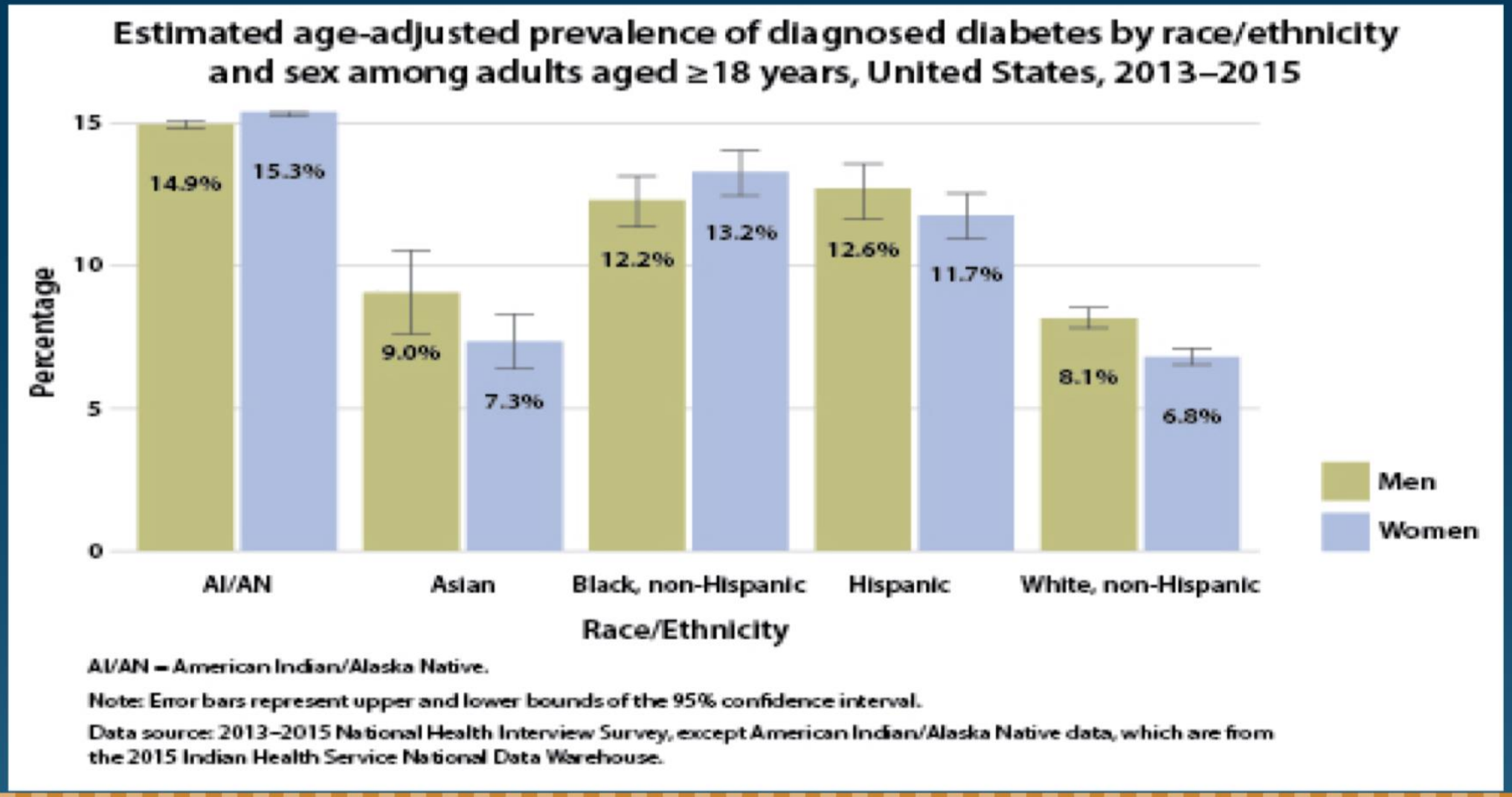
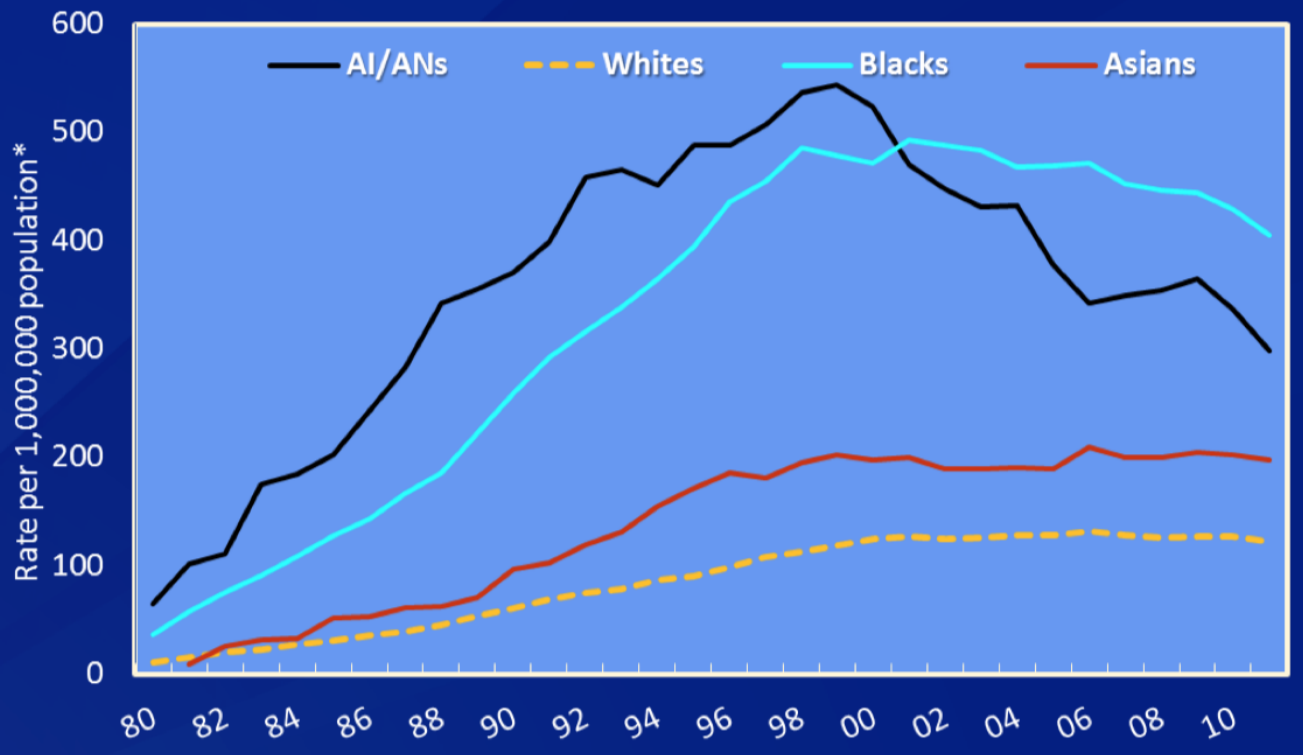
Moving Knowledge Instead of Patients and Providers

Why a Diabetes ECHO?

CDC National Diabetes Statistics Report, 2017



Kidney failure from diabetes in American Indians/Alaska Natives was the highest of any race group in the U.S.



*Rate per 1,000,000 population and adjusted for gender and age based on the 2010 ESRD cohort as reference.
AI/AN=American Indians and Alaska Natives. Racial groups include persons of Hispanic and non-Hispanic origin.
Source: US Renal Data System, 2013 Annual Data Report.

Always Improving Our Diabetes Care

- Preventing/delaying complications from diabetes requires
  - Control of blood pressure, blood sugar, lipids, other risk factors
  - Use of kidney-protective medications, screening for retinopathy, foot exams, etc.
  - *Must happen over many years*
- Many issues make it difficult for people to prevent/control diabetes, access care
  - Poverty, food insecurity
  - Lack of transportation, child care, elder care, sick leave, housing
- Comprehensive, systematic approaches
  - Multidisciplinary teams and care management: Like SDPI Healthy Heart
  - Population health: Work with *all* patients, including those who have challenges with clinic attendance, affording medicines, achieving targets
  - Public health: assess and address social determinants of health issues in the communities where patients live

Larger Context of Diabetes

- In 1997, diabetes was thought to be caused by genetics and lifestyle choices
- We now know that model needs to be expanded to include:
  - The "whats":
    - Chronic stress, trauma, adverse childhood experiences
    - Poverty, food insecurity/inadequate nutrition
    - Environmental chemical exposures
  - The "whens"
    - Before conception
    - Pregnancy
    - Birth to age 3 years
    - Youth
    - Adulthood
  - The "hows"
    - Epigenetics
    - Developmental programming
    - Altered hormone system set points

Food Insecurity

- Diet quality associated with weight gain even if calories restricted
  - Overeating, ↓ physical activity as ***consequences*** of poor diet quality, stress

JAMA 2014;311(21):2167-2168

- Prevalence of overweight in women ↑'s as food insecurity ↑

Journal of Nutrition 2001;131:1738-1745

- Pregnancy: food insecurity associated with pre-pregnancy obesity, ↑ pregnancy weight gain, and gestational diabetes

Am Diet Assoc 2010;110:692-701

- ↑ Risk for poor blood sugar control

Diabetes Care 2012;35:233-238

- 42% of households below poverty level are food insecure
  - as are 21% of all households with children

NEJM 2010;363:6-9

- **Let's screen for food insecurity and connect people to food resources**
  - Food Insecurity Assessment Tool on Division of Diabetes website

Early Life Risk Factors

- High levels of racial inequality and socioeconomic inequality increase the risk of SGA birth, particularly when they co-occur. *Am J Public Health* 2015;105:1681–1688
- Maternal stressful life events during 1st trimester ↑ risk of preterm birth (OR 2.4) *Am J Obstet Gynecol* 2010;203:34.e1-8
- **Being born early and/or small are *strongly* associated with later risk for diabetes and heart disease**

Diabetes 2009;58:523-526

How do we use ECHO to address Diabetes in Indian Country?

Goals of Project ECHO

Develop capacity to safely and effectively treat Diabetes across Indian Country.

Develop a model to treat complex diseases in rural locations.

Project ECHO

Project ECHO® is a lifelong learning and guided practice model that revolutionizes medical education and exponentially increases workforce capacity to provide best practice specialty care and reduce health disparities through its hub-and-spoke knowledge sharing networks

People need access to specialty care for complex conditions

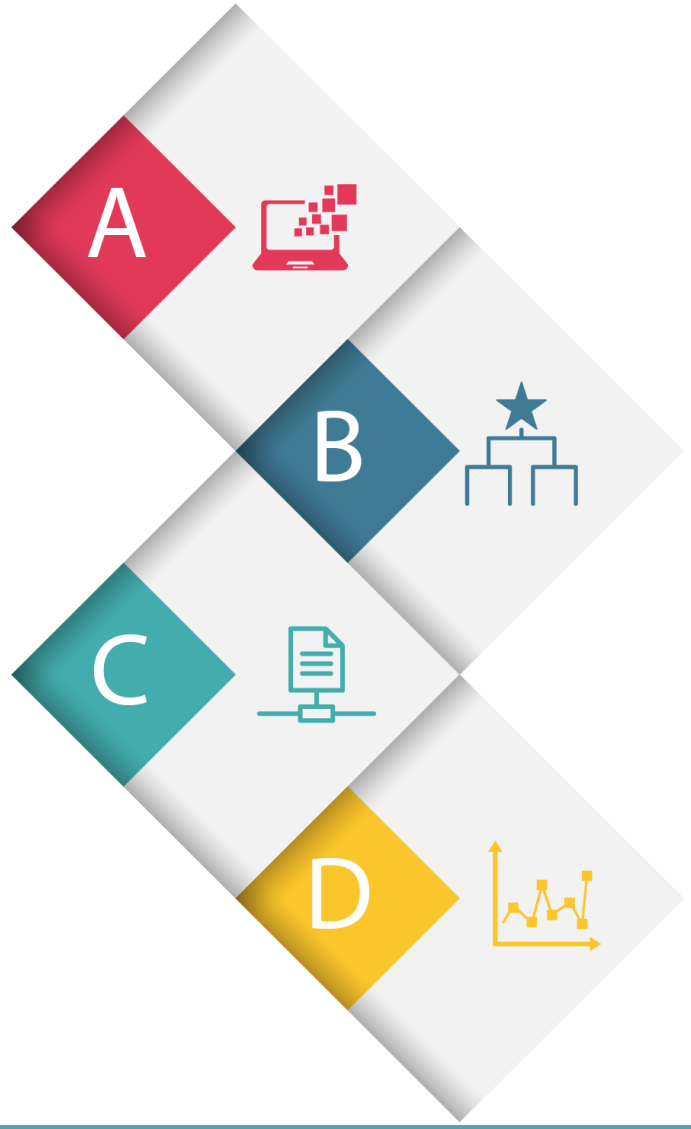
Not enough specialists to treat everyone, especially in rural India

ECHO® trains primary care clinicians to provide specialty care services

Patients get the right care, in the right place, at the right time.

The ECHO Model

Amplification – Use **Technology** to leverage scarce resources



Share **B**est **Practices** to reduce disparity

Case **Based Learning** to master complexity

Web-based **D**atabase to **Monitor Outcomes**

What is Best Practice in Medicine

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

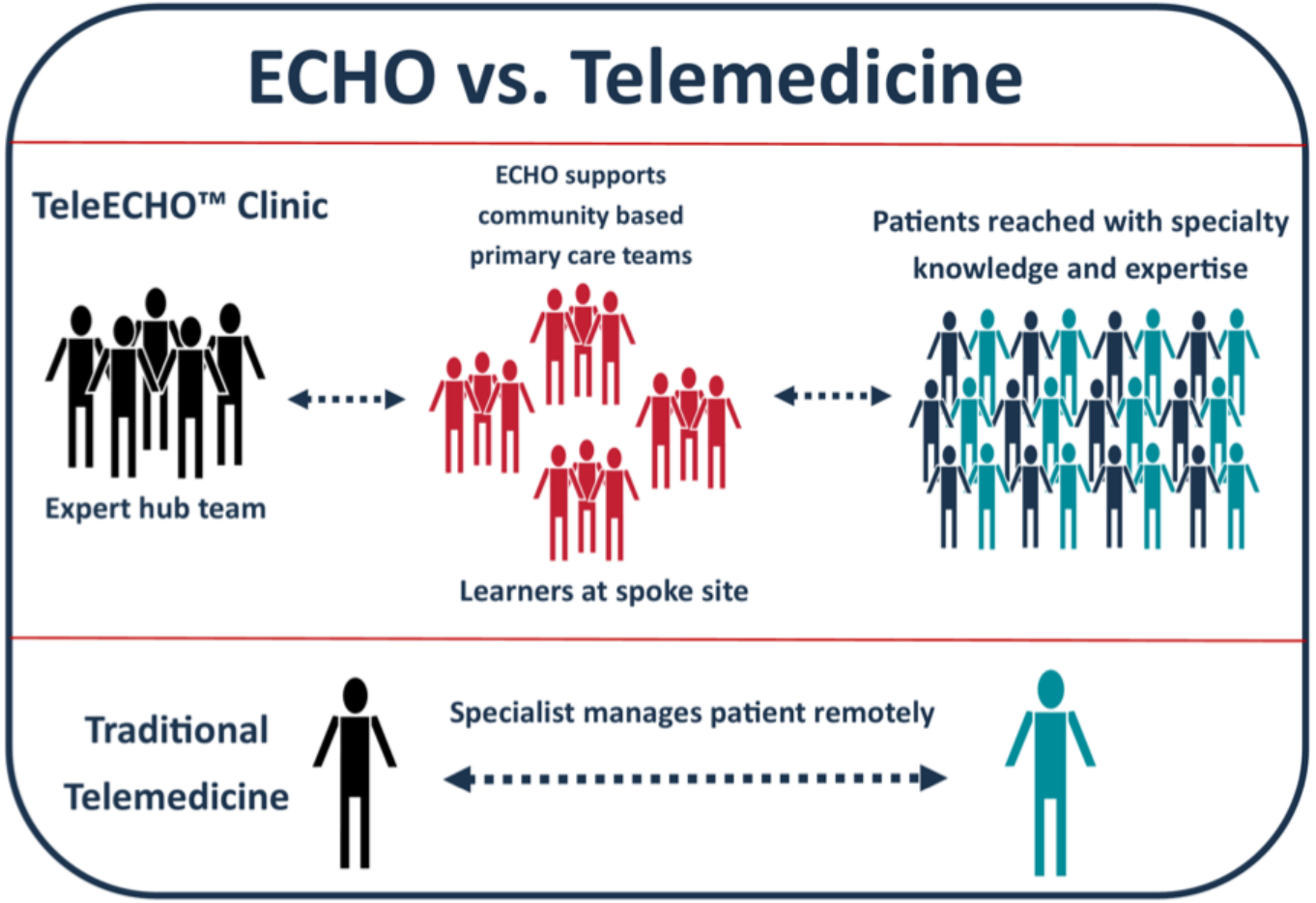
Steps

- Train physicians, physician assistants, nurse practitioners, nurses, pharmacists, educators in HCV
- Conduct teleECHO™ clinics — **“Knowledge Networks”**
- Initiate case-based guided practice — **“Learning Loops”**

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

Arora S., Thornton K., Murata G., et al. *N Eng J Med*. 2011;364(23):2199-207.



ECHO model **is not 'traditional telemedicine'**.

Treating Physician retains responsibility for managing patient.

Technology

- Videoconferencing Hardware
- Videoconferencing Software
- Video Recording System
- You Tube-like Website/Archive

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, 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**

Potential Benefits of the ECHO Model

- 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
- 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

Democratize Knowledge