

## Project ECHO

(Extension for Community Healthcare Outcomes)



Managing complex chronic conditions without sweating bullets

10:45 am – 12:30 pm

Theme 4: Building the rural health care team: making the most of available resources  
AFHTO Annual Conference  
Oct. 29, 2015

10/29/2015

## Presenters:

- Leslie Carlin, PhD
- Dr. Allison Crawford, MD FRCPC
- Dr. Ruth Dubin, PhD, MD, FCFP, CCAPM, DAAPM
- Dr. Mayur Brahmania, MD MPH
- Eva Serhal, MBA
- Dr. Amanda Steiman, MD, MSc, FRCPC



## Contributors:

- Dr. Andrea Furlan, MD, PhD (Co-Chair of ECHO Ontario Chronic Pain and Opioid Stewardship)
- Paul Taenzer, PhD (ECHO Ontario Pain executive hub member)
- Hannah Sidrak, MD (ECHO Ontario qualitative research student)
- Jane Zhao, MSc (ECHO Ontario Pain research coordinator)



## Conflicts of Interest Declaration

- Dr. Ruth Dubin, Dr. Jordan Feld, Dr. Allison Crawford, Leslie Carlin, and Eva Serhal have no conflicts of interest to declare
- Dr. Amanda Steiman:
  - Honorarium (Abbvie); Clinical trial co-investigator (until June 2014: UCB, Teva, Astra-Zeneca)
- ECHO Ontario is funded by the Ontario Ministry of Health and Long-Term Care and an OMA Complex Patient grant to Dr. Dubin



## Learning Objectives

- Understand the basic principles of ECHO
- Become familiar with the ECHO Ontario chronic pain/opioid stewardship and ECHO Ontario Mental Health Projects
- Envisage how complex chronic conditions (Hepatitis C, rheumatology) benefit from an ECHO Model
- Participate in a mock ECHO session



## Meet Daniel in 1995...

- 35 years old
- Referred to you for primary care after prolonged hospitalization for severe depression 25 years ago
- History of severe childhood abuse, illiterate, “tied to a chair”.
- All siblings had substance abuse issues (Alcohol, cocaine, IVDU).



## Daniel continued...

- Has severe low back pain with sciatica
- Also has episodes of very sore and swollen joints
- Also found to have hepatitis C: “not a candidate for interferon” due to depression
- Continues to drink alcohol and uses marijuana
- Occasional violent altercations with wife who is also your patient
- No children

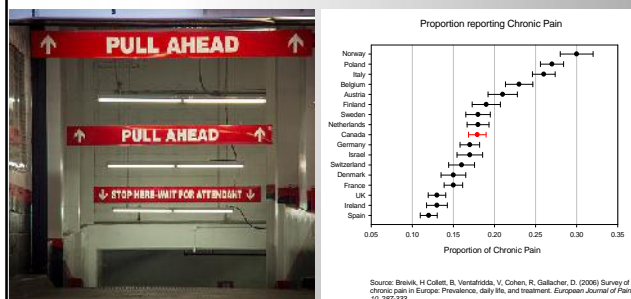


## This is a real patient!

- How keen are you to look after him?
- What barriers exist to effectively manage his conditions for:
  - Chronic Pain
  - Mental Health and Addiction
  - Hepatitis C
  - Joint Pain



## Wait Times for Specialty Pain Clinic...



## Chronic Pain: What's the big deal?

Guerriere et al 2010, Choiniere et al 2011

- Wait times for pain clinics can stretch into years
- People's mood and quality of life suffer while waiting; pain and disability increases
- 25 to 30 % of pain patients have suicidal thoughts
- Costs of care (private and government insured): average >\$3000/month (travel, meds, lost wages, OHIP billings, 3<sup>rd</sup> party costs)



## Training provided for pain management (acute and chronic) in Canada

Med students	16 hrs
GP trainees	3.5 hrs
Vet students	87 hrs



There are minimal pre-licensure requirements for pain for **Canadian** physicians.

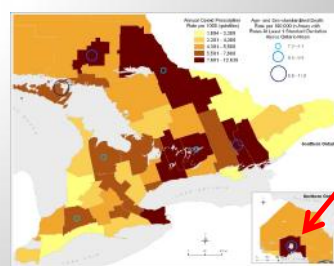
There is even less time spent on addiction training

(Watt-Watson et al, 2008 *Pain Res Manage* 13:111; Dubin et al, 2011 *Pain Res Manage* 16:105; Watt-Watson et al 2013 *Pain Res Manage* 18:25)

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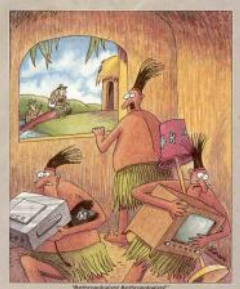
## Ontario has high rates of Opioid prescriptions and overdose deaths



Gomes et al 2011 *Healthcare Quarterly* 14: 22 (used with permission)



## Anthropology in ECHO



- -Woman walks into a seminar room....
- Studying up: the role of the ECHO anthropologist
- ECHO Ontario (Pain) as a community of practice

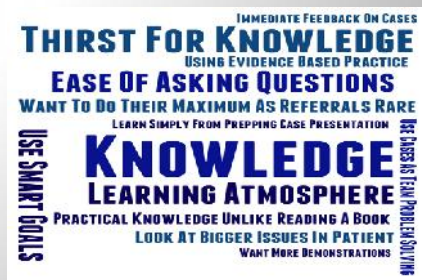


## Qualitative data from ECHO Ontario-Chronic Pain

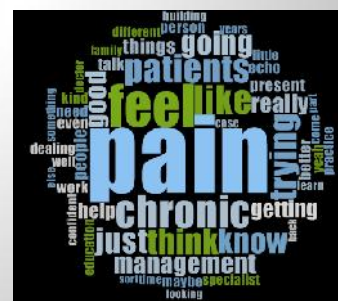
- 6 focus group discussions (FGDs)
- Setting: semi-annual 'boot camps' (mini-residencies) in Toronto, Thunder Bay, and Kingston, 2014-2015
- Total = 42 participants
  - 21 MDs, 7 NPs, 3 OTs, 3 Pharm, 3 SWs, 2 PAs, 2 RNs, 1 PT
  - 12 men, 30 women
- FGDs recorded, transcribed, annotated; analyzed by hand and with help from NVivo (qualitative data analysis software program)



## Talking about ECHO



## Talking about pain



## Burden on Family MDs

*My chronic pain patients-- I don't have a huge number-- are my most challenging patients, and I've got their faces in my brain... My top three probably take more brain and mental energy than the next 500 most challenging people. I often feel helpless.*



## Emerging themes

### Problems

- 'I have to learn more': inadequate training in management of chronic pain
- 'Another roadblock': lack of resources and the challenge of northern medicine

### Solutions

- 'It's okay to say "no"': managing challenging conversations with patients
- 'We now share this common language': building a community of practice



## Further investigation

- Semi-structured interviews with 'spokes'
- Interviews with 'hub' participants
- Compare and contrast with other ECHO incarnations- what works, why, what doesn't, why not?



## Mental Health and Addictions

- **1/5** Canadians and **1/4** Ontarians experience a mental illness or addiction in their lifetime
- The **disease burden** of mental illness in Ontario is **1.5 times higher** than **all cancers** combined
- The presence of a mental illness **increases the likelihood** one will suffer from **one or more chronic disease** including:
  - cancer
  - cardiovascular disease
  - type 2 diabetes



## Mental Health and Addictions

- Lack of **access to specialized care** for MH + A; both in rural/remote and urban areas
- **Delays in Rx** in rural areas add to the **heavy burden of complex mental illness**
- Clinicians in rural areas **manage +++ patients** with great degree of **complexity and comorbidity**
- More than **20% of all PCP visits** in ON related to **MH**
  - feel **equipped** to manage straightforward
  - feel **ill equipped** to manage complex/ severe cases



## Mental Health and Addictions

- Complexity **compounded** by Rx side effects, drug toxicities, and co-morbidities
- Optimal **management of complex conditions** = consultation with **specialists from multiple areas**
  - Can be \$\$\$ or difficult to access
- For complex patient, far more **effective** to bring **expertise together**, than send the patient to multiple experts



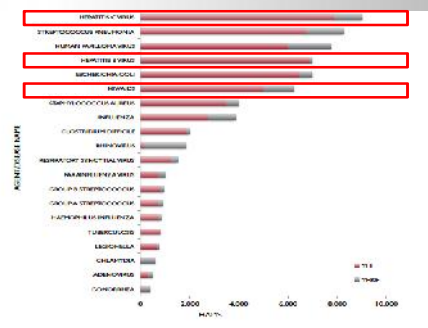
## HCV: A major global public health problem



- 130-170 million people infected
- No vaccine
- Leading indication for liver transplant

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## HCV is a MAJOR health problem in Canada



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Kwong et al PLoS One 2012

## Potential Consequences of HCV Infection

Healthy Liver → Cirrhosis → Liver Cancer  
 20%  
 (at 20 yrs of infection) 1-4%/yr



Slowly progressive over decades of infection

Does this mean 80% do not have consequences?

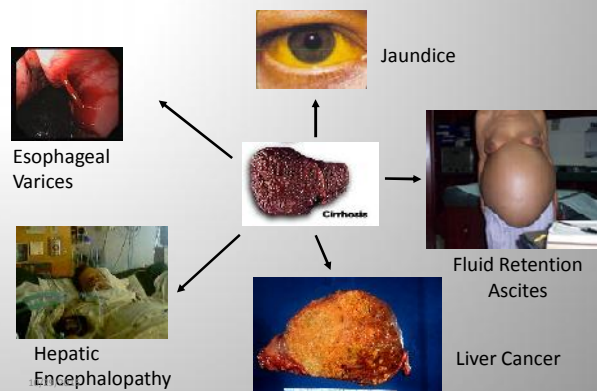
**No!**

**Cirrhosis risk 41% at 30 yrs....lifetime risk 50-60% or higher**

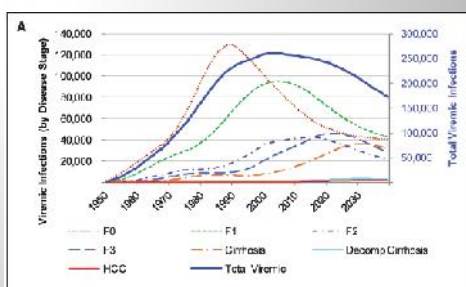
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Thein Hepatol 2008

## What we're trying to prevent



## The complications are just beginning

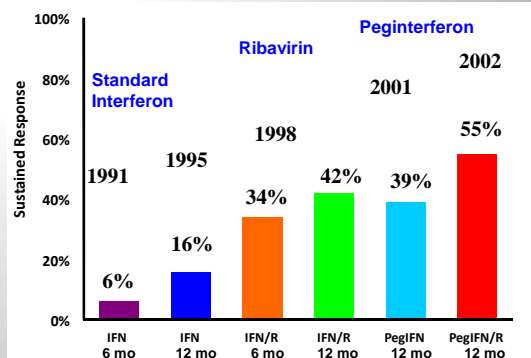


- Rising rates of cirrhosis, liver failure, liver cancer

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Myers Can J Gastro 2014

## The Good News...



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## Treatment

- HCV is a **CURABLE** infection
- No small feat – first curable chronic viral infection



## Effective but difficult



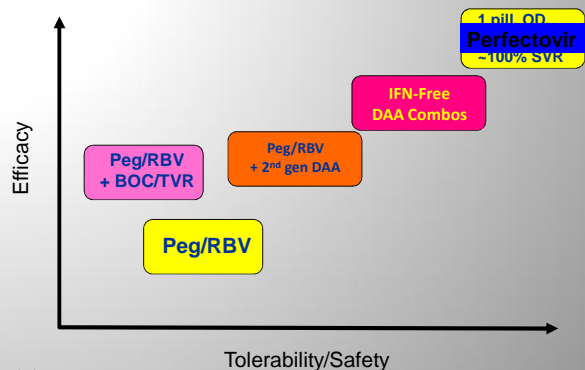
Lots of side effects

- Flu-like symptoms
- Fatigue
- Depression
- Anemia
- Neutropenia
- Injection site reactions
- Hair thinning
- Skin rash
- Autoimmune reactions
- Many others...

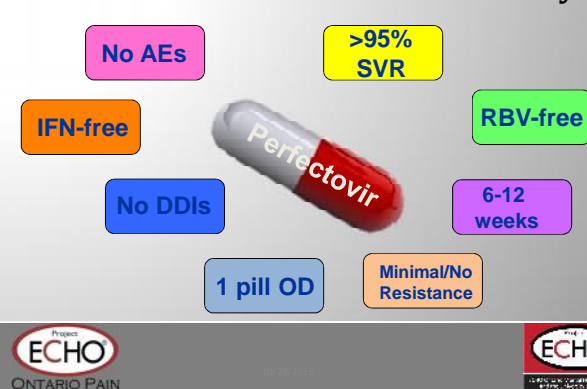
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Try dealing with this for a whole year!

## Very Rapid Progress



## Perfectovir will soon be a reality



## What about in Canada?

CMAJ

## RESEARCH

### Cost-effectiveness of screening for hepatitis C in Canada

William W.L. Wong PhD, Hong-Aili Tu PhD, Jordan J. Field MD MPH, Tom Wong MD MPH, Murray Krahn MD MSc

- Improved therapy of no benefit unless treatment rates increase
- Diagnosis rate in Canada → may be as low as 30%!!!

- Screen (1945-70) and treat with IFN-free regimen  
ICER = ~\$35,000 CAD per QALY

- We should be screening in primary care too



ONTARIO PAIN

## ECHO is ideal for HCV

Made in New Mexico: Perfected in Ontario



- Difficult-to-access communities – First Nations, PWID, rural
- Straightforward therapy but guidance helpful
- Evidence already exists for HCV care

## A Hep C free Ontario is an achievable goal



ECHO will be a key to making this a reality

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## Sore and swollen joints...

- Arthritis comes in hundreds of "flavours"
  - That is, if this is arthritis in the first place...
- If arthritis:
  - Acute vs chronic
  - Inflammatory versus non-inflammatory
  - Mono-, oligo-, polyarticular
  - Seropositive versus seronegative
  - Extraarticular features
- Physical exam:
  - Truly articular?
  - Axial/peripheral
  - Tender/swollen
  - Fibromyalgia



ONTARIO PAIN



ONTARIO PAIN

## Sore and swollen joints...

- Laboratory investigations
  - CBC
  - Non-specific inflammatory markers
  - ANA, RF as red herrings?
- Imaging
  - X-rays are insensitive tools in early disease
  - Access to U/S with power Doppler, MRI
- Treatment
  - Does he need a DMARD?
  - Contraindications in the context of multimorbidity
  - Access to biologics



## Rheumatology

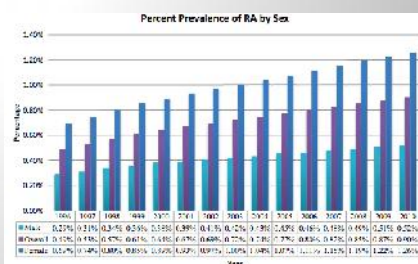


- Rheumatoid arthritis (RA) is highly morbid, but treatable
- \*TIME IS JOINT\*
- In Ontario, RA prevalence has doubled since 1996
  - This reflects 1% of the population

Widdifield 2013, 2014



## Rheumatology



Widdifield et al Can J Public Health 2013



## Rheumatology

Table 2. Crude Rates by Area of Patient Residence According to Local Health Integration Network (LHIN) in 2010

LHIN No.	LHIN Description	Count	Population	Crude Rate per 100,000	Standardized* Rate per 100,000 (95% CI)	No. of Rheumatologists per 100,000
1	East St. Catharines	3665	233,983	158	739 (703-782)	0.7
2	South West	7088	789,224	898	752 (734-770)	1.1
3	Waterloo Wellington	4634	805,992	708	710 (685-737)	0.3
4	Hamilton Niagara	11,322	1,165,450	1023	842 (824-860)	1.3
5	Central West	3474	445,231	783	816 (823-809)	0.3
6	Midwestern Huron	7366	722,141	1023	821 (803-840)	1.2
7	Western Central	7332	867,942	829	770 (775-763)	3.2
8	Central East	10,611	1,419,327	748	638 (674-703)	1.3
9	South East	14,546	1,486,654	984	660 (654-684)	0.8
10	South East	4074	413,421	984	733 (723-743)	1.8
11	North Simcoe Muskoka	3440	375,981	909	639 (635-644)	0.8
12	North East	6256	482,432	1297	1018 (1011-1024)	0.2
13	North West	6214	629,994	988	749 (749-749)	1.3
Overall	All Ontario	97,497	10,631,448	699	736 (776-788)	1.3

\* Standardized by age and sex based on 1991 census population.

† CI: confidence interval.

Note: 132 patients who were prevalent for RA in 2010 could not be assigned to a LHIN.

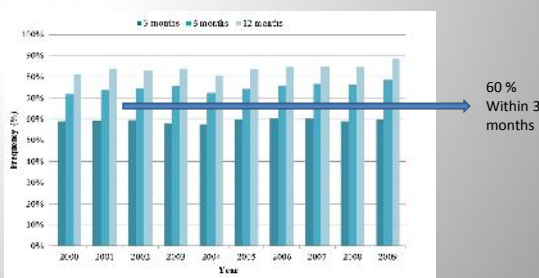
Widdifield et al Can J Public Health 2013

There are **160** rheumatologists in Ontario  
Most practice in or near large cities

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## Rheumatology

Consultations within 3 months did not increase over time:



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Widdifield et al BMJ Open 2014

## Rheumatology

- Successes in multidisciplinary RA co-management
- Early RA management is quite consistent

1. Making the diagnosis – not just RA!
2. Physical exam competency
3. Familiarity with conventional DMARDs

Lundon 2008, 2009, Bain 2012



## There is a Global Specialist Shortage

- How can specialists:
  - better manage 1000's of patients with complex conditions who live far from his/her office?
  - reach underserved populations (low income, rural, FNIM)?



...Within the existing infrastructure, and without adding to the workforce?



## So what is project ECHO®?

Extension for **Community** Healthcare Outcomes  
2003: Hepatitis C



People need access to specialty care for their complex health conditions.

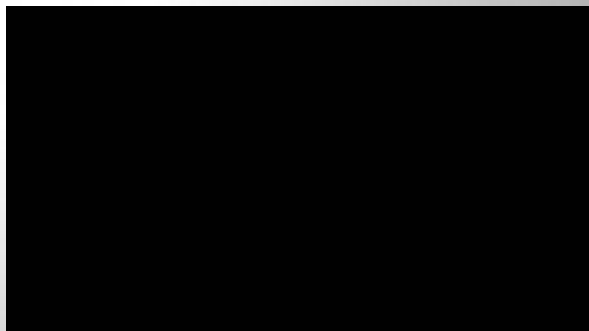
There aren't enough specialists to treat everyone who needs care, especially in rural and underserved communities.

ECHO trains primary care clinicians to provide specialty care services. This means more people can get the care they need.

Patients get the right care, in the right place, at the right time. This improves outcomes and reduces costs.



## How 'ECHO' works?



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Please refer to the YouTube video by UNM:



<https://www.youtube.com/watch?v=CfqRwNd0Nao>

New York Times: "a disruptive innovation"

[http://opinionator.blogs.nytimes.com/2014/06/11/the-e-doctor-will-stream-to-you-now/?\\_r=1](http://opinionator.blogs.nytimes.com/2014/06/11/the-e-doctor-will-stream-to-you-now/?_r=1)



## ECHO USES:

- **Video conference technology** to leverage scarce healthcare resources
- The disease management model to improve outcomes by **sharing 'Best Practices'**
- **Case-based learning** to help community practitioners **'Learn by Doing'**. Cases are managed by community practitioners with support from university specialists
- Databases to **monitor outcomes**



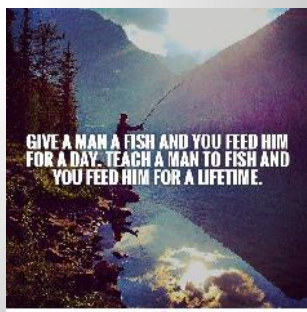
## How is ECHO different from telemedicine?

**Telemedicine** improves ACCESS by using technology to bridge distance

The ECHO model improves CAPACITY and ACCESS simultaneously



## WHY ECHO WORKS



## ECHO ONTARIO

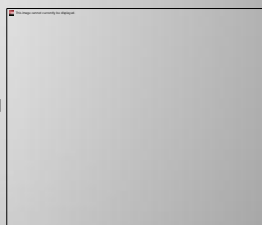
### - Didactic topics (examples) :

- Safe opioid prescribing, tapering, switching, opioids, Urine drug screens
- Responding to aberrant behaviours
- Chronic pain physical exam
- Fibromyalgia, low back pain CRPS, headache
- Pharmacological and non-pharmacological management
- Goal-setting, communication skills



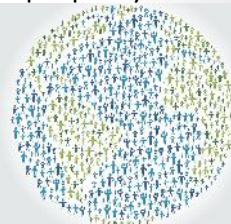
## ECHO: Case Discussion Model

- PCP'S SPEAK FIRST, THEN EXPERTS
- Clarifying questions – do you need more information?
- Recommendations for other investigations/testing?
- Suggestions re: referrals and management?
- NB: Patients are never seen during ECHO sessions but will be fast-tracked to a specialist if necessary



## META-ECHO GOAL (global ECHO movement)

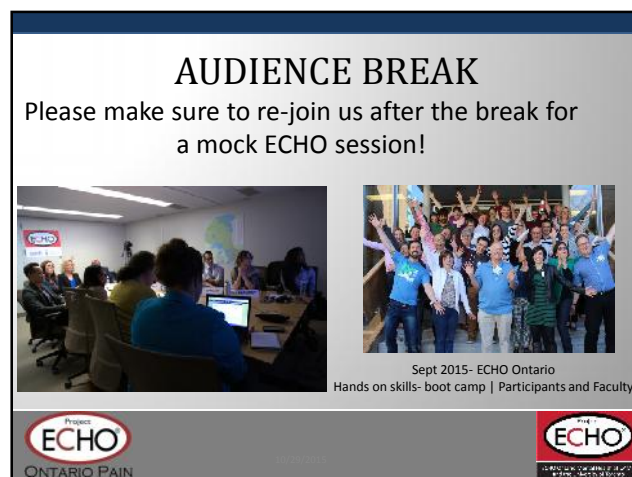
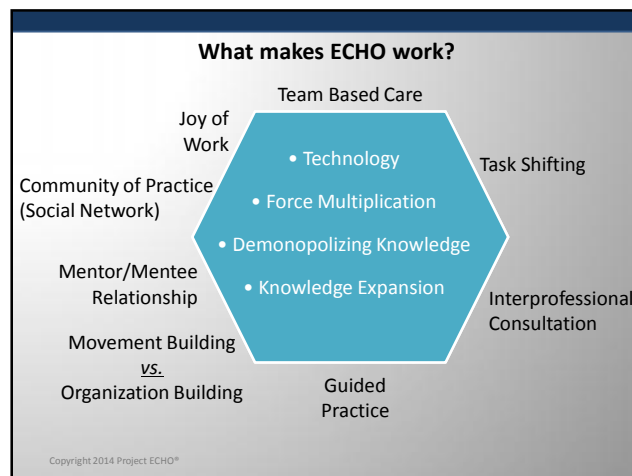
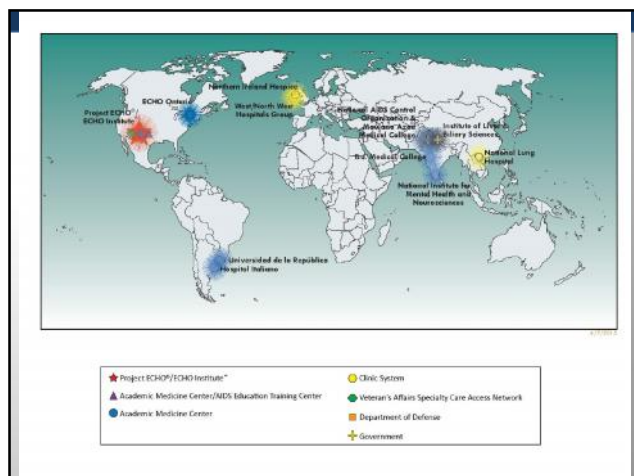
Touch one billion people by 2015



### ECHO replications 2015 so far: a sampler

- Georgia US: Pediatric Growth and Endocrinology
- Jamaica: Renal Failure Prevention, Complex Care
- Utah: High Risk Obstetrics, Hepatitis C, Advanced Liver care, Immune disorders of the gut
- ECHO Uruguay/ Missouri: Autism TeleECHO Clinic
- India: Mental Health + addictions; Cytology and Preventive Oncology (ICPO): cancer screening initiative using community health workers, HIV
- Argentina: Dermatology
- Uruguay: Anemia clinic
- Dublin: Hepatitis C ECHO
- ECHO Chicago: Hypertension in African-Americans, ADHD
- Vietnam: Tuberculosis





AND NOW FOR SOMETHING  
COMPLETELY DIFFERENT



**YOU** the audience are going to  
help Dr. Ruth manage a  
complex patient



## Remember Daniel?

- 35 years old
- Referred to you for primary care after prolonged hospitalization for severe depression 25 years ago
- History of severe childhood abuse, illiterate, "tied to a chair".
- All siblings had substance abuse issues (Alcohol, cocaine, IVDU).



## Daniel continued...

- Has severe low back pain with sciatica
- Also has episodes of very sore and swollen joints
- Also found to have hepatitis C: "not a candidate for interferon" due to depression
- Continues to drink alcohol and uses marijuana
- Occasional violent altercations with wife who is also your patient
- No children



## Questions?

- How do I treat his inflammatory arthritis?
- What about his hepatitis C? His use of alcohol and marijuana?
- What can I use to treat his depression?
- What about his chronic pain?



## ECHO: Case Discussion Model

- PCP'S SPEAK FIRST, THEN EXPERTS
- Clarifying questions – do you need more information?
- Recommendations for other investigations/testing?
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- NB: Patients are never seen during ECHO sessions but will be fast-tracked to a specialist if necessary



## Thank you!

### ECHO Ontario – Chronic Pain

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[www.porticonetwork.ca/web/echo-on-mh/home](http://www.porticonetwork.ca/web/echo-on-mh/home)



## Questions?

