Project ECHO (Extension for Community Health Outcomes)

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

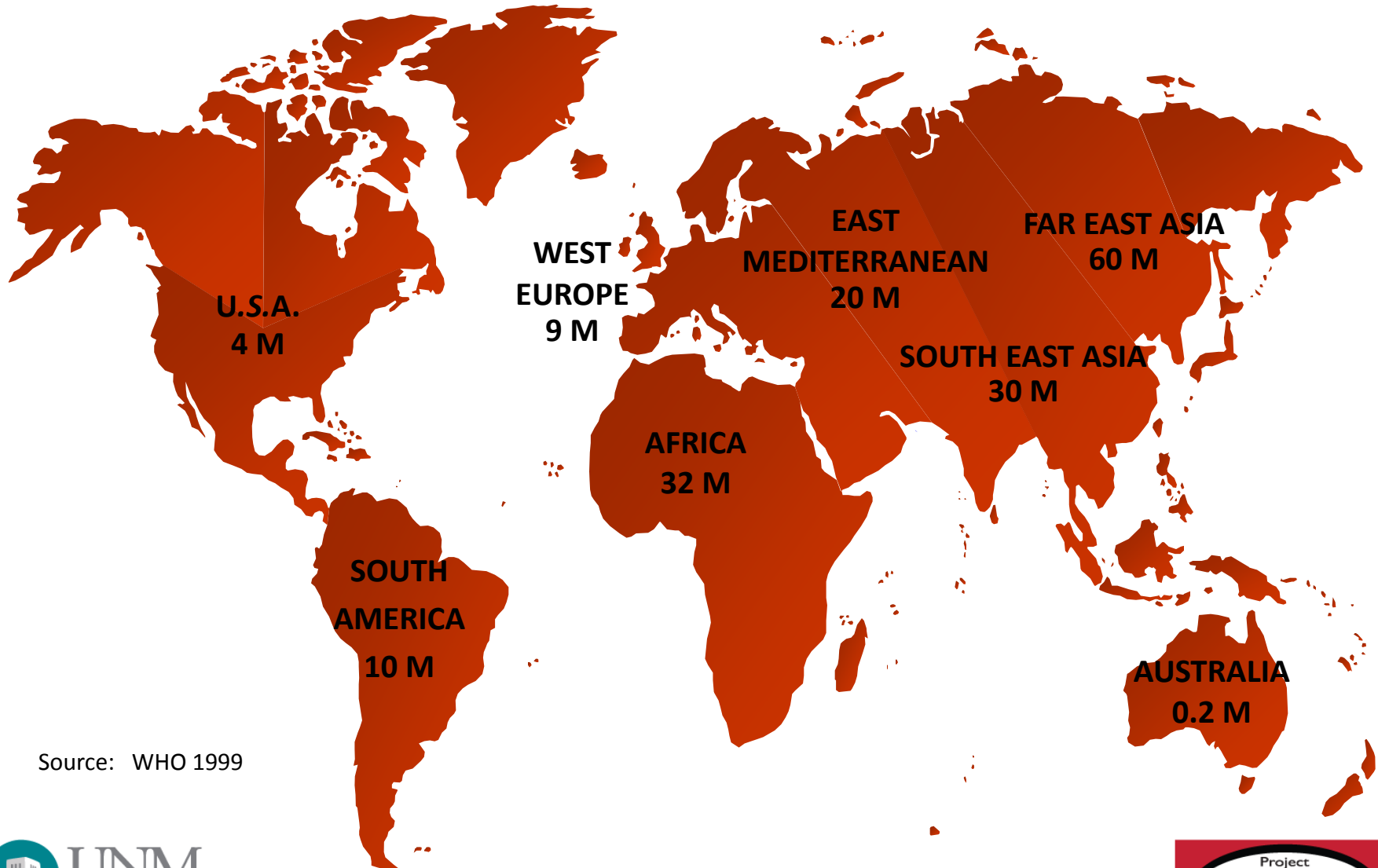Our goal is to touch the lives of 1 billion people by 2025.

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Project ECHO®

Project
ECHO®

Moving Knowledge Instead of Patients

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.

Methods

- Use Technology

- Sharing "best practices"

- Case based learning

- Web-based database to monitor outcomes

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

ECHO Whale

PCA Espanola

Baton Rouge

Pecos Valley MC

DOH Las Cruces

SBRT-First Choice South Va

Memorial HDX7000

LAS VEGAS ECFH

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 (p-value) MEAN (SD)	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 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

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(continued)

Project ECHO®

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

Community Clinicians N=25	BEFORE Participation MEAN (SD)	TODAY MEAN (SD)	Paired Difference (p-value) MEAN (SD)	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

(continued)

Project ECHO®

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

Community Clinicians N=25	BEFORE Participation MEAN (SD)	TODAY MEAN (SD)	Paired Difference (p-value) MEAN (SD)	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

Arora S, Kalishman S, Thornton K, Dion D et al: Hepatology. 2010 Sept;52(3):1124-33

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Project ECHO®

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.

Participants

- Study sites
  - Intervention (ECHO)
    - Community-based clinics: 16
    - New Mexico Department of Corrections: 5

  - Control: University of New Mexico (UNM) Liver Clinic

Treatment Outcomes

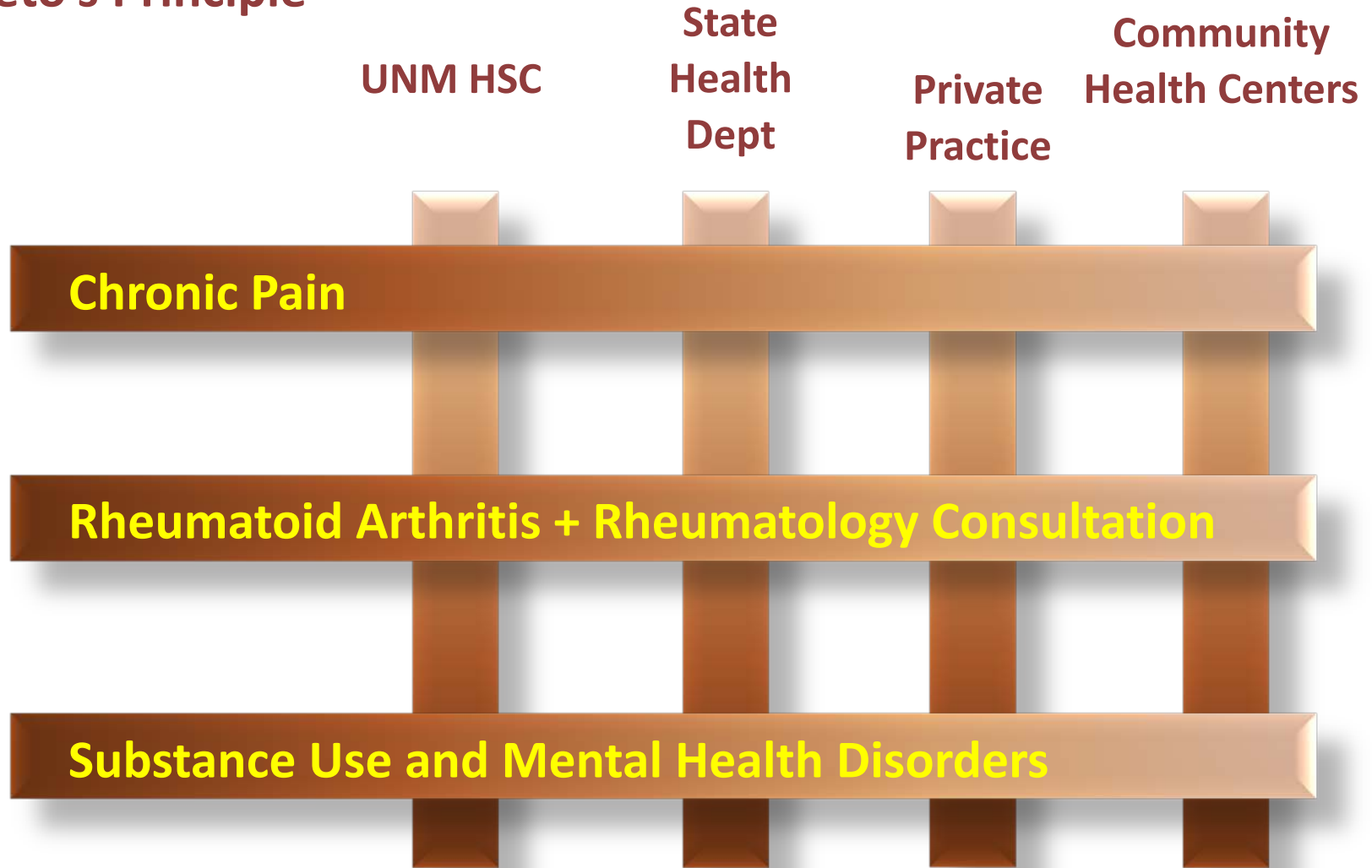| Outcome	ECHO	UNMH	P-value
	N=261	N=146	
Minority	68%	49%	P<0.01
SVR* (Cure) Genotype 1	50%	46%	NS
SVR* (Cure) Genotype 2/3	70%	71%	NS

*SVR=sustained viral response

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

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

Force Multiplier
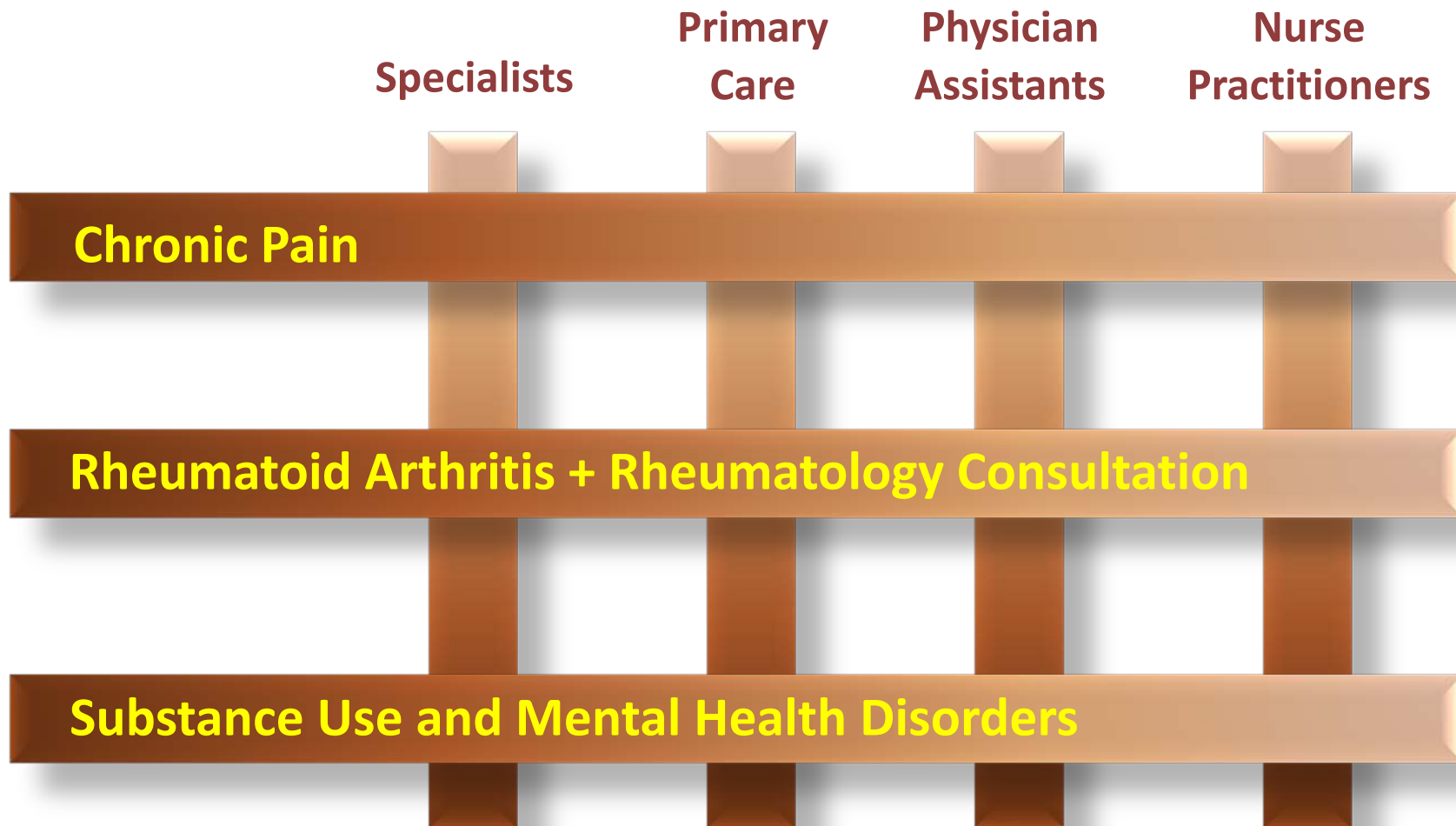## Use Existing Community Clinicians

Specialists | Primary Care | Physician Assistants | Nurse Practitioners

Chronic Pain

Rheumatoid Arthritis + Rheumatology Consultation

Substance Use and Mental Health Disorders

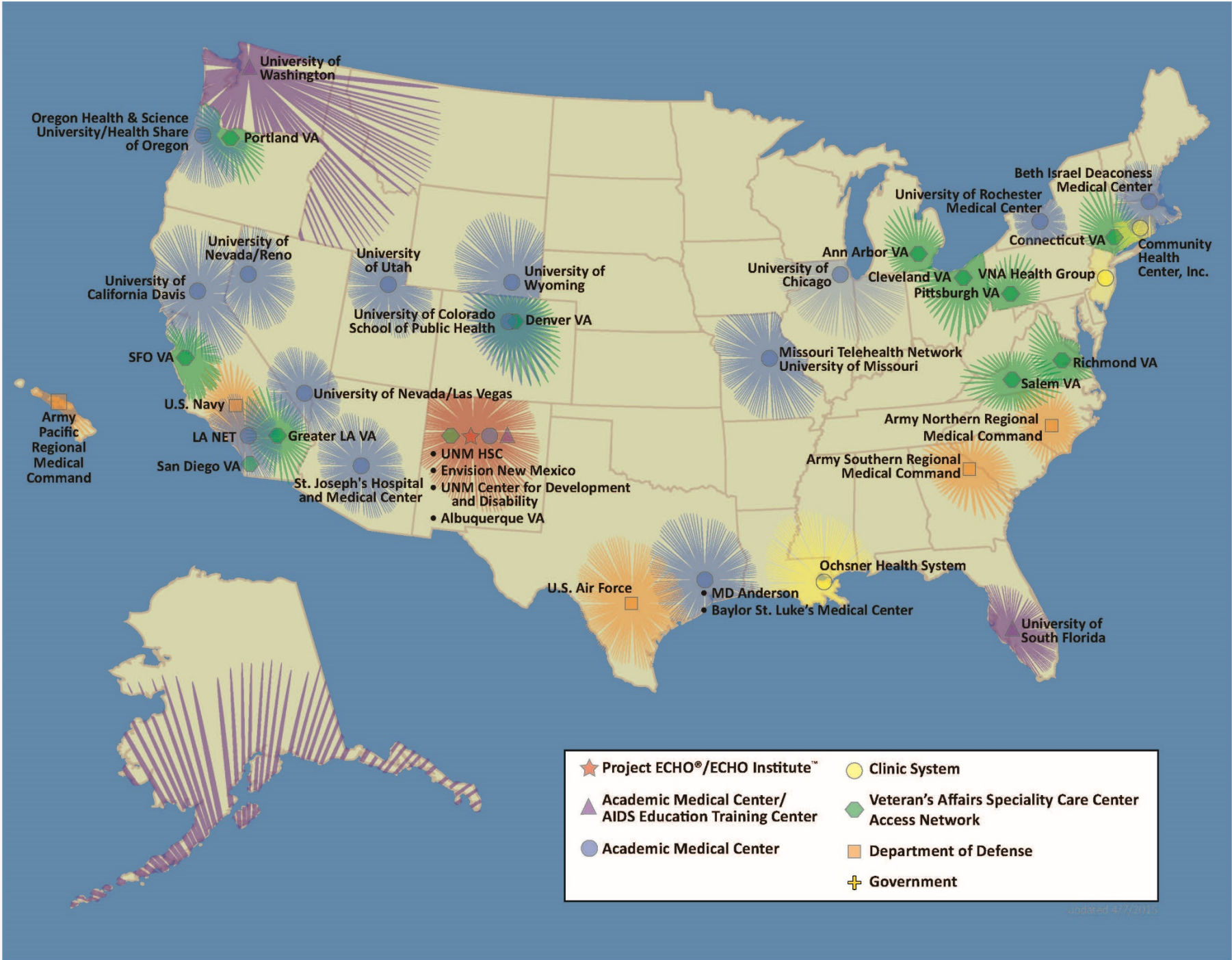# Successful Expansion into Multiple Diseases

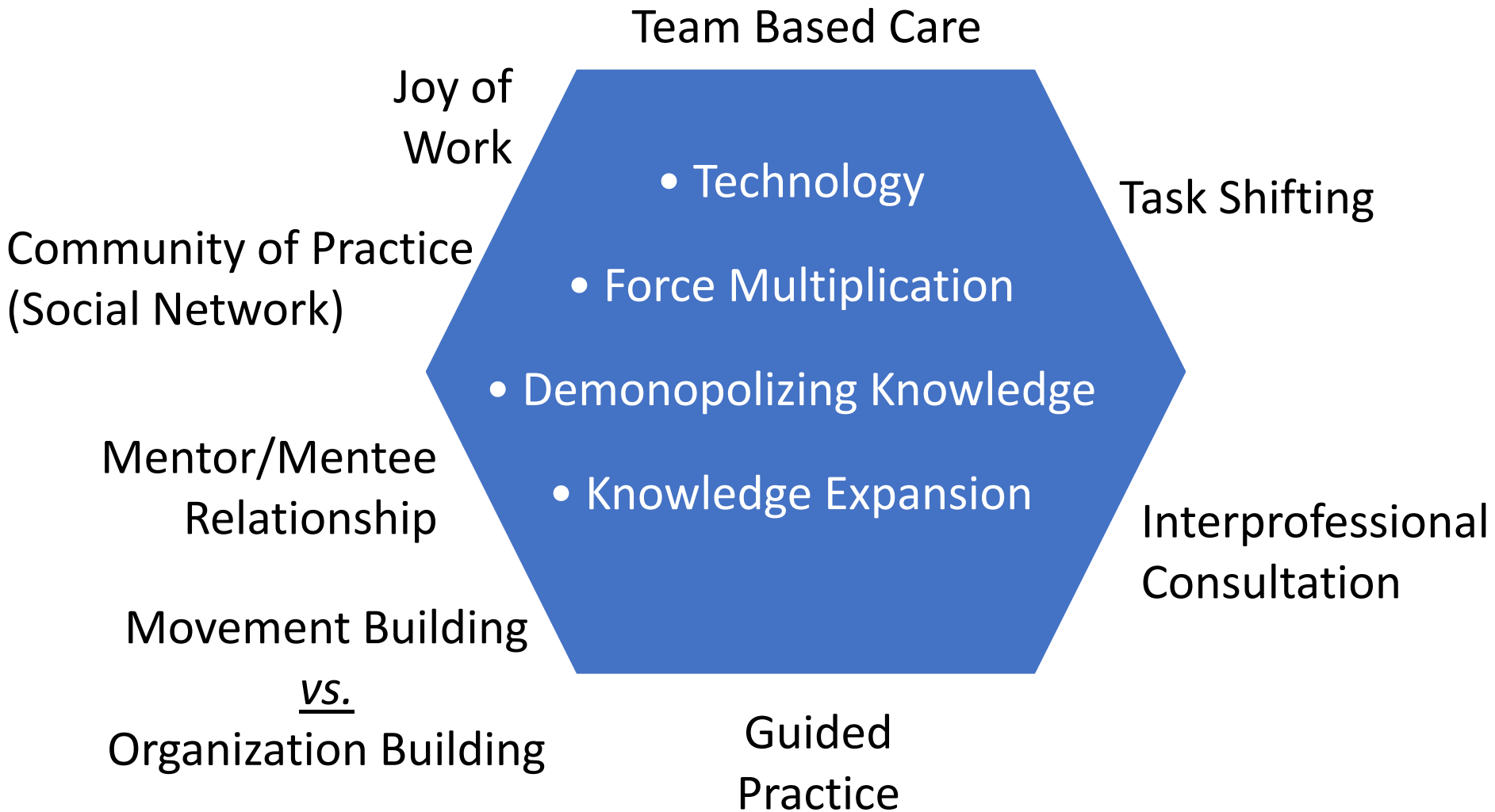|	Mon	Tue	Wed	Thurs	Fri
8-10 a.m.	Hepatitis C • Arora • Thornton	Diabetes & Endocrinology • Bouchonville		Geriatrics/ Dementia • Herman	Palliative Care • Neale
10-12 a.m.	Rheumatology • Bankhurst	Chronic Pain • Katzman	Integrated Addictions & Psychiatry • Komaromy		Complex Care • Neale • Komaromy
2-4 p.m.	HIV • Iandiorio • Thornton		Prison Peer Educator Training • Thornton	Women's Health & Genomics • Curet	

Potential Benefits of E**C**HO 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

University of Washington

Oregon Health & Science University/Health Share of Oregon

Portland VA

Beth Israel Deaconess Medical Center

University of Rochester Medical Center

Connecticut VA

Community Health Center, Inc.

University of Nevada/Reno

University of Utah

University of Wyoming

University of Chicago

Ann Arbor VA

Cleveland VA

VNA Health Group

Pittsburgh VA

University of California Davis

University of Colorado School of Public Health

Denver VA

Richmond VA

Salem VA

SFO VA

Missouri Telehealth Network University of Missouri

Army Pacific Regional Medical Command

U.S. Navy

University of Nevada/Las Vegas

LA NET

Greater LA VA

San Diego VA

St. Joseph's Hospital and Medical Center

• UNM HSC
• Envision New Mexico
• UNM Center for Development and Disability
• Albuquerque VA

Army Northern Regional Medical Command

Army Southern Regional Medical Command

U.S. Air Force

• MD Anderson
• Baylor St. Luke's Medical Center

Ochsner Health System

University of South Florida

★ Project ECHO®/ECHO Institute™

▲ Academic Medical Center/ AIDS Education Training Center

● Academic Medical Center

● Clinic System

⬢ Veteran's Affairs Speciality Care Center Access Network

■ Department of Defense

✚ Government

What makes ECHO work?

Team Based Care

Joy of Work

Task Shifting

Community of Practice (Social Network)

- Technology
- Force Multiplication
- Demonopolizing Knowledge
- Knowledge Expansion

Mentor/Mentee Relationship

Interprofessional Consultation

Movement Building
vs.
Organization Building

Guided Practice

Project ECHO® is being used to expand access to care for people with Autism and Disabilities: EXAMPLES

- Training and supporting teachers to provide better educational resources and assistive technologies to students with autism or other special needs – **University of Wyoming**

- Telementoring primary care providers and pediatricians to provide best-practice care to children with autism across USA – **University of Missouri and Massachusetts General Hospital**

- Teaching Board Certified Behavior Analysts and Behavior Technicians to provide better quality Applied Behavior Analysis to **New Mexico** families/individuals with autism (expected launch Jan. 2016)

1. ECHO to train and provide ongoing mentoring for teachers of students with disabilities:
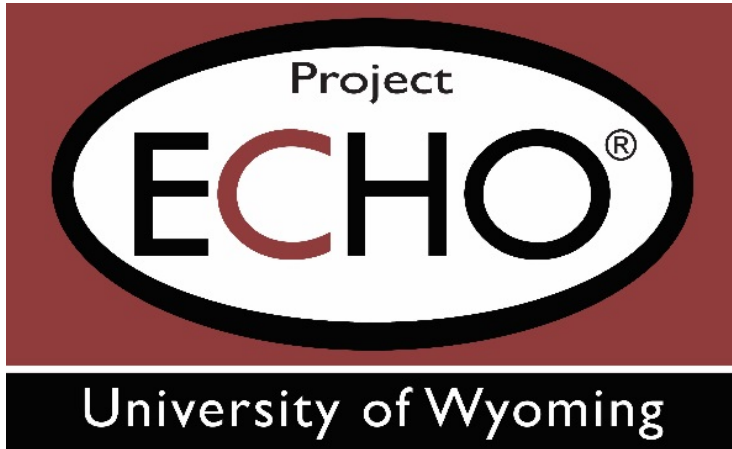
Wyoming Institute for Disabilities

Academic unit within the UW College of Health Sciences

University Center for Excellence in Developmental Disabilities Education, Research and Service (UCEDD)

Established in 1994

University of Wyoming ECHO in Assistive Technology

Feasibility test: March-May 2014

Pilot study: September 2014-May 2015

Assistive Technology ECHO 'Hub' Expertise:

University of Wyoming (UW):
- Assistive Technology Professionals (ATP)
- Assistive Technology Specialists (ATS)
- Speech Language Pathologists (SLP)
- Audiologist
- Psychologists

Wyoming Department of Education (WDE):
- Vision outreach services
- Hearing outreach services

Private practitioners:
- Occupational Therapy (OT)
- Physical Therapy (PT)
- Orientation and Mobility (0&M)
- Teacher of the Visually Impaired (TVI)

Nationally recognized AT experts/trainers
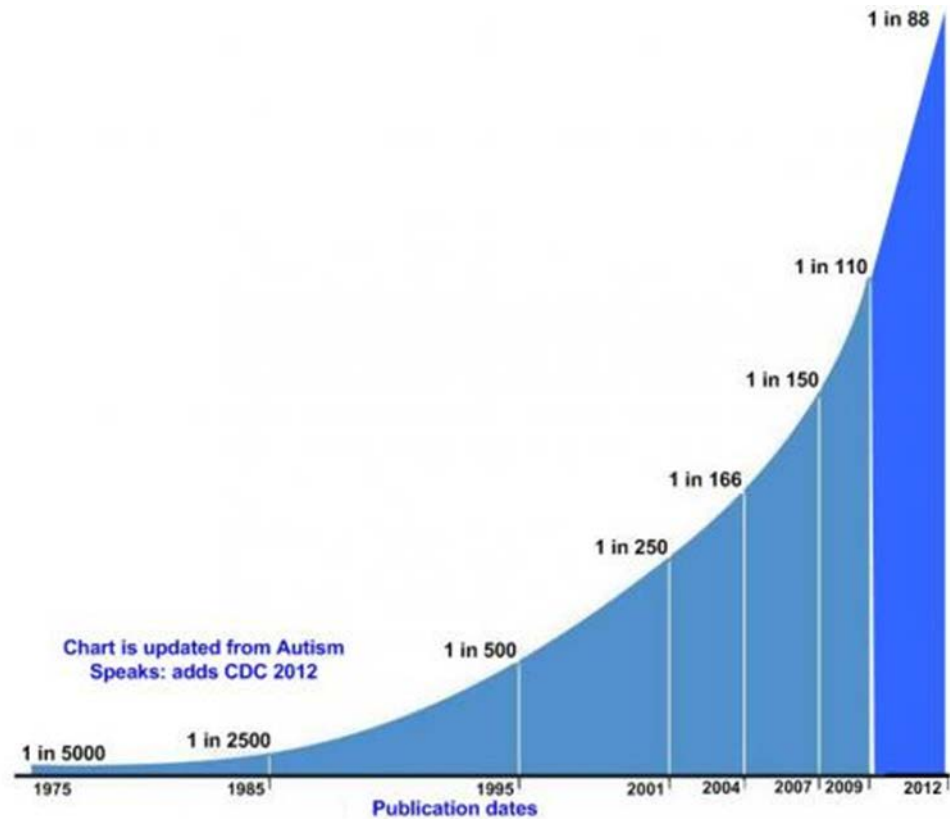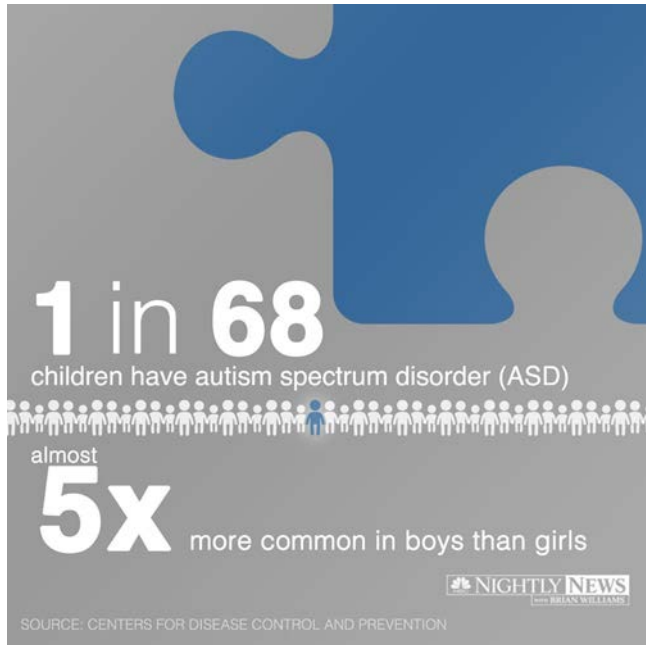
AT ECHO 'Spoke' Participants:

412 total participants; 186 unique participants

- Represent 56 school districts, agencies, organizations; includes other state departments of education, AT Act programs
- 68% provide direct assistance to students with special education needs
- 81% provide direct services to staff

Summary of Pilot Study Findings, External Evaluation

- UW ECHO in AT demonstrates the model works in education
- UW ECHO in AT model effective
- UW ECHO in AT improves educator, service provider knowledge, skills in assistive technology
- UW ECHO in AT improves educator, service provider employment self-efficacy
- UW ECHO in AT contributing to students receiving AT
- UW ECHO in AT contributing to improved student outcomes

Autism is on the Rise

1 in 68
children have autism spectrum disorder (ASD)
almost
5x more common in boys than girls
NIGHTLY NEWS
SOURCE: CENTERS FOR DISEASE CONTROL AND PREVENTION

1 in 88
1 in 110
1 in 150
1 in 166
1 in 250
1 in 500
1 in 2500
1 in 5000

Chart is updated from Autism Speaks: adds CDC 2012

1975   1985   1995   2001   2004   2007 2009   2012
Publication dates

http://www.shutterstock.com/pic-87221350/stock-photo-human-brain-research-and-intelligence-in-autism-as-a-puzzle-with-a-blue-glowing-maze-and-labyrinth.html

The Costs of Autism

- Estimated lifetime societal cost for one individual with autism at **$3.2 million**

- Early intervention reduces the long term cost and improves outcomes

- Billions of dollars of savings when applied across populations of children with autism

- PCPs are the front lines for this recognition and initiation of services

2. Transforming Primary Care for Children with Autism Across the USA
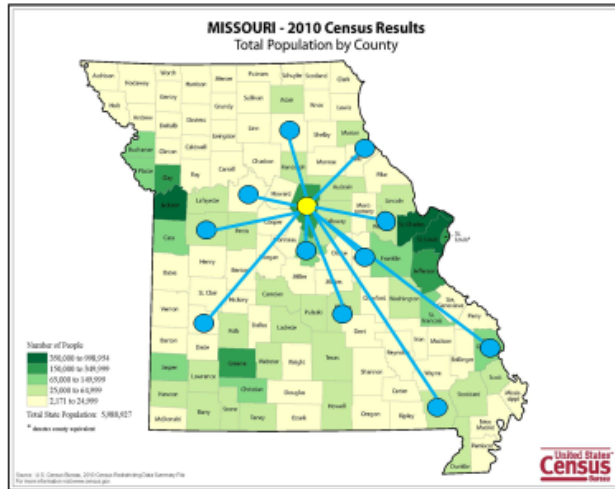
Missouri ECHO Autism participants
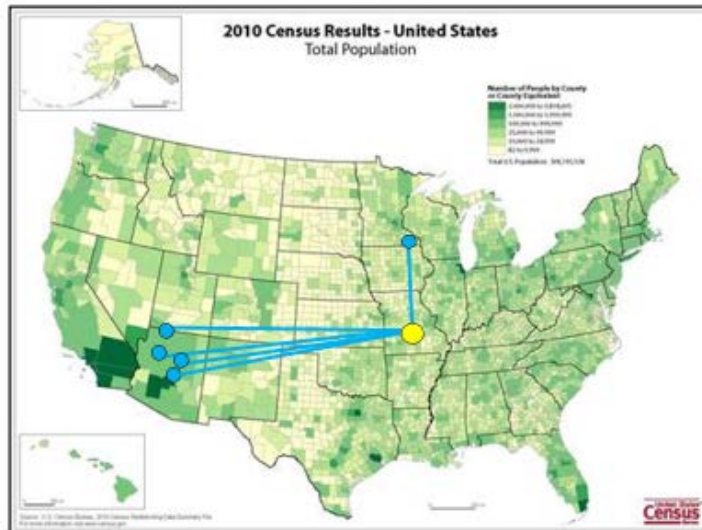
Missouri ECHO Autism participants

Missouri ECHO® Autism Clinic

Biweekly 2 hour clinic

Introductions	10 minutes
Case #1	35 minutes
Didactic	20 minutes
Case #2	35 minutes
Wrap Up	20 minutes

Hub team
- Developmental Behavior Pediatrics and/or Child Psychiatry
- Dietician
- Family Navigator
- Parent Expert
- Psychology

Primary Care Perspective

- Minimal training in autism and developmental disabilities
  - Total of 4 weeks exposure in residency
- Lack of confidence in recognizing and managing autism
- Lack of time to efficiently care for children with autism

Family Perspective

- Children with autism have many unmet medical needs
- Parents have limited confidence in their primary care provider helping them with resources and treatment options
- Families have to drive long distances to academic centers to receive help for their child
  - Time
  - Travel
  - Costs
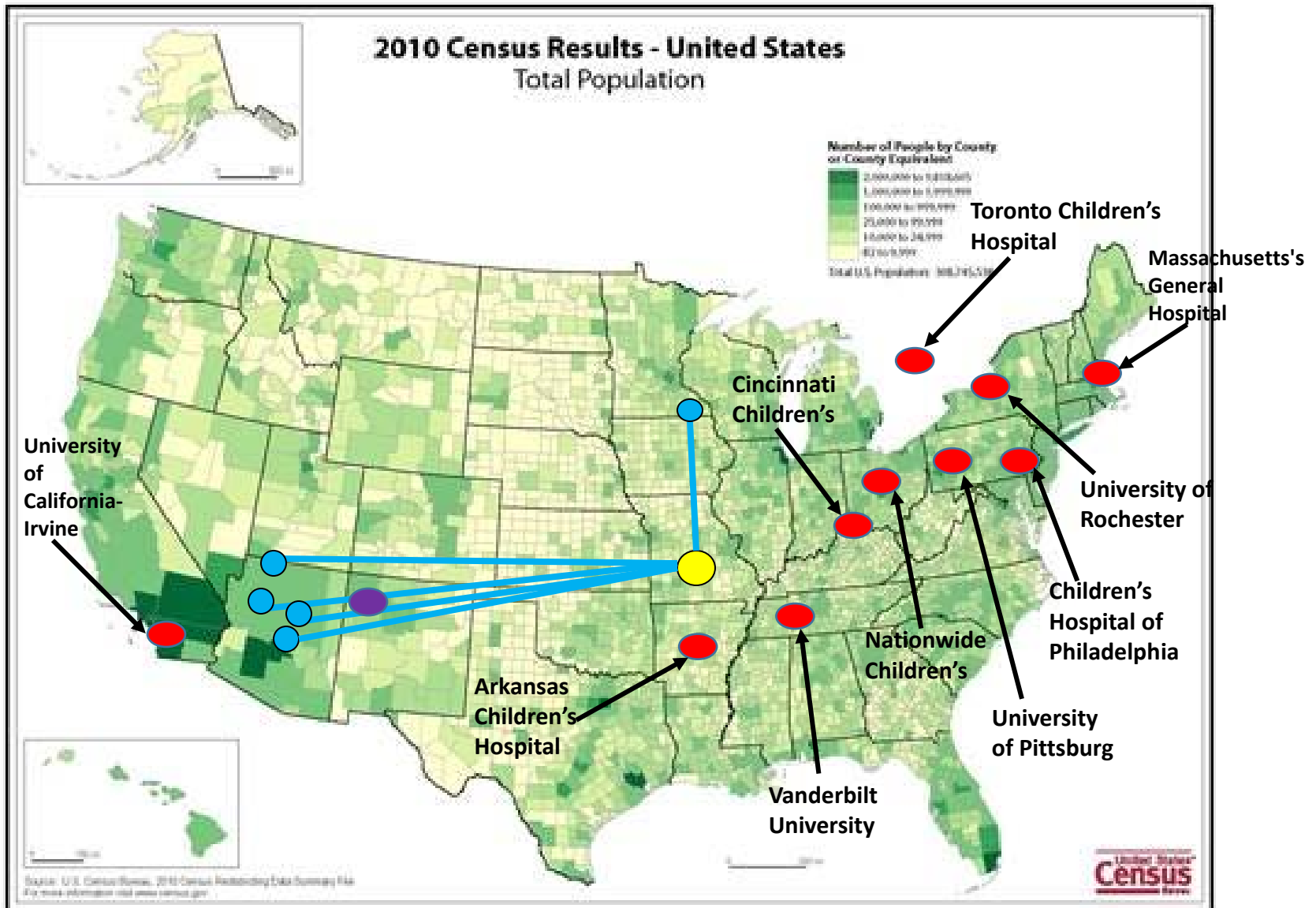 - Lost work
  - Safety in route

What does ECHO Autism Bring?

- Connects a team of experts in autism and developmental disabilities to primary care providers

- Case-based learning builds confidence and knowledge in the PCP to care for children in their practices

- Reduces costs to families and insurers

- Improves access for families

ECHO Autism Replication though the Autism Treatment Network

ECHO Autism Network

2010 Census Results - United States
Total Population

Toronto Children's Hospital

Massachusetts's General Hospital

Cincinnati Children's

University of California-Irvine

University of Rochester

Children's Hospital of Philadelphia

Nationwide Children's

Arkansas Children's Hospital

University of Pittsburg

Vanderbilt University

ECHO® Autism Navajo

ECHO® Autism Network sites

ECHO® Autism Missouri participants

3. Teaching providers to provide better quality Applied Behavior Analysis (home-based assessment, behavioral modification, training and familial support) to New Mexico families and individuals with autism

- Current Status: ECHO clinic preparation
- **Launch Pilot Study January 2016 – September 2016 (Funded by Autism Speaks)**

Current Status: Autism Treatment in NM

- Approximately 5,800 children with ASD in NM
- Only 37 Behavior Analysts in entire state of New Mexico
  - Severe shortage of specialists providers
  - Significant variability among provider adherence to clinical practice guidelines
- Intensive ABA treatment for children ranges from 10-40 hours/week
- Cases are complex, often with many barriers that prevent optimal outcomes
- Coordinated care is essential to address complex conditions and promote best outcomes

Autism ECHO in NM – in development

- Vision:
  - Improve the standard of behavioral healthcare for children with autism in NM

- Long-Term Objectives:
  - Reduce practice variance within behavior analytic services and ensure alignment with best practices
  - Improve assessment of treatment barriers that prevent families from accessing treatment
  - Improve coordinated care for families receiving intensive behavioral health services, effectively addressing barriers and ensuring access to high quality treatment options

Proposed ECHO NM Hub Specialists:

- Board Certified Behavior Analyst (BCBA)
- Licensed Psychologist
- Licensed Independent Social Worker (LISW)
- Healthcare Administrator (MHA)
- Speech and Language Pathologist (SLP)
- Parent of a child diagnosed with Autism Spectrum Disorder (ASD)