How to Democratize Medical Knowledge and Bring Best-Practice Care to One Billion People by 2025

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

Our goal is to improve the lives of 1 billion people by 2025.
ECHO works to reduce cancer disparities by amplifying the impact of cancer care specialists and experts.
The Problem (in cancer and beyond)

**Problem 1:** Billions of people lack access to high quality healthcare at the right place at the right time

**Problem 2:** Medical knowledge is growing exponentially
We are creating new treatments, innovations, interventions and best practices to prevent and treat cancer. And yet disparities are growing… Inequalities in access to care are actually inequalities in access to knowledge.
Moving Knowledge Instead of People
ECHO’s Origin: HCV in New Mexico

- 70 million in the world infected with HCV
- In New Mexico estimated number was greater than 28,000 in 2004. By 2017, 53,000 patients have tested positive for HCV antibody

- In 2004 less than 5% of patients in NM had been treated
  - 2,300 prisoners were HCV positive (~40% of those entering the corrections system), none were treated
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)
**Good** news…

- Curable in 70% of cases

**Bad** news…

- Severe side effects:
  - anemia (100%)
  - neutropenia >35%
  - depression >25%
  - No Primary Care Physicians treating HCV
Amplication – Use **Technology** to leverage scarce resources

Share **Best Practices** to reduce disparity

**Case Based Learning** to master complexity

Web-based **Database** to Monitor Outcomes
What is Best Practice in Medicine

- Algorithms/Protocols/Guidelines
- Check Lists
- Process and Task Sharing
- Wisdom Based on Experience
ECHO IS: Dynamic Learning Loops

• Interactive, Engaging Learning Environment

• Co-management of Cases

• **Learning by doing** – guided practice

• Learning from didactics

• Learning from each other

• Collaborative Problem Solving

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ECHO vs. Telemedicine

TeleECHO™ Clinic

ECHO supports community based primary care teams

Patients reached with specialty knowledge and expertise

Expert hub team

Learners at spoke site

Traditional Telemedicine

Specialist manages patient remotely

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Technology Facilitates Knowledge Sharing

- **Standard Videoconferencing Hardware** (camera, microphone, screen, computer, internet access)
  - ZOOM
    - Videoconferencing Software
    - Video Recording System
  - ECHO BOX
    - Online ECHO archive of all shared resources and materials
- **iECHO** – Electronic TeleECHO Program Management Solution
## Project ECHO Clinicians
### HCV Knowledge Skills and Abilities (Self-Efficacy)

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

<table>
<thead>
<tr>
<th>Community Clinicians N=25</th>
<th>BEFORE Participation MEAN (SD)</th>
<th>TODAY MEAN (SD)</th>
<th>Paired Difference (p-value) MEAN (SD)</th>
<th>Effect Size for the change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BEFORE Participation MEAN (SD)</td>
<td>TODAY MEAN (SD)</td>
<td>Paired Difference (p-value) MEAN (SD)</td>
<td>Effect Size for the change</td>
</tr>
<tr>
<td>1. Ability to identify suitable candidates for treatment for HCV.</td>
<td>2.8 (1.2)</td>
<td>5.6 (0.8)</td>
<td>2.8 (1.2) (&lt;0.0001)</td>
<td>2.4</td>
</tr>
<tr>
<td>2. Ability to assess severity of liver disease in patients with HCV.</td>
<td>3.2 (1.2)</td>
<td>5.5 (0.9)</td>
<td>2.3 (1.1) (&lt;0.0001)</td>
<td>2.1</td>
</tr>
<tr>
<td>3. Ability to treat HCV patients and manage side effects.</td>
<td>2.0 (1.1)</td>
<td>5.2 (0.8)</td>
<td>3.2 (1.2) (&lt;0.0001)</td>
<td>2.6</td>
</tr>
</tbody>
</table>
## Project ECHO Clinicians
### HCV Knowledge Skills and Abilities (Self-Efficacy)

<table>
<thead>
<tr>
<th>Community Clinicians</th>
<th>BEFORE Participation MEAN (SD)</th>
<th>TODAY MEAN (SD)</th>
<th>Paired Difference (p-value) MEAN (SD)</th>
<th>Effect Size for the change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N=25</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4.</strong> Ability to assess and manage psychiatric co-morbidities in patients with hepatitis C.**</td>
<td>2.6 (1.2)</td>
<td>5.1 (1.0)</td>
<td>2.4 (1.3) (&lt;0.0001)</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>5.</strong> Serve as local consultant within my clinic and in my area for HCV questions and issues.**</td>
<td>2.4 (1.2)</td>
<td>5.6 (0.9)</td>
<td>3.3 (1.2) (&lt;0.0001)</td>
<td>2.8</td>
</tr>
<tr>
<td><strong>6.</strong> Ability to educate and motivate HCV patients.**</td>
<td>3.0 (1.1)</td>
<td>5.7 (0.6)</td>
<td>2.7 (1.1) (&lt;0.0001)</td>
<td>2.4</td>
</tr>
</tbody>
</table>

(continued)
### 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

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean Score (Range 1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project ECHO® has diminished my professional isolation.</td>
<td>4.3</td>
</tr>
<tr>
<td>My participation in Project ECHO® has enhanced my professional satisfaction.</td>
<td>4.8</td>
</tr>
<tr>
<td>Collaboration among agencies in Project ECHO® is a benefit to my clinic.</td>
<td>4.9</td>
</tr>
<tr>
<td>Project ECHO® has expanded access to HCV treatment for patients in our community.</td>
<td>4.9</td>
</tr>
<tr>
<td>Access, <strong>in general</strong>, to specialist expertise and consultation is a major area of need for you and your clinic.</td>
<td>4.9</td>
</tr>
<tr>
<td>Access to <a href="#">HCV specialist</a> expertise and consultation is a major area of need for you and your clinic.</td>
<td>4.9</td>
</tr>
</tbody>
</table>
### Views of Participating Providers, Health Workers, And Educators  
1 = Strongly Disagree, 5 = Strongly Agree

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

Source: “Partnering Urban Academic Medical Centers and Rural Primary Care Clinicians to Provide Complex Chronic Disease Care,” Arora, et al., Health Affairs 2011
## Participants’ Views of Patient Benefits

1 = Strongly Disagree, 5 = Strongly Agree

<table>
<thead>
<tr>
<th>Patient Benefit</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>My participation in Project ECHO benefits patients under my care whom I co-manage with ECHO specialists.</td>
<td>4.45</td>
</tr>
<tr>
<td>The patients under my care whom I co-manage with ECHO specialists receive best-practice care.</td>
<td>4.43</td>
</tr>
<tr>
<td>My participation in Project ECHO benefits the patients under my care whom I do not co-manage with ECHO specialists.</td>
<td>4.19</td>
</tr>
<tr>
<td>I apply what I have learned about best practices through Project ECHO to all of my patients with similar chronic diseases.</td>
<td>4.45</td>
</tr>
<tr>
<td>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.</td>
<td>4.23</td>
</tr>
</tbody>
</table>

Source: “Partnering Urban Academic Medical Centers and Rural Primary Care Clinicians to Provide Complex Chronic Disease Care,” Arora, et al., Health Affairs 2011
Outcomes of Treatment for Hepatitis C Virus Infection by Primary Care Providers

Sanjeevanora, M.D., Karla Thornton, M.D., Glen Murata, M.D., Paulina Deming, Pharm.D., Summers Kalishman, Ph.D., Denise Dixon, Ph.D., Brooke Parish, M.D., Thomas Burke, B.S., Wesley Pak, M.B.A., Jeffrey Dinkelberg, M.D., Martin Kistin, M.D., John Brown, M.A., Steven Jenkins, M.D., Miriam Komaromy, M.D., and Clifford Qualls, Ph.D.

ABSTRACT

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

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

RESULTS
A total of 57.5% of the patients treated at the UNM HCV clinic (84 of 146 patients) and 58.2% of those treated at ECHO sites (152 of 261 patients) had a sustained viral response difference in rates between sites, 0.7 percentage points; 95% confidence interval, −0.2 to 1.6; P=0.08. Among patients with HCV genotype 1 infection, the rate of sustained viral response was 45.3% (38 of 83 patients) at the UNM HCV clinic and 49.7% (77 of 154 patients) at ECHO sites (P=0.57). Serious adverse events occurred in 13.9% of the patients at the UNM HCV clinic and in 6.9% of the patients at ECHO sites.

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

<table>
<thead>
<tr>
<th>Outcome</th>
<th>ECHO</th>
<th>UNMH</th>
<th>P-value</th>
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<tbody>
<tr>
<td></td>
<td>N=261</td>
<td>N=146</td>
<td></td>
</tr>
<tr>
<td>Minority</td>
<td>68%</td>
<td>49%</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>SVR* (Cure) Genotype 1</td>
<td>50%</td>
<td>46%</td>
<td>NS</td>
</tr>
<tr>
<td>SVR* (Cure) Genotype 2/3</td>
<td>70%</td>
<td>71%</td>
<td>NS</td>
</tr>
</tbody>
</table>

*SVR=sustained viral response

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.
Hepatitis C Treatment in New Mexico

2004

UNMHSC Center for Digestive Diseases Clinic
Treated Approximately 100 patients/year

2016

Project ECHO Partners
Treat Approximately 1,100 patients/year

UNMHSC Center for Digestive Diseases Clinic
Treated Approximately 250 patients/year

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Selection Criteria Beyond HCV

- Common diseases or issues
- Management is complex
- Evolving treatments and medicines
- High societal impact (health and economic)
- Serious outcomes of untreated disease
- Improved outcomes with disease management
### Successful Expansion into Multiple Topics

<table>
<thead>
<tr>
<th></th>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THURS</th>
<th>FRI</th>
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<tbody>
<tr>
<td>Rheum.</td>
<td><strong>Rheumatology</strong></td>
<td></td>
<td><strong>Community Health Workers</strong></td>
<td><strong>CDC Good Health and Wellness in Indian Country</strong></td>
<td><strong>Opioid Addiction</strong></td>
</tr>
<tr>
<td></td>
<td>• Bankhurst</td>
<td><strong>HBV</strong></td>
<td>• CHW Team</td>
<td>• Struminger</td>
<td>• Komaromy</td>
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<tr>
<td>Tuberc.</td>
<td><strong>Tuberculosis</strong></td>
<td></td>
<td><strong>Endocrinology &amp; Diabetes</strong></td>
<td><strong>Chronic Pain and Opioid Management</strong></td>
<td><strong>Nurse Practitioner/ Certified Midwife Primary Care</strong></td>
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<td></td>
<td>• Burgos</td>
<td><strong>Bone Health</strong></td>
<td>• Bouchonville</td>
<td>• Comerci</td>
<td>• Van Roper</td>
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<td>Cardiol.</td>
<td><strong>Cardiology</strong></td>
<td><strong>Crisis Interv</strong></td>
<td><strong>Miners' Wellness</strong></td>
<td><strong>Prison Peer Education Program</strong></td>
<td><strong>Integrated Addictions and Psychiatry (IAP)</strong></td>
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<tr>
<td></td>
<td>• Achrekar, Anderson &amp; Yatskowitz</td>
<td><strong>for Community Policing Agencies</strong></td>
<td>• Sood</td>
<td>• Thornton</td>
<td>• Komaromy</td>
</tr>
<tr>
<td>Repro.</td>
<td><strong>Reproductive Health</strong></td>
<td><strong>Seizures and Spells</strong></td>
<td><strong>Hepatitis C (HCV)</strong></td>
<td><strong>HIV/ HCV Corrections</strong></td>
<td><strong>Antimicrobial Stewardship</strong></td>
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<tr>
<td></td>
<td>• Singh</td>
<td></td>
<td>• Imerman</td>
<td>• Iandiorio &amp; Thornton</td>
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<td></td>
<td></td>
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<td></td>
<td>• Arora</td>
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</tbody>
</table>
This applies in medicine and beyond.
University of Rochester Geriatrics Project: Reduced ED costs for those diagnosed with mental health conditions

This mixed-methods study published Jan 2017 analyzed the effect of the ECHO GEMH (geriatric mental health) program on participant GEMH knowledge and confidence, and patient healthcare costs. ¹

• Between 2014 and 2016, 54 spoke sites in New York were enrolled in ECHO GEMH, which included approximately 154 participants.

• Using health insurance claims data, a 24% reduction in emergency department (ED) visit costs was observed in patients with a mental health diagnosis after ECHO GEMH provider participation.

• Interviews with a subset of participants showed that participation in ECHO GEMH noticeably increased knowledge and confidence in effectively treating geriatric mental health, especially from clinicians in rural communities and small cities.

• Participants also self-reported improvements in patient health outcomes, and an increase in their sense of professional support.

A study published in the April 2017 issue of *The American Journal of Medicine* proves the capacity of the ECHO model to expand access to effective hepatitis C treatment for veterans.¹

Patients in the study whose primary care providers participated in the Veterans Affairs Extension for Community Health Outcomes (VA-ECHO) received significantly higher rates of antiviral treatment (21.4%) than patients whose providers did not participate (2.5%).

No difference in adjusted rates of sustained virologic response was observed for patients whose primary care providers participated in VA-ECHO.

ECHO for Care Transitions for Older Adults:
An effective solution to reduce costs and improve health outcomes

• A prospective cohort study published on May 25, 2017 in The American Journal of Medicine proves the capacity of the ECHO model to reduce costs and improve health outcomes for older adults who are transferred from hospitals to skilled nursing facilities.¹

• The ECHO-Care Transition (ECHO-CT) program connects an interdisciplinary hospital team with clinicians at skilled nursing facilities for older adults.

• Patients discharged from acute care in hospitals to skilled nursing facilities participating in the ECHO-CT program had shorter lengths of stay in those facilities, and their 30-day readmission rates were significantly lower compared to patients discharged to matched skilled nursing facilities delivering usual care.

• The 30-day total healthcare cost for these patients was $2,602.19 lower than for those in matched skilled nursing facilities delivering usual care.

A prospective 2:1 matched-cohort study evaluating the effects of provider-participation in ECHO-AGE on reducing the use of physical and chemical restraints in Massachusetts and Maine nursing homes.

Residents cared for by ECHO-AGE-enrolled facilities were 75% less likely to be physically restrained and 17% less likely to be prescribed antipsychotic medication compared to patients in facilities that did not participate in ECHO-AGE.

A quasi-experimental design of providers from 2 federally qualified health centers (FQHCs) who participated in a chronic pain ECHO for 1 year were compared to referral and prescription patterns of a control group of FQHC providers.

**Key finding:** Providers who participated in the ECHO program were more likely to refer patients to behavioral health and physical therapy for pain management and were less likely to prescribe opioids or refer patients for surgical consults.

ECHO Evidence Base - Conclusions

- **Participation:** Providers enjoy the all-teach all learn nature of the ECHO model and regular access to a community of practice. As a result, they keep participating in regular teleECHO sessions.

- **Self Efficacy and Knowledge Growth:** The ECHO model has been shown to be an effective tool for teaching best practice and increasing provider self-efficacy to treat complex diseases they are regularly faced with in the primary care setting.

- **Cost-Effective:** A growing body of research indicates that the ECHO model is cost-effective while improving or maintaining quality of care.

- **Patient Outcomes:** Increasing evidence indicates that when providers participate in teleECHO programs, patient outcomes such as reduced ER visits and more appropriate prescribing and referral patterns result.

- **Workforce Development:** Additional research is needed to help us understand the potential benefits of the ECHO model for provider retention, joy of work, and job satisfaction.
Bridge Building to reduce disparities in access

Pareto’s Principle

UNM HSC | State Health Dept | Private Practice | Community Health Centers

Chronic Pain and Addiction

HCV Treatment

Cervical Cancer Prevention, Screening and Triage
Cumulative number of buprenorphine-waivered physicians per million population in traditionally underserved zip codes in NM versus US

Currently there are 1582 Zip Codes in the US with the following characteristics:
1) Rural (less than 1,000 people per sq mile.)
2) More than 50% of people identify themselves as American Indian or Alaska Native, Asian American, Black or African American, Hispanic or Latino, or Native Hawaiian/Other Pacific Islander.
3) The average household income is less than $52,250.

10,629,084 people reside in these zip codes, with 784,455 of those living in NM. There are 479 licensed providers residing within these zip codes, 110 within New Mexico.
Force Multiplier
Expanding capacity by enabling all member of the team to improve Prevention/Screening and Chronic Disease Management

Specialists  GPs  PAs and NPs  CHWs

- Skin Cancer Prevention and Screening
- Obesity Prevention and Community Health
- Colon Cancer Screening

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

![Bar chart showing comparison between CBC (Community Based Care) and EPC (Enhanced Primary Care) in BP Control, LDL-C Control, and Smoking Cessation]

- BP Control: CBC (N=249), EPC (N=225), P=0.0004
- LDL-C Control: CBC (N=225), EPC (N=225), P=0.0001
- Smoking Cessation: CBC (N=144), EPC (N=144), P=0.06

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
Community Health Workers in Prison

First day of peer educator training
Photo consents on file with Project ECHO® and CNMCF
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
ECHO Hubs and Spokes: State of New Mexico
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

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

**Clinics by Location:**
- **Belgium:** Brussels, Supreme Headquarters Allied Powers Europe (SHAPE)
- **Germany:** Grafenwoehr, Hohenfels, Katterbach, Landstuhl Regional Medical Center (LRMC)/FHC
- **Italy:** Lucca, Vicenza
- **Japan:** Camp Zama
- **South Korea:** Camp Casey, Camp Humphreys, Camp Carroll, Camp Walker, Bhan Algod Army Community Hospital, 12th Contingency Support Hospital
- **Arizona:** Fort Huachuca
- **California:** Fort Irwin
- **Colorado:** Colorado Springs
- **Georgia:** Fort Gordon
- **Hawaii:** Schofield Barracks (Family Medicine and Troop Medical Clinic)
- **Kansai:** Fort Leonard Wood
- **Missouri:** Fort Leonard Wood
- **New Mexico:** White Sands Missile Range
- **New York:** White Sands Missile Range
- **New Hampshire:** Fort Drum
- **Arizona:** Fort Huachuca
- **California:** Fort Irwin
- **Colorado:** Colorado Springs
- **Georgia:** Fort Gordon
- **Hawaii:** Schofield Barracks (Family Medicine and Troop Medical Clinic)
- **Kansai:** Fort Leonard Wood
- **Missouri:** Fort Leonard Wood
- **New Mexico:** White Sands Missile Range
- **New York:** White Sands Missile Range
- **New Hampshire:** Fort Drum

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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.
<table>
<thead>
<tr>
<th>Year</th>
<th>US Hubs</th>
<th>Int'l Hubs</th>
<th>Total Hubs</th>
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<td>2012</td>
<td>20</td>
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<tr>
<td>2017</td>
<td>99</td>
<td>67</td>
<td>166</td>
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</table>
ECHO Reduces Disparities in Cancer

1. Prevention: Smoking Cessation, HPV vaccination, HCV Screening/Treatment, HBV Vaccination and Treatment, diet/nutrition counseling and obesity prevention, sun safety and skin cancer prevention
2. Screening and Early Detection: Dermatology, Breast, Cervical, Colorectal Cancer, Oral and Lung Cancer
3. Pathology Best Practices
4. Cancer Care Navigation
5. Updates in Treatment: Disseminating the science to the community to enhance implementation
6. Tumor Boards
7. Precision Medicine and Cancer Genomics
8. Pain and Toxicity Management
9. Survivorship
10. Palliative Care
12. Population Health: Effective Community Cancer Intervention and Prevention Program Management
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
Cancer Dashboard Snapshot

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

[echo.unm.edu/cancer-echo/](https://echo.unm.edu/cancer-echo/)
ECHO Hubs and Superhubs: United States
ECHO Replication in US

- 4 Breath 4 Life – Franklin, TN (Primary Care)
- Alaska Native Medical Center of Alaska Native Tribal Health Consortium – Anchorage, AK (Palliative Care)
- American Academy of Pediatrics – National Headquarters, Elk Grove Village, IL (Zika)
- American Academy of Pediatrics – Georgia Chapter – Atlanta, GA (Endocrinology/Diabetes, Pediatrics, HPV)
- Arkansas Children’s Research Institute Hospital – Little Rock, AR (Autism)
- Baylor St. Luke’s Medical Center – Houston, TX (Advanced Liver Disease, Cardiology, HBV, HCV, Infectious Disease)
- Beacon Health Options – Boston, MA (Opioid Medication-Assisted Treatment)
- Better Health for Northeast NY – Albany NY (Asthma)
- Boston Medical Center – Boston, MA (Addiction Medicine)
- Billings Clinic – Billings, MT (Behavioral Health for Corrections, Addictions/Psychiatry ECHO for Corrections)
- Catholic Health Initiatives ST. Gabriel’s Health – Little Falls, Minnesota (Opioid Use Disorder)
- Cherokee Nation at Hastings Hospital – Tahlequah, OK (HCV)
- Children’s Healthcare of Atlanta – Atlanta, GA (Child Abuse/Advocacy)
- Children’s Hospital and Medical Center – Omaha, NE (Childhood Obesity)

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More ECHO Replication in US

- Children’s Hospital of Oakland – Oakland, CA (Pediatrics)
- Children's Hospital of Philadelphia – Philadelphia, PA (Autism)
- Cincinnati Children's Hospital Medical Center – Cincinnati, OH (Autism, Sickle Cell Diseases)
- Clinical Education Initiative – New York, NY (HIV, Sexually Transmitted Diseases)
- Community Health Center, Inc. – Middletown, CT (Chronic Pain, Coaches International QI, HIV, HCV, Opioid Addiction – Buprenorphine)
- Dyslexia Research Center – Baton Rouge, LA (Dyslexia)
- East Tennessee State University – Baton Rouge, LA (Epilepsy)
- Family Voices – Albuquerque, NM (CHW)
- Fenway Health – Boston, MA (Transgender Health)
- Harvard/Beth Israel Deaconess Medical Center – Boston, MA (Gerontology – ECHO Age, Care Transitions)
- Health Choice Integrated Care – Flagstaff, Arizona (Medication Assisted Treatment)
- HealthInsight – Albuquerque, NM (Quality Improvement)
- Hennepin Healthcare System – Minneapolis, MN (Addiction Medicine, HCV)
- Indiana University – Bloomington, IN (Substance Use Disorder)

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- **Indiana University – Perdue University Indianapolis Fairbanks School of Public Health** – Bloomington, IN (HCV, Primary Care)
- **Intermountain Healthcare** – Salt Lake City, UT (Liver Disease Management)
- **Johns Hopkins University School of Medicine** – Baltimore, MD (Sickle Cell Disease)
- **Joslin Diabetes Center** – Boston, MA (Endocrinology)
- **Kennedy Krieger Institute** – Baltimore, MD (Behavioral/Mental Health, Developmental Disabilities)
- **LA Net** – Long Beach, CA (Geriatrics)
- **LiveOnNY** – New York, NY (Organ Donation)
- **Lurie Center for Autism** – Lexington, KY (Autism)
- **MaineHealth** – Portland, OR (Endocrinology/Diabetes)
- **Maniilaq Association** – Kotzebue, AK (Addiction Medicine, Integrated Addictions and Psychiatry)
- **Migrant Clinicians Network** – Austin, TX (Zika)
- **Missouri Telehealth Network/University of Missouri** – Columbia, MO (Autism, Asthma, Chronic Pain, Endocrinology, Dermatology, HCV)
- **MNI Great Lakes** – Grand Blanc, MI (Osteoporosis)
- **Mountain Area Health Education Center (MAHEC)** – Asheville, NC (School Nurses, Primary Care, Chronic Pain)
More ECHO Replication in US

- National Cancer Institute Center for Global Health (NCI-CGH) – Bethesda, MD (Cancer Control Planning, Cervical Cancer Prevention)
- New Mexico Office of the Medical Investigator – Albuquerque, NM (Grief Counseling, Medicolegal Death Investigation)
- New Mexico Public Education Department – Santa Fe, NM (Education)
- New Mexico Public Education Department College and Career Readiness Bureau – Santa Fe, NM (Education)
- Northeast Ohio Medical Center DBA 'NEOMED: Ohio Alliance – Rootstown, OH
  ○ Community Health Worker, Community Health – AmeriCorps HPAC Assistance, Cystic Fibrosis, Education for Service, Schizophrenia & Complex Psychosis
- Northwest Portland Area Indian Health Board – Portland, OR (HCV)
- Northwell Health – Great Neck, NY (Behavioral/Mental Health, Chronic Pain, Substance Use Disorders)
- Ochsner Health System – New Orleans, LA (Liver Care, Liver Disease, Liver Disease Management, Rheumatology)
- Ohio Medical Directors Association (OMDA) – Ohio (Geriatrics)
- Oklahoma State University - Center for Health Sciences – Tulsa, OK (Addiction Medicine, Obesity, Psychiatry)
- Oregon Health and Science University/Health Share of Oregon – Portland, OR (Psychiatric Medication Management, Liver Care)
More ECHO Replication in US

- Parents Reaching Out – Albuquerque, NM (Parent Advocacy for Children with Disabilities)
- Partners HealthCare – Boston, MA (Substance Use Disorders)
- Partnership for Community Care Network – Greensboro, NC (Substance Abuse in Pregnancy)
- Primary Health Care, Inc. – Urbandale, IA (Behavioral/Mental Health, Primary Care, Quality Improvement)
- San Diego Tuberculosis Control-Cure Tuberculosis – San Diego, CA (Tuberculosis/TB)
- School-Based Health Alliance – Washington, DC (Adolescent Health)
- Southern Illinois University – Carbondale, IL (Hypertension)
- St. Joseph’s Hospital & Medical Center – Phoenix, AZ (HCV)
- SUNY Upstate NY – Syracuse, NY (Pediatrics)
- TMF Health Quality Institute – Austin, TX (Behavioral/Mental Health)
- Trinitas Regional Medical Center – Elizabeth, NJ (IDD population intellectual and developmental disabilities)
- UMass Memorial Medical Group – Worcester, MA (HCV, Medication Assisted Treatment)
- University of Alabama at Birmingham – Birmingham, AL (Autism)
- University of Alaska Anchorage – Anchorage, AK (Autism and Traumatic & Acquired Brain Injury)
More ECHO Replication in US

- University of Arizona – Tucson, AZ, (Rheumatology)
- University of California Davis – Davis, CA (Pain Management)
- University of California-Irvine – Irvine, CA (Autism)
- University of California Los Angeles – Los Angeles, CA (Substance Use Disorder)
- 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, Geriatrics, 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/Youth with Epilepsy Behavioral/Mental Health, Cancer Survivorship, Care Coordination, Child Abuse, Complex Care, Epilepsy, Food Safety, HCV, Neurology, Pediatrics, Tuberculosis/TB, Diabetes, Colorectal Cancer (Pilot)
- University of Hawaii – Honolulu, HI (Endocrinology, Behavioral Health)
- University of Idaho – Moscow, ID (Addiction Medicine)
More ECHO Replication in US

- University of Kansas Medical Center – Kansas City, KA (ADHD, Asthma, Children and Youth Epilepsy, Pain Management, Pediatric Psychopharmacology)
- University of Minnesota – Minneapolis, MN (Pediatric Dental Health)
- University of Nevada – Reno, NV
  - Antibiotic Stewardship, Behavioral/Mental Health, Endocrinology/Diabetes, Gastroenterology/HCV, Pain Management, Rheumatology, Special Series, Sports Medicine
- 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, Improving Clinical Flow Pilot, Bone Health, Reproductive Health, Hepatitis B, Miner’s Health
- University of New Mexico - Center for Development and Disability – Albuquerque, NM (Autism)
- University of New Mexico: Envision – Albuquerque, NM (Obesity, Pediatric Nutrition, Pediatrics, Pulmonary/Asthma)
- University of North Carolina at Chapel Hill – Chapel Hill, NC (Opioid Medication-Assisted Treatment)
- University of Pittsburgh – Pittsburgh, Pennsylvania (Autism)
More ECHO Replication in US

- University Research Co., LLC - Center for Human Services  – Bethesda, MD (Quality Improvement, Zika, TB)
- University of Rochester Medical Center – Rochester, NY
  - Geriatric Health in Long Term Care, Palliative Care, Sexually Transmitted Diseases, Geriatric Mental Health in Primary Care, General Psychology, Eating Disorders
- University of Texas MD Anderson – Houston, TX
  - Breast Cancer Management (Mozambique), Hematologic Oncology, Cancer Pharmacy (Zambia), Cancer Survivorship (Family Residents in TX), Community Cancer Survivorship (CHWs in TX), Cervical Cancer Management (Latin American), Cervical Cancer Management (Mozambique), Cervical Cancer Prevention, Head and Neck Cancer (Mozambique), Palliative Care for African Countries (PACA), Tobacco Education and Cessation in the Health System (TEACH)
- University of Utah Health  – Salt Lake City, UT
  - Behavioral Health, Chronic Pain & Headache Management, HCV, High Risk Obstetrics, Liver Care, Liver Diseases, 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, Nursing Education, Burn and Soft Tissue Injury, Gastroenterology, Identifying and Managing Patients at Risk for Cancer (Pilot)
More ECHO Replication in US

- **University of Virginia Medical Center** – Charlottesville, VA (Vascular Medicine)
- **University of Washington** – Seattle, WA
  - Chronic Pain, **HCV**, HIV, HIV Public Health, Multiple Sclerosis, NW Heart Failure Collaborative
- **University of Wisconsin School of Medicine and Public Health** – Madison, WI (Pediatric Emergency Care)
- **University of Wyoming** – Laramie, WY
  - Assistive Technologies in Education, Autism, Behavioral Support, Early Childhood K-12 Counseling, Educational Leadership, Geriatrics, School Nurses, Secondary Transition, Waiver Services
- **UNM Carrie Tingley Hospital** – Albuquerque, NM (Cognitive Rehabilitation)
- **Vanderbilt University Medical Center** – Nashville, TN (Autism)
- **Wake Forest Baptist Medical Center** – Winston-Salem, NC (Bone Health)
- **Washington State Department of Health** – Seattle, WA (Tuberculosis/TB)
- **Western NY Collaborative/AKA Excellus Blue Cross BS** – Rochester, NY (Chronic Pain, Opioid Addiction-Buprenorphine)
- **West Virginia Clinical and Translational Science Institute – of West Virginia University** – Morgantown, WV
  - Chronic Pain, **HCV**, Medication Assisted Treatment, Chronic Lung Disease
- **Yale University** – New Haven, CT (Child Abuse)

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Veteran’s Health Administration
- 9 hubs around the U.S. – Ann Arbor, Cleveland, Connecticut, Eastern Colorado, Los Angeles, Portland and Puget Sound, Richmond, San Diego, San Francisco
  - Chronic Pain, Chronic Disease Prevention and Management

Department of Defense
- Army (4 hubs around the world)
  - Eastern Region Medical Command at Landstuhl RMC – Germany (Chronic Pain)
  - Army - Regional Health Command - Atlantic – Fort Bragg, North Carolina (Chronic Pain)
  - Army - Regional Health Command - Central – Fort Sam Houston, Texas (Chronic Pain)
  - Army - Regional Health Command - Pacific – Honolulu, Hawaii (Chronic Pain)

Air Force
- United States Air Force 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 Hubs and Superhubs: Global

Key: ECHO Hub Type (189)
- Superhub (10)
- Hub (173)
- U.S. DoD Hub (7)
- U.S. VA Hub (9)

Key: Country Shading
- ECHO impact (28)
- Awaiting ECHO impact (142)
ECHO Replication Sites Worldwide

- Adizes Institute – Mexico (Business Consulting)
- Aga Khan University & Hospital – Karachi, India (HCV)
- All Ireland Institute of Hospice & Palliative Care – Dublin, Ireland (Palliative Care)
- Ambience Public School – Delhi, India (Teacher Mentorship)
- Ambience Public School – Gurgaon, India (Preventive Health)
- Baycrest – Toronto, Canada (Geriatrics)
- Center for Disease Control – Guatemala – Edificio, Guatemala (HCV)
- Centre for Addiction and Mental Health (CAMH) – Toronto, Canada (Behavioral Health)
- Centre Hospitalier del Universite de Montreal – Montreal, Canada (HCV)
- Children's Health Queensland Hospital and Health Service – Brisbane, Australia (ADHD, Childhood Overweight and Obesity Prevention, Foot Anomalies, Child Development, Refugee Health)
- Children's Hospital of Eastern Ontario (CHEO) – Ottawa, Canada (Pediatrics, Psychiatry)
- Clinica Medica Internacional - AmorPro TB – Juarez, Mexico (Tuberculosis/TB)
- Consorcio Ecuatoriano para el Desarrollo de Internet Avanzado (CEDIA) – Cuenca, Ecuador (Endocrinology/Diabetes, Hypertension)
- Georgian-French Joint Hepatology Clinic – Georgia (HCV)

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More ECHO Replication Sites Worldwide

- Health and Social Care Board Northern Ireland (HSCNI) – Belfast, Northern Ireland (Dermatology for GP Trainees, Endocrinology/Diabetes, Ophthalmology, Quality Improvement, Pregnancy and a Cancer Diagnosis (Pilot), Head and Neck Cancer (Pilot))
- HealthNet – Pakistan (HCV)
- Highland Hospice - Scotland – Inverness, United Kingdom (Nurse Specialist-Palliative Care)
- Holland Bloorview Kids Rehabilitation Hospital (ATN Site) – Toronto, Ontario (Autism)
- Holy Family Hospital – New Delhi, India (Cardiology)
- Hospice UK – London, United Kingdom (Palliative Care)
- Hospital Britanico Buenos Aires – Buenos Aires, Argentina (Inflammatory Bowel Disease, Gastroenterology)
- Hospital de Clínicas de Porto Alegre – Porto Alegre, Brazil (HCV)
- Hospital Eva Peron – Buenos Aires, Argentina (Dermatology, Psoriasis)
- Hospital for Sick Children (SickKids) – Toronto, Canada (Pain Management)
- Hospital Italiano – Buenos Aires, Argentina (HCV)
- Indian National Association for Study of the Liver – Chandigarh, India (HCV)
More ECHO Replication Sites Worldwide

- 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))
- Institute for Liver and Biliary Sciences – New Delhi, India (Liver Disease)
- Instituto Alexander Fleming – Buenos Aires, Argentina (Colorectal Cancer)
- Instituto de Oncology Angel H Roffo – Argentina (Head and Neck Cancer)
- Instituto de Rehabilitacion Psicofisica de Buenos Aires – Buenos Aires, Argentina (Pulmonary)
- Jamaica Ministry of Health – Mandeville, Jamaica (Chronic Disease Prevention and Management)
- Jaramogi Oginga Odinga Teaching & Referral Hospital – Kenya (HIV)
- Karuna Trust – Bangalore, India (Maternal and Child Health)
- Kazakh Medical University for Continuous Education – Almaty, Kazakhstan (HIV)
- Kyrgyz State Medical Institute of Postgraduate Education – Bishkek, Kyrgyzstan (HIV)
- Lair Centre – Vancouver, Canada (HCV)
- Liverpool Hospital – Liverpool, Australia (HCV)
- LV Prasad Eye Institute – Hyderabad, India (Ophthalmology)
- Ministry of Health and Public Hygiene – Abidjan, Cote d’Ivoire (HIV)
More ECHO Replication Sites Worldwide

- Mrcheveli - Georgia – Georgia (საქართველო) (HCV)
- Namibia Ministry of Health and Social Services (MOHSS) – Windhoek, Namibia (HIV, Quality Improvement)
- National AIDS STI Control Program Kenya – Nairobi, Kenya (HIV, Quality Improvement)
- National Center for Tuberculosis and Lung Diseases – Georgia (საქართველო) (Tuberculosis/TB)
- National Institute for Mental Health and Neurosciences – Bengaluru, India
  - Addiction Medicine, Behavioral/Mental Health, Integrated Addictions and Psychiatry, Opioid Addiction-Buprenorphine, Pregnancy, **Tobacco Cessation**
- National Institute for Tuberculosis and Respiratory Diseases – India (Tuberculosis/TB)
- National Public Health Laboratory Services – Kenya (Antimicrobial Stewardship)
- National Tuberculosis, Leprosy and Lung Disease Program Kenya – Nairobi, Kenya (Tuberculosis/TB)
- Neolab – Georgia (საქართველო) (HCV)
- Northern Ireland Hospice – Belfast, NI (Palliative Care)
- Obra Social Ferroviaria (OSFE) – Argentina (Rheumatology)
- Post Graduate Institute of Medical Education and Research – Chandigarh, India (HCV)
- Reaching You - Ministry of Health and Population – Nasr City, Egypt (Cardiology, HCV, Pulmonary)

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More ECHO Replication Sites Worldwide

- Royal College of Surgeons in Ireland – Dublin, Ireland (Rheumatology)
- Solidarity and Action Against The HIV Infection in India – Delhi, India (Maternal and Child Health)
- St. Luke's Hospice – Sheffield, United Kingdom (Palliative Care)
- Tajik Institute for Postgraduate Education of Medical Staff – Tajikistan (HIV)
- Tata Memorial Centre – India (Virtual Cancer Tumor Board, Cancer Clinical Trials)
- The Heartbeat Trust – Dun Laoghaire, Ireland (Cardiology)
- The Ministry of Health, Community Development, Gender, Elderly and Children – Tanzania (HIV)
- Trivandrum Institute of Palliative Sciences – Thiruvananthapuram, India (Palliative Care)
- Uganda Virus Research Institute HIV – Entebbe Uganda (HIV)
- Ummeed Child Development Center – India (Autism)
- Universidad Austral – Buenos Aires, Argentina (HCV)
- Universidad Central de Venezuela – Ciudad Universitaria, Los Chaguaramos, Venezuela (Pediatrics, High Risk Pregnancy)
More ECHO Replication Sites Worldwide

- **Universidad de la República** – Montevideo, Uruguay
  - HIV, HCV, Anemia, Heart Failure, *Cancer of the Cervix*, Autism, **Pediatric Palliative Care**, **Adult Palliative Care**, Neurological Rehab, Autoimmune Diseases, Non-communicable Diseases
- **Universidad Panamericana** – Mexico City, Mexico (Psychiatry)
- **University Health Network (‘Ontario Pain’)** – Toronto, Canada (Chronic Pain, HCV, Rheumatology)
- **Vietnam National Lung Hospital** – Hanoi, Vietnam (Tuberculosis/TB)
- **West/Northwest Hospitals Group** – Galway, Ireland (Endocrinology/Diabetes)
Recognizing a critical need to address disparities in cancer care, MD Anderson has been designated as an ECHO superhub for oncology by the ECHO Institute at the University of New Mexico Health Science Center (UNMHSC)
Project ECHO Programs at MD Anderson

• Cervical Cancer Prevention - Rio Grande Valley
• Cancer Survivorship (Family Residents) – Texas
• Cancer Survivorship (CHWs) - Texas
• Hematologic Oncology
• Palliative Care - Africa
• Pharmacy – Zambia, Africa
• Mozambique, Africa – Cervical Cancer Management, Breast Cancer Management, Head & Neck Cancer
• Latin America – Cervical Cancer Management
• Tobacco Cessation - Texas
Inequity of Cervical Cancer

85% of cervical cancer cases occur in the developing world
HCV on the Texas-Mexico Border

- Population of ~1.3 million
- 90% of population is Hispanic, 40% below the poverty line
- <10% of eligible women receiving cervical cancer screening
- No public hospital, 40% fewer providers than the rest of Texas
- LEEP treatment for uninsured patients for treatment of dysplasia only available one day per month (Ob-Gyn travels from UTMB-Galveston to McAllen)
- Cervical cancer rates are 30% higher compared with non-border counties in Texas
A world away from MD Anderson…..
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
Cervical Cancer Prevention ECHO 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
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
Tata Memorial: Virtual Tumour Board ECHO
India’s National Cancer Grid

- National Cancer Grid - network of major cancer centers, research institutes
- Dec 2016, launched the ECHO program
  - Connect 86 hospitals of the NCG
  - 20+ centers currently participate
- Weekly ECHO clinics with over 80 participants

Courtesy Swasth India & Dr. C S Pramesh, TMH
Asia-Pacific Economic Cooperation (APEC) ECHO
Vietnam Case Presentation
The “ECHO Act” (Expanding Capacity for Health Outcomes Act)  
Passed House/Senate by unanimous vote, November-December 2016  
Signed into law by President Barack Obama, December 2016

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

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What Makes ECHO Work?

- Community of Practice (Social Network)
- Joy of Work
- Mentor/Mentee Relationship
- Team Based Care
- Technology
- Force Multiplication
- De-monopolizing Knowledge
- Knowledge Expansion
- Movement Building
- Task Shifting
- Interprofessional Consultation
- Guided Practice
- vs.
- Organization Building

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A note of gratitude
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