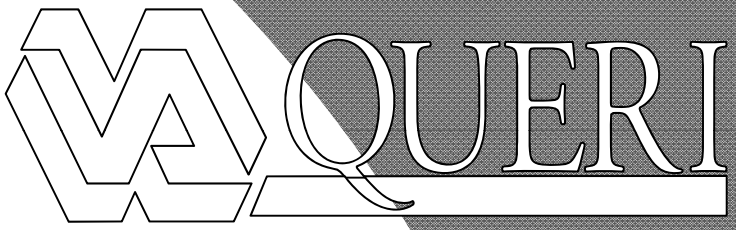

Pushing the Implementation Science "Envelope" in VA: Enhancing our Value and Contributions

Brian S. Mittman, PhD

VA Center for Implementation Practice and Research Support

VA Greater Los Angeles Healthcare System

September 20, 2012

Purpose and basis for this presentation

- Reflect on recent progress, current status and future direction of implementation science in VA (and in field more broadly)
- Identify opportunities for enhancements
- Presentation adapted from talk on "the future of implementation science" at May 2012 Academy for Healthcare Improvement (www.a4hi.org) conference *Advancing the Methods for Healthcare Quality Improvement Research*

My interest is in the future because I am going to spend the rest of my life there.

Charles F. Kettering, 1876-1958
American inventor, founder of Delco,
head of research at GM

Prediction is very difficult, especially if it's about the future.

Niels Bohr, physicist, 1885-1962
(Also attributed to Yogi Berra, Winston Churchill, Woody Allen, Mark Twain, others)

There are many methods for predicting the future. For example, you can read horoscopes, tea leaves, tarot cards, or crystal balls. Collectively, these methods are known as "nutty methods." Or you can put well-researched facts into sophisticated computer models, more commonly referred to as "a complete waste of time."

Scott Adams, 1957-
The Dilbert Future, 1997

The best way to predict the future is to invent it.

Alan Kay, 1940-, computer scientist
Xerox PARC, Apple Computer

Polling Question

Please indicate your VA affiliation and your level of prior implementation research training and experience

1. VA affiliation, with prior implementation science training
2. VA affiliation, no prior training but relevant experience
3. VA affiliation, no prior training <u>or</u> experience
4. Non-VA, with prior training or experience
5. Non-VA, no prior training or experience

Using the past to predict the future:
A short history of QI and implementation research

- Quality assessment, small-area variations (1970s)
- "Changing physician behavior" (1980s)
- Industrial quality improvement , QI research, AHRQ (1990s)
- Quality chasm, translational roadblocks, NIH (2000s)
- Implementation research, *Implementation Science*, AHI (2000s)
- Health reform/ACA (2010s): CER, CMS/CMMI, AAMC
- Methodological awareness and developments (theory; contextual influences; processes, mechanisms, mediators): ongoing

Using the past to predict the future: *Assessing and projecting trends*

- Current levels of quality, safety, value, utilization of best practices; improvement since 2000: *moderately poor (2 on a 5-point scale)*
- Volume of insights, useful findings and practice/policy-relevant guidance produced by QI research to date; improvement since 2000: *poor (1 on a 5-point scale)*
- Volume of QI research activity, interest and grants; growth since 2000: *moderate to high (3-4 on a 5-point scale)*
- Volume of QI publications and presentations; growth since 2000: *moderate to high (3-4 on a 5-point scale)*
- *Conclusion: growth in activity has not produced comparable growth in insights, guidance, impacts*

Using the past to predict the future:
Diagnosing recent trends

Challenges might stem from

- Features of the evidence, research, innovations we implement
- External barriers (IRB, funding, study sites/subjects)
- Professional, institutional factors (disciplines, terms, concepts)
- Theoretical and conceptual foundations
- Research approaches, designs, methods

Features of the evidence, research and innovations we implement

- Efficacy vs. effectiveness research
- External validity, generalizability, transferability
- Practical/pragmatic clinical/behavioral trials ("effectiveness trials")
- Designing for dissemination: "reach" goals vs. near-term goals
- Practice-based evidence (L. Green)

External barriers
IRB, funding, study sites/subjects

- QI/service/operations vs. research:
  solving the review problem vs. evading review requirements
- Funding sources and mechanisms; review committee composition; reviewer guidance; design/methods consensus
- Access to study sites; partnerships with study sites

Professional, institutional factors: *disciplines, terms, concepts*

- Multiple origins, foundations
- Heterogeneous labels, subfields
- Consistency vs. “let a thousand flowers bloom”: internal vs. external orientation and needs
- Research synthesis, shared learning
- Progress in establishing a more inclusive, cohesive community, professional society

Theoretical and conceptual foundations

- Lack of adequate theory (number, scope, value)
- Excess volume of theories
- Lack of guidance in using theory

Research approaches, designs, methods

Disagreements and debates over
research approaches, designs and methods

vs.

Lack of consensus (or clarity of communication)
regarding our primary research questions and goals
(and appropriate research to address these)

An aside:
"selective" vs. "biased" sampling

The *representative sampling paradox* in implementation research:

- Estimating implementation success in 3 years vs. now
- Sampling to represent future vs. current conditions

Implementation phenomena are different

→ implementation research approaches, designs and methods must differ *even when answering the same questions as clinical research*

Studying complex social interventions

Implementation strategies and programs are *complex social interventions* characterized by:

- Variability and heterogeneity of program (intervention) content across time and place
- Heterogeneity of program implementation across time and place
- Strong contextual influences (leadership, culture, experience/capacity, staff/budget sufficiency), variability and heterogeneity of context across time and place
- Weak main effects (other than for *robust* programs)

Studying complex social interventions

- Robust CSIs are amenable to RCTs to estimate mean effect sizes (and the strength of a small number of contextual influences)
- We prefer to study robust CSIs because "that's where the light is"
- The value and applicability of methods for estimating "effectiveness" decreases with increases in the
  - magnitude of contextual influences
  - degree of heterogeneity and variability of programs and settings increases
- and with decreases in the main effect size

Studying complex social interventions: What is our goal?

Two very different questions

1. Does it work? Is it "*effective*"?
   Should it be approved?
   Included in the formulary?
   Should I use it?

2. How, why, when and where does it work?
   How should I use it?
   How do I make it work?

For many/most implementation strategies, Q1 is meaningless

Developing insights and guidance for implementation

- How do I choose an appropriate implementation strategy given my context?
- How do I implement (deploy) that strategy to increase effectiveness?
- How do I adapt and customize that strategy to increase effectiveness (initially and over time)?
- How do I modify/manage the organization or setting to increase effectiveness (initially and over time)?
- How, why, when and where does it work?

Developing insights and guidance for implementation

Selecting research approaches, designs and methods

- Trials facilitate effectiveness estimates; observational studies facilitate study of barriers, facilitators, mechanisms, mediators, moderators
- Process evaluation can develop insights into mechanisms
- Theory-based evaluation, realistic evaluation, related approaches from program evaluation offer additional value
- Guidance in selecting, applying and further developing these approaches is needed
- Implementation strategies exist on a continuum; research approaches should be matched to their features

Conclusion

A productive, satisfying future requires focused attention, action

- Features of the evidence, research, innovations we implement
- External barriers (IRB, funding, study sites/subjects)
- Professional, institutional factors (disciplines, terms, concepts)
- Theoretical and conceptual foundations
- Research approaches, designs, methods

Enhancing Implementation Science 2012, Advanced Program

Program Agenda

1. Sept 20: Overview (*Brian Mittman, VA*)
2. Early October: "Independent study" (*see next slide*)
3. Oct 18: Scale-up/spread (*David Aron, VA*)
4. Nov 1: Measures, Measurement and Instruments (*Cara Lewis and Kate Comtois, Seattle Implementation Research Conference*)
5. Nov 15: Network Analysis and Network Interventions (*Tom Valente, USC*)
6. Dec 6: Complex Adaptive Systems (*Luci Leykum, VA*)

CIPRS

Center for Implementation Practice & Research Support

Enhancing Implementation Science 2012
Independent Study (early October)

Select one or more topics and watch archived Cyberseminars

- QIR cyberseminars: qualitative research methods, sustainability, quantitative approaches for CSIs, realist evaluation, cost analysis (also in EIS 2011), context
- EIS 2011: Advanced theory, facilitation strategies, implementation outcomes

Access archived seminars from:

- www.hsrd.research.va.gov/cyberseminars/catalog-upcoming.cfm (click on Archive tab and filter QUERI Implementation Research)
- www.queri.research.va.gov/meetings/eis/2011/