Using the ECHO Model to Expand Access to Care and Treatment for Viral Hepatitis

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Conflict of Interests

• ECHO Uruguay received grants from Gilead and Abbvie

• ECHO UNM receives grants from multiple donators, public and private, from US and international, through the ECHO Institute
Objectives

• Describe Project ECHO creation, mission, goals and activities

• Introduce the basic principles and components of the ECHO model for education and workforce development

• Highlight the existing and future global viral hepatitis ECHO activities

• Share the Uruguayan experience
What is Project ECHO?

• Extension for
• Community
• Healthcare
• Outcomes

• ECHO is a model
• Echo is a movement
• ECHO is non-profit
Mission of Project ECHO

To **democratize** medical knowledge and get best practice care to **underserved** people all over the world
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 of Project ECHO

• Use **technology** to leverage scarce healthcare resources (specialty knowledge and expertise)

• Share “**best practices**” (reduce disparities by reducing variation in care)

• Incentive **case based learning** (learning by doing) to master complexity

• Use Web-based database to monitor outcomes

How does ECHO work?

• ECHO links expert specialist teams at an academic ‘hub’ with primary care clinicians in local communities (the ‘spokes’)

• Together, they participate in weekly teleECHO clinics, which are like virtual grand rounds, combined with mentoring and patient case presentations

• The clinics are supported by basic, widely available teleconferencing technology
Project ECHO: Multidisciplinary Teams

ECHO Facilitators *(Hub)*
Multidisciplinary Team

ECHO Partners *(Spokes)*
Community Clinic
Primary Care Team
Steps

• Train physicians, nurses, pharmacists and their teams

• Conduct teleECHO clinics (“knowledge network”)

• Initiate case-based guided practice (“learning loops”)

• Collect data and monitor outcomes centrally
Learning Loops

• Interactive learning environment
• Co-management of cases
• Learning by doing
• Learning from didactics
• Learning from each other
• Collaboration in solving problems
Benefits to clinicians and teams

• No cost continuing education credits

• Professional interaction with colleagues with similar interests
  • Less isolation with improved recruitment and retention

• A mix of work and learning

• Access to consultation with specialists

Benefits to communities

• Increased access to treatment

• Decreased related morbidity and mortality

• Training of the local workforce
Difference with Telemedicine

• ECHO does not take direct care of the patients by teleconference because that is not conducive to demonopolizing knowledge and multiplying the number of patients cared.

• The repetition of this methodology and the mutual teaching allow the rural health care providers to progressively “specialize” and be able to assist their own patients at their place of residence.
ECHO vs. Telemedicine

**TeleECHO™ Clinic**
- Expert hub team

**ECHO supports community based primary care teams**
- Learners at spoke site

**Traditional Telemedicine**
- Specialist manages patient remotely

**Patients reached with specialty knowledge and expertise**
Hepatitis C in New Mexico (2004)

- Few health care providers and no specialists
- More than 35,000 reported HCV cases, < 5% had been treated
- High rate of chronic liver disease/cirrhosis
Hepatitis C Treatment in 2004

• Good News (?): curable in 45-70% of cases

• Bad News: severe side effects
  • Anemia 100%
  • Neutropenia >35%
  • Depression >25%

• No primary care clinicians treating HCV
Outcomes of Treatment for Hepatitis C Virus Infection by Primary Care Providers

Sanjeev Arora, M.D., Karla Thornton, M.D., Glen Murata, M.D., Paulina Deming, Pharm.D., Summers Kalishman, Ph.D., Denise Dion, Ph.D., Brooke Parish, M.D., Thomas Burke, B.S., Wesley Pak, M.B.A., Jeffrey Dunkelberg, M.D., Martin Kistin, M.D., John Brown, M.A., Steven Jenkusky, M.D., Miriam Komaromy, M.D., and Clifford Qualls, Ph.D.
Study Design

• Prospective cohort

• Study sites:
  • Intervention (ECHO)
    • 16 Community-based clinics
    • 5 New Mexico Department of Corrections
  • Control
    • University of New Mexico Hepatitis C Clinic

• Principal endpoint
  • Sustained viral response (SVR): no detectable virus 6 months after completion of treatment

# Treatment Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>ECHO</th>
<th>UNMH</th>
<th>P-value</th>
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<td>N=146</td>
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<td>68%</td>
<td>49%</td>
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<tr>
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<td>46%</td>
<td>NS</td>
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<tr>
<td>SVR* (Cure) Genotype 2/3</td>
<td>70%</td>
<td>71%</td>
<td>NS</td>
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</table>

*SVR=sustained viral response

Conclusion

• 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 treated approximately 1,100 patients/year.
- UNMHSC Center for Digestive Diseases Clinic treated approximately 250 patients/year.
ECHO Model is Cost Effective

- The United States Congress passed the ECHO Act in 2016, requiring the Department of Health and Human Services to investigate the model

- A cost-effectiveness analysis to assess diagnosis and treatment of HCV infection in a primary care patient panel, with and without the implementation of Project ECHO, was performed

- Markov models were used to simulate disease progression, quality of life, and life expectancy among individuals with HCV infection and for the general population

Thilo Rattay, Ian P. Dumont, Hauke S. Heinzow, and David W. Hutton. Gastroenterology, October 2017
ECHO Model is Cost Effective

Results

• The incremental cost-effectiveness ratio of ECHO was $10,351 per quality-adjusted life year

• Budget impact analysis shows payers would have to invest an additional $339.54 million over a 5-year period to increase treatment by 4,446 patients, per 1 million covered lives

Thilo Rattay, Ian P. Dumont, Hauke S. Heinzow, and David W. Hutton. Gastroenterology, October 2017
ECHO Model is Cost Effective

Conclusion

• Project ECHO is a cost-effective way to treat patients with HCV infection at scale, using existing primary care providers

• This approach could substantially reduce the burden of chronic HCV infection in the United States

Thilo Rattay, Ian P. Dumont, Hauke S. Heinzow, and David W. Hutton. Gastroenterology, October 2017
Moving beyond Hepatitis C
How to choose other diseases?

- Common diseases
- Complex management
- Evolving treatments and medicines
- High societal impact
- Serious outcomes of untreated disease
- Improved outcomes with disease management
Current situation

- ECHO® is applied in + 50 centers in USA and + 20 other countries
- There are more than 1,000 clinics that work with ECHO
- Fifty different diseases
New Mexico
USA
ECHO Hubs and Superhubs: Global
Viral Hepatitis

ECHO activities globally
Georgia HCV Elimination Program

HCV Treatment Site
Harm Reduction Site
Expansion of ECHO for HCV in India

- In Punjab, India they used ECHO to train staff at district hospitals and treated 39,000 patients with HCV in less than 18 months.

- This can happen when HCV drugs are available at low cost.

- In India a complete course of treatment costs less than 250 dollars.

Prof. R. K. Dhiman
Chandigarh, India

- Project of the National School of Medicine of Uruguay and the University of New Mexico with the participation of all the public and private health care institutions

- Nineteen Uruguayan professionals were trained in Albuquerque

- Eleven ECHO® clinics working: Hepatitis C, HIV, adults and children palliative care, anemia, heart failure, cervical cancer, autism, autoimmune diseases, family medicine and neurological rehabilitation
President Vázquez, First President to declare ECHO of National Interest
International influence

ECHO Uruguay helped to launch similar projects in:

• Argentina (Hepatitis C)
• Brazil (Hepatitis C)
• Ecuador (General)
• Venezuela (General)
• Mexico (Palliative Care)
• Australia (Hepatitis C)
Current situation and future outlook

• In January 2016, ECHO Uruguay was appointed as *super hub*

• It is now a center of reference in Latin America and can train people from other countries
New 2017!
ECHO: Building Bridges

University  Public Sector  Private Sector  Community
Force multiplication

Specialists  Primary Care  Nurses  CHW  Assistants

And among countries

Vasili Kandinski
Moving Knowledge Instead of Patients
Join us and together we will reach our goal of improving 1 billion lives by 2025

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Project ECHO
Summary

It is a movement that demonopolizes medical knowledge and democratizes medical care, especially in underserved areas across the world.