HEALTH SCIENCES

Project ECHO®

Oliver Bogler, PhD

Chief Operating Officer, ECHO Institute ™

University of New Mexico

@ProjectECHO @obogler

UNMProjectECHO obogler@unmmg.org

Project ECHO

At ECHO, our mission is to unlock expert knowledge and get best practices to underserved people all over the world.

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

Supported by New Mexico Department of Health, Agency for Healthcare Research and Quality, New Mexico Legislature, the Robert Wood Johnson Foundation, the GE Foundation, Helmsley Charitable Trust, Merck Foundation, BMS foundation, NM Medicaid

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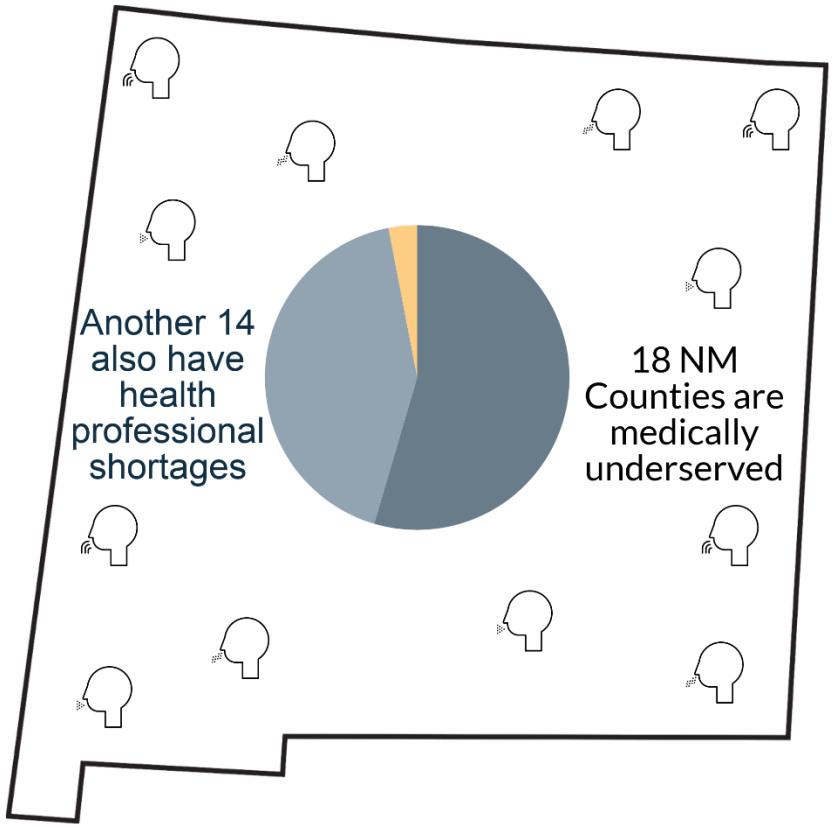
It all started in New Mexico with the vision of one man…



Sanjeev Arora, MD, MACP
Director of Project ECHO®
Distinguished Professor of Medicine
(Gastroenterology/Hepatology)
Department of Medicine
UNM Health Sciences Center

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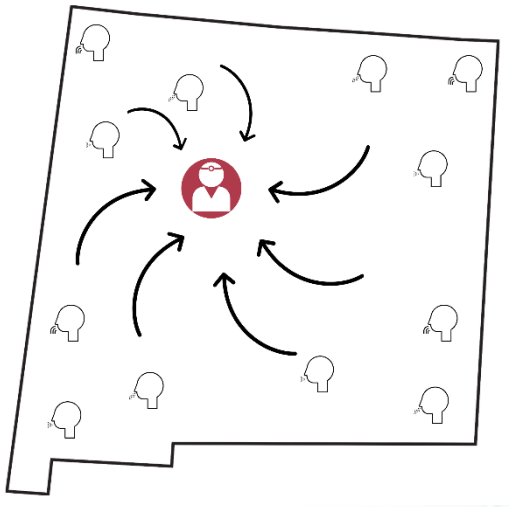
… focused on one disease: HCV

2004:	> 28,000 infected	Treatable:	Curable in 70% of cases	
	< 5% treated	Complex:	Severe side effects	anemia 100%
				neutropenia >35%
				depression >25%



wait list for Dr. Arora = many months

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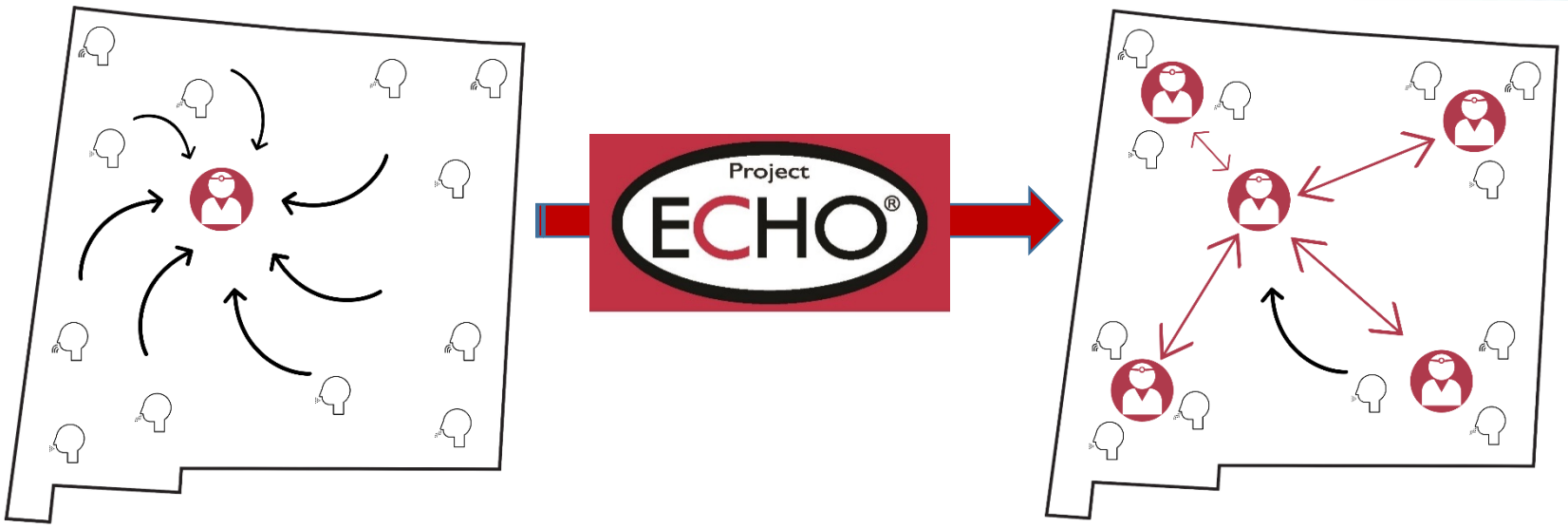
Move Knowledge not People



the right care at the right place and the right time

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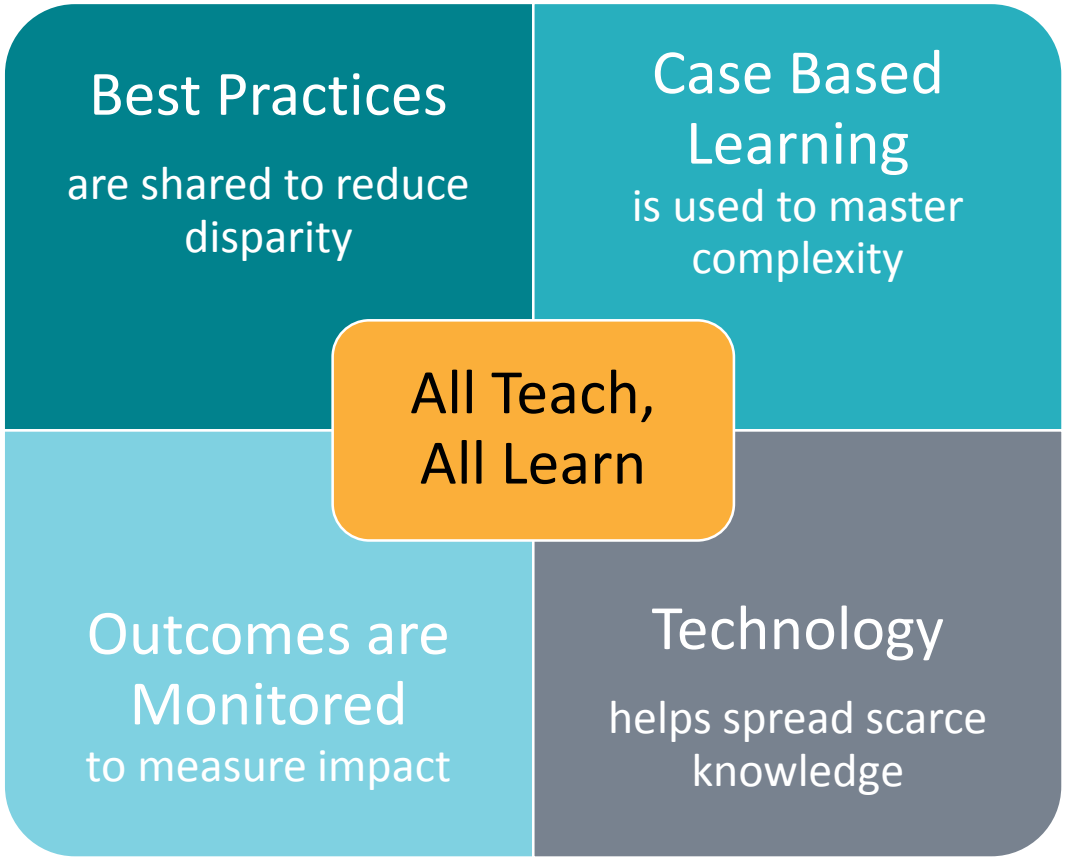
The ECHO Model – Principles



Project ECHO moves knowledge, not people

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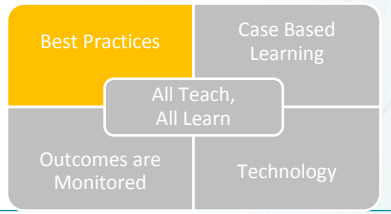
The ECHO Model – Best Practices



- Best practices for complex diseases are developed at academic medical centers
  - Algorithm-based treatment strategies, check Lists – adherence, process based
  - 10-20 min didactics in every ECHO session
  - Wisdom Based on Experience

40%

of people with some chronic conditions who don't receive recommended care

less than 1 in 5 | public health articles focused on translating research into practice

ECHO Programs can rapidly disseminate best practices across distance

Translating Scientific Discoveries Into Public Health Action: How Can Schools Of Public Health Move Us Forward? Ross C Brownson, PhD, Matthew W Kreuter, PhD, MPH, Barbara A Arrington, PhD, and William R True, PhD, MPH Public Health Rep. 2006 121(1): 97–103.doi: 10.1177/003335490612100118PMCID: PMC1497798

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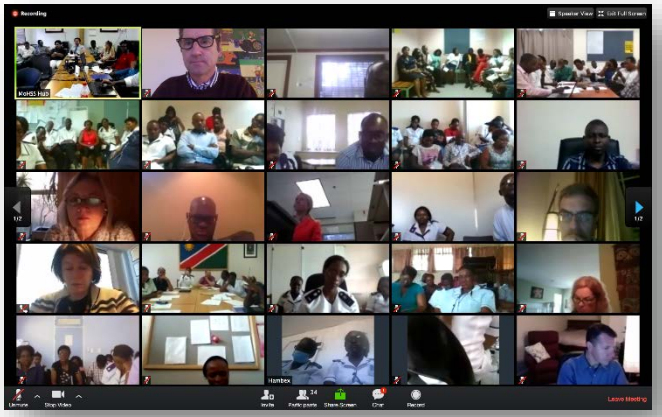
The ECHO Model – Case Based Learning

- Case based learning resembles post-graduate guided practice training of residents and fellows
  - Cases are de-identified
  - Cases are presented by spokes
  - Everyone discusses and makes recommendations – hubs and spokes
  - Cases can be re-presented over time
- ECHO Program Sessions typically include a brief didactic and several case presentations



Patients presented at ECHO benefit from input. Patients with similar disease to those presented benefit from enhanced expertise of their provider.

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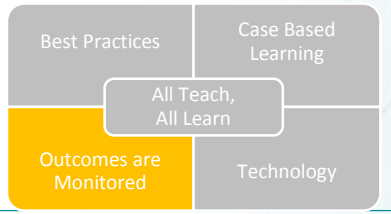
The ECHO Model – Outcomes



measuring outcomes at the provider and the patient level

HCV Knowledge Skills and Abilities (Self-Efficacy)

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

scale: 1 = none or no skill at all 7= expert-can teach others
Arora S., Kalishman S., Thornton K., et al. Hepatol. 2010;52(3):1124-33.

Patient Viral Response

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

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

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

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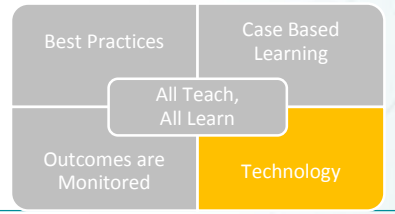
The ECHO Model – Technology



- Videoconferencing that works well with low bandwidth & is capable of recording
- Scalable file sharing in the cloud to permit exchange of didactics & operational information
- iECHO – electronic TeleECHO Clinic management solution

We are committed to a digital strategy for the ECHO movement and are working on the next generation of solutions.

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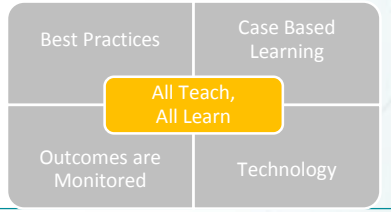
The ECHO Model – All Teach, All Learn



- In the NEJM Hep C paper ALL the patient cure rates were better than contemporary studies (20-34%)
- Hypothesis that delivering care at home by a multidisciplinary team may improve adherence
- All teach, because the providers closest to the patient know most about them and their context

The context in which care is delivered is critical.

Patient Viral Response			
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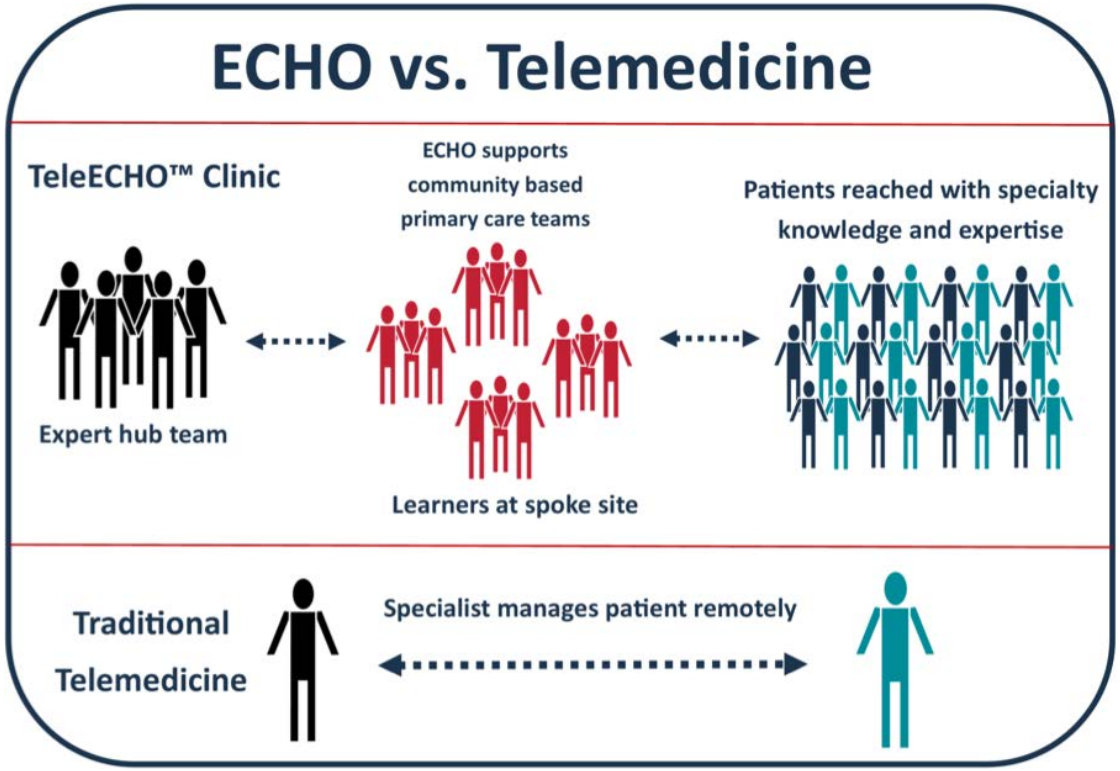
The ECHO Model – Principles



ECHO model is not 'traditional telemedicine'.

Treating Physician retains responsibility for managing patient.

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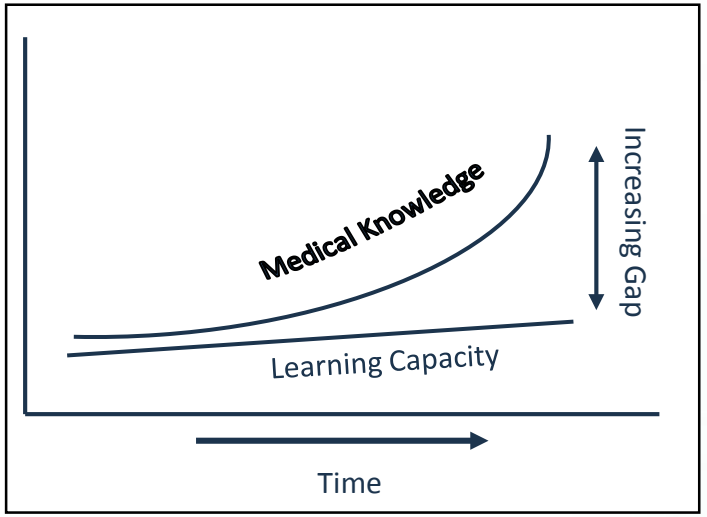
Project ECHO Must Work at Scale

- Project ECHO moves knowledge
- The rate of knowledge growth is growing geometrically
- The ability of traditional learning methodologies to bring this knowledge to the point of application is increasing more slowly
- To make an impact Project ECHO must work at global scale



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

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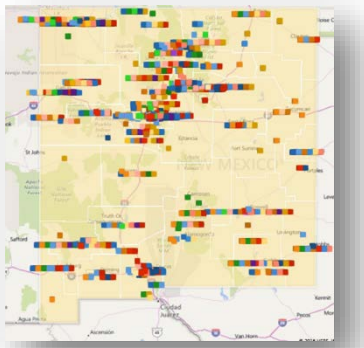
The Challenge of Scale

- Miner's Wellness
- Integrated Addictions and Psychiatry (IAP)
- Rheumatology
- Nurse Practitioner/ Certified Midwife Primary Care
- Tuberculosis
- Cardiology
- Opioid Addiction
- CDC Good Health and Wellness in Indian Country
- HIV/ HCV Corrections
- Reproductive Health
- Antimicrobial Stewardship
- Prison Peer Education Program
- Chronic Pain
- HCV
- Community Health Workers
- HBV
- Bone Health
- Endocrinology & Diabetes
- Substance Abuse & Mental Health Disorders
- Chronic Pain and Opioid Management



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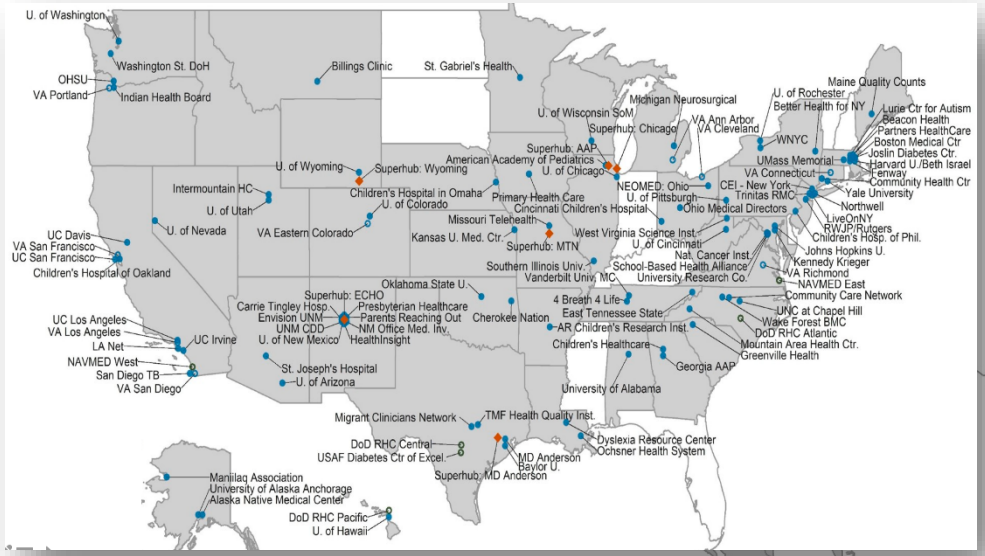
The Challenge of Scale



189 Hubs
in 28 countries
(3/27/18) and growing
rapidly

Project ECHO and Cancer

- Cancer Incidence and Mortality in Rural Areas:
  - Rural mortality rates higher for:
    - Cervical
    - Colorectal
    - Kidney
    - Lung
    - melanoma
    - oropharyngeal cancer
  - Rural areas have:
    - lower average annual age-adjusted cancer incidence rates for all anatomic cancer sites combined
    - higher death rates than metropolitan areas.
  - 2006-2015, the annual age-adjusted death rates for all cancer sites combined decreased
    - -1% / year in nonmetropolitan areas
    - -1.6% / year in metropolitan areas

Blake, K.D., Moss, J.L., Gaysynsky, A., et al. *Cancer Epidemiol Biomarkers Prev*. 2017;26(7):992-7.; Henley, S.J., Anderson, R.N., Thomas, C.C., et al. Morb Mortal Wkly Rep. 2017;66(14):1-13.

Project ECHO opportunities in Cancer:

- Prevention: smoking cessation, HPV vaccination, HCV treatment, HBV vaccination and treatment, sun safety and skin cancer prevention
- Screening and Early Detection: dermatology, breast, cervical, colorectal cancer, oral and lung
- Pathology Best Practices
- Cancer Care Navigation
- Updates in Treatment: Getting the science to the community; Tumor Boards; Precision Medicine and Cancer Genomics
- Pain and Toxicity Management
- Survivorship
- Palliative Care
- Population Health: effective community cancer intervention and prevention program management

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Project ECHO: TeleECHO™ Snapshot

- HBV ECHO: Reducing Perinatal Transmission

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ECHO Replication: Next Steps, Secrets for Success & ECHO Value

Erika Harding, MA

Chief Replication Officer, ECHO Institute ™

University of New Mexico

eharding@salud.unm.edu

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

That means we need to engage many partners on many levels: community partners, hub partners, funding partners, Superhub partners, legislative and policy partners…

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What is Project ECHO?

How is it different from telemedicine?

Telemedicine

- Focus is direct service delivery
- Usually billable
- Usually one-to-one
- Unidirectional flow of information
- Usually one-and-done, or time-limited/specific
- Single expert providing opinion

ECHO

- Focus is on education and capacity building
- Not usually billable
- One-to-many (hub and spokes)
- Multidirectional flow of knowledge
- Ongoing, based on learner's needs
- Multidisciplinary expert team providing mentoring, advice and support

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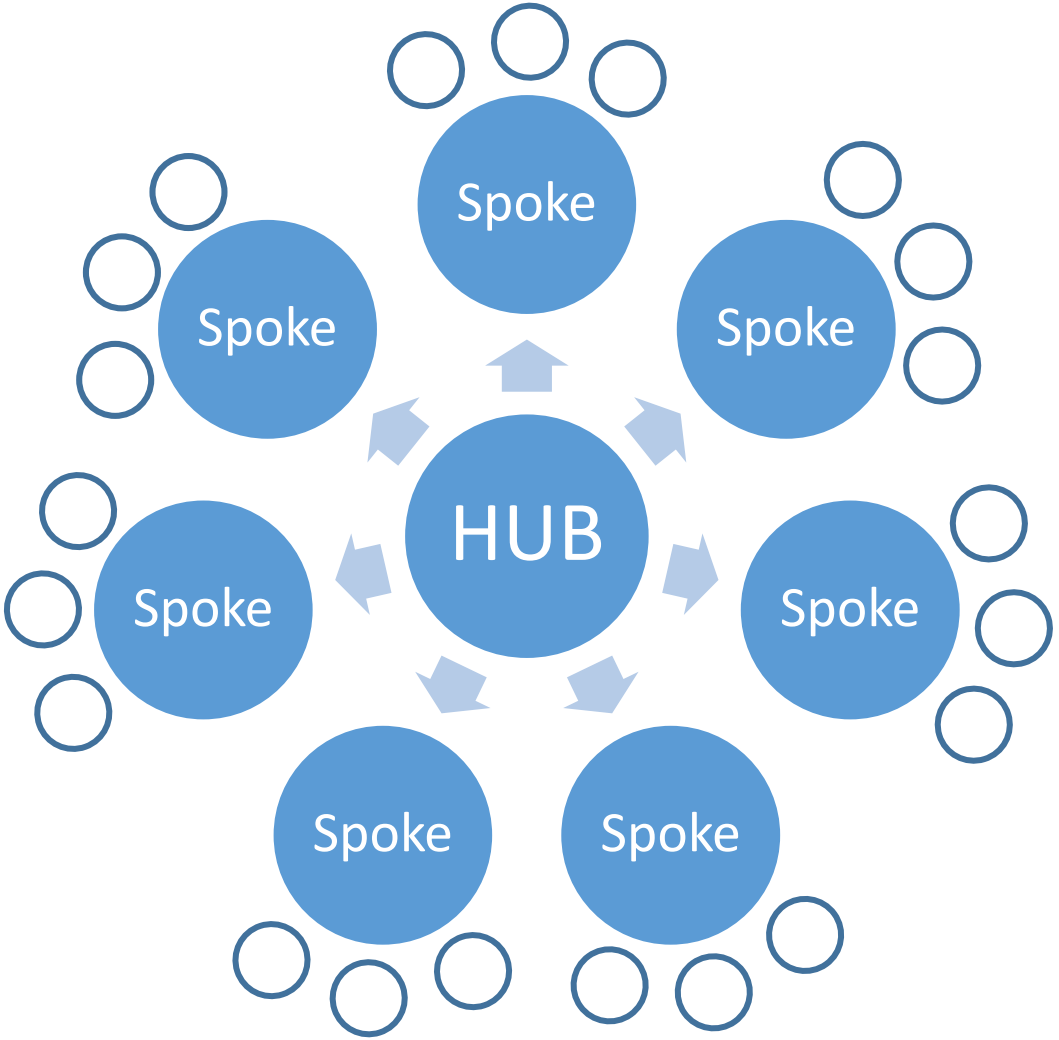
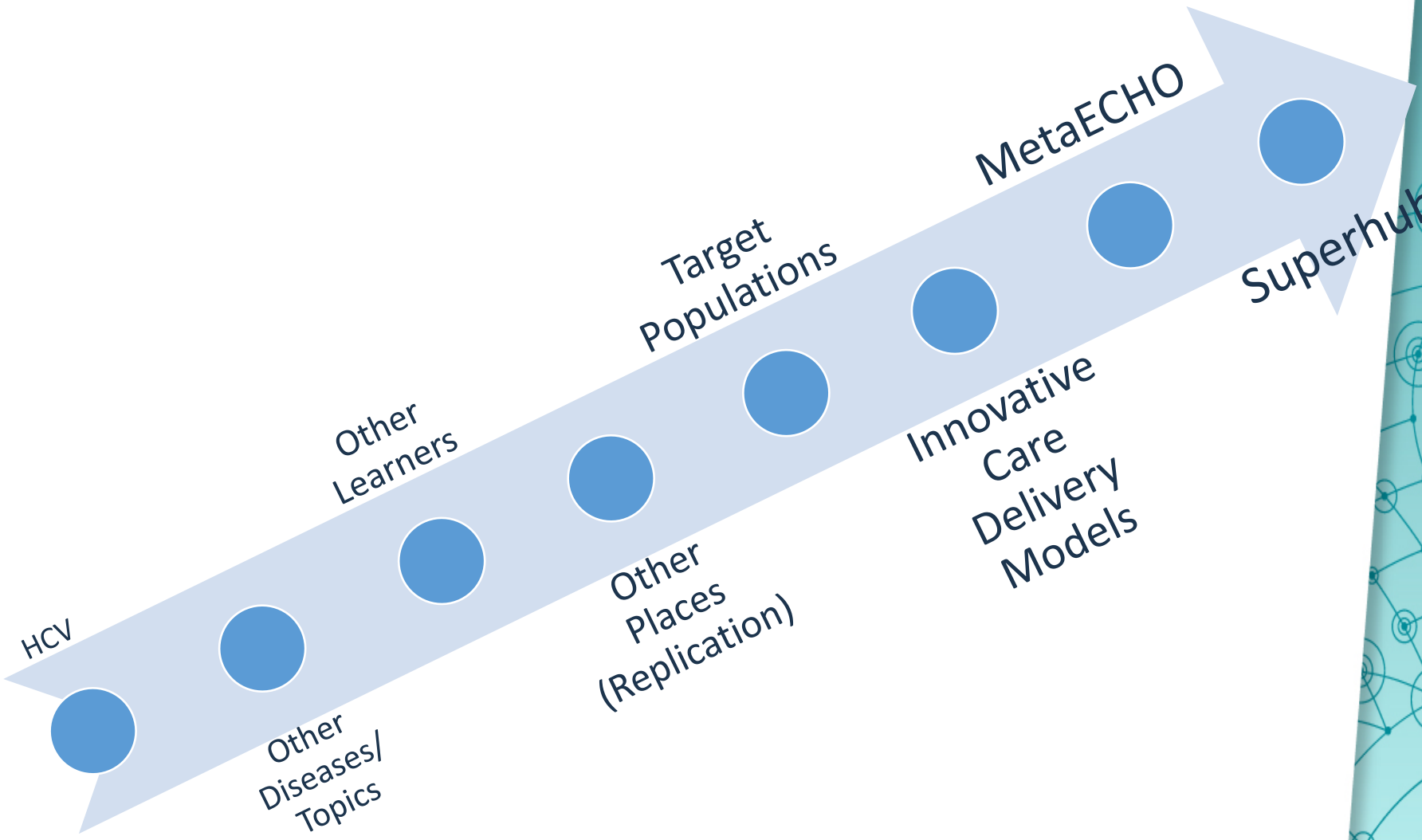
Evolution of Project ECHO: how do all the parts fit together?

HCV

HCV was our flagship Program




HCV
Other Diseases/ Topics
Other Learners
Other Places (Replication)
Target Populations
Innovative Care Delivery Models
MetaECHO
Superhubs

ECHO Secrets of Success: #1 Pick the Right Topic

- Community needs/gaps in care
- Availability/interest of hub team members
- Fits the interests of community providers/spoke champions
- More or less protocol-driven?
- External motivators: chronic pain, HCV, rheumatology, HIV
- Some diseases/topics find more traction
- Not too broad, not too narrow

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ECHO Secrets of Success:
#2 Pick the Right Champions/Facilitators

Transformational Learning REQUIRES Transformational Leadership: choose your mentors carefully

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ECHO Secrets of Success: #3 Get good help and Train them well!

Multi-disciplinary hub team members:

- Specialist(s) (.1 up to .5 if they serve as project director)
- Pharmacist (.1 or .2)
- Psychologist, Psychiatrist or Social Worker (.1 or .2)
- Others, depending on disease (.1 or .2)

Hub staff to run the teleECHOclinics:

- Clinic coordinator or Administrative assistant (.5 or 1.0)
- IT User Support (.5)
- RN (.5) whenever possible

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ECHO Secrets of Success: #4 Always focus on the needs of your learners/participants

The objective of the ECHO model is to create workforce multiplication and capacity building, with all team members working at the top of their game and the height of their scope of practice.

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Lessons learned at Project ECHO

Problems

- Not following the ECHO Model
- Presuming ECHO is just curbside consultation instead of educational capacity building
- Presuming ECHO is easy
- Assuming superiority over primary care or generalists
- Assuming that collegiality occurs without effort
- Being inaccessible to partners
- Not optimizing videoconferencing connectivity, or user support
- Not engaging interdisciplinary team

Successful replications

- Face to face relationships are crucial before technology is introduced
- Get technical assistance from experienced ECHO clinicians
- Careful planning for the desired outcomes
- Don’t depend on philanthropy: look for third-party (insurance) payers and government revenue sources.

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ECHO Replication: International Case Presentation

Sarah Zalud-Cerrato, MPH
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India has a tremendous need for new methods of cancer screening and care delivery

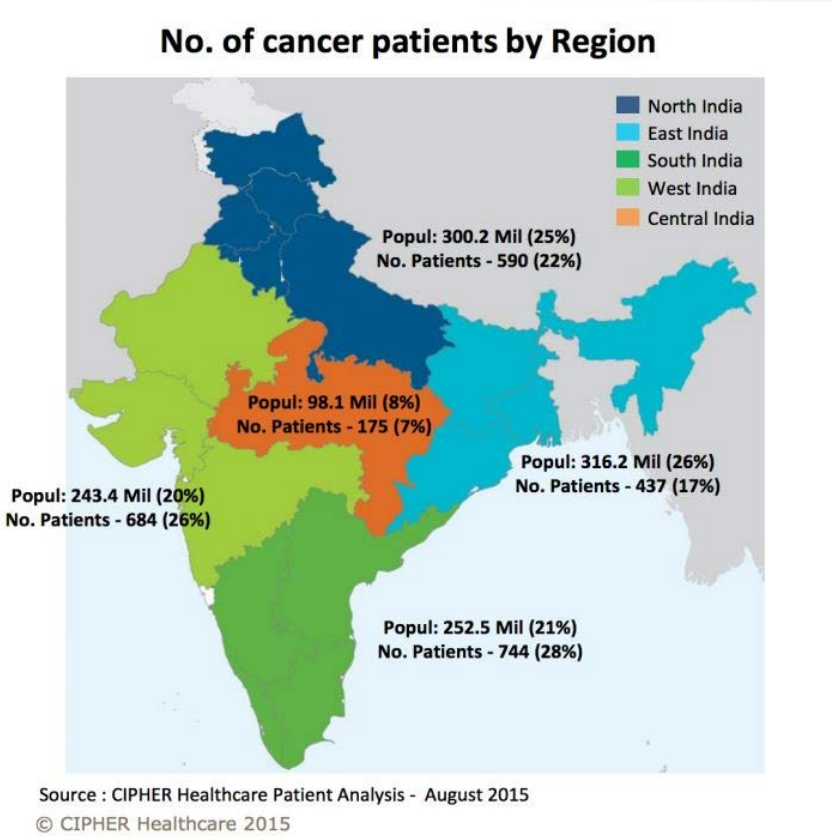
Problem:

There is 1 oncologist per 1,600 cancer patients in India.

Cancer mortality rates in India are 4-6 times higher than those of the US.

Only 12% of cancers in India are detected at an early stage.

8 of the cities in India have 40-60% of the specialist cancer facilities



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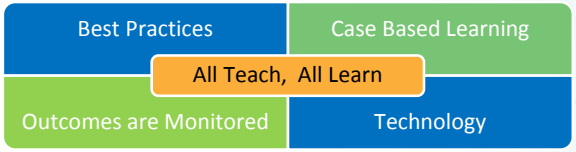
The ECHO Model – A New Way



- The National Institute of Cancer Prevention and Research in India is using the ECHO model to train ASHA workers (like CHWs) to provide cancer screening
- Goals included:
  - Empowering CHWs to carry out screening independently
  - Maximize the reach of the CHWs in the community
- Provide cervical, breast and oral cancer screening to extend reach of services to rural areas

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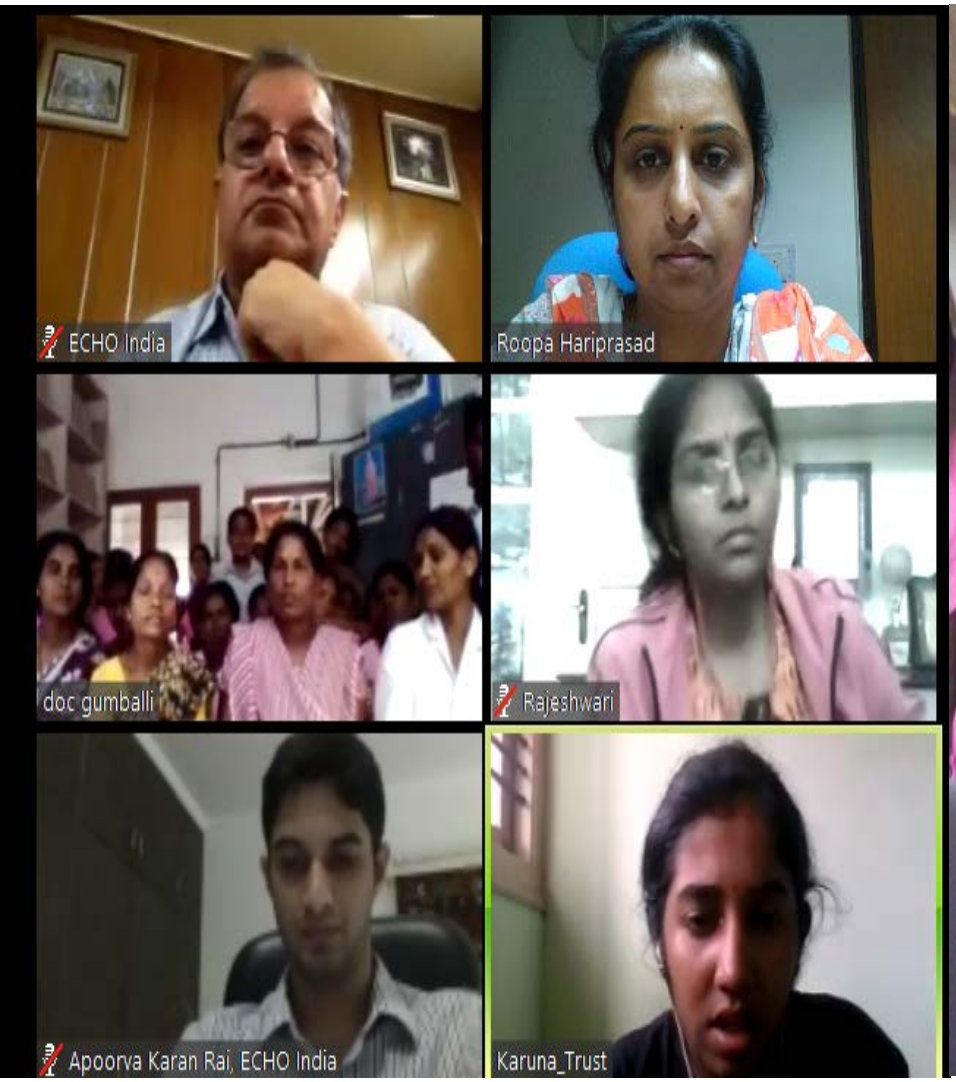
The ECHO Model in Action



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Cancer Screening Programs for CHWs

- Provided 5 days of intensive hands-on training
  - Cancer screening tests
  - Skill practice exercises
- Weekly teleECHO sessions
  - Reiterate lessons learned in training
  - Provide an opportunity for real-life case study discussion
  - Feedback from experts in a constructive manner
  - Resource Sharing
  - Expert Presentations

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Topics Covered During Cancer Screening Program

- **Cervical Cancer Screening**
  - Epidemiology, Risks & Symptoms
  - Screening tests modalities
  - Screening Guidelines
  - Evaluation of Screen Positives
  - Treatment modalities
  - Staging & Treatment of Invasive Ca
  - HPV Vaccination
- **Breast Cancer Screening**
  - Modalities of Screening for Breast cancer – CBE/ SBE
  - Modalities of treatment of benign & malignant lesions
- **Oral Cancer Screening**
  - Modalities of Oral cancer Screening
  - Treatment of OPMDs and Malignant oral lesions
  - Tobacco Cessation: Pharmacological/ Non-pharmacological Mngt.
  - m-Health in Tobacco Cessation

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Lessons Learned

- Implementing ECHO in international settings is possible and very effective, even in rural areas where bandwidth may be more limited
- Existing CHWs or other auxiliary healthcare staff can receive additional training and provide these services without an additional burden on the health system
  - Can alleviate the need to hire additional healthcare personnel
- ASHAs or CHWs know the regional languages, cultures and customs, which is imperative to the success of any screening program
- Providers reported increased knowledge as a result of their participation in these ECHO sessions
- Identifying a follow-up facility to provide care once positive screens are identified is critical.

ECHO Replication: Domestic Case Presentation

Lucca Cirolia, BA

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Comprehensive Program for Cervical Cancer Prevention in Texas

Project ECHO as a successful platform to increase knowledge, collaboration, and provider satisfaction in support of initiatives to increase clinical capacity

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

The University of Texas MD Anderson Cancer Center

MD Anderson *is one of the world's most respected centers focused on cancer patient care, research, education, and prevention. It is ranked No. 1 for cancer care in the U.S. News & World's Report's Best Hospital survey, and is one of only 49 comprehensive cancer centers designated by the National Cancer Institute*

- MD Anderson is designated as the first **Project ECHO Superhub for oncology**.
  - Operationalized by the Cancer Prevention & Control Platform, within the Moon Shots Program™, Department of Gynecologic Oncology, and other key teams
  - Trains other institutions and organizations to become ECHO hubs
- **Cancer Prevention & Control Platform** accelerates the development, dissemination, and amplification of evidence-based strategies, community services, policy interventions, and knowledge targeting measurable reductions in cancer incidence and mortality at a population level

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Background: Cervical Cancer in Rio Grande Valley, Texas

Cervical cancer rates are 30% higher compared with non-border counties in Texas

- No public hospital
- 40% fewer doctors and nurse practitioners in comparison with the Texas average.
- LEEP treatment for uninsured patients for treatment of dysplasia only available one day per month (Ob-Gyn travels from UTMB-Galveston to McAllen)
- <10% of eligible women receiving cervical cancer screening

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Comprehensive Program for Cervical Cancer Prevention in Texas

Goal: Improve cervical cancer screening and prevention in low-resource areas of Texas

- **Program Strategy:** Multi-system partnerships to increase cervical cancer prevention capacity through
  - **Patient navigation:** Reduce loss to follow-up rates, increase number of women screened
  - **Patient education:** Cervical cancer prevention outreach at the community level
  - **Provider education:** In person hands-on training for colposcopy, biopsy and LEEP, mentoring of local providers, and telementoring using Project ECHO

***Comprehensive program funded by**: Cancer Prevention Research Institute of Texas, The University of Texas MD Anderson Cancer Center Moon Shots Program™, philanthropic funds, The Prevent Cancer Foundation, and The Raul Tijerina Foundation*

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Implementation of Project ECHO is part of a comprehensive strategy to reduce cervical cancer rates

The Cervical Cancer Prevention Project ECHO (CCP):

- Convenes advance practice providers and physicians from medically-underserved regions in Texas to discuss clinical guidelines and best practices for cervical cancer prevention
- Created and operationalized in 2014 alongside complementary program strategies
- Reach: 110 unique providers (4/2014-present); 2,000+ hours of education and case-based telementoring
  - Frequency: Sessions held every two weeks
  - Duration: 1 hour
  - Average number of attendees per session: 23

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Cervical Cancer Prevention ECHO Concurrent Curriculum

- Evidence based guidelines for management of abnormal screening tests
- HPV Vaccination
- HPV screening
- Colposcopy
- LEEP
- Cancer Management
- Guest lectures include: Management of cervical cancer in low-resource settings, fertility treatment in cancer survivors, breast cancer algorithms, family planning

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Outcomes: Comprehensive Program for Cervical Cancer Prevention in Texas

Program Level Metrics

- Number of women screened: 16,132
  - Number of women appropriately managed: 1,991 (Colposcopy for abnormal results)
  - 384 women treated with LEEP
  - 107 women diagnosed with CIN2/3 (thereby preventing cancer)
  - 6 women diagnosed and treated for early stage cervical cancer diagnosed through the program
- Number of women educated in cervical cancer screening and HPV vaccination: 10,703

ECHO Metrics

Provider Level Metrics

- Provider satisfaction
- Provider self-efficacy
- Provider knowledge on management of preinvasive disease

Process Metrics

- Attendance
- Number of cases presented
- Satisfaction with ECHO clinics

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HEALTH SCIENCES ECHO

Hub Team

The University of Texas MD Anderson Cancer Center:

Department of Gynecologic Oncology

- Kathleen Schmeler, MD, Program Lead
- Andrea Milbourne, MD, Co-lead
- Mila Salcedo, MD, Visiting Scientist, Santa Casa de Misericordia de Brazil

Cancer Prevention & Control Platform

- Melissa Lopez, MS, Program Director, Cervical Cancer in Resource-Limited Settings
- Ellen Baker, MD, MPH, Lead Technical Officer
- Payal Pandit Talati, MPH, Program Director
- Anna Brewster, MS, Program Director
- Michael T. Walsh, Jr., Executive Director

The University of Texas Medical Branch:

- Ana Rodriguez, MD, Co-lead

The University of Texas Rio Grande Valley Medical School:

- Tony Ogburn, MD, Faculty

The University of Texas Health Science Center Houston:

- Maria Daheri, RN

The University of Texas School of Public Health – Brownsville

- Sue Fisher-Hoch, MD
- Joseph McCormick, MD

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
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Our Partners (Spoke sites)

Federally Qualified Health Centers

- Su Clinica (Brownsville, Harlingen)
- Mercy Ministries (Laredo)
- Gateway Community Health Center (Laredo)
- Grayson County Clinic (Sherman)

Hospitals

- Lyndon B. Johnson Hospital (Houston)

Residency Programs

- UTRGV Medical School (Edinburg)

Mobile Units

- UTHSC- Mobile Van (RGV)

International

- Instituto del Seguro Social (Mexico)
- Hospital General San Juan de Dios (Guatemala)
- Basic Health International (El Salvador)

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For institutions interested in training on the application of Project ECHO to oncology, the next training is May 3 – 4, 2018.

Please contact Melissa S. Lopez for more information: Mslopez1@mdanderson.org
Direct: 713 – 794 – 5182

mdanderson.org/ProjectECHO

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ECHO Visioning Workshop

1. **What is the topic you would like to tackle with ECHO?**
2. Imagine a "dream team" of multidisciplinary experts that you would like to "bring to the table" if money was not an obstacle. This is your ECHO hub. **What kind of expertise would you put on your ECHO hub team?**
3. **Who are the community participants or learners/"spokes" for this envisioned ECHO**? And where do they do their work?
4. In order to improve access to care, you have to change the skills, knowledge and care practices of your learners. **What do you hope your community participants will be able to DO – or DO BETTER – after one year of participating in your ECHO on a regular basis?**
5. **How will you assess impact?**
6. **What questions or challenges do you have or anticipate?**

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Partnership Documents: Guiding Principles

Collaboration with ECHO requires:

Replication Statement of Collaboration – Front-end document that outlines the roles and responsibilities of both partners in any replication collaboration.

IP Terms of Use Contract – Legally binding agreement that details all the elements of the Statement of Collaboration, with a specific focus on Intellectual Property issues.

What do you agree to?

1. Follow the ECHO mission and model
2. Use the ECHO name and trademarks
3. Mutual expectation of sharing
4. Use iECHO
5. No selling ECHO IP to outside 3rd parties
6. Non-exclusivity

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Steps for Replication

- Orientation is just the beginning…
- Next you sign partnership documents
- Begin planning budget and seek funding
- Design the project (target audience, curriculum, resources, community needs, evaluation strategy and tools …)
- Develop your team – experts and staff
- Bring a team for full training (3 days– Immersion)
- Continue to develop curriculum, begin to recruit spokes/participants
- Build organizational buy-in
- Practice before you launch – get feedback
- Launch!
- Continue to seek input and reflection, constant QI
- Publicize your success – money follows successful ECHOs (not the other way around)

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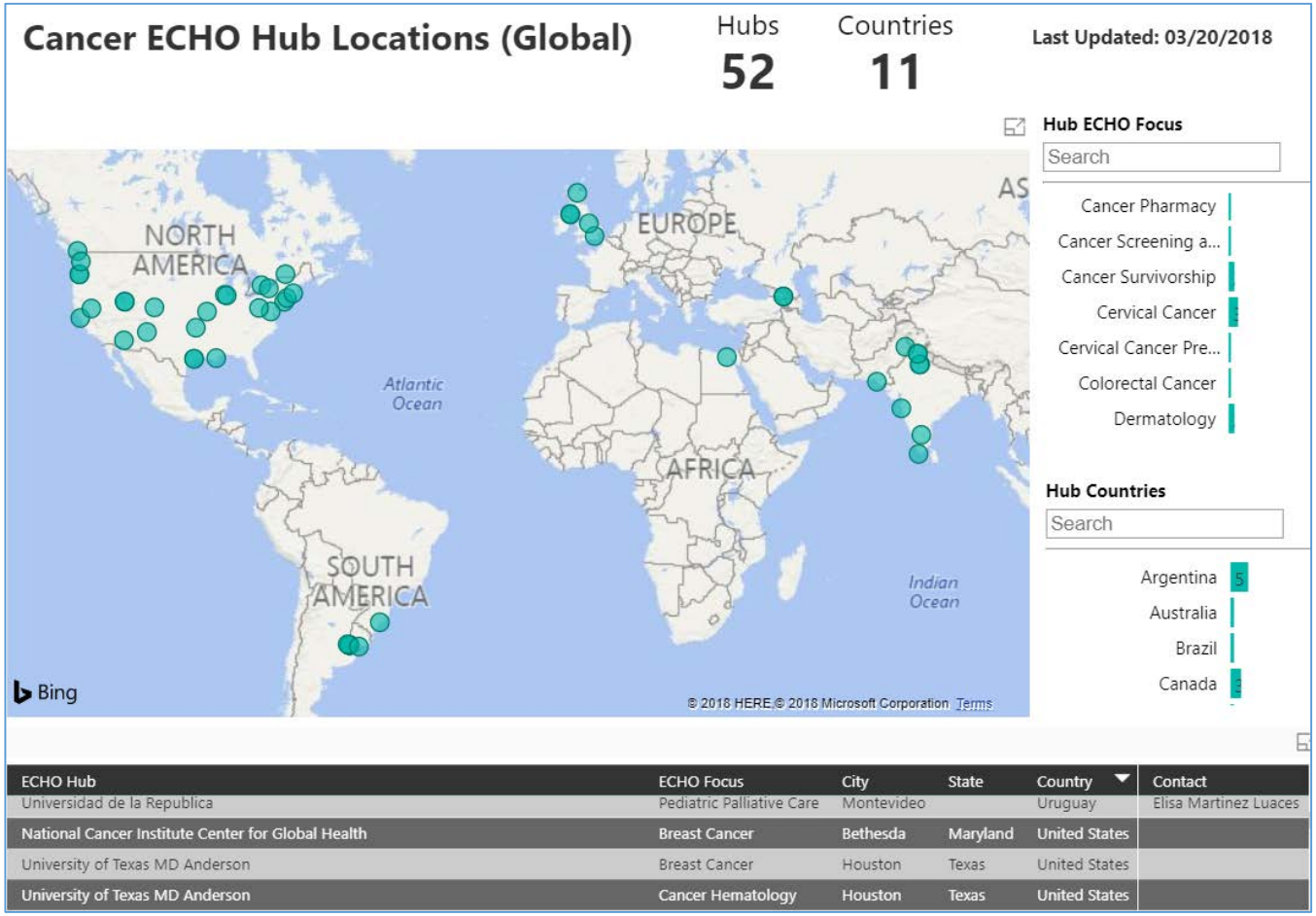
Cancer ECHO Interactive Map



- Tracks hub launches and locations
- Filters based on location or ECHO focus (e.g. Cervical Cancer Prevention).
- Tool for potential partners / spokes to connect with active ECHO hubs

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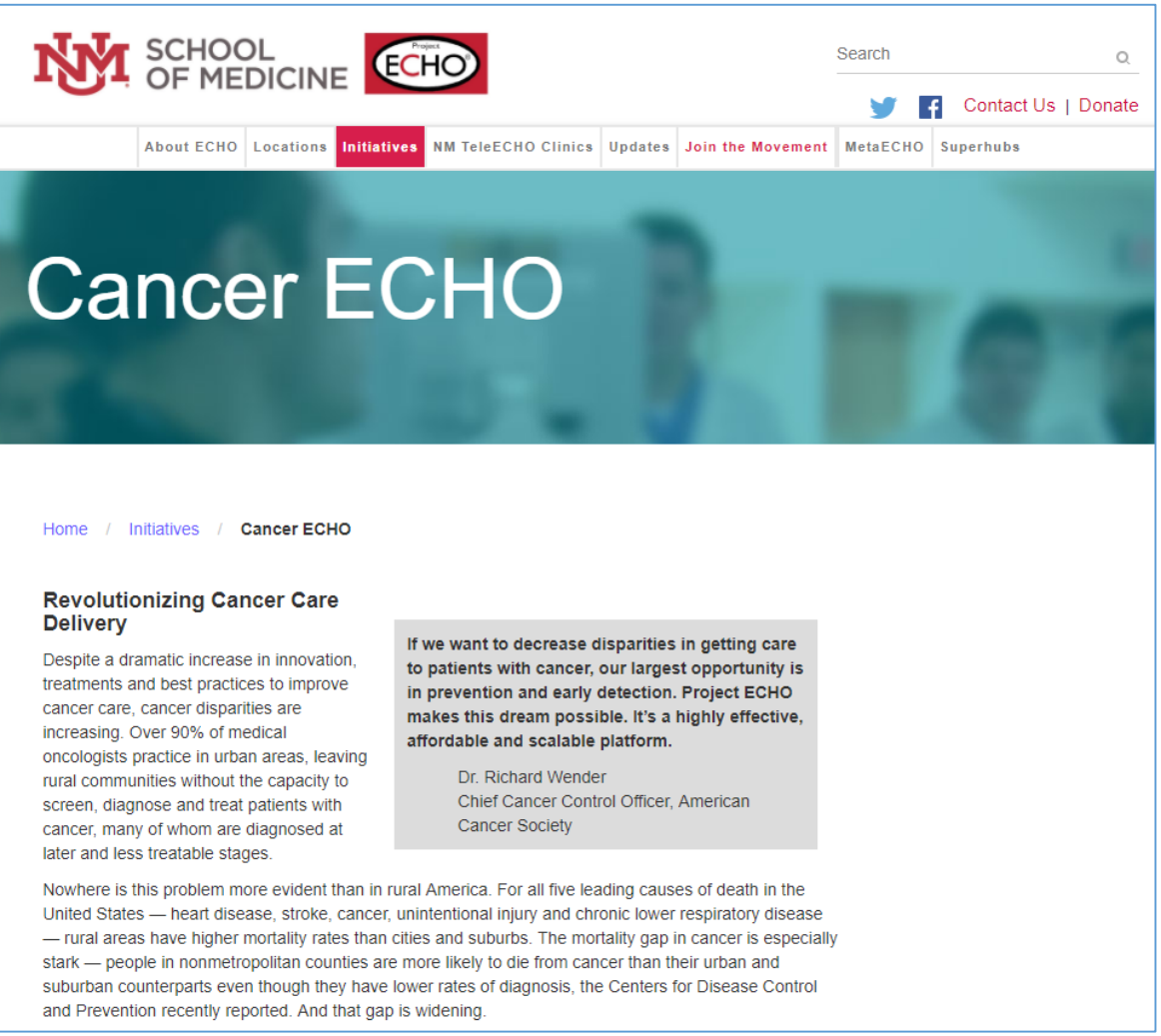
Cancer Dashboard Snapshot



echo.unm.edu/cancer-echo/

- Learn more about the Cancer Initiative
- Read more about the effectiveness of ECHO for cancer care delivery
- Attend Training
- Start an ECHO

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Additional Reference Materials

- **Read More About the Effectiveness of ECHO for Cancer**
  - Quality medical care in rural communities is out of reach for millions, The Hill, 2018
  - Project ECHO: An Effective Means of Increasing Palliative Care Capacity, American Journal of Managed Care; Evidence Based Oncology, 2017
  - Building Virtual Communities of Practice for Health, The Lancet, 2017
  - Ensuring Equitable Cancer Care for All Patients, The ASCO Post, 2017
  - Project ECHO: A Telementoring Program for Cervical Cancer Prevention and Treatment in Low-resource Settings, Journal of Global Oncology ePub, 2016
  - Review additional research on the ECHO model here.
- **Learn More About Project ECHO**
  - **Attend Introduction:** Join us for a 90 minute ECHO Introduction videoconference to learn more about the ECHO model (held monthly).
  - **Become an ECHO Partner:** Learn how to Start an ECHO and attend ECHO Immersion (a free, three day on-site training at the ECHO Institute in Albuquerque, New Mexico, U.S.A.)

Contact us at cancerECHO@salud.unm.edu to explore opportunities for collaboration with our Cancer ECHO team. Learn more about our partnership with the Bristol-Myers Squibb Foundation and their support of this initiative.

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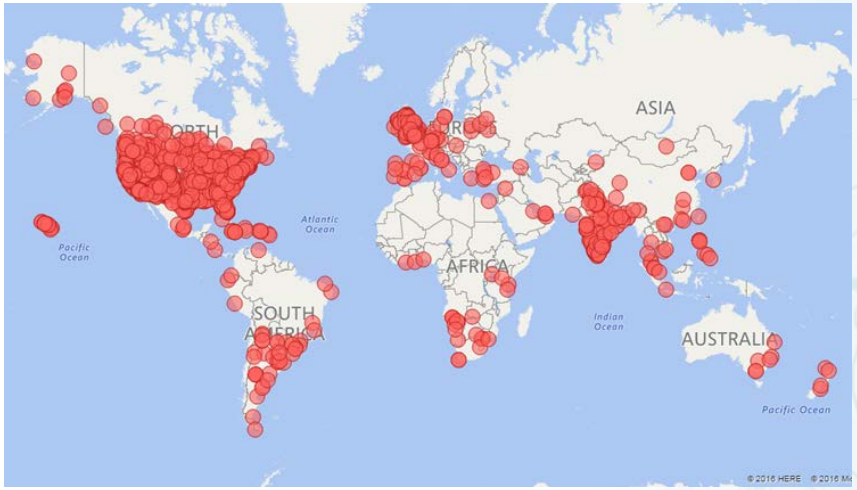
TeleECHO Video Conferencing Application



- ECHO transitioned to cloud-based, Zoom solution
  - Designed to connect mobile, desktop and room systems
  - Optimized for connecting to low bandwidth, rural areas
  - Sized for 200 person meeting capacity
  - Encrypted (128 bit) for HIPAA-compliant connections
  - Configured w/ breakout rooms, whiteboards

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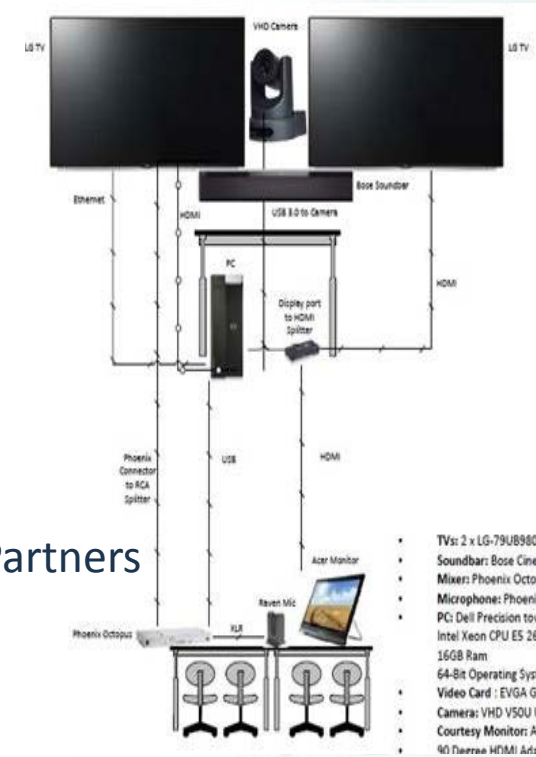
TeleECHO "Hub" Technology

- Essential ECHO "Hub" Technology Elements
  - Microphone System
  - Speaker System
  - Webcam
  - Two High Def Displays
  - Computer
  - Zoom
  - Network Connection

Free to Partners



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TeleECHO "Spoke" Technology

- Essential ECHO "Spoke" Technology Elements w/ Costs
  - Microphone System
  - Speaker System
  - Webcam
  - One High Def Display
  - Computer
  - Zoom Partners
  - Network Connection

Free to

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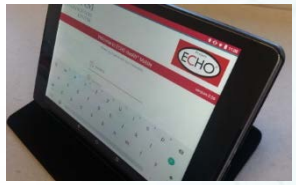
TeleECHO "Spoke" Technology and Costs

- **"ECHO-on-the-Cheap" Spoke = $0**
  - Mobile Devices (Laptop, Smart Phone or Tablet)



  - Zoom

  - Network Connection

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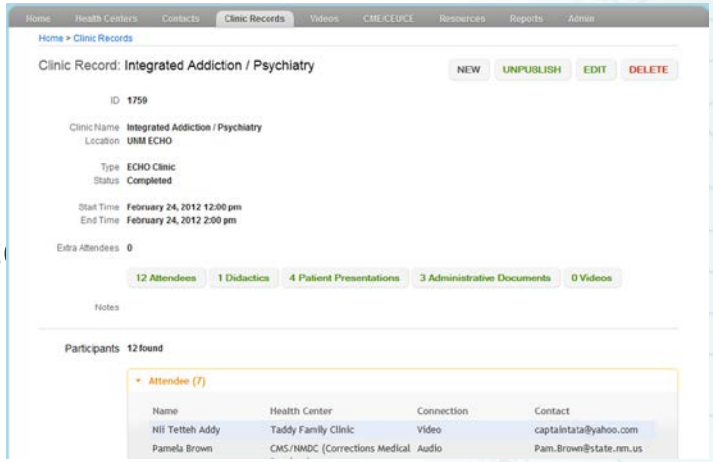
iECHO: TeleECHO Program Management Tool

- iECHO is the only tool that we require partners to use
- Main iECHO functionality:
  - Manage and audit TeleECHO™ clinics
  - Collect data on TeleECHO™ clinic performanc
- Web-based, large-scalability to support:
  - Contact Management
  - Activity Tracking
  - Reporting



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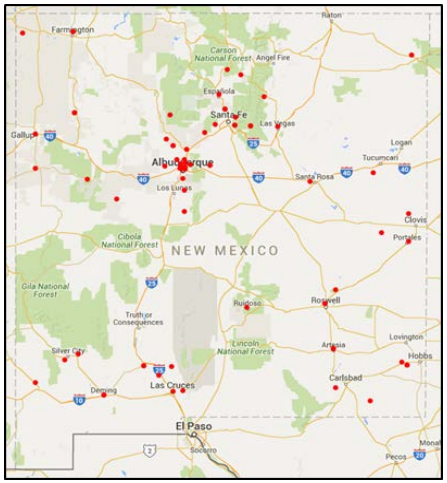
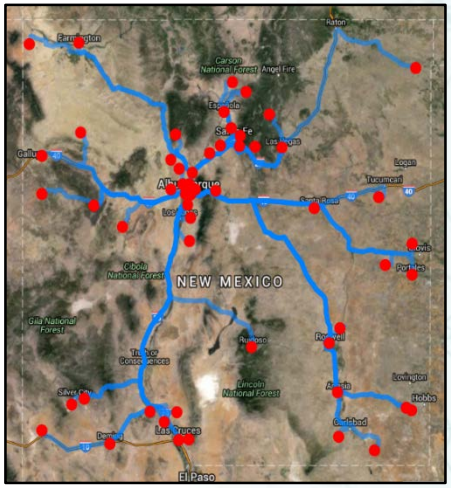
iECHO: Why we require Partners use it

- Can show spread in numbers, geography and types of TeleECHO clinics
- Can provide data to support new funding requests

Example study using iECHO data:

- ECHO New Mexico (2006-15)
- 9,707 patient presentations
- 26 different disease topics
- 61 unique “spoke” locations
- 2.43 million miles saved
- 38,878 hours saved
- Avg Savings: 250 Miles, 4 Hrs





- Aggregating information across other iECHO instances be will valuable to support determining the true impact of ECHO movement

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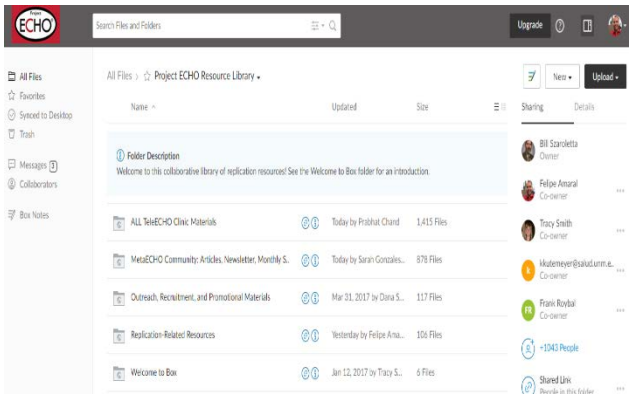
ECHO Box: File Sharing and Storage



ECHO Box at projectecho.box.com is a shared resource for MetaECHO Community that can be enormously useful for sharing didactics, documents, marketing materials, etc.

ECHO's Replication group has established a Box folder structure to enable uploading, storage and sharing of replication documents amongst Project ECHO partners.

To become connected to the ECHO Box resource:

- Partners establish their own free personal Box account
- Partners sign an appropriate use document (to ensure no PHI or other sensitive information will be uploaded)
- Project ECHO shares access the appropriate folder(s)

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Why is evaluation important?

- Validates or discerns value
  - Evidence based: Backs program theory with evidence
- Supports continuous improvement
  - Includes providing feedback to the stakeholders and program managers to make adjustments, adaptations
- Assists with funding
- If published, can support the growth of the movement
  - Replication; sustainability

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Need to plan from the start

- Evaluation needs to be considered and planned from the start
- A **logic model** can be a helpful tool to plan your project and plan your evaluation

Can measure / report at any of these levels
Plan evaluation to assess desired outcomes

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Think about level

Moore's levels of outcomes for medical education

Level	Outcome	Definition
1	Participation	Attendance
2	Satisfaction	Satisfaction
3A	Learning: declarative	Knows (what)
3B	Learning: procedural	Knows how
4	Competence	Shows how
5	Performance	Change in practice
6	Patient health	Change in patient health
7	Community Health	Change in population health

Cost effectiveness ROI

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Existing Data Sources

- **iECHO / ECHO Admin statistics**
- **Records** (chart reviews, referrals, travel savings)
- **Existing databases**
  - Electronic health records
  - Insurance claims data (e.g., Medicaid, managed care organizations)

Are there any existing databases for healthcare-related data that you can think of in your country/state/organization?

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Work to Build Upon – Publications & Data Analyses

- 100+ publications and growing
  - Across about 20 partners and about 25 unique topics
  - Majority evaluate levels from participation through self-efficacy
  - Four include patient health outcomes
    - UNM: NEJM study on HCV (2011)
    - Beth Israel Deaconess Medical Center: two JAMDA studies on geriatric mental health (2014, 2016)
    - VHA: Journal of Telemedicine and Telecare study on endocrinology (2015)
- Cost effectiveness analyses
  - Conf. paper on HCV that showed cost effectiveness at $3,500 per QALY
  - Travel data in some papers that could be translated to dollars

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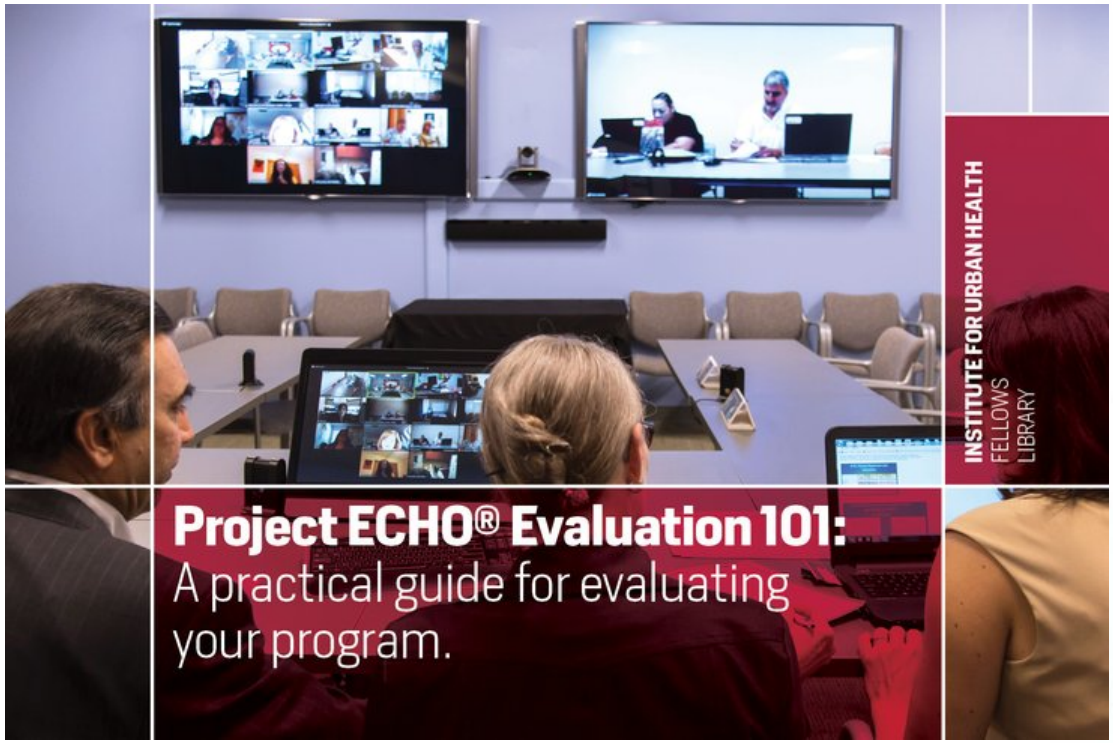
New York Academy of Medicine



http://www.nyam.org/publications/

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