



Improving Knowledge to Action: Models, Partners, and Tools

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Overview

- Knowledge to Action models
- Implications for partnerships
- Tools for local agencies
- Summary and discussion

Comparison of Knowledge Types

MODE I

- Focus is knowledge generation
- Basic to applied research
- Scientist as expert
- Clear standards of knowledge

MODE II

- Focus is problem-solving
- Learn by doing
- Knowledge is co-created and context dependent
- Flexible methods & general guidelines for quality

Partnering

Knowledge Exchange

**Improved Integration
& Outcomes**

Systems Thinking

Transdisciplinarity

C 2 Centre for
Clinical
2 E Epidemiology
& Evaluation



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PROBLEM-BASED RESEARCH

- ❖ Build teams
- ❖ Think through problems
- ❖ Integrate perspectives
- ❖ Foster systems change

“For every complex problem, there is a solution that is simple, neat, and wrong”

H.L.Mencken

Generations of Knowledge Thinking

1: Linear Models (1960s-mid 90s)

LANGUAGE

- Dissemination
- Diffusion
- Knowledge transfer
- Knowledge uptake

KEY ASSUMPTIONS

- Knowledge is a product
- Key process is a handoff from research producers to research users
- Knowledge is generalizable across contexts is a function of effective packaging

Generations of Knowledge Thinking

2: Relationship Models (Mid-90s to present)

LANGUAGE

- Knowledge exchange

KEY ASSUMPTIONS

- Knowledge from multiple sources research, theory, and practice
- Key process is interpersonal, involving social relationships
- Networks of research producers and research consumers
- Collaborate thru production-synthesis-integration cycle
- Knowledge is context-linked, and must be adapted to local setting
- Degree of use is a function of effective relationships and processes

Generations of Knowledge Thinking

3: Systems Models

LANGUAGE

- Knowledge integration
- Knowledge translation
- Knowledge mobilization
- Knowledge exchange and uptake

KEY ASSUMPTIONS

- Knowledge cycle is tightly woven within priorities, culture, and context
- Explicit and tacit knowledge need to be integrated to inform decision making and policy
- Relationships mediate throughout the cycle, and must be understood from a systems perspective, in the context of the organization and its strategic processes
- Degree of use is a function of effective integration with the organization(s) and its systems

SEMINAL ARTICLES

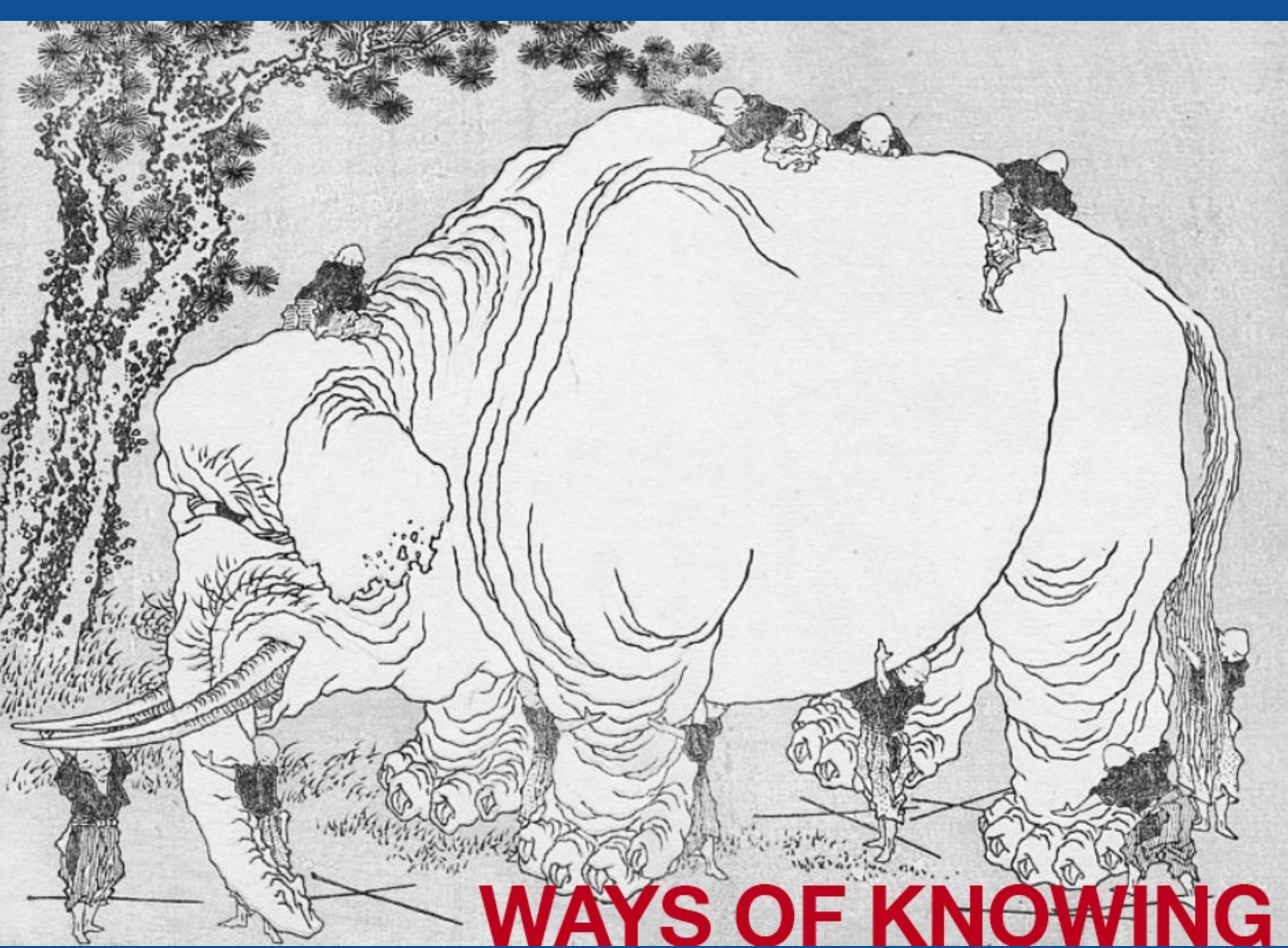
CHANGE THEORY

Grol, Richard, et al. Planning and studying improvement in patient care.
Milbank Quarterly 2007; 85:93-138.

KNOWLEDGE TO ACTION MODELS

Van de Ven, Andrew, & Johnson, Paul.
Knowledge for theory and practice.
Academy of Management Review
2006; 31:802-821.

Van de Ven, A. *Engaged Scholarship*. Oxford, 2007



WAYS OF KNOWING

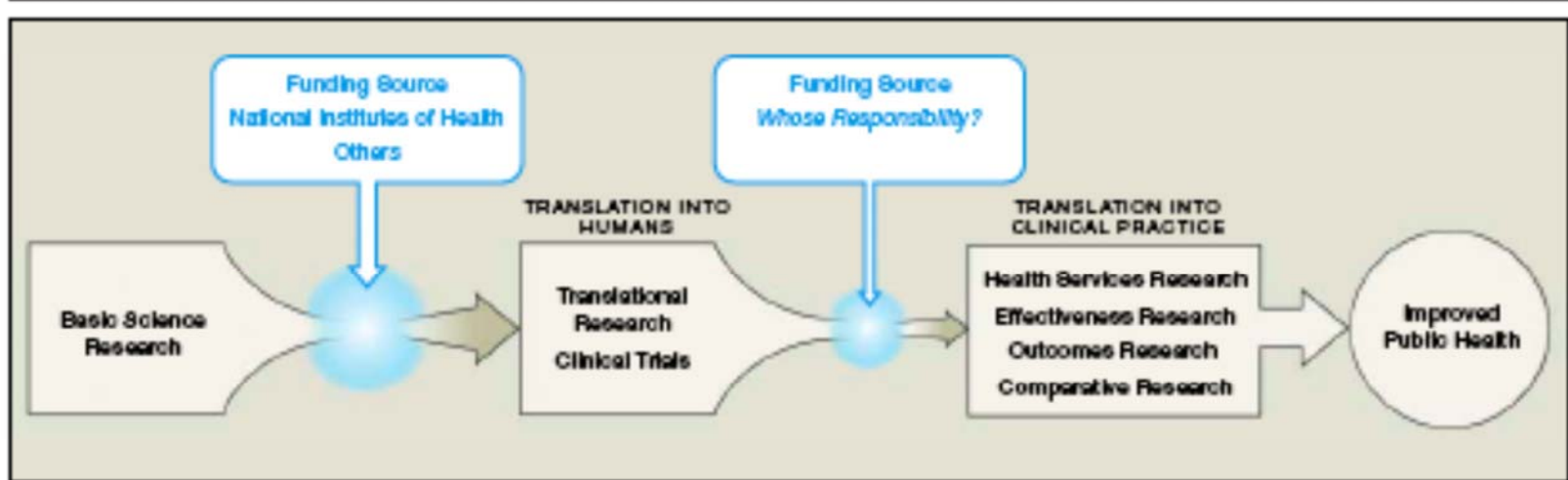
LINKING CHANGE THEORY TO KTA

TRANSFER (linear)	EXCHANGE (relationship)	CO-PRODUCTION (systems)
<ul style="list-style-type: none">• Cognitive• Educational• Motivational• Communications	<ul style="list-style-type: none">• Social learning• Social network and influence• Teamwork	<ul style="list-style-type: none">• Complexity• Leadership• Organizational culture, learning and innovation• Quality Management and integrated care

FROM KTA THEORY TO MENTAL MODELS

NCIC	VAN DE VEN	MENTAL MODEL
linear	transfer	linear
relationship	exchange	circular
systems	co-production	dynamic

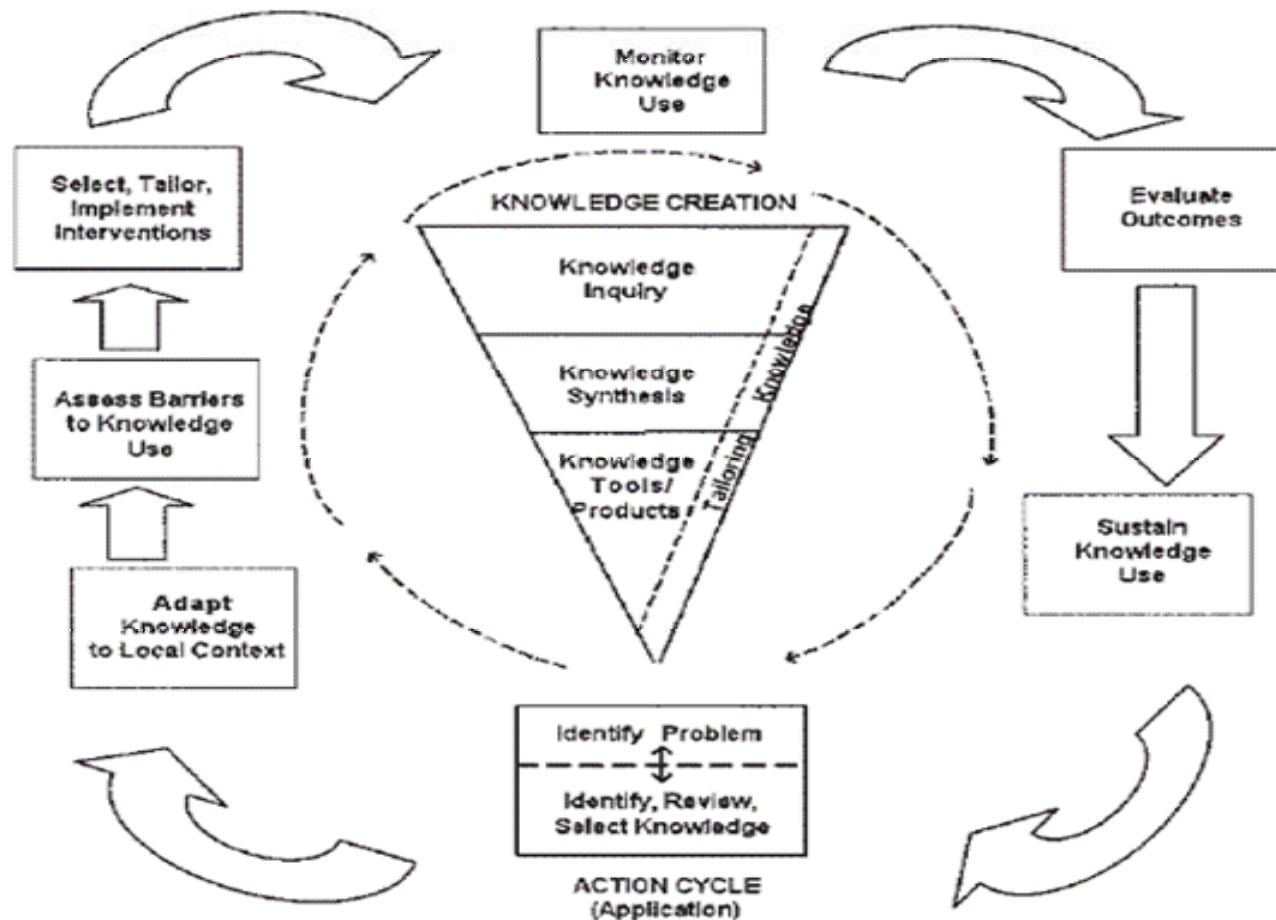
Linear Models ~ Two Stage Translational Research



Clinical research can be viewed as encountering 2 separate roadblocks on the way toward improving public health. These 2 translational blocks have different factors creating each but whereas the National Institutes of Health has been consistently targeting the bench-to-bedside block, no one is taking responsibility for the second, which is integrally tied with the funding of the health care delivery system.

Crowley WF et al. *JAMA* 2004;291:1120-1126.

Circular Models ~ Planned Action

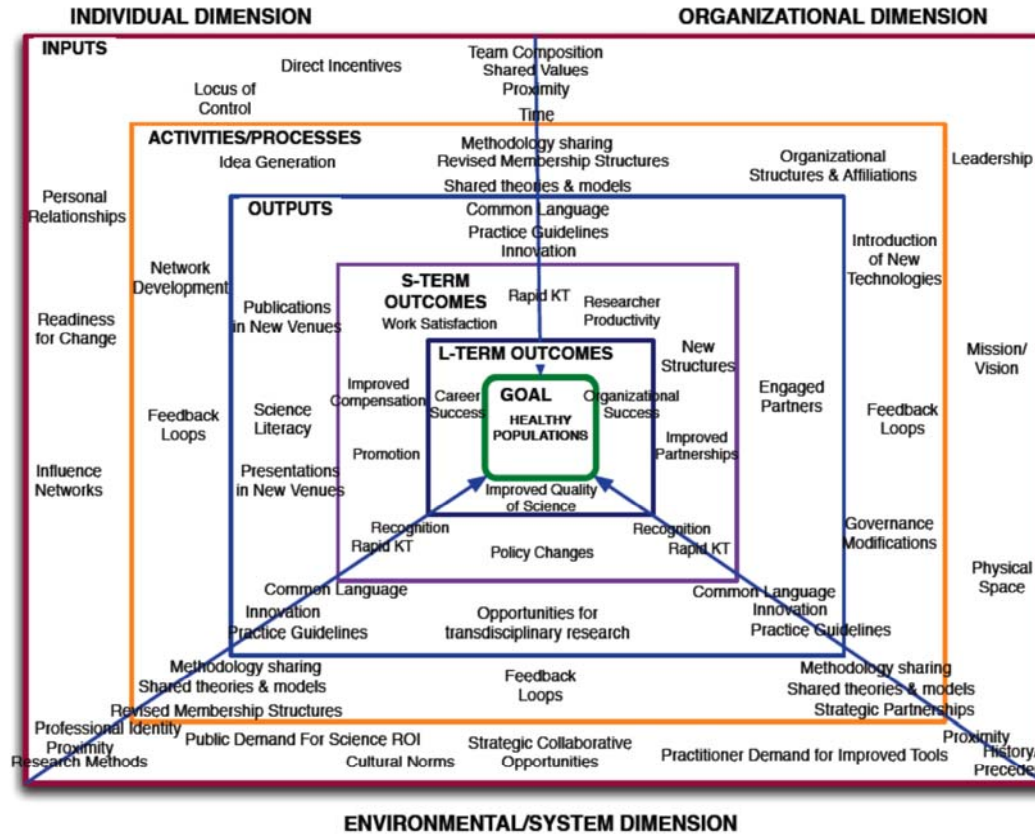


Circular Models 2 ~ NHS Systems Change



Kelly MP, Speller V, & Meyrick J (2004). London: Health Development Agency, <http://www.nice.org.uk/page.aspx?o=502709>

Logic Model ~ Interdisciplinary Teams



SYSTEM ANTECEDENTS FOR INNOVATION

Structure Size/maturity Formalisation Differentiation Decentralisation Slack resources	Absorptive capacity for new knowledge Pre-existing knowledge/skills base Ability to find, interpret, re-codify and integrate new knowledge Enablement of knowledge sharing via internal and external networks	Receptive context for change Leadership and vision Good managerial relations Risk-taking climate Clear goals and priorities High quality data capture
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SYSTEM READINESS FOR INNOVATION

Tension for change
 Innovation-system fit
 Power balances
 (supporters vs opponents)
 Assessment of implications
 Dedicated time / resources
 Monitoring and feedback

THE INNOVATION

Relative advantage
 Compatibility
 Low complexity
 Trialability
 Observability
 Potential for reinvention
 Risk
 Task issues
 Nature of knowledge required (tacit/explicit)
 Technical support

COMMUNICATION AND INFLUENCE

DIFFUSION (Informal, unplanned)

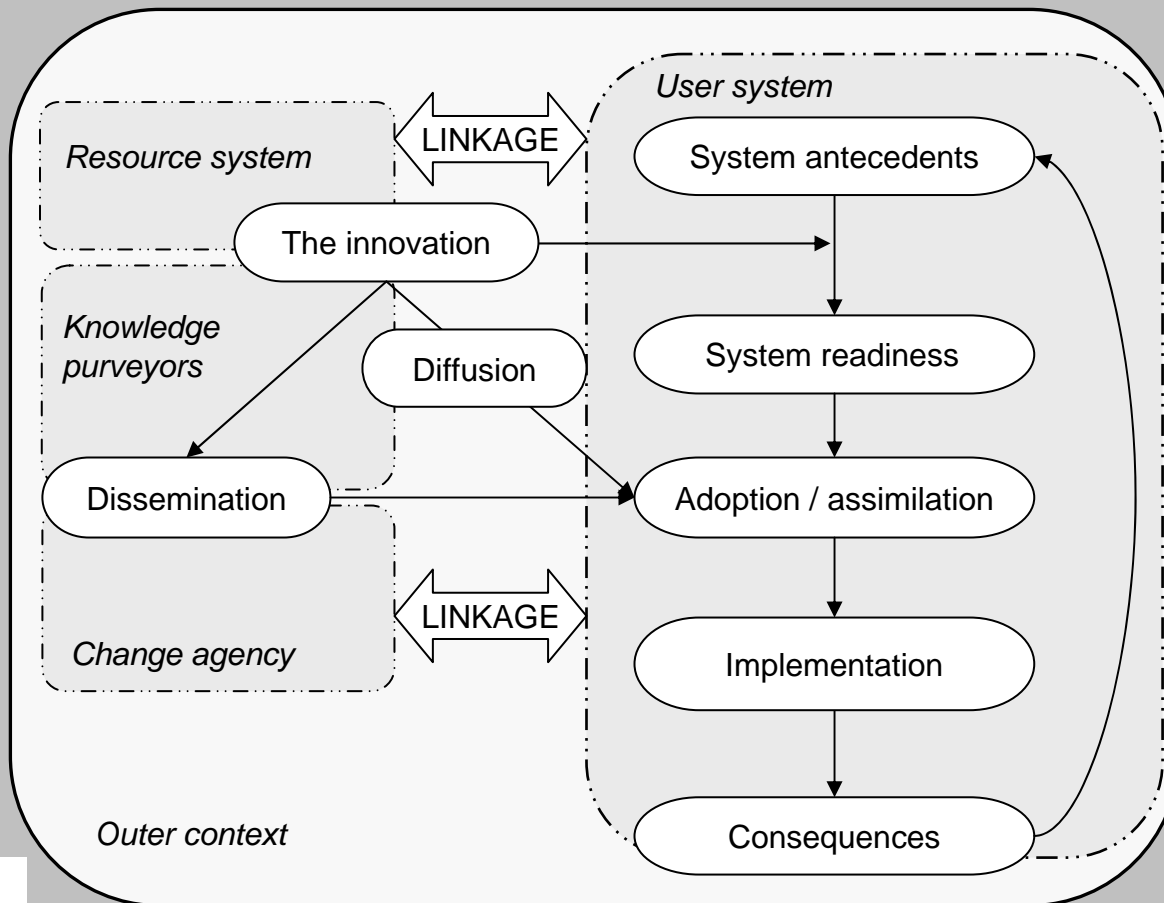
Social networks
 Homophily
 Peer opinion

Marketing
 Expert opinion
 Champions
 Boundary spanners
 Change agents

DISSEMINATION (formal, planned)

THE OUTER CONTEXT

Socio-political climate
 Incentives and mandates
 Inter-organisational norm-setting & networks
 Environmental stability



THE ADOPTER

Needs
 Motivation
 Values and goals
 Skills
 Learning style
 Social networks

ASSIMILATION

Complex, non-linear process
 'Soft periphery' elements

THE IMPLEMENTATION PROCESS

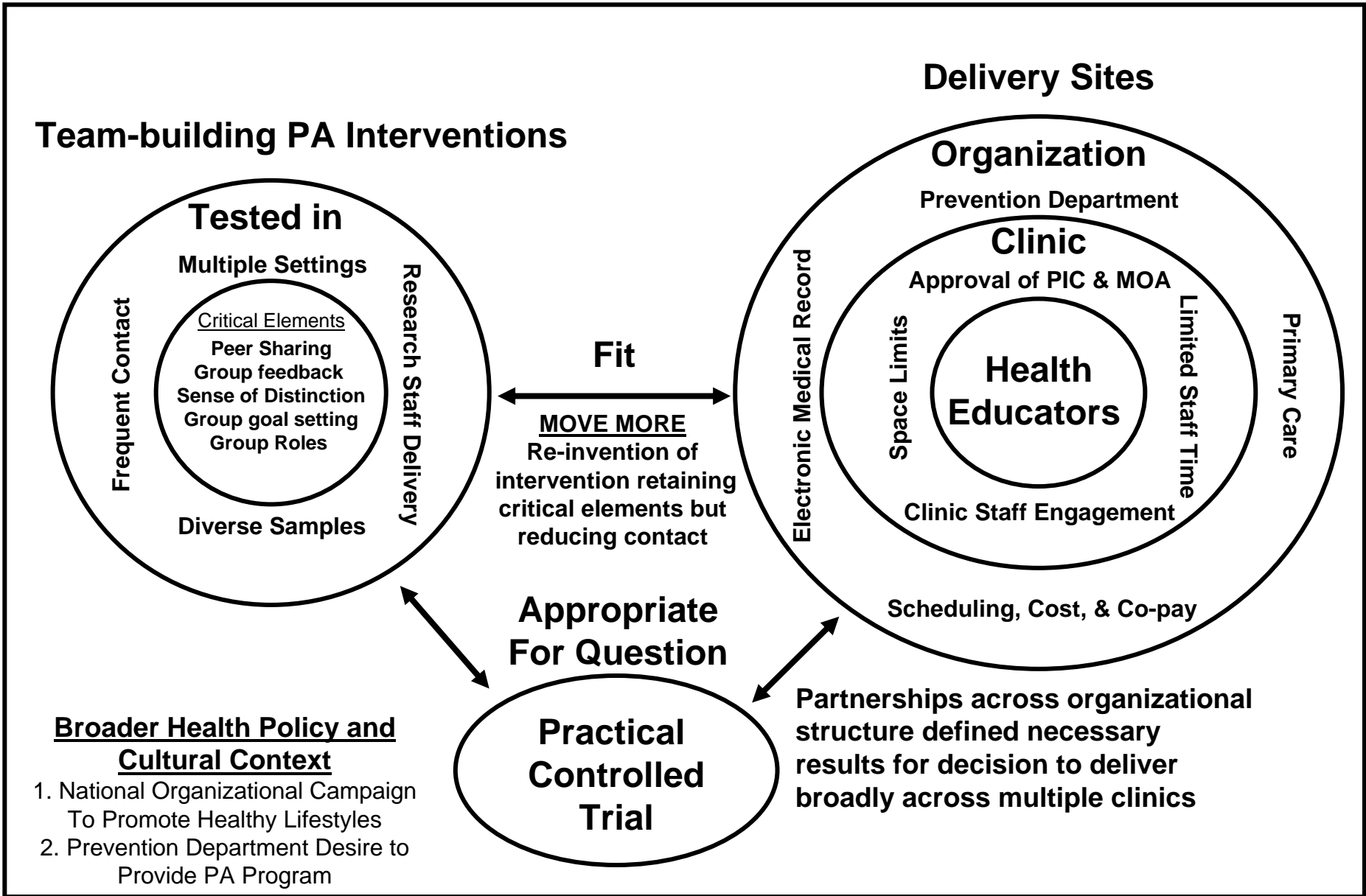
Decision-making devolved to front line teams
 Hands-on approach by leaders and managers
 Human resource issues, especially training
 Dedicated resources
 Internal communication
 External collaboration
 Reinvention/development
 Feedback on progress

LINKAGE

Design stage
 Shared meanings and mission
 Effective knowledge transfer
 User involvement in specification
 Capture of user-led innovation

Implementation stage

Communication and information
 User orientation
 Product augmentation e.g. technical help
 Project management support



Note: PIC=Physician in Charge; MOA=Medical Office Administrator

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Cluster Based Learning

- Six year Strategic Research training program
- To foster links between research, policy and practice

Organized around:

- Community-partnership clusters
- Transdisciplinary teams
- Problem-based approach

Cluster-Based Learning

Cluster-Based Learning

Innovative solution-focused approach to adult education

- Clusters solve specific real world health service research problems
- Groups collaborate to define problems and generate feasible solutions
- Personalized learning plans and mentoring
- Clusters brought together to collaborate for cross-cluster learning, such as specific training workshops (e.g. statistics, program evaluation)

OBSSR/CHSRF Rapid Review

- Clear common aims
- Trust
- Collaborative leadership
- Sensitivity to power issues
- Membership structure
- Action learning

Embedded Research

Intersectoral collaboration for problem-based research

- Primacy of Mode II
- Blended funding ~ grants, contracts, platform
- Close collaboration between producers and users
- Shared governance and accountability

CAHSPR Community of Practice for Embedded Research

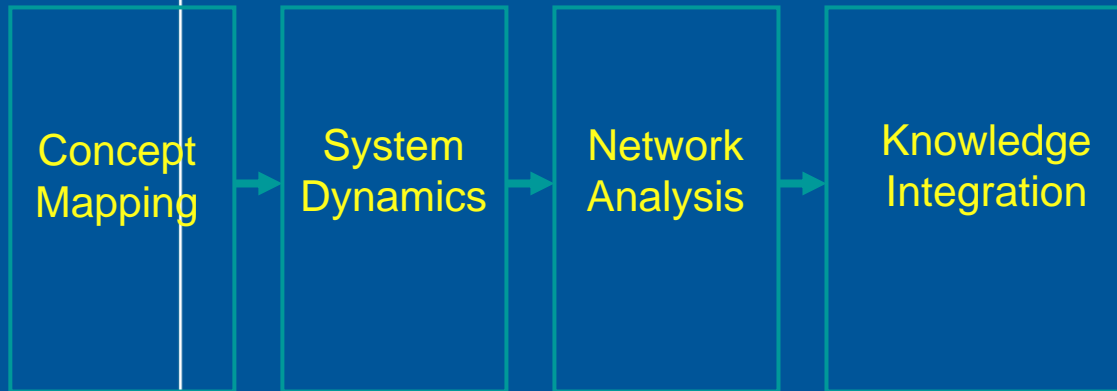
- Supported by CAHSPR ~ member association with some 200 student members
- Linked to national health services and policy research training programs
- Demand from next generation
- Web-based, student driven
- Directors from 14 centres and training programs in six countries
- Priority on ways to involve students early

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Action Research

WHOLE SYSTEMS METHODS

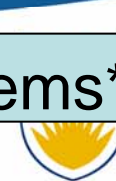


STRATEGIC CHANGE

REFINING METHODS

- Administrative Databases
- Surveillance, Info Systems, Report Cards
- Systematic reviews
- Better Practices Toolbox
-

Rapid Learning Systems*



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*Etheredge L, *Health Affairs* 2007 26(2): w107-w118

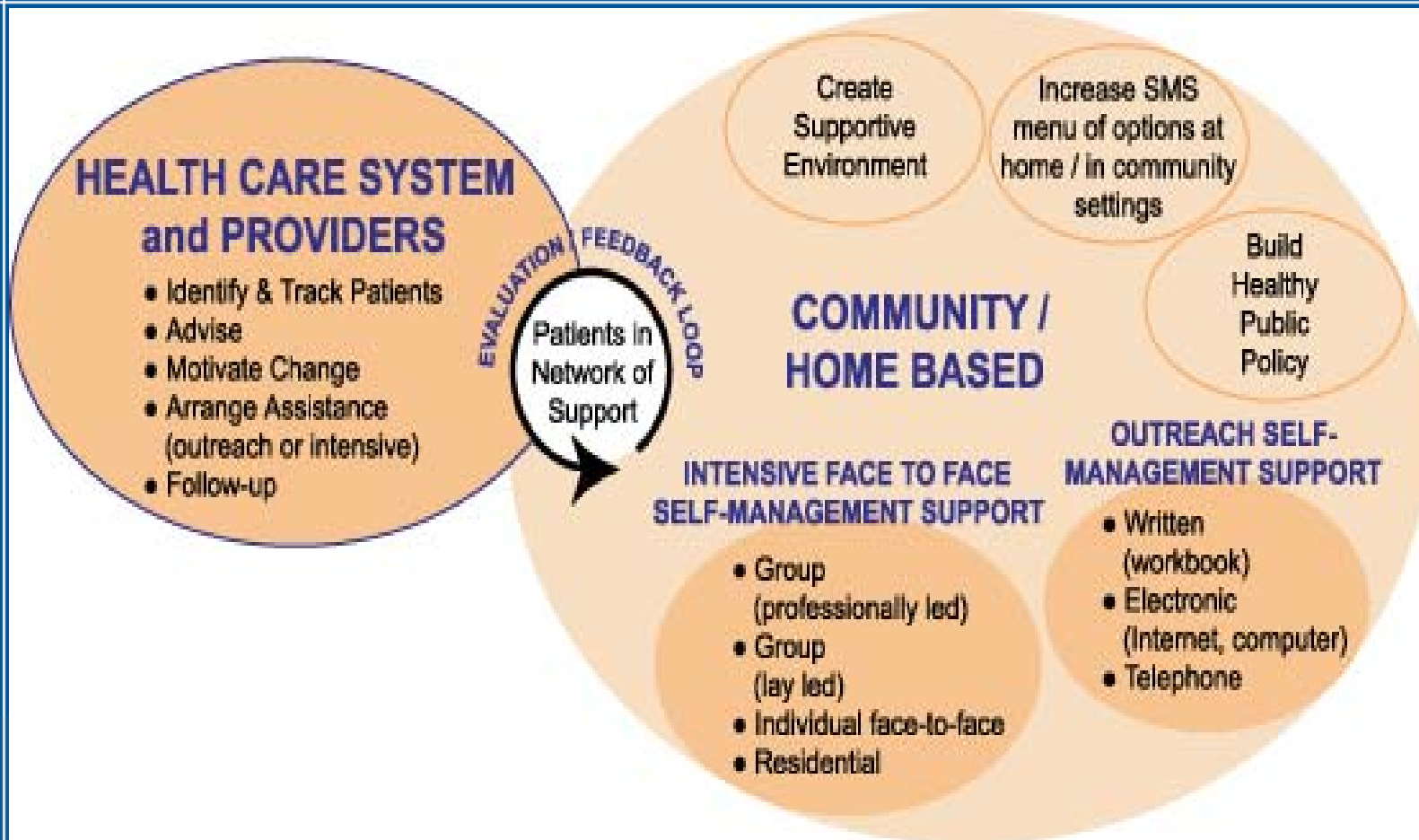
Rapid Reviews to Date

- Person-centred care
- Healthy Weights
- Population-based chronic disease self management support
- Interorganizational partnerships
- Evidence-informed public health policy
- Telehealth services for regional chronic disease management strategy

Rapid Review Methodology

- Realist review methodology (Pawson, et al. 2005)
- Targeted literature review
- Virtual expert panel
- Scheduled modified e-Delphi process over 3 months
- Report providing practical understanding of theoretical frameworks and/or evidence-based interventions
- Sense making process to tailor results to local context

SMS Framework for BC



Adapted from Barr et al,
Hospital

Key Messages from Research

- Research supports well-developed strategies that recognize the importance of environment and personal/social context (*limitations for clinician-only models*)
- There is no “one size fits all.” An effective SMS strategy must include a menu of patient-centred options
- The same menu of behaviour change SM strategies can be used for most major chronic diseases

Key Messages (cont.)

- A number of flexible SM and SMS options should be developed for patients across a range of health care and community services and resources
- Personal self-management skills include:
 - Goal setting
 - Self-monitoring
 - Stimulus control
 - Cognitive restructuring
 - Problem solving
 - Social support

Key Messages (cont.)

- The greatest challenge for SMS is at the systems level, where the optimal mix of clinical, community, and informal strategies is hard to manage ... i.e. a systems approach to KTA
- The Expanded Chronic Care Model is a useful framework for planning and continuously improving a systems strategy.

Key Messages (cont.)

- Systems factors for supporting effective SM and SMS include providing:
 - a range of delivery strategies (e.g. primary care counselling, telephone outreach, email, Internet)
 - tools to evaluate alternative strategies for individuals
 - system enhancements for tracking patient outcomes and prompting interventions.

Lessons Learned for Rapid Reviews

- Typically 3 months, but have to push
- Sensemaking process for local recommendations
- Realist review works well when clear theoretical lens
- Tailored process researchers vs.. decision makers
- Demanding project management
- Process needs tweaking each time ~ not as consistent as we'd like
- Second round needed for operational planning
- Participant and user satisfaction high

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1. Revolution in academia

- Van de Ven's "engaged scholarship"
- Gabriele Bammer's "integration and implementation science" ~ Bammer G. *Ecology and Society* 2005; 10(2):6
www.ecologyandsociety.org/vol10/iss2/art6/
 - Systems thinking and complexity science
 - Participatory methods
 - Knowledge management, exchange and implementation

2. Revolution in service

- Research a line item competing with patient service
- Transformative versus incremental strategy

3. Revolution in science

- Generalizable versus contextual knowledge
- Behaviour change AND system dynamics
- Clinical versus public health evidence

