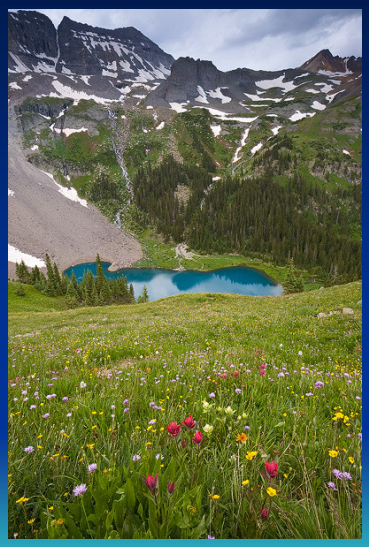

IMPLEMENTATION AND DISSEMINATION SCIENCE: NON-VA PERSPECTIVE

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Institute for Health Research
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OVERVIEW

- Current Situation (Gap Research—Practice)
- Contributing Factors (Why is This?)
- What Do We Know?
- Current Efforts
- Points of Convergence with QUERI
- Future Directions and Discussion

2

WHO IS THIS GLASGOW GUY?

- Behavioral scientist; public health
- HIT work on disease management, health behavior change
- Translation, D & I research: RE-AIM
- Moving to National Cancer Institute—CER, advice, opportunities

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THE NEED

- 17-year lag (urban myth?)
- 150 years for British navy to implement vitamin C for scurvy
- Considered a great "Quality Chasm" by the IOM and others*
- Described by former NIH Director as "lost in translation"

*Institute of Medicine, Committee on Quality Health Care in America. Crossing the Quality Chasm…Washington, D.C., National Academies Press, 2003

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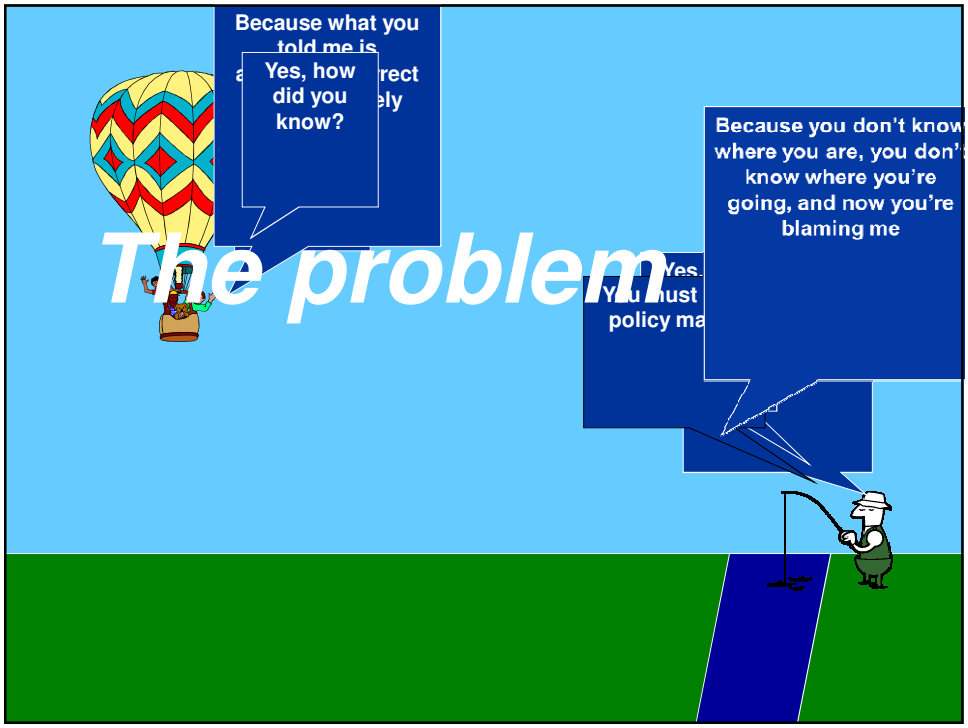

CURRENT SITUATION NATIONALLY

- Underperforming health care system (McGlynn)
- Expensive, unsustainable cost, increasing
- Balkanized and silo approaches
- Inequitable: Health disparities
- CRISIS and OPPORTUNITY

McGlynn EA et al. The quality of health care…*N Eng J Med* 2003;348(26):2635-2645
Institute of Medicine. Unequal treatment…Washington D.C., National Academies Press, 2003

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WHY? (TARGETS FOR CHANGE?)

- Research (RCT especially) not relevant to patients, practitioners, policy makers
- Vested interests (FDA model)
- Way we were trained
- Complex, "wicked issues"*
- Insufficient funding (98.5% NIH budget for basic)

*Kreuter MW et al. Understanding wicked problems. *Health Educ Behav* 2004;Aug;31(4):441-454

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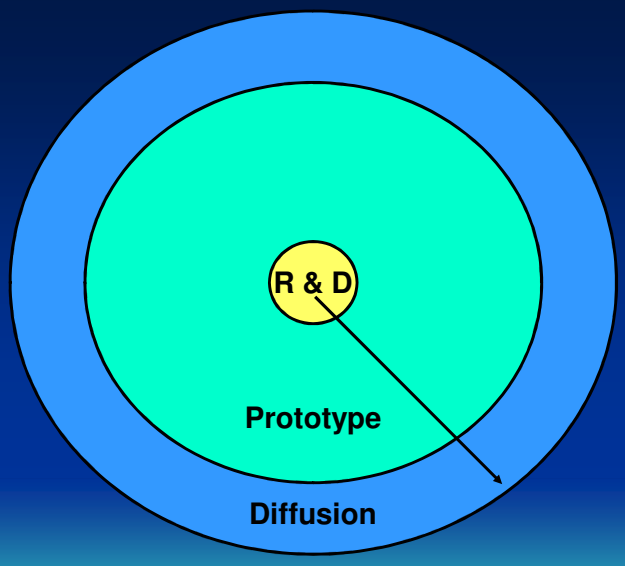

Current Situation: Ideal

J. McCannon – Scale up and Speaker – National Meeting – July 2010

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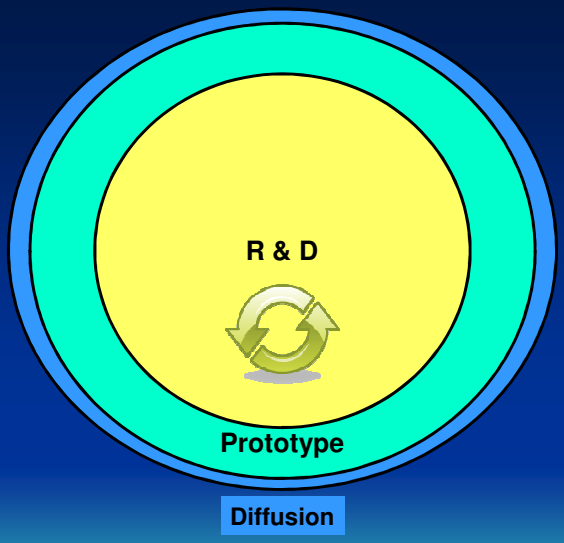

Current Situation: Actual

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MISMATCH BETWEEN THE "GOLD STANDARD" RCT AND EFFECTIVENESS INTERVENTIONS

Attributes of Effective Interventions	Attributes Associated with Traditional "Gold Standard" RCT
Significant front-line flexibility within quality parameters	Intervention standardized; discretion minimized
Evolving—in response to experience and conditions	Intervention constant over time
Intervention/program design reflecting local strengths, needs, preferences	Intervention centrally designed, uniform across sites
Intake/recruitment into program under local control	Intake/recruitment centrally designed for randomization

Adapted from Schorr (common-purpose.org, 2001) with permission

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MISMATCH BETWEEN THE "GOLD STANDARD" RCT AND EFFECTIVENESS INTERVENTIONS (cont.)

Attributes of Effective Interventions	Attributes Associated with Traditional "Gold Standard" RCT
Multiple components	Single factor, single sector
Interactive components take into account health, social, educational needs	Components clearly separable
Complex, changing hard-to-measure attributes	Readily measured inputs
Implementers "believe in" the intervention	Value-free implementation

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WHAT DO WE KNOW? WHAT ARE WE LEARNING?

- Terminology:
  - Implementation Research: The scientific study of methods to promote the systematic uptake of clinical research findings and other evidence-based practices into routine practice, and hence to improve the quality and effectiveness of health care.
  - Dissemination: The active process through which information needs (pull) of target groups working in specific contexts (capacity) are accessed; and information is tailored to increase awareness, acceptance and use of lessons learned form science. (Kerner 2007)
  - Dissemination Research: The study of processes and variables that determine and/or influence the adoption of knowledge, interventions, or practice by various stakeholders. (Lomas)
  - Diffusion: The passive or "naturalistic" spread of innovation across settings and time

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CANADIAN / UK COLLEAGUES

- **Knowledge Transfer:** Linear expert "translation" to practitioner model
- **Knowledge Exchange:** Reciprocal learning from practice and vice-versa
- **Knowledge Integration:** Systems model more complex and contextual

Best A et al. The evolution of cancer control research…*Cancer Epi Biomarkers Prev* 2003;12:705-712

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ROGER'S DIFFUSION PRINCIPLES (PROGRAM CHARACTERISTICS)

- Comparative advantage
- Trialability
- Complexity (Simple)
- Congruent with organization values (Compatibility)
- Observability

Rogers EM. *Diffusion of Innovations.* 5th Ed. New York: Free Press; 2003

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IMPLEMENTATION AND DISSEMINATION RESEARCH CHARACTISTICS

- Contextual
- Complex
- Multi-component programs and policies
- Non-linear
- Transdisciplinary
- Multi-level

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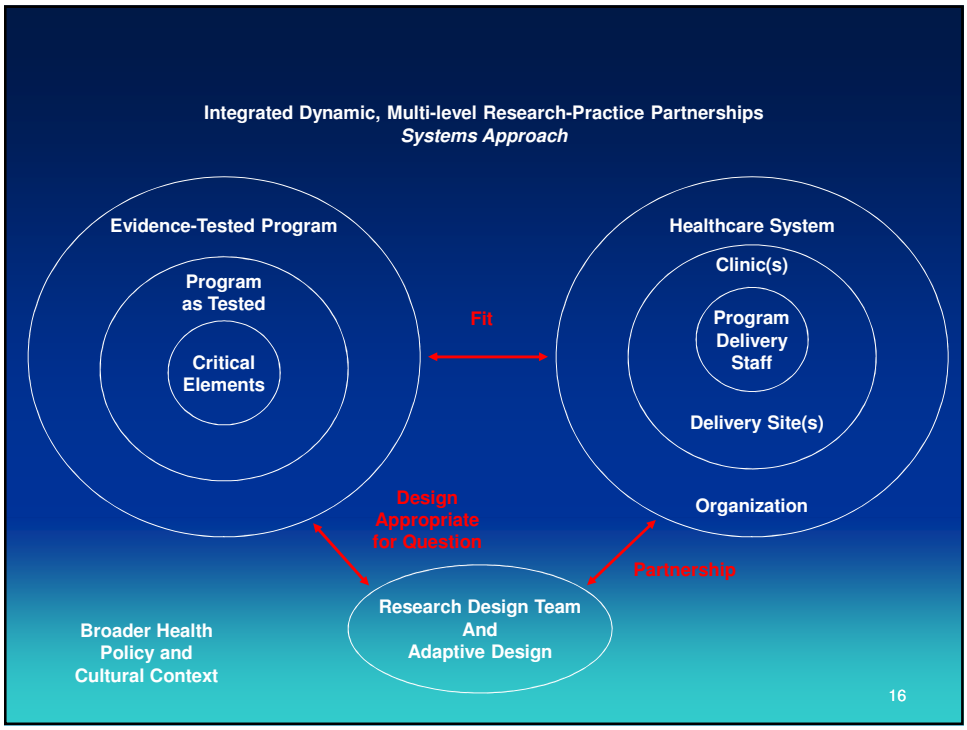

LEARNING WHAT DOES NOT WORK

- Publishing in journals (without appendices or protocols)
- Doing talks like this (without follow-up)
- Traditional CME
- Distributing guidelines
- Having an EMR

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REALIST EVALUATION AND REVIEW APPROACH

"What intervention under what conditions delivered by what staff is most (cost) effective for producing what outcomes for which populations and how does it come about?"

…VERSUS…

"What is the mean effect size from the small subset of RCTs on this condition?"

Pawson R et al. Realist review: A new method…*J Health Serv Res Policy* 2005;10(S1):S21-S39

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ULTIMATE IMPACT OF MAGIC DIET PILL

Dissemination Step	Concept	% Impacted
50% of Clinics Use	Adoption	50%
50% of Clinicians Prescribe	Adoption	25%
50% of Patients Accept Medication	Reach	12.5%
50% Follow Regimen Correctly	Implementation	6.2%
50% of Those Taking Correctly Benefit	Effectiveness	3.2%
50% Continue to Benefit After 6 Months	Maintenance	1.6%

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MORAL OF THE STORY?

"Focus on the Denominator"
(not just the numerator)

(Each step of the dissemination sequence, or each "RE-AIM" dimension is important)

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RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact

RE-AIM ELEMENT	GUIDELINES AND QUESTIONS TO ASK
REACH Percent and representativeness of participants	Can the program attract large and representative percent of target population? Can the program reach those most in need and most often left out (i.e., the poor, low literacy and numeracy, complex patients)?
EFFECTIVENESS Impact on key outcomes, quality of life, unanticipated outcomes and subgroups	Does the program produce robust effects across sub-populations? Does the program produce minimal negative side effects and increase quality of life or broader outcomes (i.e., social capital)?

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RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact (cont.)

RE-AIM ELEMENT	GUIDELINES AND QUESTIONS TO ASK
ADOPTION Percent and representativeness of settings and staff that participate	Is the program feasible for majority of real-world settings (costs, expertise, time, resources, etc.)? Can it be adopted by low resource settings and typical staff serving high-risk populations?
IMPLEMENTATION Consistency and cost of delivering program and adaptations made	Can the program be consistently implemented across program elements, different staff, time, etc.? Are the costs—personnel, up front, marginal, scale up, equipment costs—reasonable to match effectiveness?

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RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact (cont.)

RE-AIM ELEMENT	GUIDELINES AND QUESTIONS TO ASK
MAINTENANCE Long-term effects at individual and setting levels, modifications made	Does the program include principles to enhance long-term improvements (i.e., follow-up contact, community resources, peer support, ongoing feedback)? Can the settings sustain the program over time without added resources and leadership?

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JGIM Journal of General Internal Medicine

Embracing a Health Services Research Perspective on Personal Health Records: Lessons Learned from the VA My HealtheVet System

Kim M. Nazi, PhD(c)1, Timothy P. Hogan, PhD, Todd H. Wagner, PhD, D. Keith McInnes, ScD, MS, Bridget M. Smith, PhD, David Haggstrom, MD,MAS, Neale R. Chumbler, PhD, Allen L. Gifford, MD, Kathleen G. Charters, PhD, RN, Jason J. Saleem, PhD, Kenneth R. Weingardt, PhD, Linda F. Fischetti, RN, MS, and Frances M. Weaver, PhD

J Gen Intern Med 25(Suppl 1):62–7

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D & I OPPORTUNITIES

- Simulations, modelings, system dynamic models (prior to large-scale efforts, ID unanticipated outcomes)
- Time-lagged replications
- Natural experiments
- Well-documented QI studies
- Rapid learning EMR databases
- Practical and pragmatic trials

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PRACTICAL (PRAGMATIC) TRIALS: KEY CHARACTERISTICS

- Multiple, heterogeneous settings
- Representative populations
- Comparison conditions are real-world alternatives
- Multiple outcomes important to decision and policy makers

Tunis SR et al. Practical clinical trials…*JAMA* 2003;290:1624-1632
Glasgow RE et al. Practical clinical trials…*Med Care* 2005;43(^):551-557

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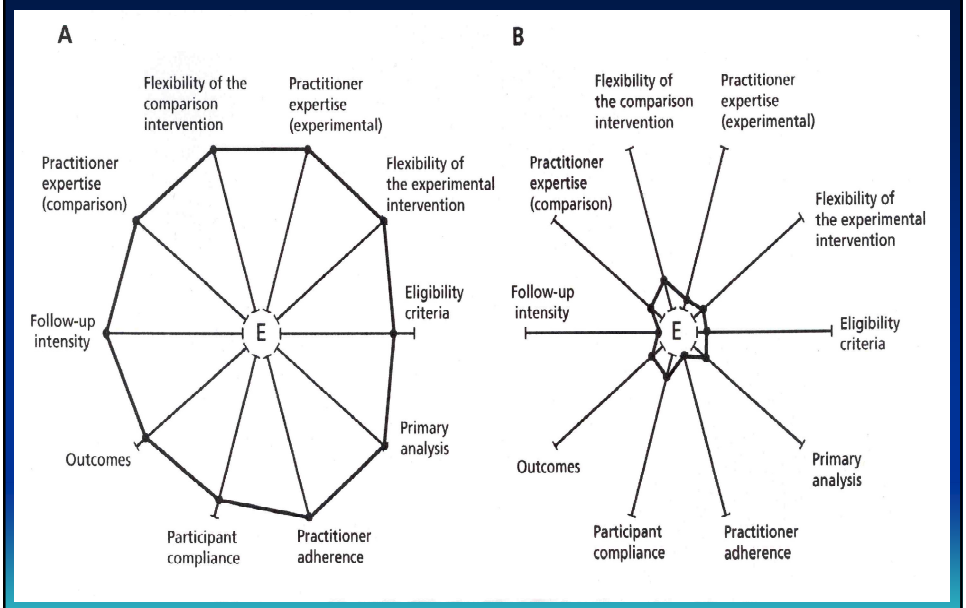

Thorpe et al. A pragmatic-explanatory continuum indicator summary (PRECIS)…*CMAJ* 2009; 180(10):E47-357

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OTHER POINTS OF CONVERGENCE WITH QUERI

- PDSA versus PPPP…P
- Focus on ultimate or population impact
- Recognizes multiple types of evidence and the importance of replication
- Importance of organizational factors (PRISM)

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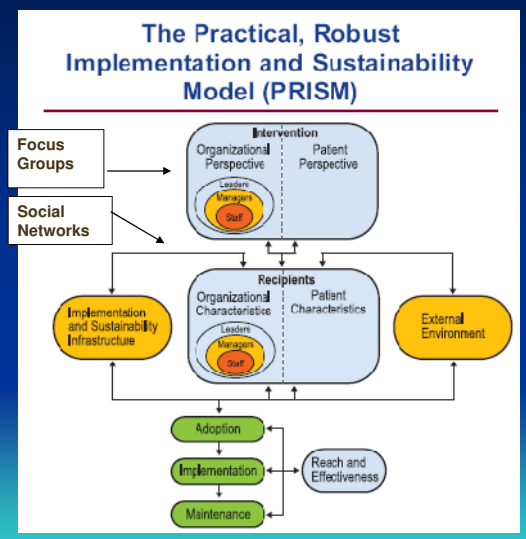
PRACTICAL, ROBUST, IMPLEMENTATION AND SUSTAINABILITY MODEL (PRISM)



Feldstein A, Glasgow RE. A practical, robust Implementation…*Jt Comm J Qual Safety* 2008;34:228-243

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SUMMARY: D & I EMPHASIS

- Need evidence that is:
  Contextual, Practical, Rapid
- 3 "R's":
  Robustness, Relevance, Replication
- Generalization across 3 "S's":
  Settings, Subgroups, Simulations

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RESOURCES

1. On-line resources
   - Cancer PLANET (http://cancercontrolplanet.cancer.gov)
   - RE-AIM (www.re-aim.org)
   - Center for Health Dissemination and Implementation Research (http://research-practice.org)
2. References (see hand-outs)

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D & I OPPORTUNITIES: ADD YOURS

- "T3" and "T4" research
- Comparative Effectiveness Research-T (see handout)
- Scale-up and Sustainability
- Incorporation of Economic Perspectives
- Training (annual NIH meeting; summer institute)

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