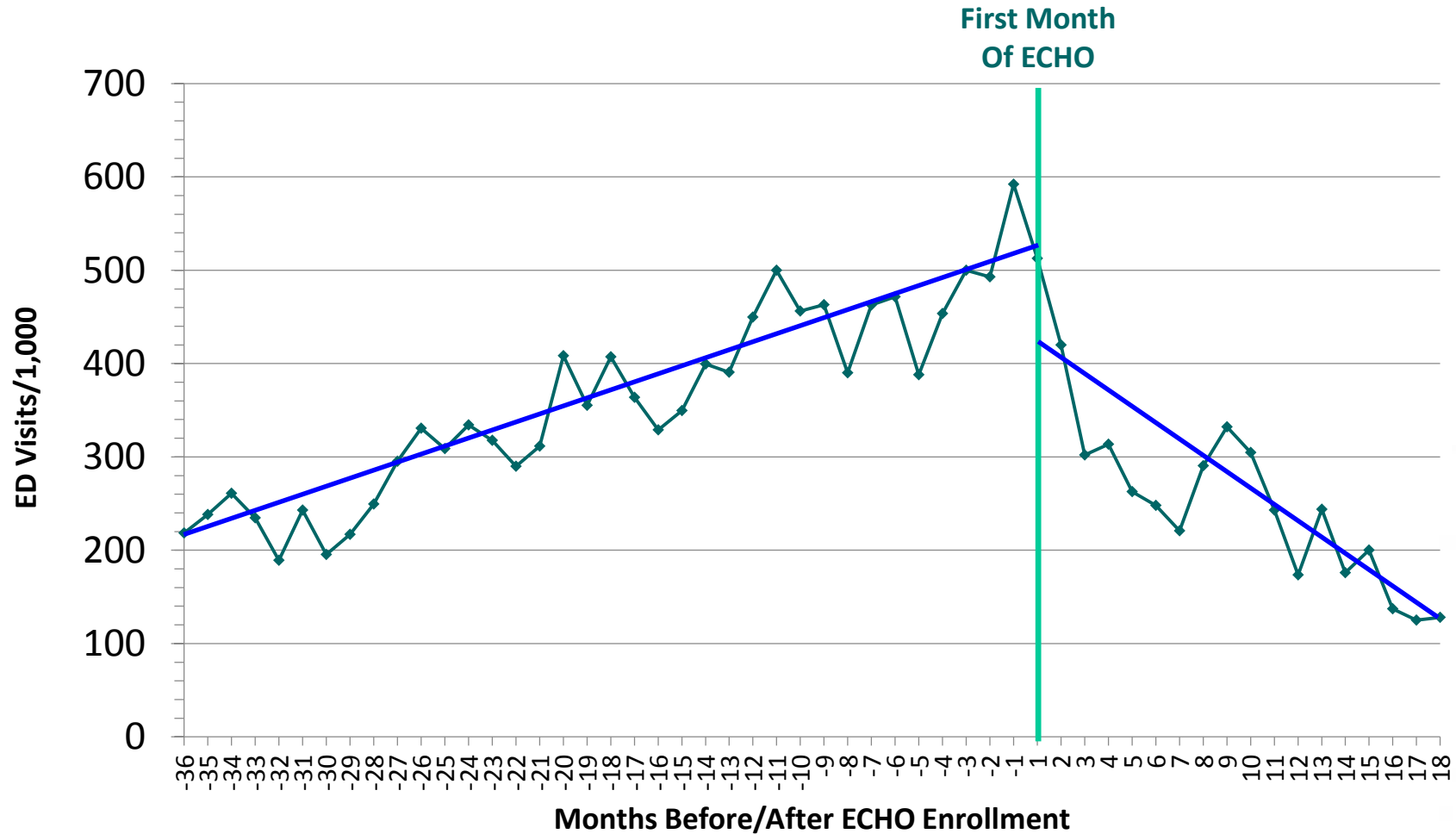
- University of Rochester experts in geriatric psychiatry help train and mentor primary care clinicians in NY
- Since 2014, 500 clinicians have participated in their ECHO project funded by AHRQ
- There was a 20 % reduction in ED visits
- 24 % reduction in overall costs

Fisher, E., Hasselberg, M., Conwell, Y., et al. *Popul Health Manag.* 2017;20(5):342-7.

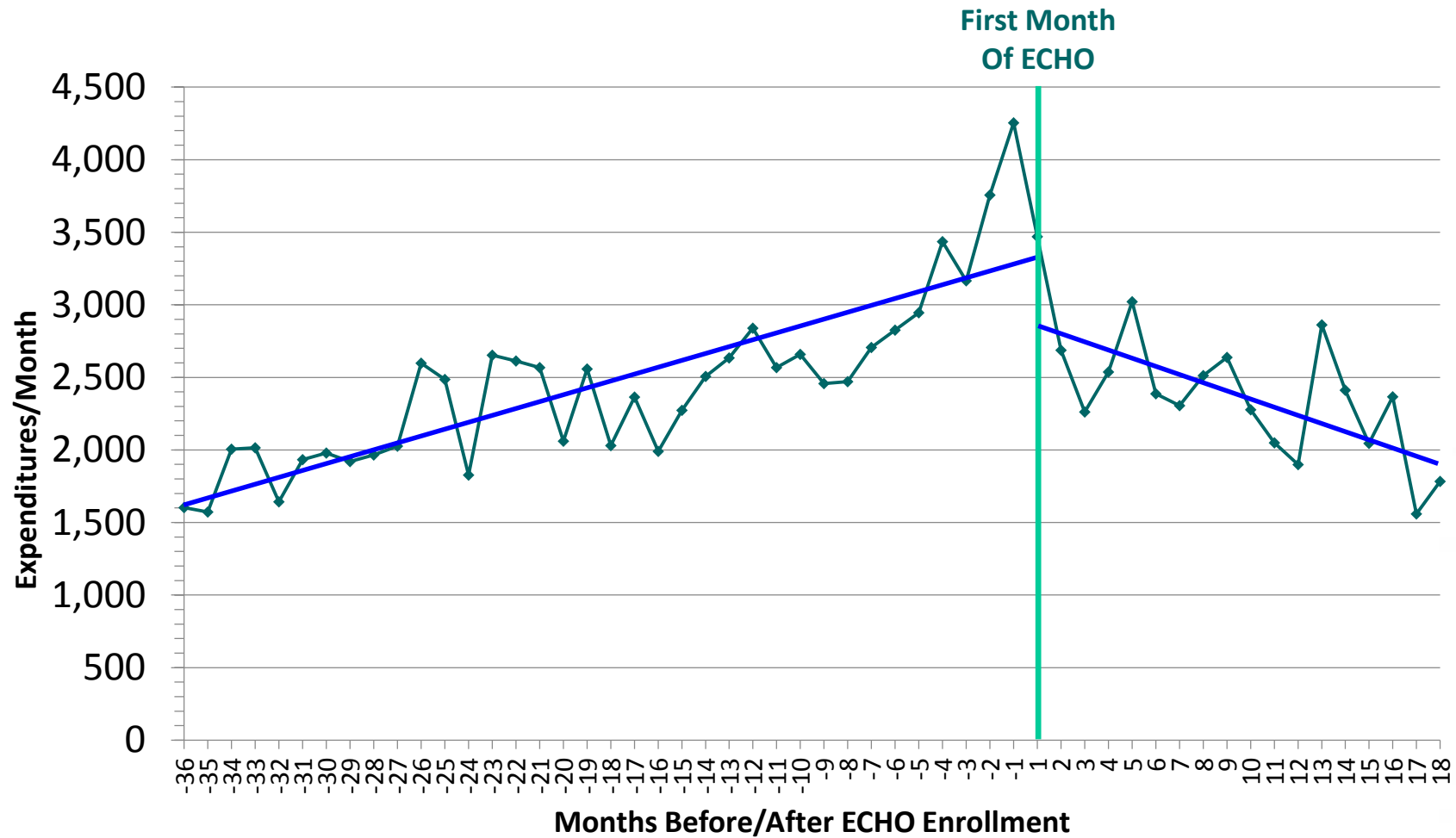
ECHO Care: ADMISSIONS/1,000/MONTH



ECHO Care: ED VISITS/I,000/MONTH



ECHO Care: -TOTAL EXPENDITURES/MONTH



“Pain ECHO” changes knowledge, confidence, and prescribing patterns

- VA PCPs who attended a mean of 28 sessions had increased confidence and knowledge about pain management
- PCPs from FQHCs who attended a Pain ECHO program for a mean of 39 sessions decreased prescribing of opioids ¹

1. Ball, Pain Medicine, 2017
2. Anderson, Pain Medicine, 2017

ECHO CHW Training

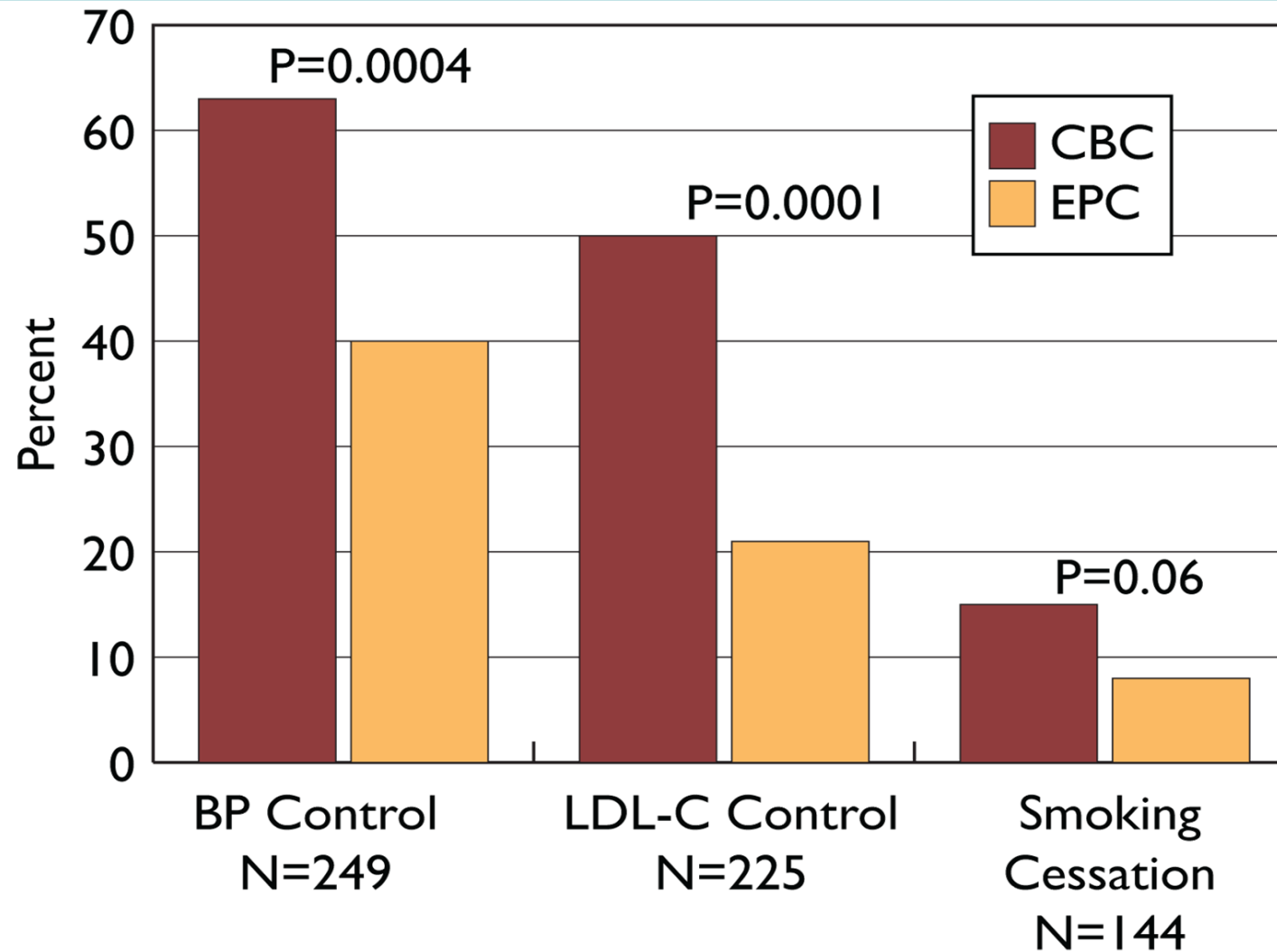
Multiple Tracks

- CHW Specialist Training
 - **Diabetes and cardiovascular risk reduction:** Diabetes, Obesity, Hypertension, Cholesterol, Smoking Cessation, Exercise Physiology
 - **Opioid Use Disorder**
 - **ECHO Care™:** Complex Multiple Diagnoses
 - **Obesity Prevention:** Diet, Exercise, Motivational Interviewing
 - **Prevention of Child Abuse and Neglect (PCAN)**

Why is a CHW Intervention Effective?

- Live in Community
- Understand culture
- 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

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



Becker, D.M., Yanek, L.R., Johnson W.R., et al. *Circulation*. 2005;111:1298-1304.

Diabetes Specialty CHW Program

- Narrow Focus — Deep Knowledge
- Standardized Curriculum
 - 3 Day Onsite
 - Weekly ECHO sessions for 16 weeks
 - Diet
 - Exercise
 - Smoking Cessation
 - Motivational Interviewing
 - Gentle Nudges
 - Finger Stick
 - Foot Exam
 - Part of Disease Management Team

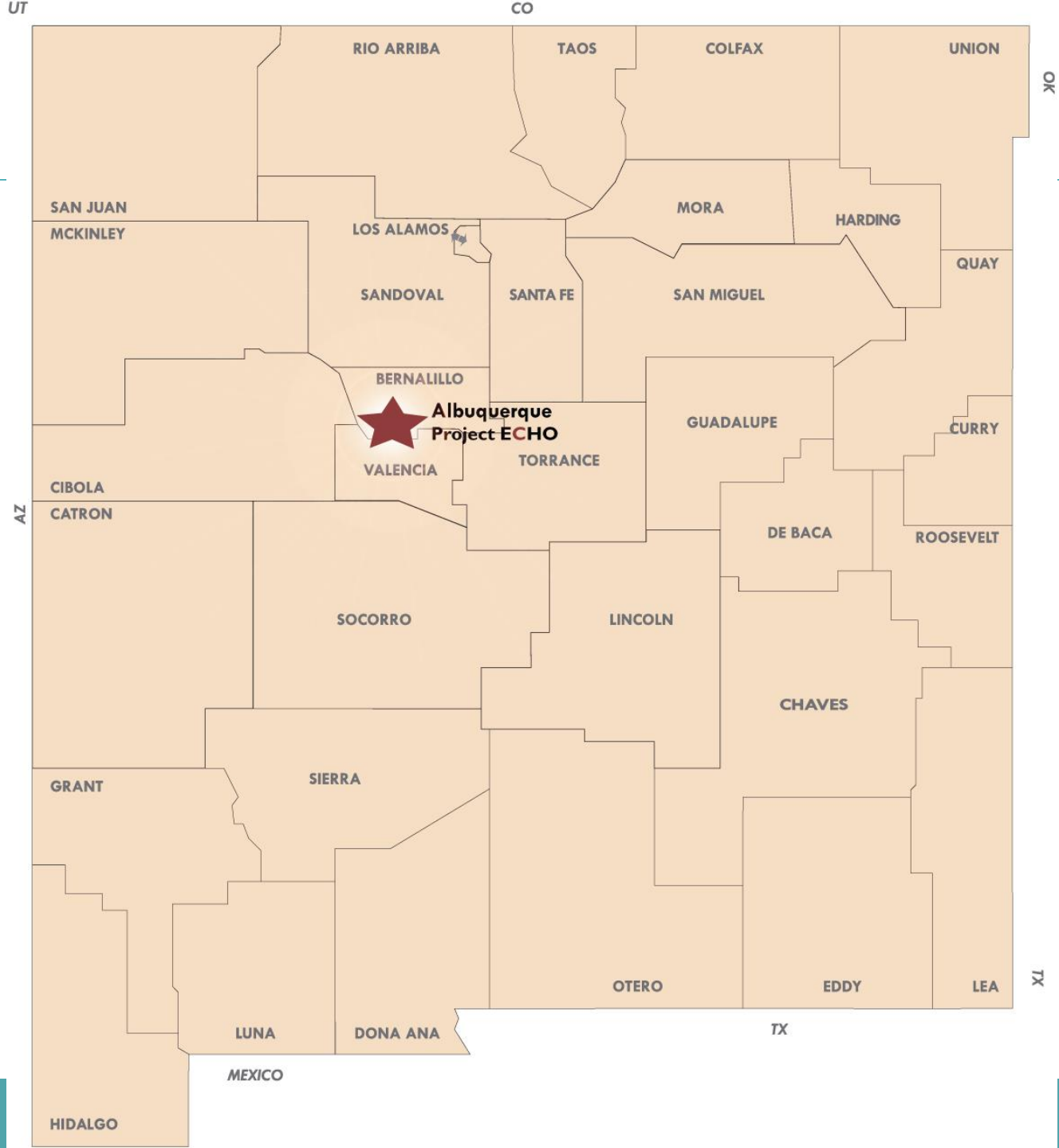
Community Health Workers in Prison

The New Mexico Peer Education Program

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

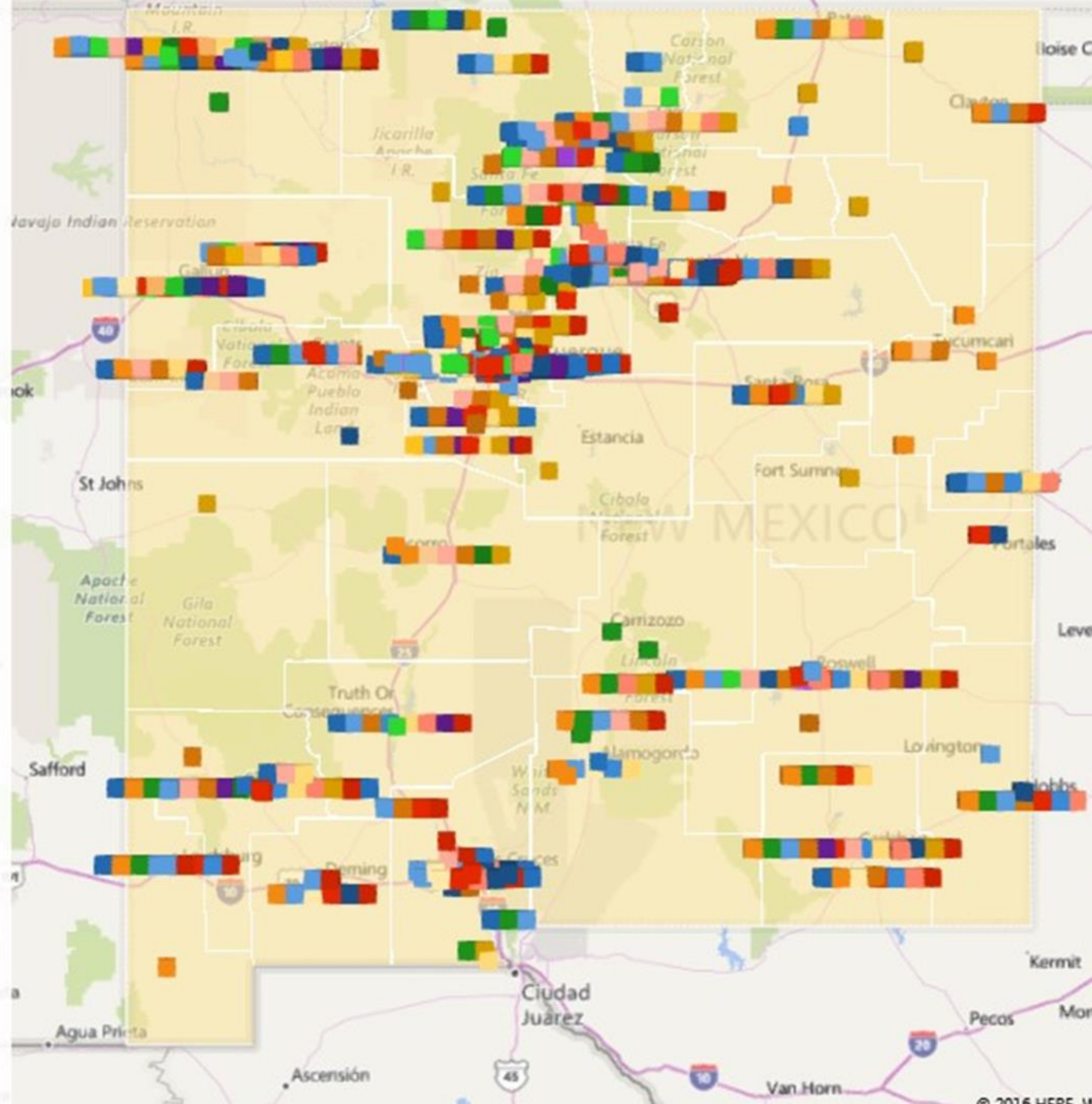


First day of peer educator training
Photo consents on file with Project ECHO® and CNMCF

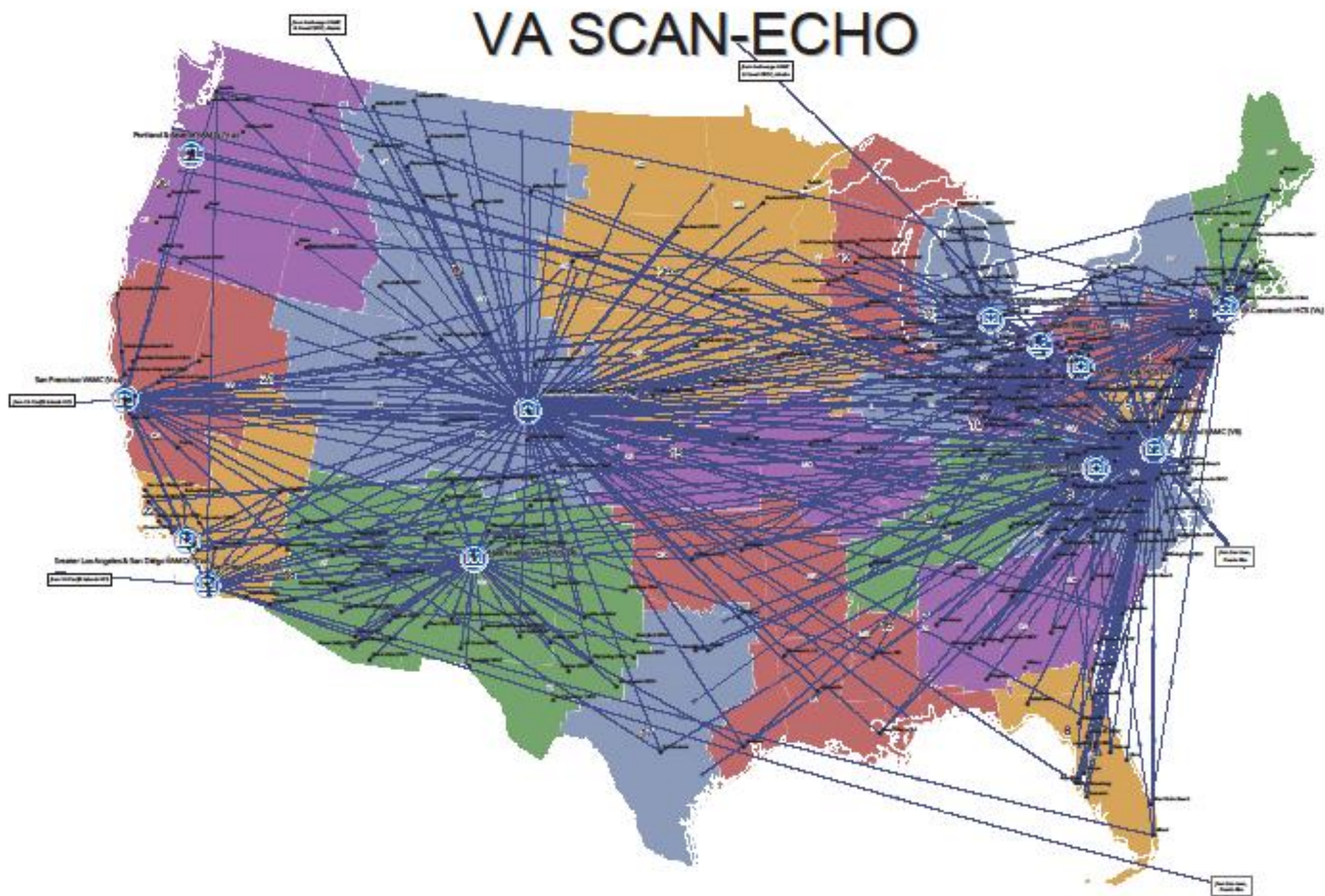


ECHO Hubs and Spokes: State of New Mexico

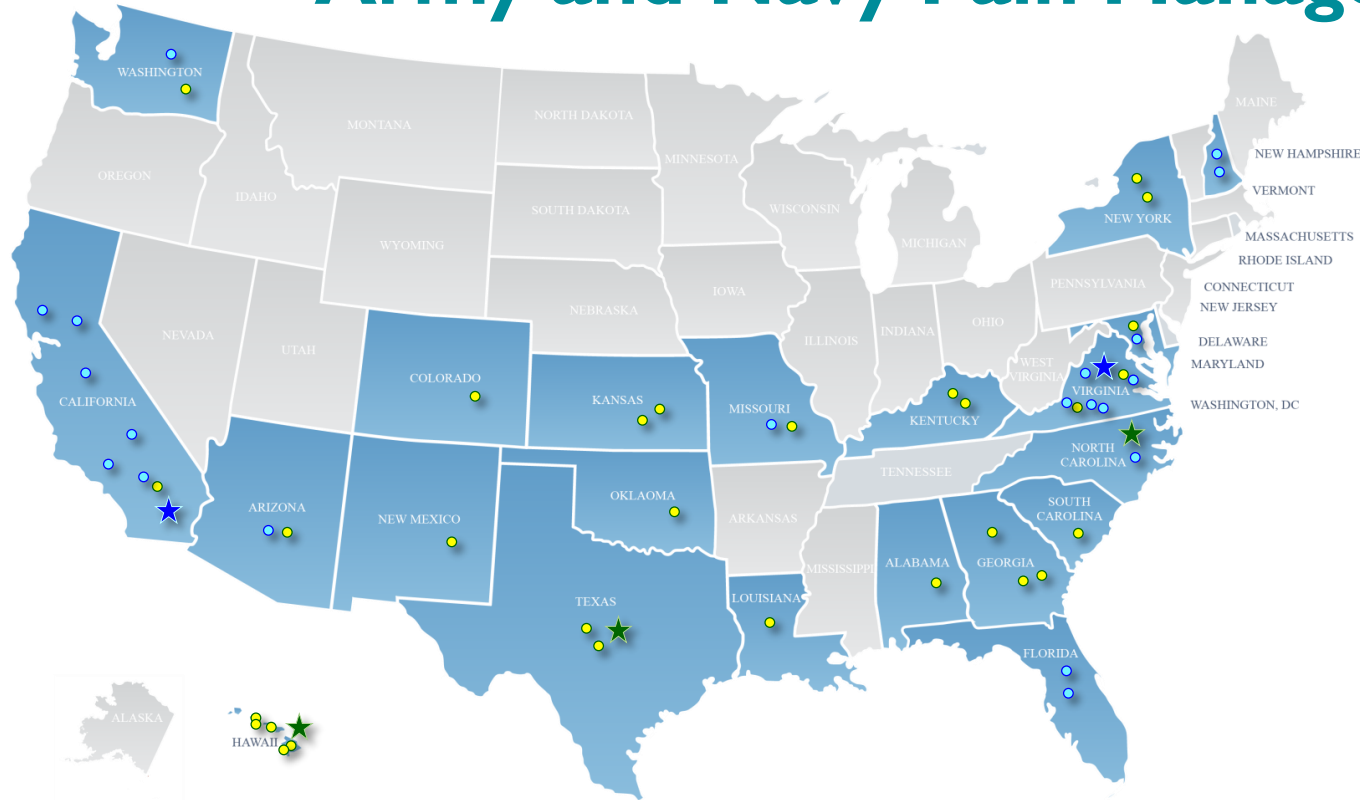
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- Rheumatology
- Women's Health/Genomics



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 3. **Journal:** [Journal]
 4. **Volume:** [Volume]
 5. **Issue:** [Issue]
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Army and Navy Pain Management ECHO Clinics



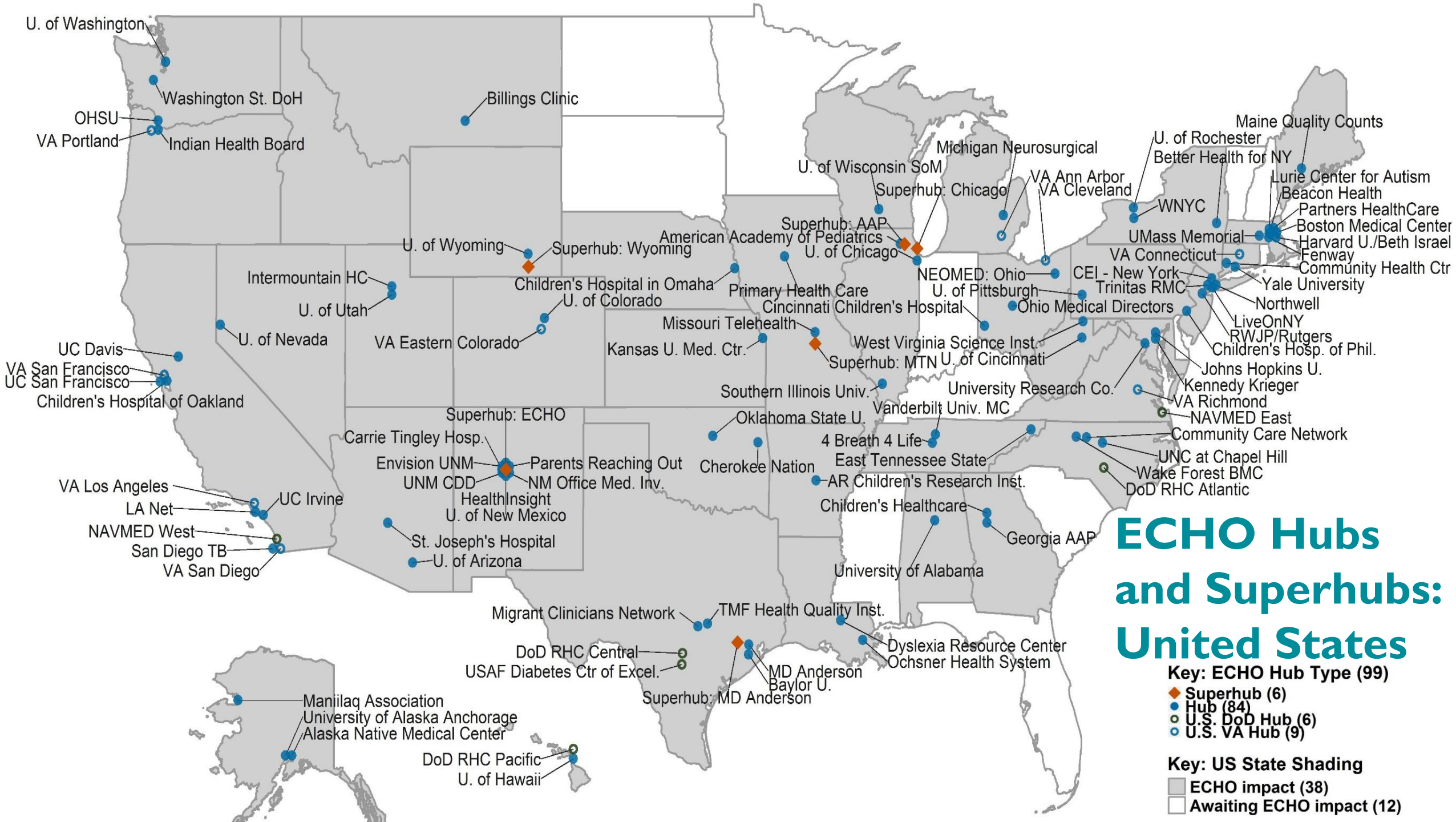
★ Army ECHO Hubs: Regional Health Command-Europe (RHC-E) – Landstuhl, Germany | Regional Health Command-Central (RHC-C)-Joint Base San Antonio-Brook Army Medical Center – TX | Regional Health Command-Pacific (RHC-P)-Tripler Army Medical Center – HI | Regional Health Command-Atlantic (RHC-A) – Ft. Bragg, NC

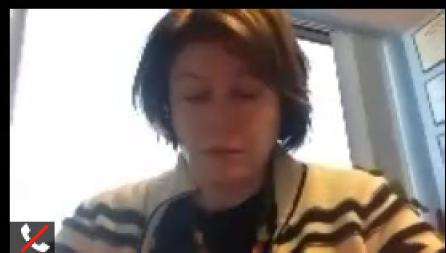
- **Belgium:**
 - Camp Casey
 - Supreme Headquarters Allied Powers Europe (SHAPE)
- **Germany:**
 - Grafenwoehr
 - Hohenfels
 - Katterbach
 - Landstuhl Regional Medical Center (LRMC)/FHC
 - LRMC/IMC
 - Stuttgart
 - Wiesbaden
 - Vilseck
- **Italy:**
 - Livorno
 - Vicenza
- **Japan:**
 - Camp Zama
- **South Korea:**
 - Camp Casey
 - Camp Humphreys
 - Camp Carroll
 - Camp Walker
 - Brian Allgood Army Community Hospital/ 121st Combat Support Hospital
- **Alabama:**
 - Redstone Arsenal
- **Arizona:**
 - Fort Huachuca
- **California:**
 - Fort Irwin
- **Colorado:**
 - Colorado Springs
- **Georgia:**
 - Fort Gordon
 - Fort Benning
 - Ft. Stewart
- **Hawaii:**
 - Schofield Barracks (Family Medicine and Troop Medical Clinic)
 - Adult Medicine Patient Centered Medical Home (PCMH) Tripler
 - Family Medicine PCMH Tripler
 - Warrior Ohana PCMH
 - VA Pain Clinic
- **Kansas:**
 - Fort Leavenworth
 - Fort Riley
- **Kentucky:**
 - Fort Knox
 - Fort Campbell
- **Louisiana:**
 - Fort Polk
- **Maryland:**
 - Fort Meade
- **Missouri:**
 - Fort Leonard Wood
- **New Mexico:**
 - White Sands Missile Range
- **New York:**
 - Fort Drum
 - West Point
- **Oklahoma:**
 - Fort Sill
- **South Carolina:**
 - Fort Jackson
- **Texas:**
 - Fort Bliss
 - Fort Hood
- **Virginia:**
 - Joint Base Langley-Eustis
 - Fort Lee
- **Washington:**
 - Madigan Army Medical Center



★ Navy ECHO Hubs: Navy Medicine East (NME)- Naval Medical Center (NMC) Portsmouth, VA | Navy Medicine West (NMW)- Naval Medical Center San Diego (NMCS), CA

- **Arizona:**
 - NH Yuma
- **California:**
 - NMCS Naval Training Center
 - NHC Lemoore
 - NH Twentynine Palms
 - NH Camp Pendleton
 - Naval Air Facility El Centro
 - Naval Air Station North Island
- **Florida:**
 - Naval Hospital (NH) Jacksonville
 - Naval Air Station Jacksonville
- **Maryland:**
 - NHC Pax River
- **Missouri:**
 - Behavioral Health Clinic (BHC) Boone
- **North Carolina:**
 - NH Camp LeJeune
- **New Hampshire:**
 - BHC Portsmouth NH
 - Navy Safe Harbor
- **Virginia:**
 - NMC Portsmouth (Case Management, Pain Clinic, Psychiatry, Internal Medicine)
 - BHC Oceana
 - TriCare Prime Clinic (TPC) Chesapeake
 - TPC Virginia Beach
 - 633rd Medical Group-Langley





Hambex







The “ECHO Act”(Expanding Capacity for Health Outcomes Act)

Passed House/Senate by unanimous vote, November-December 2016

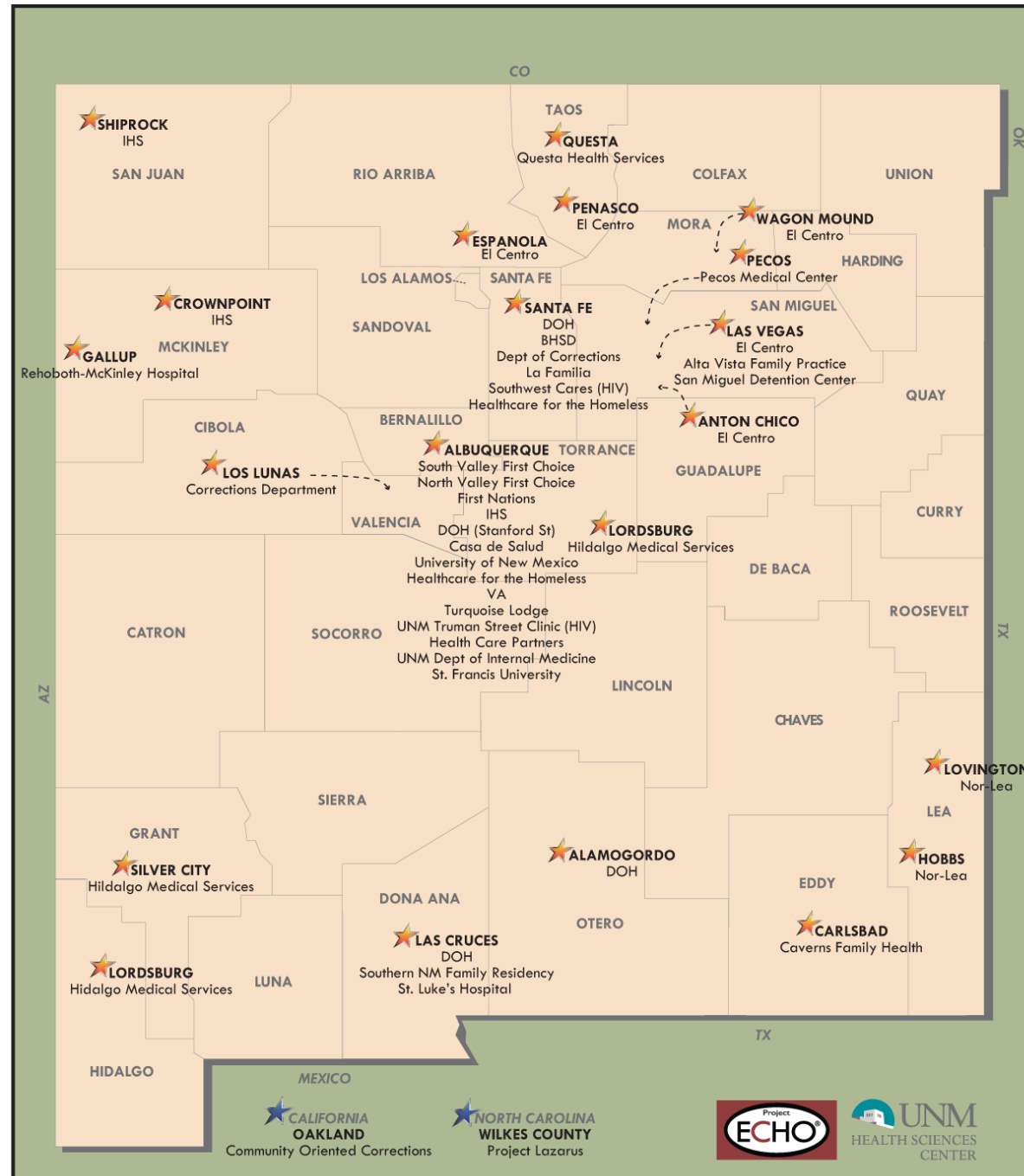
Signed into law by President Barack Obama, December 2016

Asks the Secretary of Health and Human Services to study the impact of Project ECHO on:

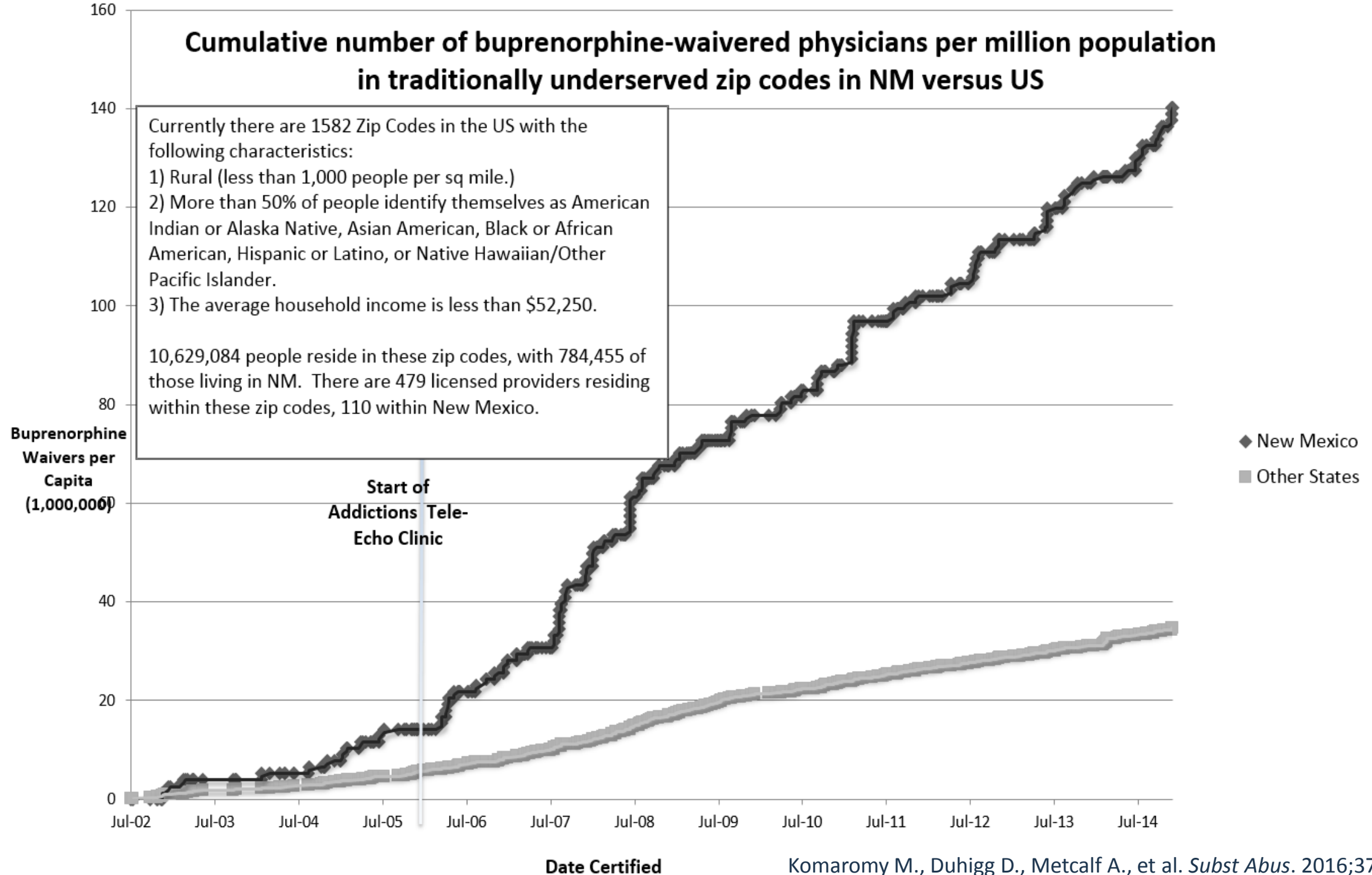
Conditions	Mental and substance use disorders, chronic diseases and conditions, prenatal and maternal health, pediatric care, pain management, and palliative care
Workforce	Implementation of public health programs, including those related to disease prevention, infectious disease outbreaks, and public health surveillance
Public Health	Health care workforce issues, such as specialty care shortages and primary care workforce recruitment, retention, and support for lifelong learning
Rural and Underserved Populations	Delivery of health care services in rural areas, frontier areas, health professional shortage areas, and medically underserved areas, and to medically underserved populations and Native Americans

Scaling ECHO to address the Opioid Epidemic

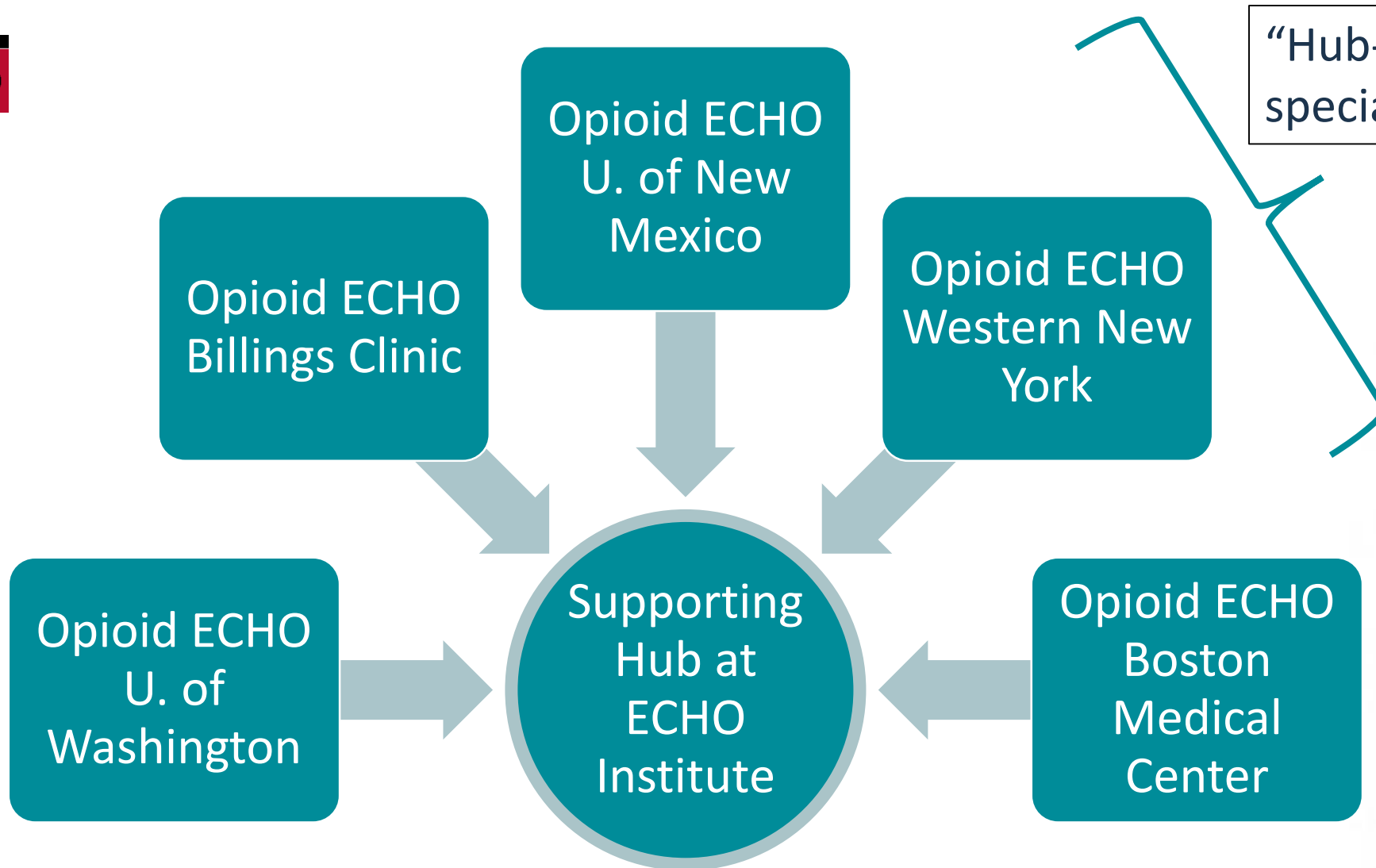
IAP CLINIC PARTICIPATION SITES



Cumulative number of buprenorphine-waivered physicians per million population in traditionally underserved zip codes in NM versus US

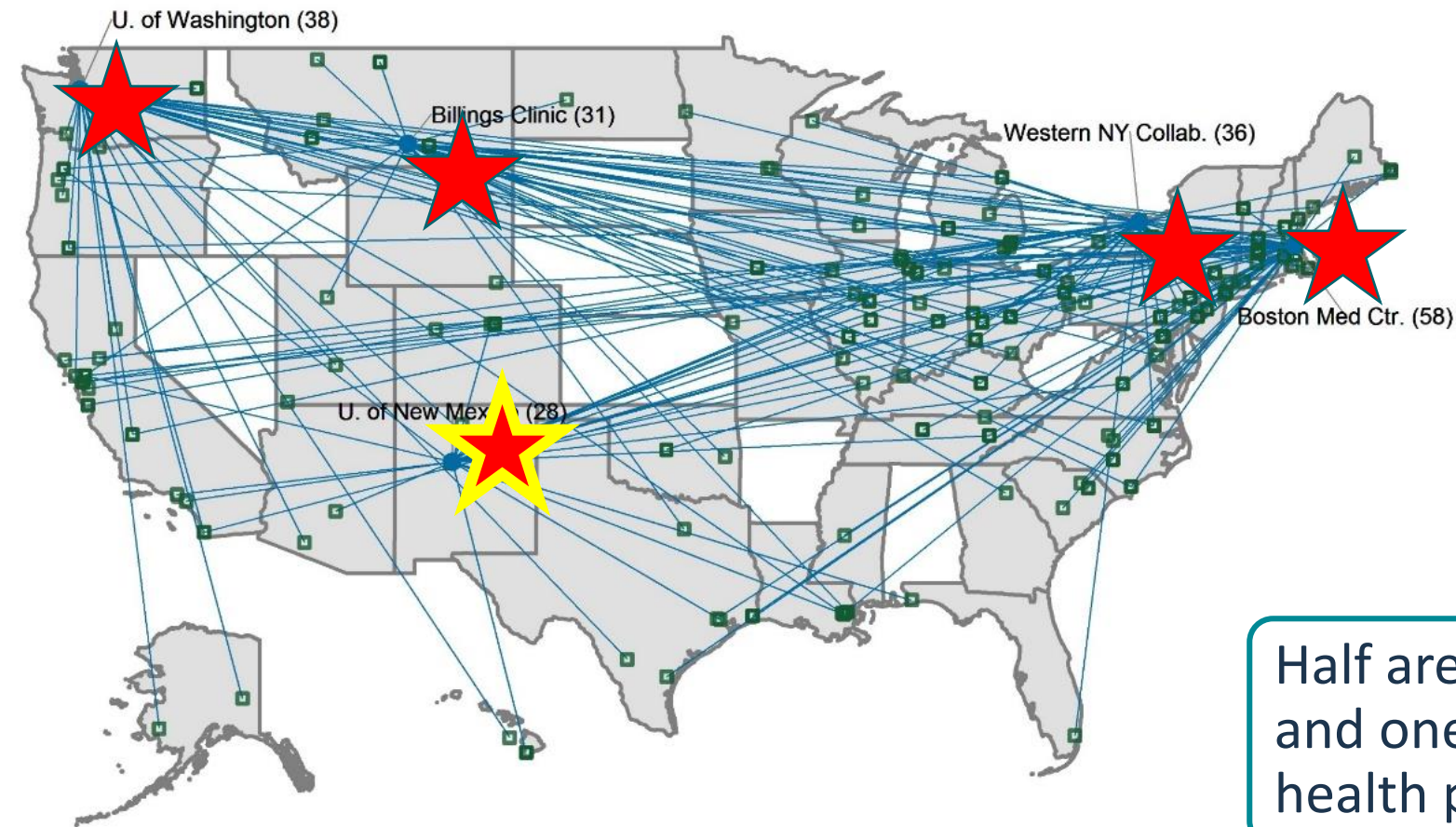


ECHO Shared Services Model



Supporting hub leads development of curriculum and provides IT, evaluation, and admin support, and participant recruitment for all hubs

HRSA-funded National Opioid ECHO Program



PARTICIPATION *Year one*

- 355 participants from
- 147 HRSA-funded health centers

Half are medical providers,
and one third are behavioral
health providers

HRSA

Opioid Addiction Treatment ECHO

- Participants in ECHO for addiction/mental health report that presenting cases changes their management plan ¹
 - For this national Opioid ECHO, early results show:
 - Impact of case-based learning in each session
- For those who presented a case:
- 92% say input changed management plan
- Learning from cases presented by others:
- 81% learned something new from a case presented that day which will change their care of their own patients
- Marked increase in confidence and significant increase in positive attitude

Komaromy, Psychiatric Services, 2017

Federal funding for Opioid Addiction Treatment ECHO



Funding source
for Hub

**SAMHSA-
STR**

HRSA

AHRQ

In 2017 \$0.5B was distributed to states through the CURES Act to address Opioid Use Disorder
20 states are implementing Opioid ECHO using CURES funds

De-monopolizing medical knowledge

ECHO Hub	ECHO Focus	Contact	Email
Arkansas Children's Research Institute Hospital	Autism		
Billings Clinic	Addictions/Psychiatry ECHO for Corrections	Sarah Porter-Osen	SPorterOsen@Billi
Billings Clinic	Autism	Sarah Porter-Osen	SPorterOsen@Billi
Billings Clinic	Behavioral Health for Corrections	Sarah Porter-Osen	SPorterOsen@Billi
Billings Clinic	Behavioral/Mental Health	Sarah Porter-Osen	SPorterOsen@Billi
Children's Hospital of Philadelphia	Autism	Christina DiSandro	DISANDROC@ema
Cincinnati Children's Hospital Medical Center	Autism	Elizabeth Cordova	eecordova@salud.
Community Health Center, Inc.	Behavioral/Mental Health	Agi Erickson	ericksa@chc1.com
East Tennessee State University	Epilepsy	Linda Gail Adams	adamsl@etsu.edu
Kennedy Krieger Institute	Behavioral/Mental Health	Mary Leppert	Leppert@kennedy
Lurie Center for Autism	Autism	Audrey Wolfe	AWOLFE2@mgh.h
Missouri Telehealth Network	Autism	Lindsey Beckmann	showmeecho@hea
Missouri Telehealth Network	Child Psychiatry	Lindsey Beckmann	showmeecho@hea
Northwell Health	Behavioral/Mental Health		
Oklahoma State University - Center for Health Sciences	Psychiatry	Tara Jackson	tara.m.jackson@ok
Oregon Health & Science University	Child Psychiatry	Bryan Cochran	cochranb@ohsu.e
Oregon Health & Science University	Psychiatric Medication Management	Bryan Cochran	cochranb@ohsu.e
Primary Health Care	Behavioral/Mental Health	Bery Engebretsen	bengebretsen@ph
Robert Wood Johnson Partners/Rutgers	Autism	Kathy Dodsworth-Rugani	Kathy.Dodsworth-

Echo.unm.edu
“join an ECHO”

The vast majority of ECHO hubs around the US and around the world do not charge learners/learner organizations

Support for starting/expanding Opioid ECHO in your state

- 3-day “immersion” training offered monthly in New Mexico for ECHO partners
- Tools available for Opioid ECHO shared services model
 - Materials for outreach and recruitment
 - 12-session curriculum
 - Evaluation tools
 - Consultation
- Opioid ECHO collaborative recently launched to support evaluation and research on the impact of Opioid Addiction Treatment ECHO

States can use the ECHO shared-services model to scale-up their workforce to meet the need for prevention, screening, and treatment of opioid use disorder

miriamk1@salud.unm.edu