

# Project ECHO: The 5 “Cs”—CEAD Conference on Complex Cognitive Cases

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# Goals for Session

Participants will:

- Be able to describe Project ECHO, how it works, and a range of applications
- Observe an interactive Project ECHO session
- Gain an understanding of differential diagnostic strategies and how a dementia specialist team manages a complex patient using the Project ECHO model of care

# Geriatric Neurology Shortage

- Demand for neurologists outpaces supply
- US needs 11% more neurologists to meet current needs
- By 2025, that number will grow to 19 percent
  - 16,366 US neurologists (2012) projected to increase to 18,060 by 2025
  - Demand is projected to increase from 18,180 (2012) to 21,440 (2025)
- Average wait time for new patient: 35 business days (from 28 days in 2010)

[Neurology](#). 2013 Jul 30; 81(5): 470–478 doi: [10.1212/WNL.0b013e318294b1cf](https://doi.org/10.1212/WNL.0b013e318294b1cf)

# Geriatric Psychiatry Shortage

- Only 1,596 physicians are currently certified in geriatric psychiatry
- One for every 11,372 older Americans
- By 2030 that total is predicted to rise to only 1,659, which would then be only one for every 20,195 older Americans (ADGAP, 2007b).
- Half of fellowship positions go unfilled nationwide
- General psychiatry is a partial solution
  - 71% feel very prepared to dx and treat delirium
  - 96% to dx and treat major depression
  - 56% to diagnose and treat dementia.

# One Solution: Project ECHO<sup>®</sup>



**ECHO<sup>®</sup> HUB**  
*Team of Specialists*



**ECHO<sup>®</sup> SPOKE**  
**Community-based**  
*Front line Clinicians*



**PATIENT REACH**

**“One to Many”**

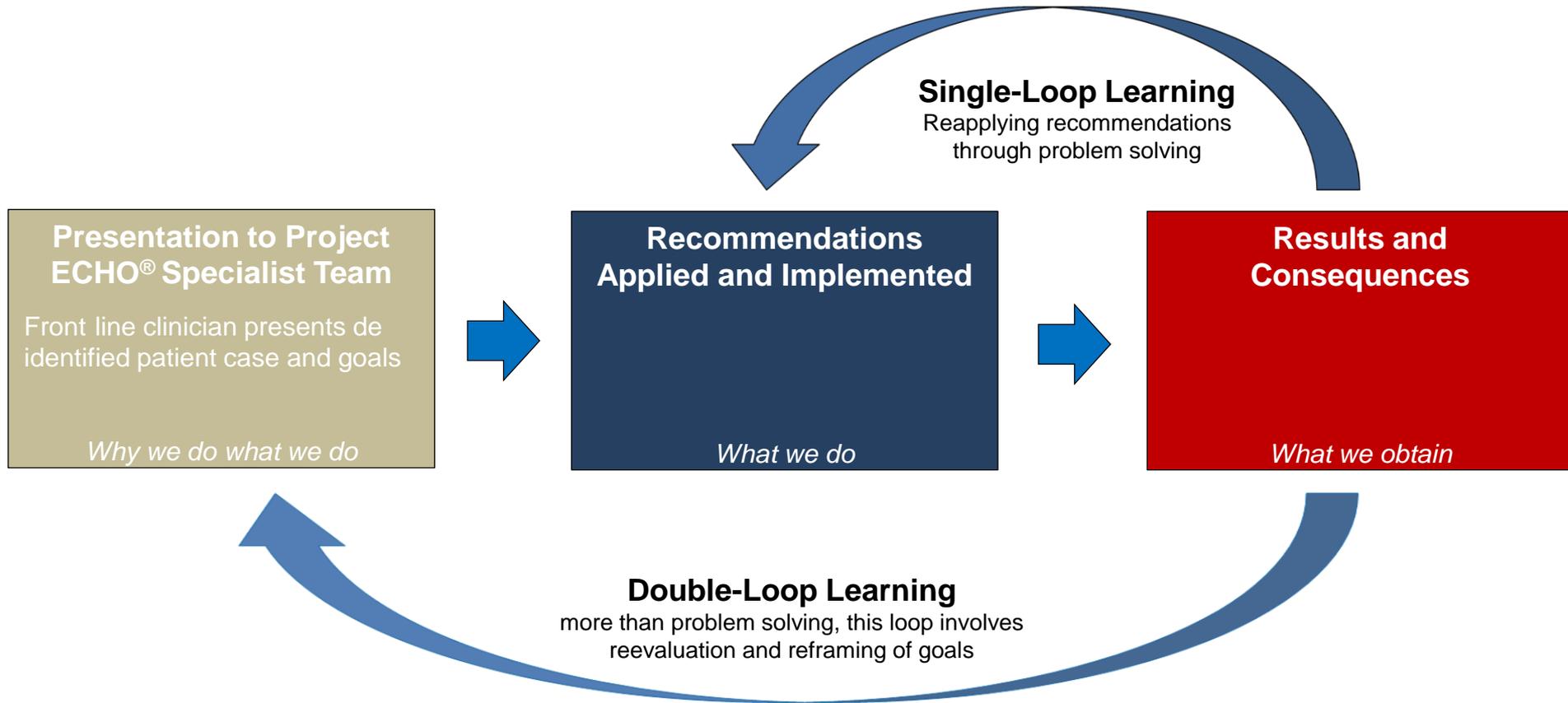
# How Project ECHO<sup>®</sup> Works

- Use Technology (multipoint videoconferencing and Internet)
- Disease Management Model focused on reducing variation in processes of care and sharing “best practices”
- Case based learning through three main routes:
  1. Learning Loops
  2. Knowledge Networks
  3. Content Knowledge

Arora (2013); Supported by N.M. Dept. of Health, Agency for Health Research and Quality HIT Grant 1 UC1 HS015135-04, New Mexico Legislature, and the Robert Wood Johnson Foundation.



# Learning Loops



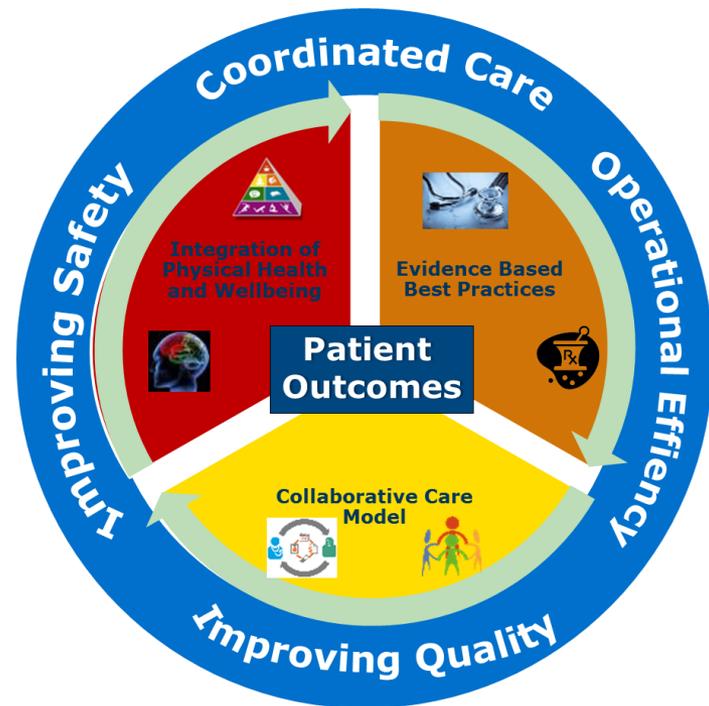


# Content Knowledge

## Evidence Based Didactics

*Emphasis on:*

- National and CMS Quality Initiatives
- Multidisciplinary Team-based Approaches
- Cost Effective and Value-Based Care





University of Rochester **ECHO**

# Project ECHO<sup>®</sup> GEMH for Primary Care (PC)

September 18, 2014 – February 4, 2016

**33** TeleECHO<sup>™</sup> clinics

**520** total attendees

**15.8** attendees on average per TeleECHO clinic

**244** Continuing Medical Education (CME) credits

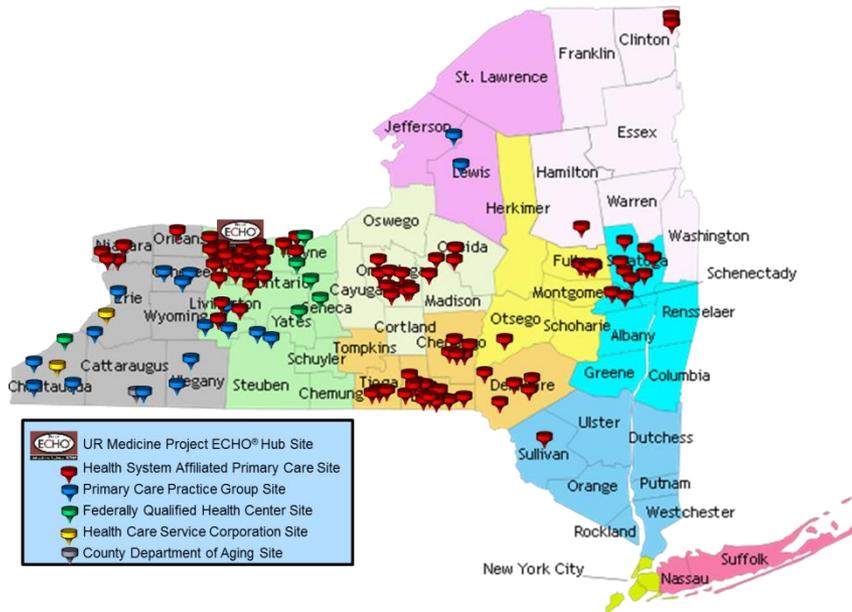
**65** patient case presentations

- 59 new and 6 follow up patient cases

**33** Evidence-based didactic presentations



# Participants in ECHO<sup>®</sup> GEMH for PC



- Primary Care Practices
  - Hospital system affiliated
  - Accountable care affiliated
  - Provider owned group
- Federally Qualified Health Centers
- Health Service Corporations
- County Department of Aging Centers

# Findings: Utilization by GEMH patients

## Health care utilization among Excellus beneficiaries aged 65+ with GEMH condition\*

Utilization Variables (average use per patient)	Mean: Before ECHO® GEMH	Mean: After ECHO® GEMH	% Change	P-value
Inpatient Visits	0.276	0.23	-16%	0.21
Outpatient Visits	4.175	3.93	-6%	0.29
<b>ER Visits</b>	<b>0.829</b>	<b>0.67</b>	<b>-20%</b>	<b>0.08</b>
Antipsychotics	0.372	0.41	10%	0.26
Benzodiazepines	0.590	0.56	-4%	0.60

\*Patients who do not have a mental health condition of interest are those who have not received a diagnosis of anxiety, depression, dementia or adjustment disorder, or who have not filled prescriptions for a medication that treats one of these mental health conditions.

# Findings: Cost of Care for GEMH Patients

**Health care costs for Excellus beneficiaries aged 65+ with GEMH condition\***

Cost Variables (average cost per patient, \$)	Mean: Before ECHO® GEMH	Mean: After ECHO® GEMH	% Change	P-value
Inpatient Costs	\$2,560.72	\$2,198.09	-14%	0.22
Outpatient Costs	\$1,405.57	\$1,402.93	0%	0.98
<b>ER Costs</b>	<b>\$406.37</b>	<b>\$310.71</b>	<b>-24%</b>	<b>0.049</b>
Prescription Costs	\$1,938.35	\$1,712.85	-12%	0.60
<b>Total Costs</b>	<b>\$7,725.34</b>	<b>\$7,142.97</b>	<b>-8%</b>	<b>0.16</b>

\*Patients with a mental health condition of interest are those who have not received a diagnosis of anxiety, depression, dementia or adjustment disorder, or who have not filled prescriptions for a medication that treats one of these mental health conditions.

# TELE-MENTORING IS NOT TELE-MEDICINE

## ECHO vs. Telemedicine

TeleECHO™ Clinic



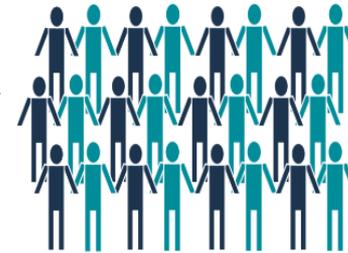
Expert hub team

ECHO supports  
community based  
primary care teams



Learners at spoke site

Patients reached with specialty  
knowledge and expertise



Traditional  
Telemedicine



Specialist manages patient remotely



# WHAT IT OFFERS TO COMMUNITY HEALTH PRACTITIONERS?

Acquire new skills and competence

01

Take advantage of convenient virtual learning

06

Become part of a community of practice and learning

02

Review evidence-based practice guidelines

07

Increase their professional satisfaction

03

08

Gain confidence in treating patients with the specific health condition

Decrease their feelings of professional isolation

04

09

Become an expert in their community. Have outcomes equal to those provided by specialists at a university

Present cases and obtain specialist feedback

05

10

Receive free CME credits





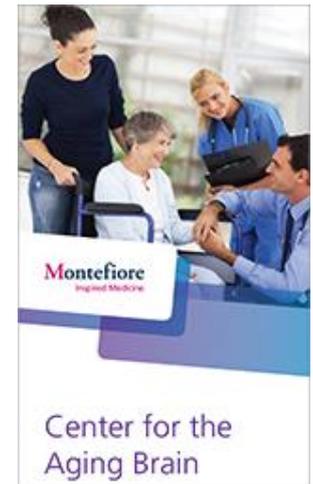
# WHAT ARE WE GOING TO USE PROJECT ECHO FOR?

To improve treatment in the community in these areas:

- Alzheimer's Disease and Dementia
- Adult and Pediatric Complex Care
- Opioid Treatment



# An Interactive Echo Example



- 64 yo F referred to Montefiore Center for Aging Brain by a geriatric psychiatrist for a second opinion
  - Seen by geriatrics, neuropsychology and neurology
- We'll present snippets from her evaluation with us and ask those of you in this room to assist with the diagnosis and management.



# Case Details

Redacted to protect patient's PHI

# Summary

- There are in addition some vascular risk factors that are confirmed on MRI that could contribute to part of the overall picture.
- There is no akineto-rigid syndrome, dystonia, myoclonus, apraxia, alien limb syndrome, and cortical sensory loss to suggest at this time a parkinsonian plus syndrome.
- The lack of progression and improvement bodes against a neurodegenerative pattern.
- Given the brisk reflexes and new dexterity complaints and falls, MRI of the c spine to look at cervical cord, as well as an EMG. *Postural instability likely multifactorial related to cervical spine disease, neuropathy and leg weakness.*
- Alcoholism.....

# Basics

- Subcortical dementia
- Cortical Dementia – PD, DLBD, AD, Vascular Dementia, FTD

# A More Sophisticated Differential:

- *Is this a disease of amyloid accumulation (AD)?*
- *Is this a disease of synuclein deposition (PD, DLBD)?*
- *Is this a disease of tau (TDP 43)?*

# Parkinsonian Syndromes

- 1)  $\alpha$ -synucleinopathies, such as the full clinical spectrum of PD with and without cognitive impairment/dementia, dementia with Lewy bodies (DLB), and multiple system atrophy (MSA).
- 2) tauopathies, including progressive supranuclear palsy (PSP) and corticobasal degeneration (CBD).
- A small proportion of cases, e.g. presenting with a corticobasal syndrome, are classified as TDP-43opathies (pathology of transactive response DNA binding protein of 43 kDa).

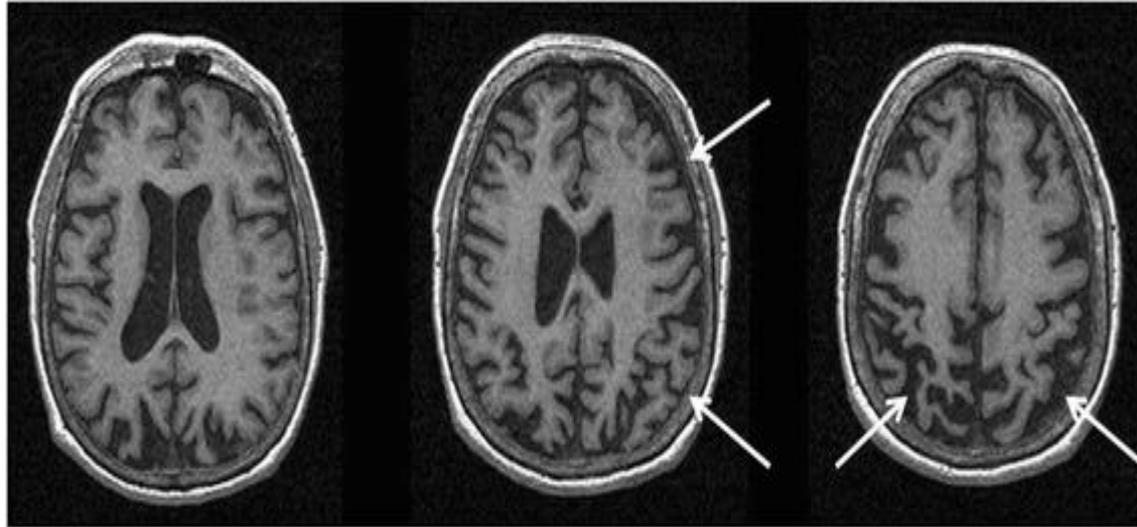
# Diseases Associated with Tau

- Corticobasal degeneration
- Dementia pugilistica
- FTD with Parkinsonism linked to chromosome 17
- Picks Disease
- PSP
- Post-encephalitic Parkinsonism
- Parkinson's disease complex of Guam

# Comparison of CBD and PSP

Characteristics	PSP	CBD
Parkinsonism	Symmetric-axial	Asymmetric-distal
Levodopa response	Initial ?	Absent
Cognitive disturbance	Frontal	Lateralized
Psychiatric disturbance	Apathy	Depression
Postural Instability	Early (within 1year)	Present
Pyramidal signs	Late (bilateral)	Uni/Bilateral
Contracture	Late	Early
Myoclonus and apraxia	Absent	Uni/Bilateral
Saccades – speed	Slow Vertical>horizontal	Normal Vertical = horizontal
MRI	Frontal and midbrain atrophy: T2 signal increased	Asymmetric-unilateral frontalparietal

MRI of a patient with a pathological diagnosis of Corticobasal Degeneration. Serial axial T1 sequences showing right greater than left parietofrontal atrophy typical of that seen in Corticobasal Syndrome. In this case, the patient had a confirmed pathological diagnosis of CBD



## Natural history and survival of 14 patients with corticobasal degeneration confirmed at postmortem examination

R K B Pearceg et al.

- A minority of corticobasal degeneration patients may present with early dementia or never present cortical features. Poor survival in our patients with corticobasal degeneration was predicted by the early presence of severe or bilateral parkinsonian features or frontal lobe syndrome.
- At the first neurological visit, on average 3.0 years after onset of symptoms, the most common features included unilateral or asymmetric limb bradykinesia or rigidity (78%) as well as ideomotor apraxia (64%).
- The most common initial manifestation was limb clumsiness, reported by half of the patients at the first visit. Other initial symptoms included gait disorder (36%) with falls (21%); unilateral painful paraesthesiae (29%); frontal lobe dementia symptoms (dementia associated with disinhibition) (21%); and dysarthria (14%).
- A rest tremor was found in 29% of patients.
- Average disease duration (7.9 years) was slightly longer than in a recently reported series.