Project ECHO (Extension for Community Health Outcomes)

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

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

Supported by New Mexico Department of Health, Agency for Health Research and Quality, New Mexico Legislature, the Robert Wood Johnson Foundation, the GE Foundation and Helmsley Trust
Moving Knowledge Instead of Patients
A Global Health Problem
Over 170 Million Carriers Worldwide, 3-4 Million new cases/year

Source: WHO 1999
Goals of Project ECHO®

Develop capacity to safely and effectively treat HCV in all areas of New Mexico and to monitor outcomes.

Develop a model to treat complex diseases in rural locations and developing countries.
Methods

• Use Technology
• Sharing “best practices”
• Case based learning
• Web-based database to monitor outcomes

## 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>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>
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</table>
# Project ECHO® Clinicians

## HCV Knowledge Skills and Abilities (Self-Efficacy)

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<th>Effect Size for the change</th>
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<tr>
<td>4. 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>5. 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>6. 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>
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### Project ECHO® Clinicians

**HCV Knowledge Skills and Abilities (Self-Efficacy)**

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<th>Effect Size for the change</th>
</tr>
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</table>
| **Overall Competence** (average of 9 items) | 2.8* (0.9) | 5.5* (0.6) | 2.7 (0.9) (<0.0001) | 2.9 |}

Cronbach’s alpha for the BEFORE ratings = 0.92 and Cronbach’s alpha for the TODAY ratings = 0.86 indicating a high degree of consistency in the ratings on the 9 items

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

Results of the HCV Outcomes Study

Participants

• Study sites
  ▪ Intervention (ECHO)
    ➢ Community-based clinics: 16
    ➢ New Mexico Department of Corrections: 5
  ▪ Control: University of New Mexico (UNM) Liver Clinic
# Treatment Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>ECHO</th>
<th>UNMH</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<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

Disease Selection

• Common diseases
• Management is complex
• Evolving treatments and medicines
• High societal impact (health and economic)
• Serious outcomes of untreated disease
• Improved outcomes with disease management
Bridge Building

Pareto’s Principle

UNM HSC

State Health Dept

Private Practice

Community Health Centers

Chronic Pain

Rheumatoid Arthritis + Rheumatology Consultation

Substance Use and Mental Health Disorders

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Force Multiplier
Use Existing Community Clinicians

Specialists
Primary Care
Physician Assistants
Nurse Practitioners

Chronic Pain
Rheumatoid Arthritis + Rheumatology Consultation
Substance Use and Mental Health Disorders
## Successful Expansion into Multiple Diseases

<table>
<thead>
<tr>
<th>Time</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-10 a.m.</td>
<td>Hepatitis C</td>
<td>Diabetes &amp; Endocrinology</td>
<td>Geriatrics/Dementia</td>
<td>Palliative Care</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Arora</td>
<td>• Bouchonville</td>
<td>• Herman</td>
<td>• Neale</td>
<td></td>
</tr>
<tr>
<td>10-12 a.m.</td>
<td>Rheumatology</td>
<td>Chronic Pain</td>
<td>Integrated Addictions &amp; Psychiatry</td>
<td>Complex Care</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Bankhurst</td>
<td>• Katzman</td>
<td>• Komaromy</td>
<td>• Neale</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Komaromy</td>
<td></td>
</tr>
<tr>
<td>2-4 p.m.</td>
<td>HIV</td>
<td>Prison Peer Educator Training</td>
<td>Women’s Health &amp; Genomics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Iandiorio</td>
<td>• Thornton</td>
<td>• Curet</td>
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<td>• Thornton</td>
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Potential Benefits of ECHO Model™ to Health System

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

- Team Based Care
  - Technology
  - Force Multiplication
  - Demonopolizing Knowledge
  - Knowledge Expansion

Joy of Work

Community of Practice (Social Network)

Mentor/Mentee Relationship

Movement Building vs. Organization Building

Guided Practice

Task Shifting

Interprofessional Consultation

Movement Building vs. Organization Building
Project ECHO® is being used to expand access to care for people with Autism and Disabilities: EXAMPLES

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

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

- Teaching Board Certified Behavior Analysts and Behavior Technicians to provide better quality Applied Behavior Analysis to New Mexico families/individuals with autism (expected launch Jan. 2016)
1. ECHO to train and provide ongoing mentoring for teachers of students with disabilities:

Wyoming Institute for Disabilities

University of Wyoming

Academic unit within the UW College of Health Sciences

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

Established in 1994
University of Wyoming
ECHO in Assistive Technology

Feasibility test: March-May 2014
Pilot study: September 2014-May 2015
Assistive Technology ECHO ‘Hub’

Expertise:

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

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

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

Nationally recognized AT experts/trainers
AT ECHO ‘Spoke’ Participants:

412 total participants; 186 unique participants

• Represent 56 school districts, agencies, organizations; includes other state departments of education, AT Act programs
• 68% provide direct assistance to students with special education needs
• 81% provide direct services to staff
Summary of Pilot Study Findings, External Evaluation

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

1 in 68 children have autism spectrum disorder (ASD)

almost 5x more common in boys than girls

SOURCE: CENTERS FOR DISEASE CONTROL AND PREVENTION
The Costs of Autism

• Estimated lifetime societal cost for one individual with autism at $3.2 million
• Early intervention reduces the long term cost and improves outcomes
• Billions of dollars of savings when applied across populations of children with autism
• PCPs are the front lines for this recognition and initiation of services
2. Transforming Primary Care for Children with Autism Across the USA

Missouri ECHO Autism participants

Missouri Telehealth Network Show-Me ECHO

MISSOURI - 2010 Census Results
Total Population by County

2010 Census Results - United States
Total Population

Project ECHO®
Missouri ECHO® Autism Clinic

Biweekly 2 hour clinic

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

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

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

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

• Connects a team of experts in autism and developmental disabilities to primary care providers
• Case-based learning builds confidence and knowledge in the PCP to care for children in their practices
• Reduces costs to families and insurers
• Improves access for families
ECHO Autism Replication though the Autism Treatment Network
3. Teaching providers to provide better quality Applied Behavior Analysis (home-based assessment, behavioral modification, training and familial support) to New Mexico families and individuals with autism

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

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

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

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

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