

Project ECHO® (Extension for Community Health Outcomes)

Sanjeev Arora, MD, MACP

Distinguished Professor of Medicine (Gastroenterology/Hepatology)

Director of Project ECHO®

Department of Medicine

University of New Mexico Health Sciences Center

Tel: 505-272-2808

Fax: 505-272-6906

sarora@salud.unm.edu

 **@UNMProjectECHO**

 **UNMProjectECHO**

At ECHO, our mission is to democratize medical knowledge and get best practice care to underserved people all over the world.

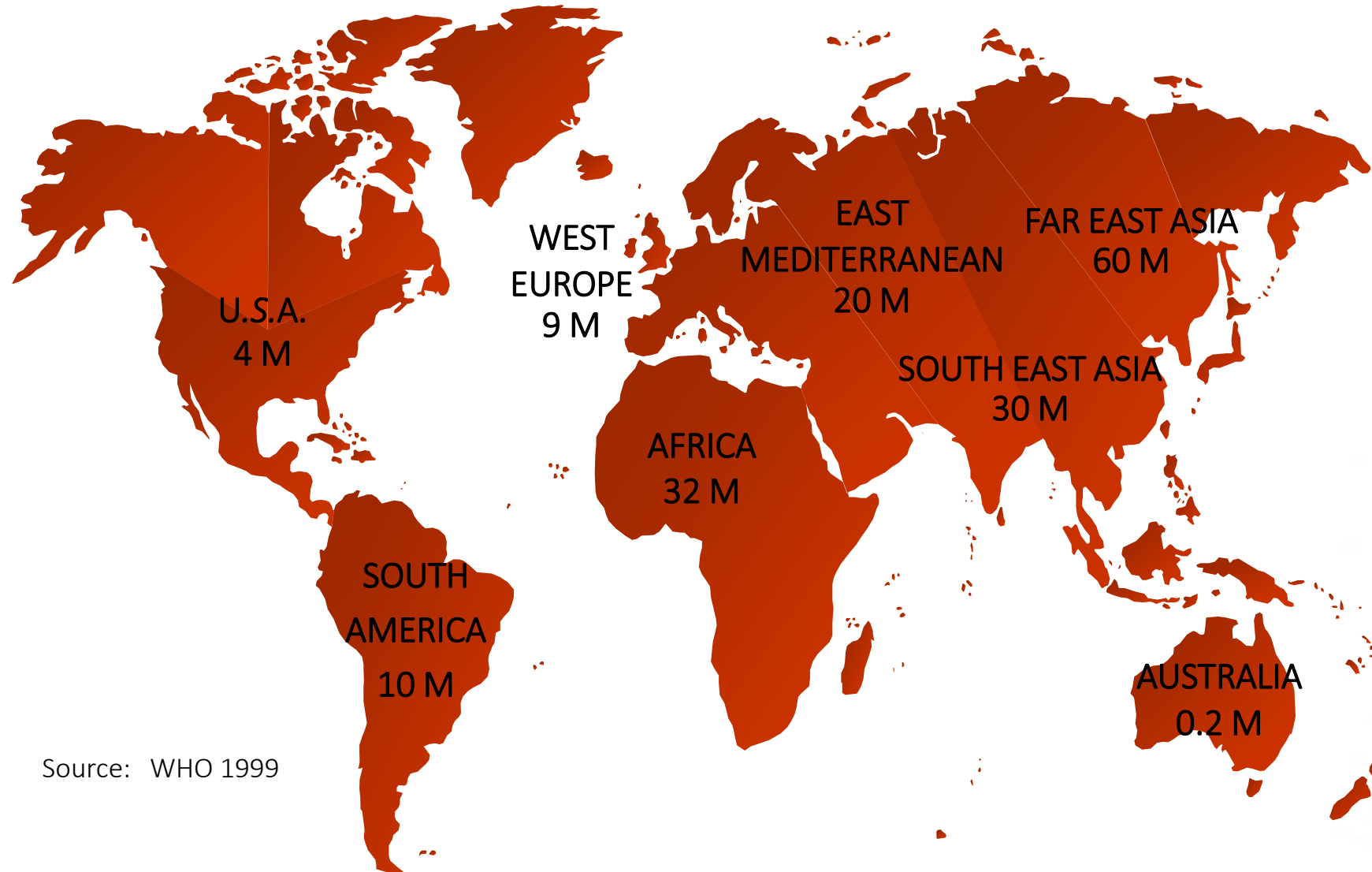
Our goal is to touch the lives of 1 billion people by 2025.



Moving Knowledge Instead of Patients

A Global Health Problem

Over 170 Million Carriers Worldwide, 3-4 Million new cases/year



Source: WHO 1999

HCV in New Mexico

- Estimated number was greater than 28,000
- In 2004 less than 5% had been treated
 - 2,300 prisoners were HCV positive (~40% of those entering the corrections system), none were treated

HCV Treatment 2004

Good news...

- Curable in 70% of cases

Bad news...

- Severe side effects:
 - anemia (100%)
 - neutropenia >35%
 - depression >25%
 - No Primary Care Physicians treating HCV

Rural New Mexico

Underserved Area for Healthcare Services

- 121,356 square miles
- 2.08 million people
- 47% Hispanic
- 10.2% Native American
- 19% poverty rate compared to 14.3% nationally
- 21% lack health insurance compared to 16% nationally
- 32 of 33 New Mexico counties are listed as Medically Underserved Areas (MUAs)
- 14 counties designated as Health Professional Shortage Areas (HPSA's)

(Statistics from 2013)

Goals of Project ECHO

Develop capacity to safely and effectively treat HCV 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

Methods

- **Use Technology** to leverage scarce resources
- **Sharing “best practices”** to reduce disparities
- **Case based learning** to master complexity
- **Web-based database to monitor outcomes**

Arora S, Geppert CM, Kalishman S, et al: Acad Med. 2007 Feb;82(2): 154-60.

What is Best Practice in Medicine

- Algorithm
- Check Lists
- Process
- Wisdom Based on Experience

Steps

- Train physicians, physician assistants, nurse practitioners, nurses, pharmacists, educators in HCV
- Train to use web-based software — **iECHO & ECHO Health®**
- Conduct teleECHO™ clinics — **“Knowledge Networks”**
- Initiate case-based guided practice — **“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
- Access to specialty consultation with GI, hepatology, psychiatry, infectious diseases, addiction specialist, pharmacist, patient educator





Technology

- Videoconferencing Hardware
- Videoconferencing Software
- Video Recording System
- You Tube-like Website/Archive
- **ECHO Health** – Electronic Clinical Management Tool
- **iECHO** – Electronic TeleECHO Clinic Management Solution

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)

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

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
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 HCV.	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

(continued)

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, Dion D et al: Hepatology. 2010 Sept;52(3):1124-33

Clinician Benefits

(Data Source; 6 month Q-5/2008)

Benefits N=35	Not/Minor Benefits	Moderate/Major Benefits
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

	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, <u>in general</u> , to specialist expertise and consultation is a major area of need for you and your clinic.	4.9
Access to <u>HCV specialist</u> expertise and consultation is a major area of need for you and your clinic.	4.9

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

Results of the HCV Outcomes Study

Arora S, Thornton K, et al. N Engl J Med. 2011 Jun; 364:2199-207.

Objectives

- To train primary care clinicians in rural areas and prisons to deliver Hepatitis C treatment to rural populations of New Mexico
- To show that such care is as safe and effective as that give in a university clinic
- To show that **Project ECHO** improves access to Hepatitis C care for minorities

Participants

- Study sites
 - Intervention (ECHO)
 - Community-based clinics: 16
 - New Mexico Department of Corrections: 5
 - Control: University of New Mexico (UNM) Liver Clinic

Principle 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	
Minority	68%	49%	P<0.01
SVR* (Cure) Genotype 1	50%	46%	NS
SVR* (Cure) Genotype 2/3	70%	71%	NS

*SVR=sustained viral response

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

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.

ECHO Model™ is Cost Effective

- In 60 Percent of Patients treated for HCV the model was cost savings
- Overall Cost per Discounted Quality of Life Year Gained was less than 3500 dollars

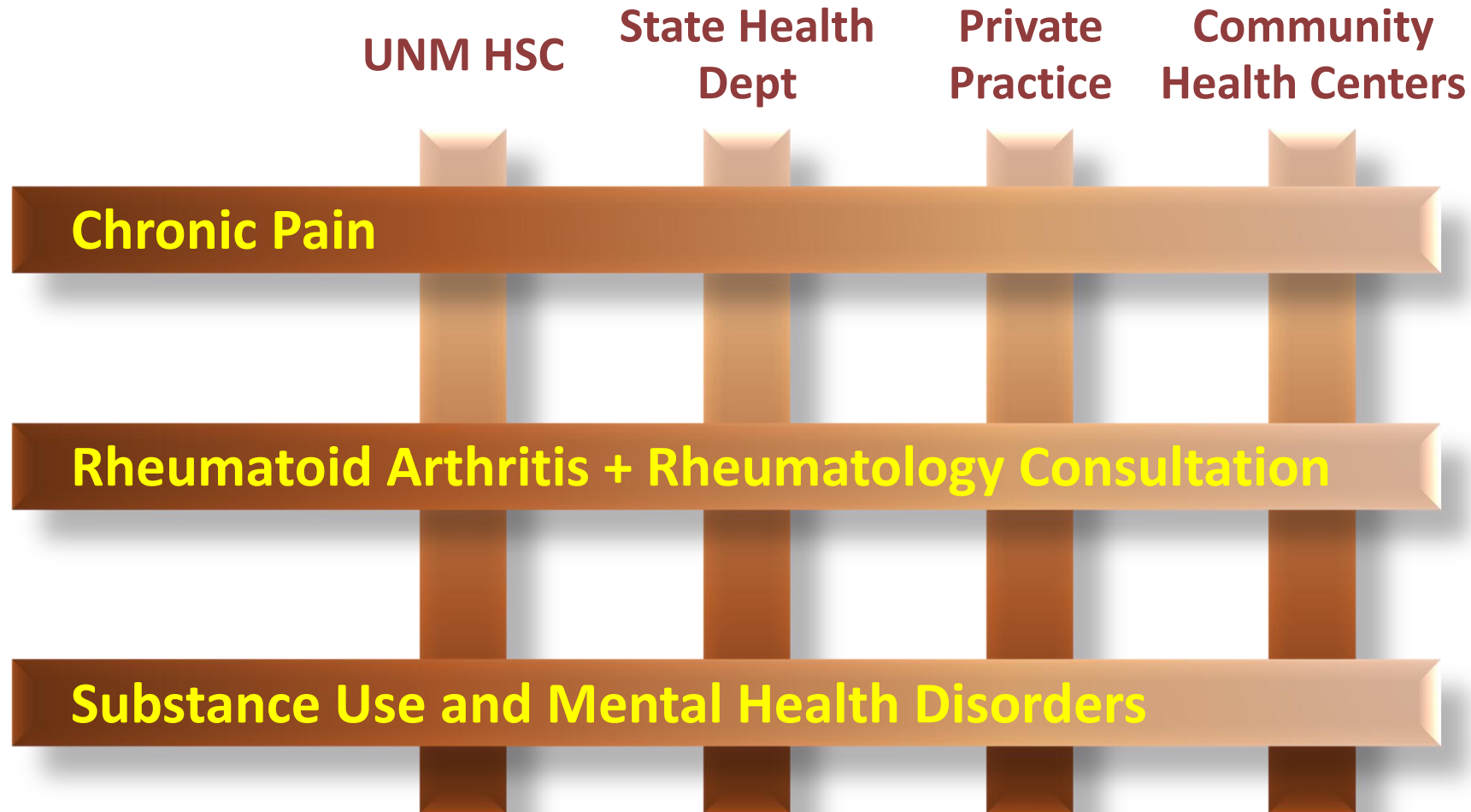
AASLD Presentation Washington DC November 2013

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

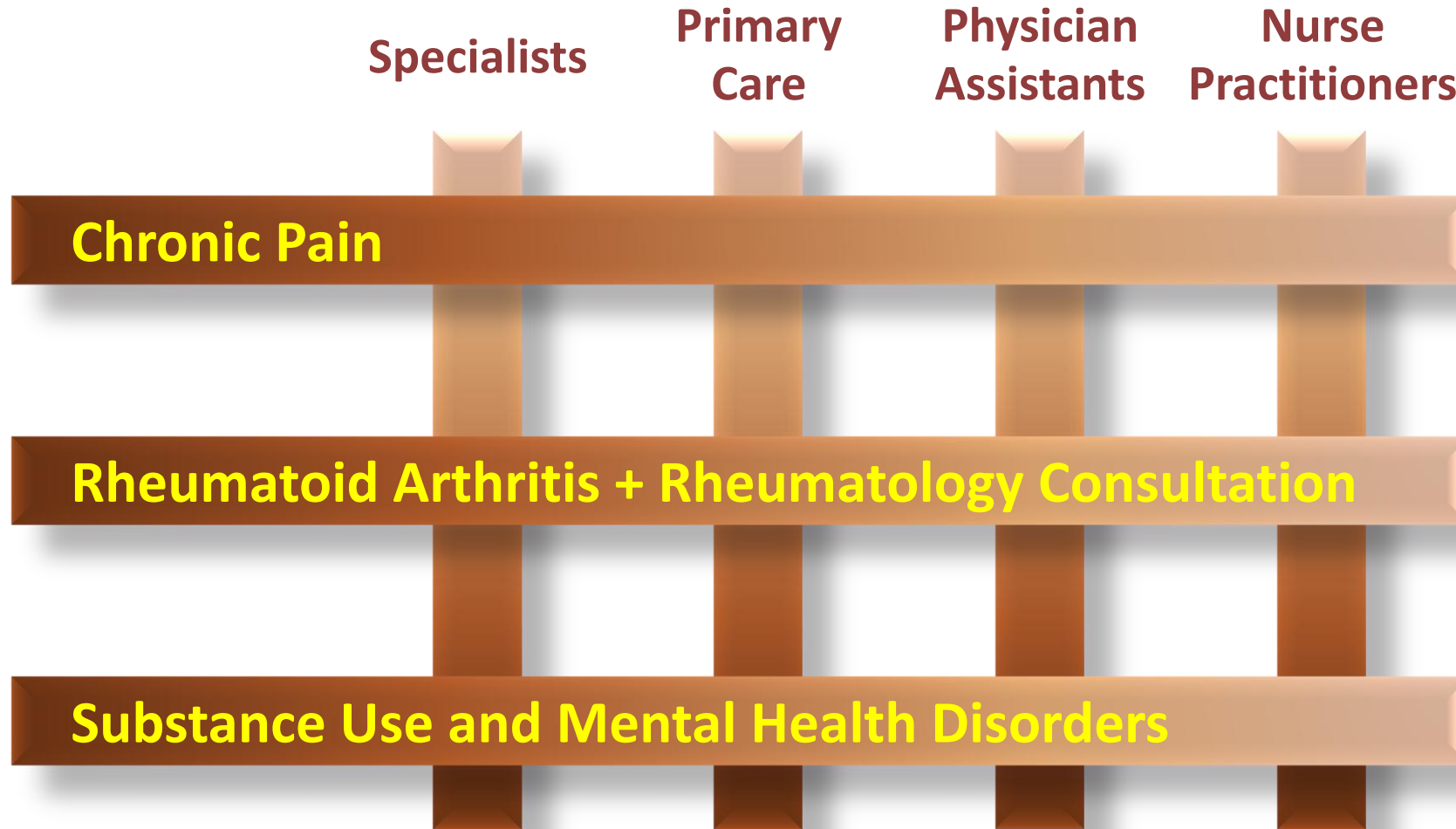
Bridge Building

Pareto's Principle



Force Multiplier

Use Existing Community Clinicians



Successful Expansion into Multiple Diseases

Mon	Tue	Wed	Thurs	Fri
<u>Hepatitis C</u> <ul style="list-style-type: none"> • Arora • Thornton 	<u>Namibia HIV</u> <ul style="list-style-type: none"> • Struminger 	<u>IHS Navajo HIV</u> <ul style="list-style-type: none"> • Iandiorio 	<u>Hepatitis C in Prisons</u> <ul style="list-style-type: none"> • Thornton 	<u>Nurse Practitioners</u> <ul style="list-style-type: none"> • Van Roper
<u>Rheumatology</u> <ul style="list-style-type: none"> • Bankhurst 	<u>Partners in Good Health and Wellness</u> <ul style="list-style-type: none"> • Struminger 	<u>Endocrinology & Diabetes</u> <ul style="list-style-type: none"> • Bouchonville 	<u>Chronic Pain and Headache</u> <ul style="list-style-type: none"> • Shelley 	<u>Integrated Addictions and Psychiatry</u> <ul style="list-style-type: none"> • Komaromy
<u>HIV</u> <ul style="list-style-type: none"> • Iandiorio 	<u>Bone Health</u> <ul style="list-style-type: none"> • Liewicki 	<u>Crisis Intervention for Community Policing Agencies</u> <ul style="list-style-type: none"> • Duhigg 	<u>Improving Clinical Flow</u> <ul style="list-style-type: none"> • IHI • Clewett 	<u>Tuberculosis</u> <ul style="list-style-type: none"> • Struminger
<u>Complex Care</u> <ul style="list-style-type: none"> • Komaromy 	<u>Prison Peer Educator Training</u> <ul style="list-style-type: none"> • Thornton 	<u>Epilepsy</u> <ul style="list-style-type: none"> • Immerman 		

Project ECHO

Views of Participating Providers, Health Workers, And Educators

1 = Strongly Disagree, 5 = Strongly Agree

Benefit	Mean
Through the Project ECHO telehealth clinics, I am learning best-practice care in chronic disease.	4.68
I am connected with peers in the ECHO telehealth clinic whose opinion I respect for professional advice and consultation.	4.55
I learn with guidance from Project ECHO academic specialists in chronic disease management whose knowledge and skills I respect.	4.73
I am connected to and respected by the academic specialists in the ECHO telehealth clinic in which I participate.	4.4
I am developing my clinical expertise through participation in Project ECHO.	4.48
After gaining expertise in the clinical diseases addressed in Project ECHO, I am comfortable teaching others what I have learned .	4.33

Source: "Partnering Urban Academic Medical Centers and Rural Primary Care Clinicians to Provide Complex Chronic Disease Care," Arora, et al., Health Affairs 2011

Project ECHO

Participants' Views of Patient Benefits

1 = Strongly Disagree, 5 = Strongly Agree

Patient Benefit	Mean
My participation in Project ECHO benefits patients under my care whom I co-manage with ECHO specialists.	4.45
The patients under my care whom I co-manage with ECHO specialists receive best-practice care.	4.43
My participation in Project ECHO benefits the patients under my care whom I do not co-manage with ECHO specialists.	4.19
I apply what I have learned about best practices through Project ECHO to all of my patients with similar chronic diseases.	4.45
I feel comfortable applying the principles I learned from Project ECHO to other patients in my practice with similar chronic disease, independently, without presenting them on the network.	4.23

Source: "Partnering Urban Academic Medical Centers and Rural Primary Care Clinicians to Provide Complex Chronic Disease Care," Arora, et al., Health Affairs 2011

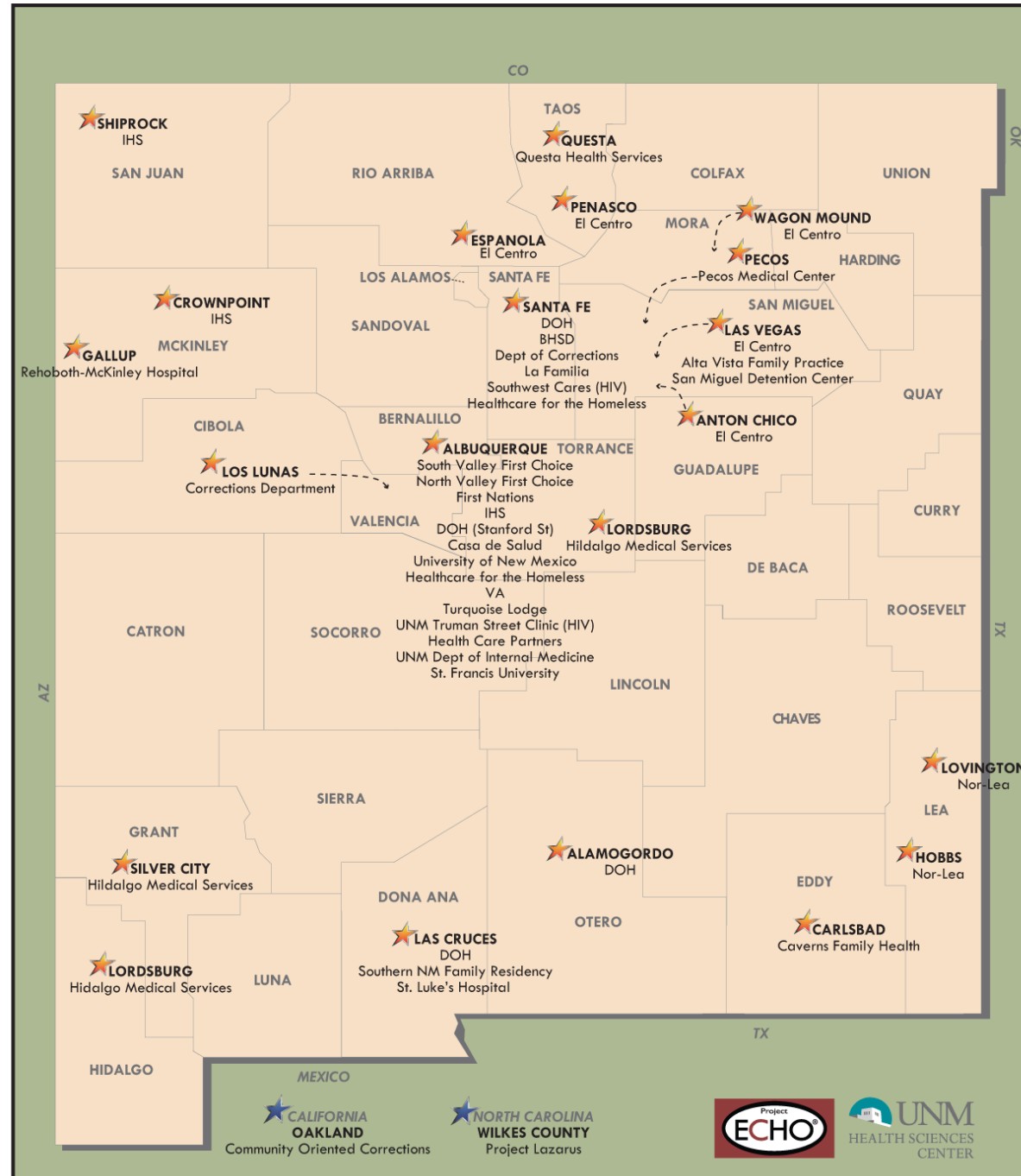
ECHO Age Beth Israel Deaconess Boston

- 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

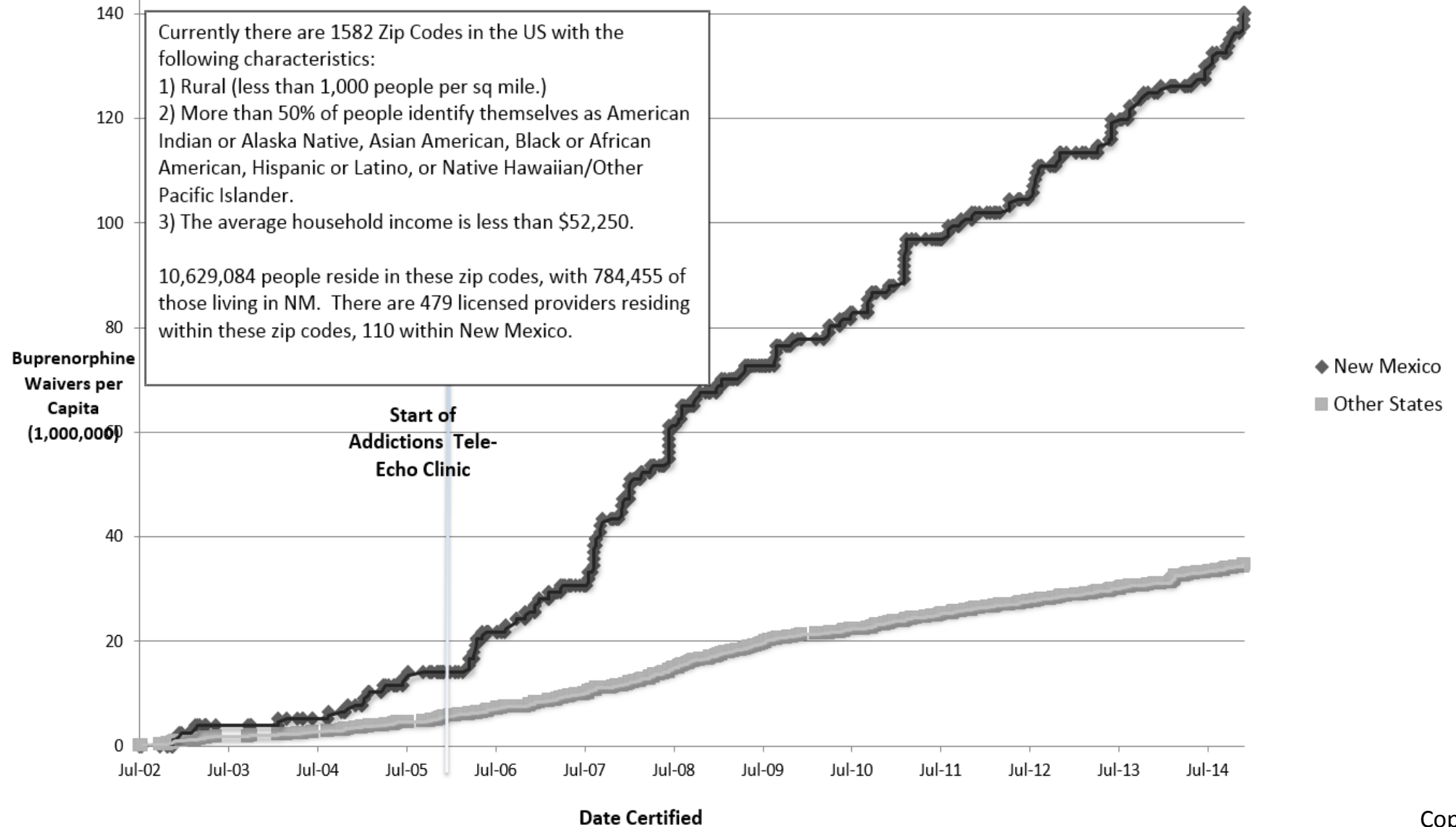
Stephon E. Gordon et al: 2015: Vol. 16, Issue 3, B27–B28



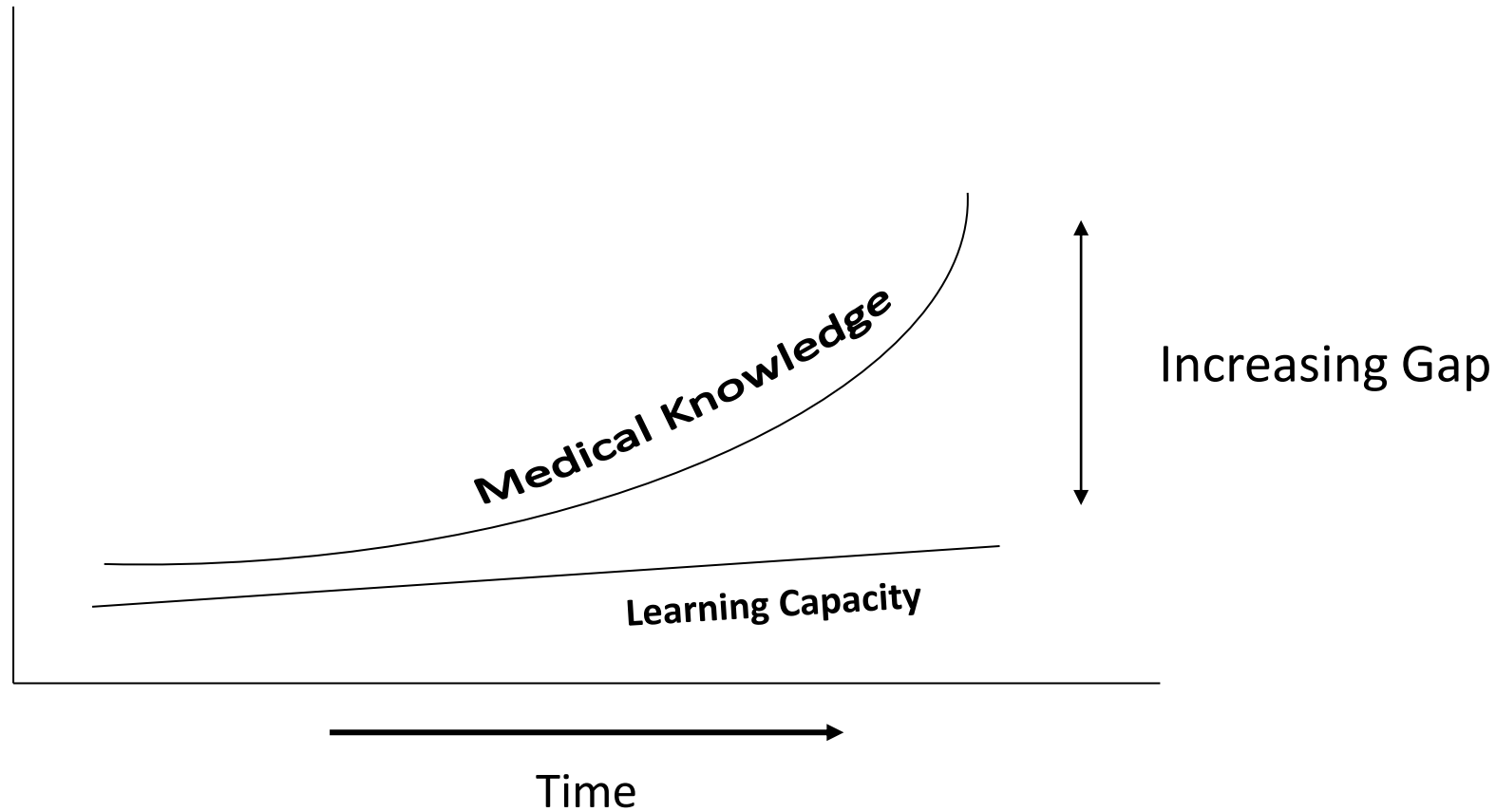
IAP CLINIC PARTICIPATION SITES



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



What The Mind Does Not Know The Eye Cannot See



“Expanding the Definition of Underserved Population”

Major Reductions in Harm

AHRQ 2010 Baseline & Results to Date

2010 145 Harms/1,000 Discharges

2011 142 Harms/1,000 Discharges

2012 132 Harms/1,000 Discharges

2013 121 Harms/1,000 Discharges

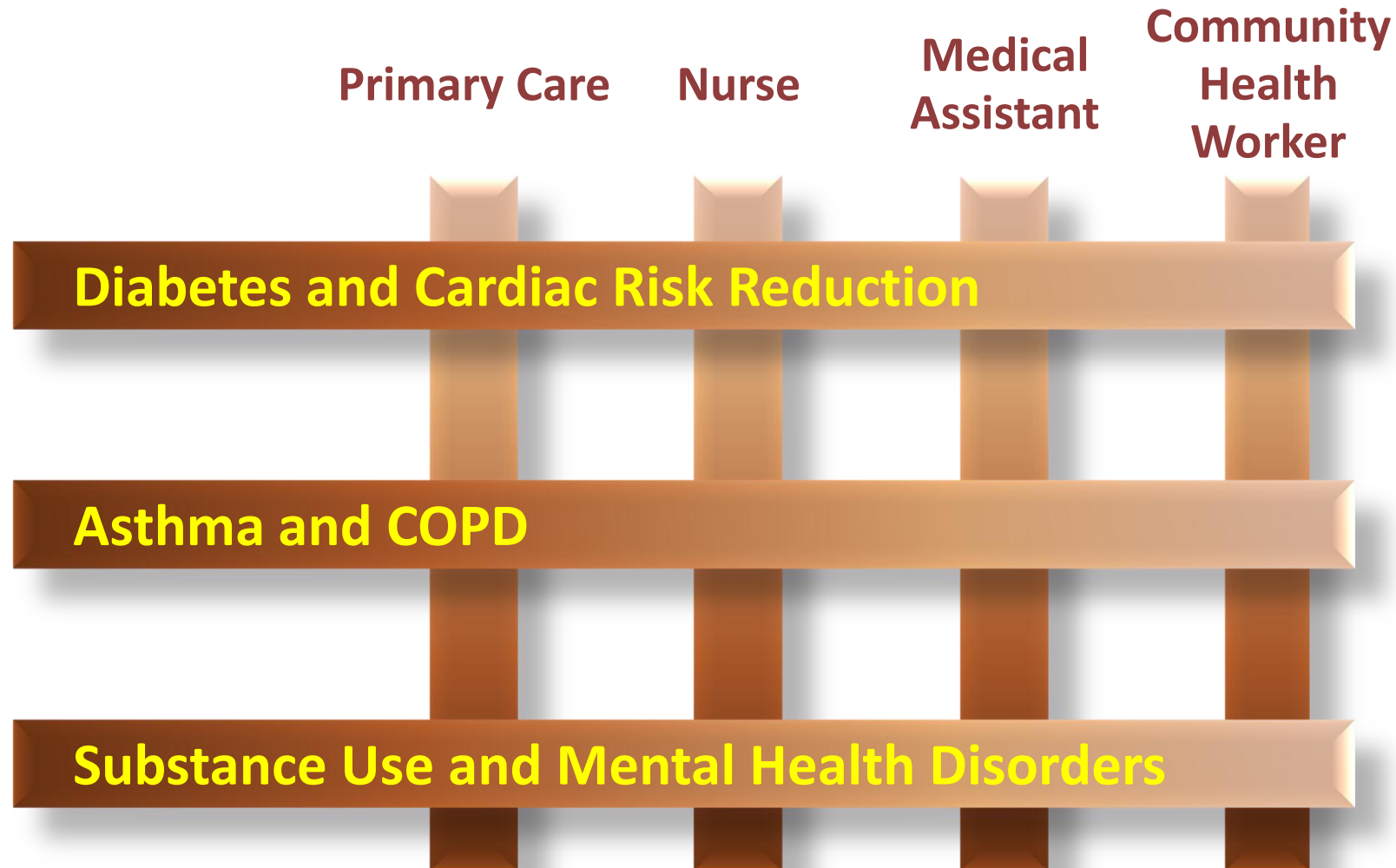
2014 121 Harms/1000 Discharges

Slide provide by Dennis Wagner MPA

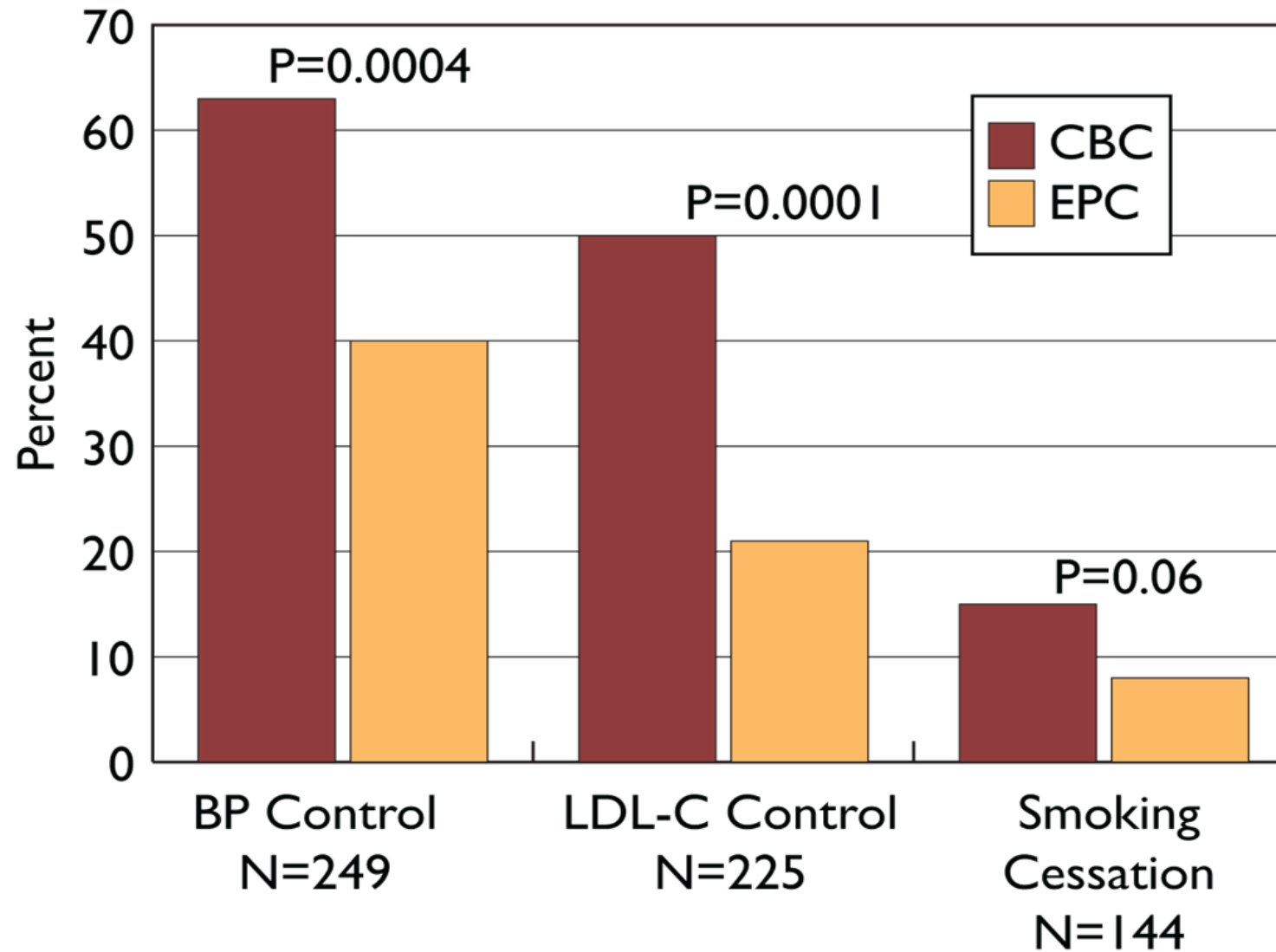
Source: Secretary Burwell announces results of patient safety improvement efforts, HHS News Release, December 2, 2014.

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 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

ECHO CHW Training

Multiple Tracks

- CHW Specialist Training
 - **CREW:** Diabetes, Obesity, Hypertension, Cholesterol, Smoking Cessation, Exercise Physiology
 - **CARS:** Substance Use Disorders
 - **ECHO Care™:** Complex Multiple Diagnoses
 - **Obesity Prevention:** Diet, Exercise, Motivational Interviewing
- Prison Peer Educator Training

Diabetes Specialty CHW Program

- Narrow Focus — Deep Knowledge
- Standardized Curriculum
 - 3 Day Onsite
 - Webcam/Weekly Video Based Clinics
 - Diet
 - Exercise
 - Smoking Cessation
 - Motivational Interviewing
 - Gentle Nudges
 - Finger Stick
 - Foot Exam
 - Ongoing support via knowledge networks
 - 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

Graduation Ceremony of First Cohort

The New Mexico Peer Education Program

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



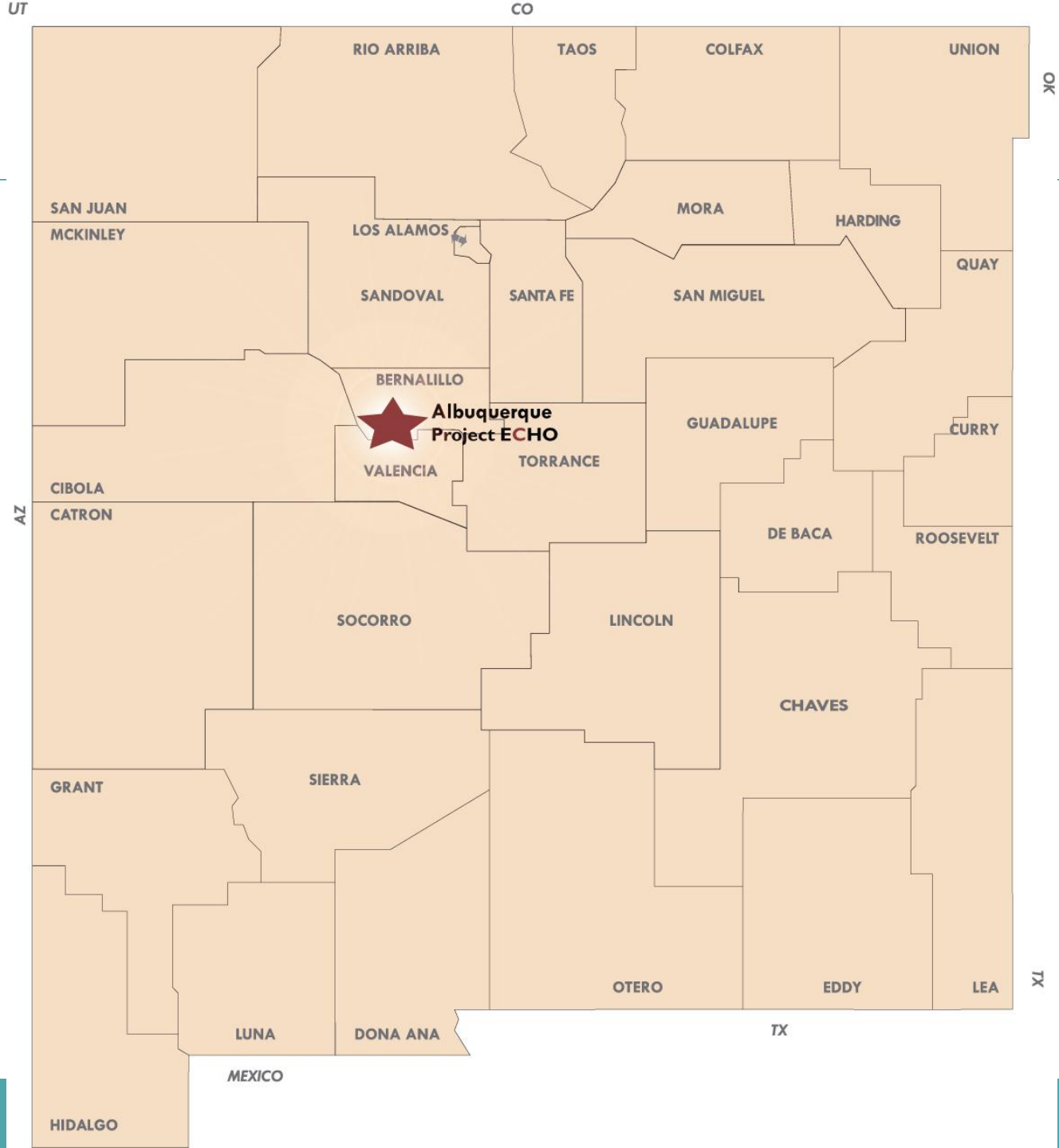
Graduation as Peer Educators

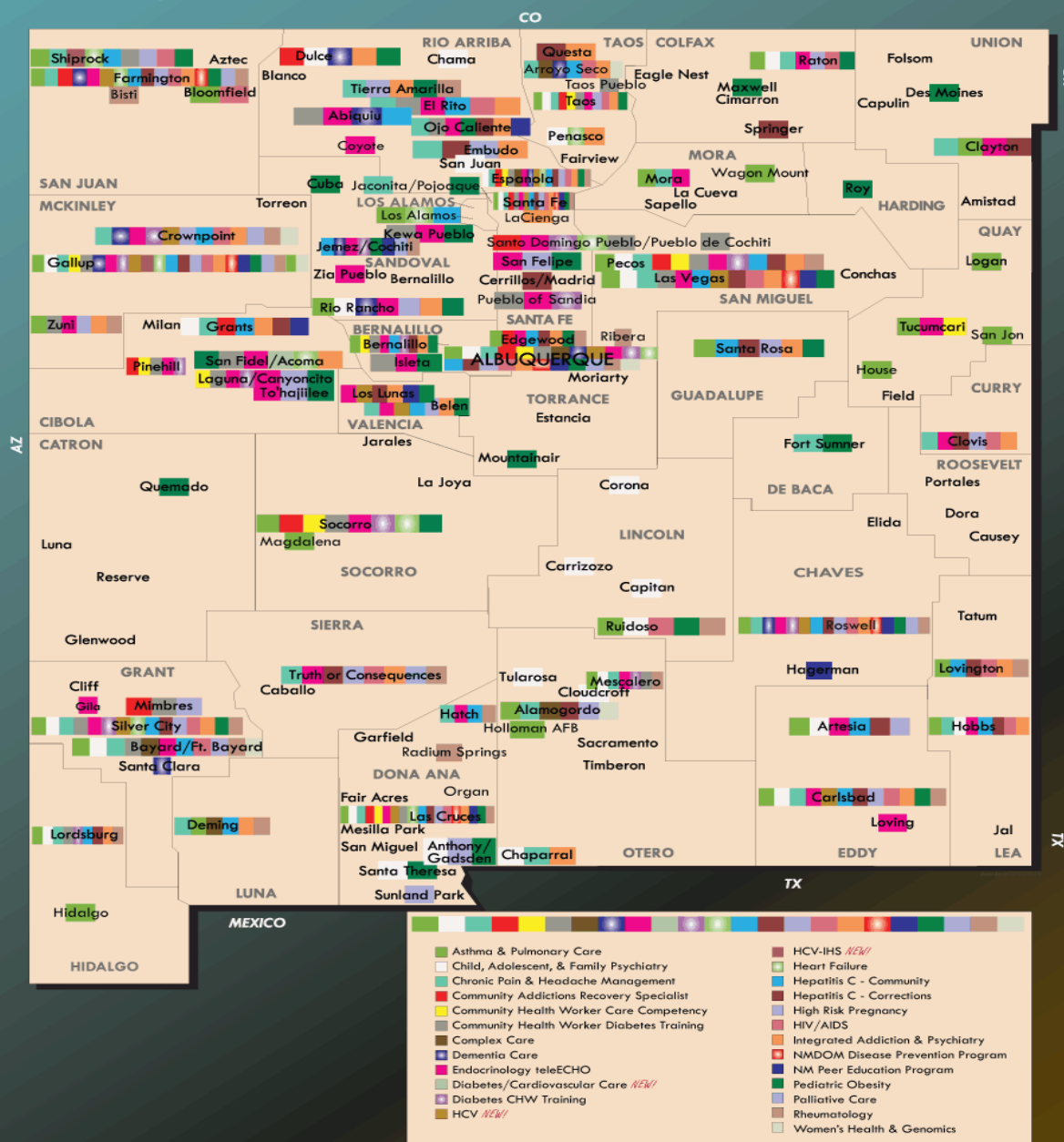
Photo consents on file with Project ECHO® and CNMCF

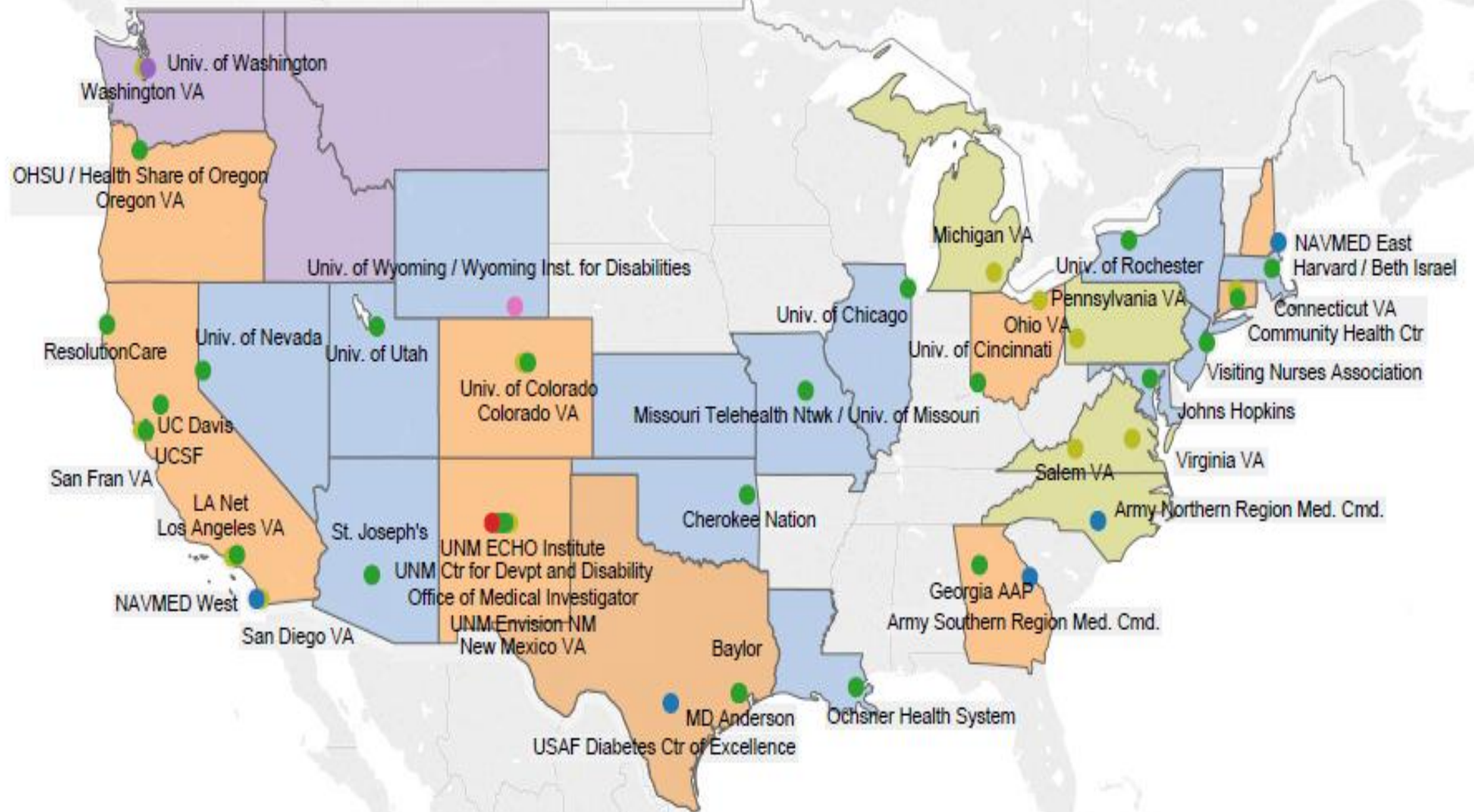
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Potential Benefits of ECHO Model to Health System

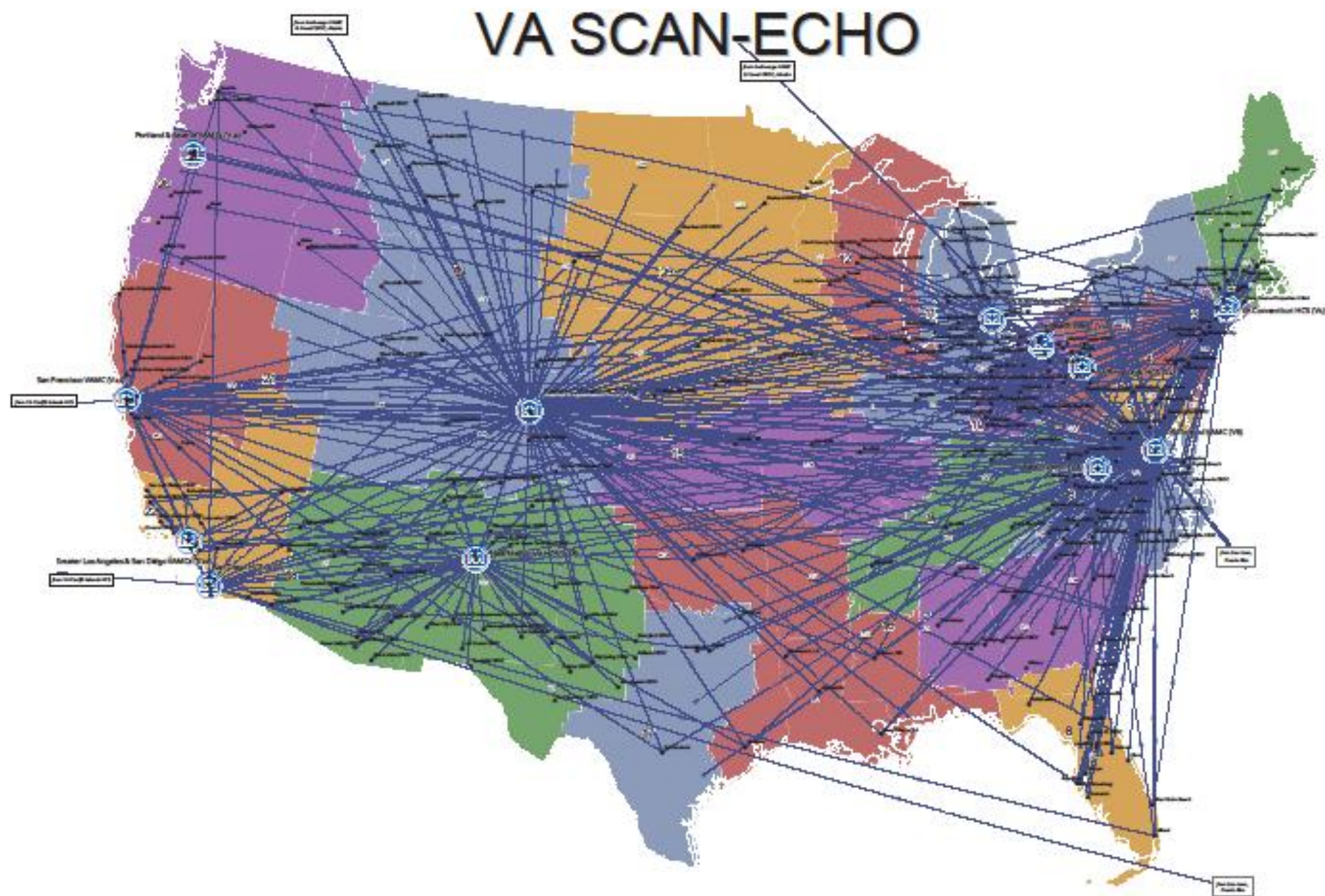
- Quality and Safety
- Rapid Learning and best-practice dissemination
- Reduce variations in care
- Access for Rural and Underserved Patients, reduced disparities
- Workforce Training and Force Multiplier
- Democratize Knowledge
- Improving Professional Satisfaction/Retention
- Supporting the Medical Home Model
- Cost Effective Care- Avoid Excessive Testing and Travel
- Prevent Cost of Untreated Disease (e.g.: liver transplant or dialysis)
- Integration of Public Health into treatment paradigm



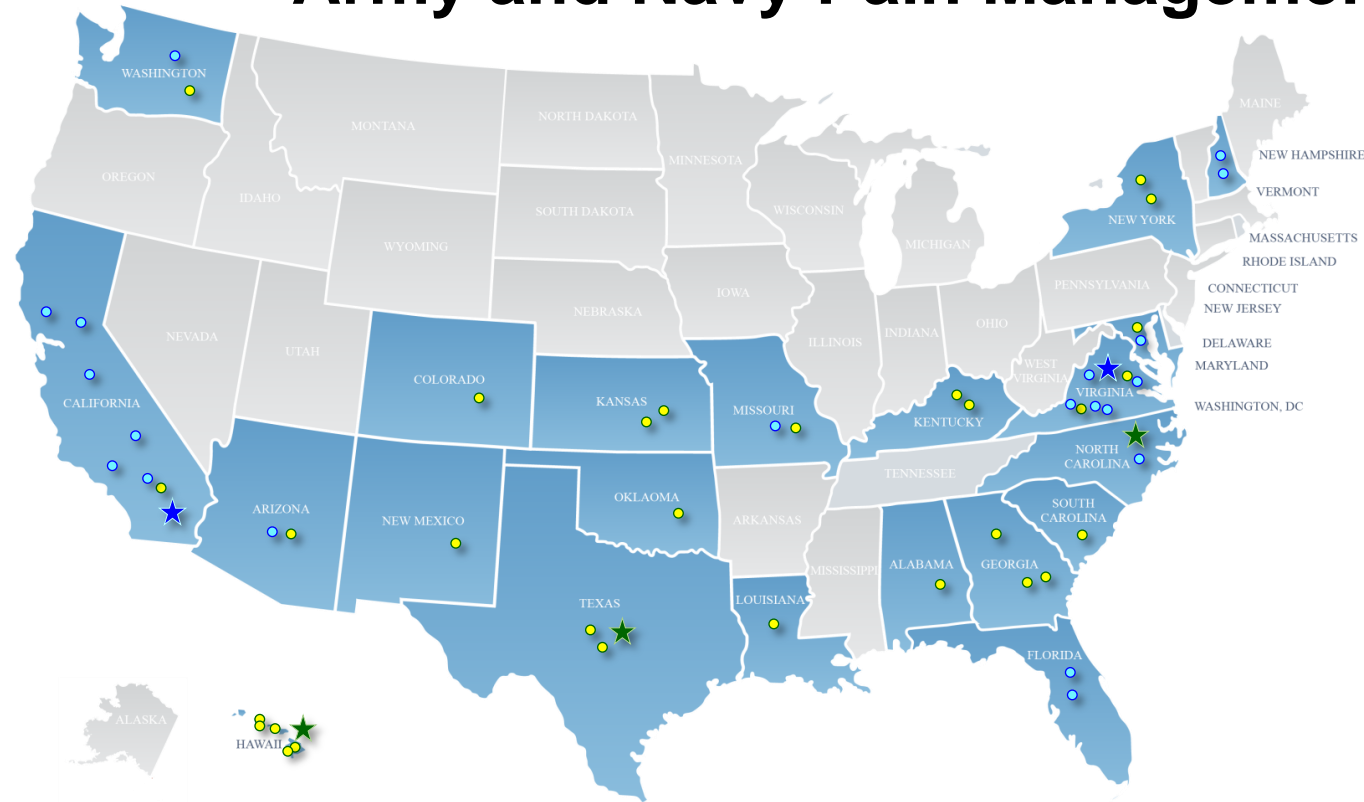




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 3. **Journal:** [Journal]
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 5. **Issue:** [Issue]
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Army and Navy Pain Management ECHO Clinics



★ 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

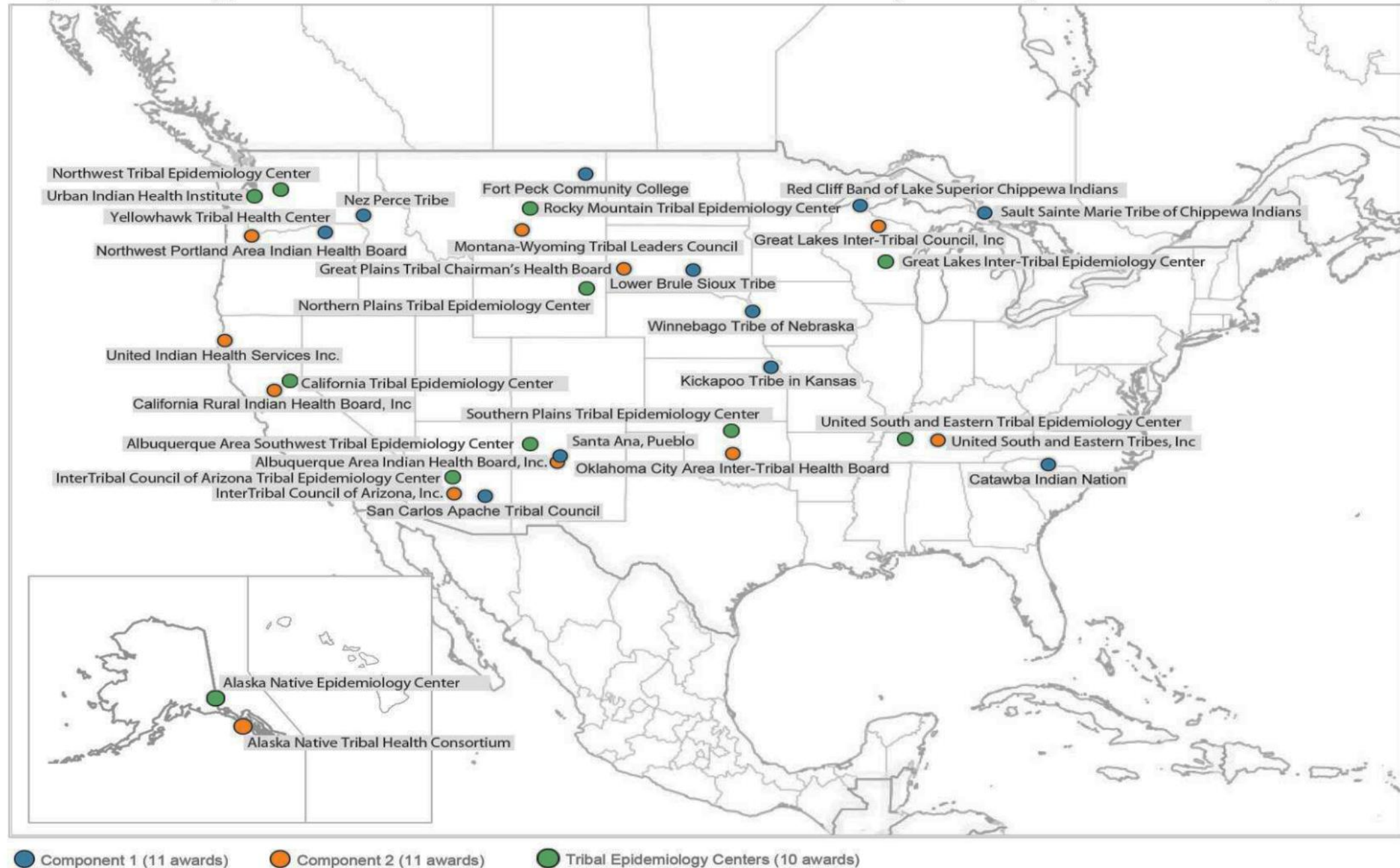
- **Belgium:**
 - Brussels
 - Supreme Headquarters Allied Powers Europe (SHAPE)
- **Germany:**
 - Grafenwoehr
 - Hohenfels
 - Katterbach
 - Landstuhl Regional Medical Center (LRMC)/FHC
 - LRMC/IMC
 - Stuttgart
 - Wiesbaden
 - Vilseck
- **Italy:**
 - Livorno
 - Vicenza
- **Japan:**
 - Camp Zama
- **South 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
 - NH 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

Comprehensive Approach to Good Health and Wellness in Indian Country Awards (DP14-1421PPHF14) **/22 awards



**These awards are financed solely by Prevention and Public Health Funds.

ECHO Replication in US:

- **Albertina Kerr** – Portland, OR (Developmental Disabilities)
- **Baylor St. Luke's Medical Center** – Houston, TX (Advanced Liver Disease, Cardiology, HBV, HCV, Infectious Disease)
- **Behavior Change Institute** – Oakland, CA (Autism)
- **Billings Clinic** – Billings, Montana (Behavioral Health for Corrections, Addictions/Psychiatry ECHO for Corrections)
- **Cherokee Nation at Hastings Hospital** – Tahlequah, OK (HCV)
- **Cincinnati Children's Hospital Medical Center** – Cincinnati, OH (STORM - Sickle Cell Treatment & Outcomes Research in the Midwest)
- **Community Health Center, Inc.** – Middletown, CT (Chronic Pain, Coaches International QI, HIV, HCV, Opioid Addiction – Buprenorphine)
- **Georgia AAP Chapter** – Atlanta, GA (Pediatric Growth and Endocrinology)
- **Harvard/Beth Israel Deaconess Medical Center** – Boston, MA (Gerontology – ECHO Age)
- **Johns Hopkins University School of Medicine** – Baltimore, Maryland (Sickle Cell Disease)

More ECHO Replication in US:

- **Kansas University Medical Center / Children's Mercy Hospital** – Kansas City, KS and Kansas City, MO (Children and Youth with Epilepsy)
- **LA Net** – Los Angeles, CA (Geriatrics)
- **Maimonides** – New York, New York (Pediatric Epilepsy)
- **Migrant Clinicians Network** – Texas (Managing Ambulatory Health Care)
- **Missouri Telehealth Network/University of Missouri** – Columbia, MO (Autism, Asthma, Chronic Pain, Endocrinology)
- **New Mexico Office of the Medical Investigator** – Albuquerque, NM (Grief Counseling, Medicolegal Death Investigation)
- **Ochsner Health System** – New Orleans, LA (Liver Disease Management)
- **Oregon Health and Science University/Health Share of Oregon** – Portland, OR (Psychiatric Medication Management)
- **Parents Reaching Out** – Albuquerque, NM (Parent Advocacy for Children with Disabilities)
- **ResolutionCare** – Eureka, CA (Palliative Care)

More ECHO Replication in US:

- **St. Joseph's Hospital & Medical Center** – Phoenix, AZ (HCV)
- **Trinitas Regional Medical Center** – Elizabeth, NJ (IDD population (intellectual and developmental disabilities))
- **University of California Davis** – Davis, CA (Pain Management)
- **University of California at San Francisco** – San Francisco, CA (HCV)
- **University of Chicago** – Chicago, IL
 - Children and Youth with Epilepsy, HCV, Hypertension, Risk Based Approach to Women's Health, Pediatric ADHD, Pediatric Obesity and Comorbidities , Geriatric/Palliative, Pilot on Free & Charitable Projects
- **University of Cincinnati College of Medicine** – Cincinnati, OH (Chronic Pain)
- **University of Colorado School of Public Health** – Denver, CO (Children and Youth with Epilepsy), Diabetes, CRC
- **University of Hawaii** – HI (Endocrinology, Behavioral Health)
- **University of New Mexico, ECHO Institute** – Albuquerque, NM
 - Chronic Pain and Headache Management, Community Health Worker Training Initiatives, Complex Care, Endocrinology, Epilepsy Across a Lifespan, HCV, HCV Corrections, HIV, IHS HCV, IHS HIV, Integrated Addictions and Psychiatry, NM Department of Health TB, NM Peer Education Project, Nurse Practitioner/Certified Nurse-Midwife, Rheumatology, Women's Health and Genomics, Improving Clinical Flow Pilot, Bone Health

More ECHO Replication in US:

- **UNM: Center for Development and Disability** – Albuquerque, NM (India Autism ECHO Program)
- **UNM: Envision NM** – Albuquerque, NM (Childhood Overweight Medical Management, Pediatric Nutrition, Pediatric Asthma/Pulmonary)
- **University of Nevada** – Reno, NV
 - Antibiotic Stewardship, Autism, Diabetes/General Endocrinology, Gastroenterology, Pain Management, Primary Care and Behavioral Health, Mental Health, Rheumatology, Special Series, Sports Medicine)
- **University of Rochester Medical Center** – Rochester, NY
 - Geriatric Health in Long Term Care, Palliative Care in Primary Care, Palliative Care in Long Term Care, Geriatric Mental Health in Primary Care, General Psychology
- **University of Utah** – Salt Lake City, UT
 - Behavioral Health, Chronic Pain & Headache Management, HCV, High Risk Obstetrics, Liver Care, Immune Disorders of the Gut, Internal Medicine/ Pediatrics Residency, Interprofessional Education (Medicine, Nursing, Pharmacy, Social Work, Wellness/Nutrition), UU Community Clinics Headache, UU Community Clinics HCV, Pregnancy Care, Post-partum Hemorrhage, Identifying & Managing Patients at Risk for Cancer, Nursing Education, Burn and Soft Tissue Injury
- **University of Washington** – Seattle, WA
 - Chronic Pain, HCV, HIV, HIV Public Health, Multiple Sclerosis, NW Heart Failure Collaborative

More ECHO Replication in US:

- **University of Wyoming / Wyoming Institute for Disabilities** – Laramie, WY (Assistive Technologies in Education)
- **UT MD Anderson Cancer Center** – Houston, TX
 - Cervical Cancer Prevention, Tobacco Cessation in Mental Health Facilities, Management of Cervical and Breast Cancer (In Mozambique and in Zambia)
- **Visiting Nurses Association Health Group** – Red Bank, NJ (Care Transitions)
- **Western NY Collaborative/AKA Excellus Blue Cross BS** – Rochester, New York (Behavioral Health)
- **West Virginia University/Cabin Creek Health Systems** – West Virginia (HCV)

More ECHO Replication in US:

Veteran's Health Administration

- **12 hubs around the U.S. – Ann Arbor, Cleveland, Connecticut, Eastern Colorado, Los Angeles, New Mexico, Pittsburgh, Portland & Seattle, Richmond, Salem, San Diego, San Francisco**
 - Behavioral/Mental Health, Cardiology, Chronic Pain, Dermatology, Endocrinology/Diabetes, Epilepsy, Hepatitis C, HIV/AIDS, Infectious Disease, Liver Care, Neurology, Nephrology, Nursing, Otolaryngology, Pulmonary/Asthma, Sleep Medicine, Spinal Cord Injury/Plastics, Surgery, Transgender, Transplant, Urology, Vascular Medicine, Women's Health
- **Department of Defense**
 - **Army** (4 hubs around the world)
 - **Eastern Region Medical Command** at Landstuhl RMC – Germany (Chronic Pain)
 - **Northern Region Medical Command** at Womack AMC – Fort Bragg, NC (Chronic Pain)
 - **Pacific Region Medical Command** at Tripler AMC – Honolulu, HI (Chronic Pain)
 - **Southern Region Medical Command** at Dwight D Eisenhower AMC – Fort Gordon, GA (Chronic Pain)
- **Air Force**
 - **USAF Diabetes Center of Excellence** – San Antonio, Texas (Diabetes)
- **Navy** (2 hubs)
 - **NAVMED East** – Navy Medical Center Portsmouth (Chronic Pain)
 - **NAVMED West** – Naval Medical Center San Diego (Chronic Pain)

ECHO Consortium and Partners



Republic of Namibia Ministry of Health and Social Services



Centers for
Disease Control
and Prevention
(CDC)

US
Headquarters

CDC Namibia



Elizabeth Glaser
Pediatric AIDS
Foundation

EGPAF



International Training & Education
Center for Health Namibia

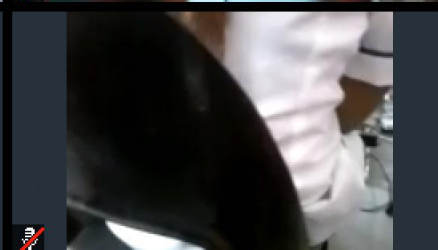
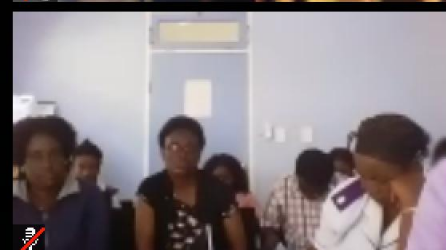


The University of New Mexico



UNIVERSITY of
WASHINGTON

University of Washington

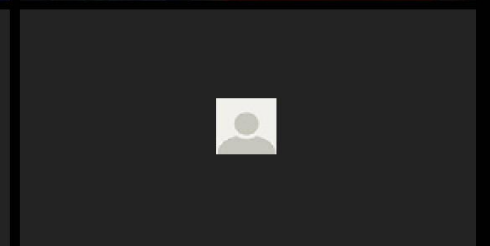
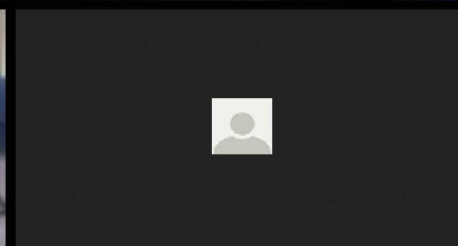






From Bruce Agins to Me (Private)
Bruce when do you leave for SA?...







CDC-Funded HIV/TB ECHO's in Phased Implementation

- HCTB HOP Funds
 - EGPAF: Cameroon and Cote d'Ivoire
 - ICAP: Kenya and TBD
- Additional countries operating with COP or ROP funds
 - Kazakhstan and Kyrgyzstan
 - Botswana (focus on treatment failure)
- ILB HOP Funds
 - Tanzania, Uganda
- TB focus countries
 - Haiti



ECHO Replication Sites Worldwide:

- **Adizes Institute**- Mexico (Business Consulting)
- **Ambience Public School** – Delhi, India (Teacher Mentorship)
- **Amor-Pro TB, Puentes de Esperanza, Centers for Disease Control and Prevention, and Cure TB/San Diego County TB Control Branch** – Mexico, California, Texas, New Mexico (US-MX Border TB Initiative)
- **Centre for Addiction and Mental Health (CAMH)** – Toronto, Canada (Behavioral Health)
- **Georgian-French Joint Hepatology Clinic** – Georgia (HCV)
- **Health and Social Care Board Northern Ireland (HSCNI)** – Belfast, Northern Ireland (Dermatology for GP Trainees, Carers, Diabetes, Ophthalmology)
- **Heartbeat Trust** – Ireland (Cardiology /Heart Failure)
- **Hospital de Clínicas de Porto Alegre** – Porto Alegre, Brazil (HCV)
- **Hospital Eva Peron** – Buenos Aires, Argentina (Dermatology, Psoriasis)
- **Hospital Italiano** – Buenos Aires, Argentina (HCV)
- **Institute for Cytology and Preventive Oncology (ICPO) and Karuna Trust** – Karnataka, India
 - Cancer Screening and Prevention for Accredited Social Health Activists (ASHA) workers and Auxiliary Nurse Midwives (ANMs)

More ECHO Replication Sites Worldwide:

- **Institute of Liver and Biliary Sciences** – New Delhi, India (Liver Disease)
- **Instituto de Rehabilitacion Psicofisica** – Buenos Aires, Argentina (Idiopathic Pulmonary Fibrosis)
- **Jamaican Ministry of Health** – Mandeville, Jamaica (Chronic Disease Prevention and Management)
- **Jindal Steel and Power Limited Foundation** – Hisar, India (Diabetes)
- **Karuna Trust** – Bangalore, India (Maternal and Child Health)
- **Lair Centre** – Vancouver, Canada (HCV)
- **Liverpool Hospital** – Australia (HCV)
- **Namibia Ministry of Health and Social Services (MOHSS)** – Namibia, Africa (HIV)
- **National AIDS Control Organization (NACO) at B.J. Medical College** – Ahmedabad, India (HIV)
- **National AIDS Control Organization (NACO) at Maulana Azad Medical College** – New Delhi, India (HIV)
- **National Institute for Mental Health and Neurosciences (NIMHANS)** – Bangalore, India
 - Mental Health and Drug Addiction, Mental Health during Pregnancy and Postpartum, Road to Recovery

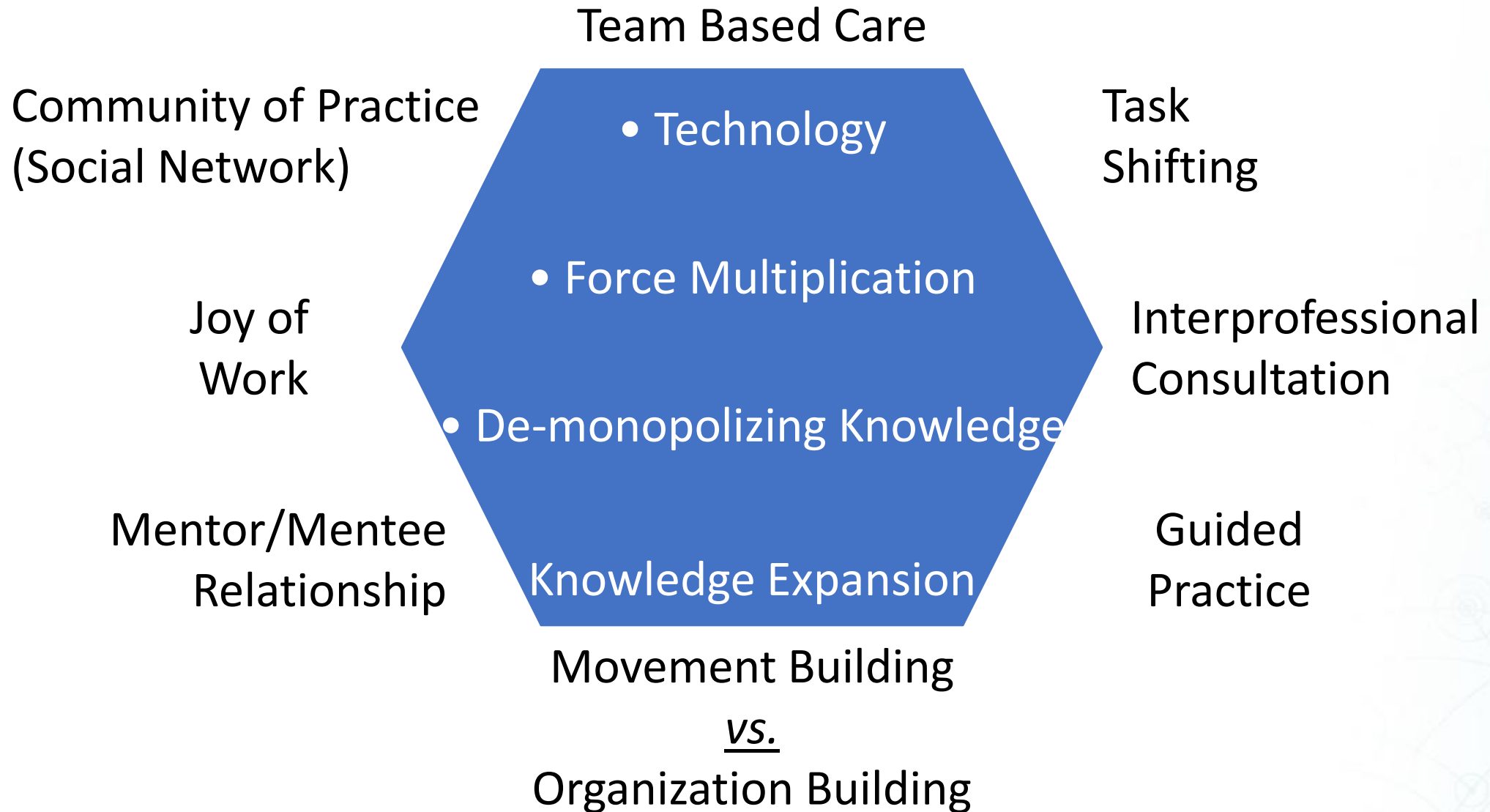
More ECHO Replication Sites Worldwide:

- **Northern Ireland Hospice** – Belfast, NI
 - Community Hospice Nurse Specialist Clinic, Lymphoedema Management, Management of Dehydration, Pregnancy and a Cancer Diagnosis, Non-Malignant Respiratory Disease, Head and Neck Cancer, Care of the Younger Adult, Heart Failure
- **Ontario Pain ECHO** – Queens University & University of Toronto Ontario, Canada (Chronic Pain)
- **Pontifícia Universidade Católica do Rio Grande do Sul** – Porto Alegre, Brazil (Dementia and Depression)
- **Post Graduate Institute of Medical Education and Research (PGIMER)** – Chandigarh, India (HCV)
- **Reaching You** – Egypt (HCV, Cardiology, Pulmonary)
- **Royal College of Surgeons Ireland** – Ireland (Rheumatology)
- **St. James's Hospital** – Dublin, Ireland (HCV)
- **St. Michael's Hospital** – Toronto, Canada (Substance Use Disorders)
- **Universidad Austral** – Buenos Aires, Argentina (HCV)
- **Universidad de la República** – Montevideo, Uruguay (HIV, HEP.C, ANEMIA, HEART FAILURE, CANCER OF THE CERVIX, AUTISM, PEDIATRIC PALLIATIVE CARE, ADULTS PALLIATIVE CARE, NEUROLOGICAL REHAB AND AUTOIMMUNE DISEASES)
- **Vietnam National Lung Hospital** – Hanoi, Vietnam (Tuberculosis)
- **West/North West Hospitals Group** – Galway, Ireland (Diabetes)

The ECHO Team



What Makes ECHO Work?



I don't know what your destiny will be, but one thing I know:
the only ones among you who will be really happy are those
who will have sought and found how to serve.

Albert Schweitzer

1952 Nobel Prize for his philosophy of “reverence for life”

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