

# Phase 2 Translational Research

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**UNIVERSITY**  
*of* **VERMONT**  
**COLLEGE OF MEDICINE**

# Outline

- Background
- Who cares?
- So- what is evidence anyway? (Group discussion)
- Contemporary response in medicine-And reactions in psychology
- Translational Scientists-Translational practitioner researchers-2 leaps (three really)
- Discussion

# Background



# The Meaning of Translational Research

- Translational research means different things to different people but seems important to about everyone (Woolf JAMA 2008)
- It depends.....

# On how you look at things

- Effective translation of the new knowledge, mechanisms driven by advances in basic science research for prevention, diagnosis and treatment essential for improving health

Fontanarosa et al. (JAMA 2002)

Close the gap of quality by improving access, reorganizing and improving systems of care, helping clinicians and patients make more informed choices, and providing reminders and point of decision support McGlynn et al (Annals of internal Medicine 2003)

Or

The translation of results from clinical studies  
into everyday clinical practice and health  
decision making Institute of Clinical Research Roundtable  
(2003)

# The Spectrum of the Health Sciences

## The Spectrum of the Health Sciences

Science:	<b>Basic Science</b>	<b>Research &amp; Development</b>	<b>Technology Assessment</b>	<b>Quality Improvement</b>	<b>Community Action</b>
Questions:	<i>What is going on?</i>	<i>What can we do?</i>	<i>What should we do?</i>	<i>How can we deliver it?</i>	<i>How can we ensure health?</i>
Actors:	Biologic and Social Scientists	Engineers	Health Services Researchers & Clinical Epidemiologists	Providers & Policy Makers	Community Members and Leaders
Audiences:	<i>Scientists &amp; Engineers</i>	<i>Manufacturers &amp; Distributors</i>	<i>Providers, Policy Makers, Payors</i>	<i>Providers, Institutions</i>	<i>Patients, Families, Providers, Communities, Employers, Institutions, Government</i>
Outcomes:	Insight into mechanisms of health & disease	New products	Evidence-Based Medicine	Better care	Healthier Communities

*Well-developed*



*Newly developing*

Each of the sciences has created the need for the next.  
Each has required new methods, insights, attitudes and leaders.

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Translational research specifically aims at taking discoveries and best practices to benefit the lives of people in our communities.

Translational Research has four different but interrelated components (T1-T4):

Phase 1 translation (T1) research seeks to move a basic discovery into a candidate health application.

Phase 2 translation (T2) research assesses the value of T1 application for health practice leading to the development of evidence-based guidelines.

Phase 3 translation (T3) research attempts to move evidence-based guidelines into health practice, through delivery, dissemination, and diffusion research.

Phase 4 translation (T4) research seeks to evaluate the "real world" health outcomes of a T1 application in practice.

The phases described above are expected to overlap and provide feedback loops to allow integration of new knowledge.

# Who cares? A major conundrum

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- It affects a lot of stuff
- Training
- Safety in silos
- How and what gets done- policy, practice funding

# Policy and practice

- The IOM has suggested that by 2020, 90% of clinical decisions will be supported by effectiveness evidence
- Currently there is a time lag between research and eventual health benefits of approximately 17 years. Medical Research Council, Wellcome Trust and Academy of Medical Sciences (2008)
- It also showed that reducing this time lag would improve economic returns.

# What gets done is what is paid for

- In 2002 NIH budget was \$9.1 billion for applied and developmental research and \$787 for health services research
- In the president's recovery allocation AHRQ has received \$1.1 billion dollars for comparative effectiveness research

# The Public Health Imperative

- There is great pressure to implement practice and often limited information
- There are pressures and opportunities for collaboration with universities, and specifically medical schools
- The air is rife with the sounds of health care reform
- Chronic illness is very hip

# What is evidence anyway?

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The discussion

# Contemporary response

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- In Medicine
- In Psychology

# In Medicine

- Center for Translational Science Awards
- What medical schools are doing (U of Vermont College of Medicine as example)
- A stranger in a strange land-my life in a CTS
- Translational science study sections at NIH

# In Psychology

- Houston- we have a problem: the lack of effectiveness of psychology in medicine
- Two stories- The psychology department and the CTS and the psychology and health lab oncology collaboration-sort of
- The APA position

# The Leap-Translational Scientists Translational Research Practitioners

- The translational scientist- new thinking new designs
- Population focus from non generalizable findings
- Beyond RCT's -efficacy to effectiveness
- New roles for practitioners as scientists- The Practice Based Research Network method
- The Collaborative Care Research Network

# The Cochrane Position

The Cochrane Effective Practice and Organization of Care Group has endorsed three alternative methodologies for evaluating population interventions

Cochrane Effective Practice Group (2003)

# Three alternative designs

- Non RCT-individuals or groups allocated to experimental conditions using quasi experimental methods
- Controlled before and after study-no random allocation and single points of data collection before and after intervention
- Interrupted time series design-same group compared over time with repeated measures with multiple groups

# Summary

- There is a tremendous need for population based effectiveness research
- There is tremendous pressure, from multiple sources for such efforts
- Medicine is being supported to move in this direction
- There is a tremendous opportunity for behavioral medicine
- Thinking, designs, roles and locus of research efforts all need to shift to accommodate the changes

# Discussion...

