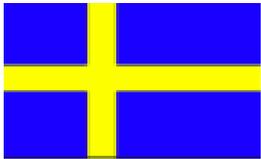


Evaluating implementation and improvement

20jan/22jan15

SEFOH



John Øvretveit,

Director of Research, Professor of Health Innovation and Evaluation,
Karolinska Institutet, Stockholm, Sweden



**Karolinska
Institutet**

Objectives

- to improve Veteran's healthcare more quickly
- ...by doing and using implementation evaluation research
- know tools and resources to help me

... for researchers and practitioners unfamiliar with improvement and/or implementation research

My needs – *most* useful to me would be...

Vote for one (3) – I will show all 3 then
ask your vote

1 How to evaluate implementation



2 How to evaluate improvement



3 Difference and overlap between
implementation and improvement



sciences

My needs – *most* useful to me would be...

Vote for one – I will show all 4 then ask your vote

4 Evaluating implementation fidelity

5 Evaluating adaptations

6 Action evaluations to improve

implementation and build knowledge

7 What? Explain all above please

Three Challenges

- “Inappropriate variations” in use of effective interventions across VA services
 - Vet’s deserve more for *their* service
- Changing “usual way” is difficult
 - when high workload & low change capacity-expertise & other Va priorities
- Also for VA researchers
 - to use new methods/practices
 - Reviewers not familiar with methods, your training, identity & to work more closely with ops & funding issue

Va Opportunities

- Find and focus on those effective improvements easy to implement or high impact
 - E.g. appointment reminders texting, adherence support
 - interventions which reduce costs and increase quality and easy to implement in most settings – e.g. Could researchers do this better – could the VA system?
 - relook at Queri steps & assumptions
- Generic implementation models >>> family of Imple approaches, for different interventions / settings/ subjects
- Innovate in new practice-partnership research methods, in advance of Academia
 - inc. using digital data for faster lower cost research & improvement

Disclosure – 5 biases/assumptions

- Reduce suffering more effectively by
 - a) measuring outcomes
 - b) *learning* how to get the best outcomes - research and practitioner (and patients)
- Data essential, varying quality, and need care to attribute “outcomes” (researcher expertise)
- Match method to purpose of the research
(= RCT best, and worst, of evaluation designs depending on user questions and resources)

Disclosure – Johns biases/assumptions

- Environment can make intervention more or less effective – sometimes need to understand
- European bias:
 - more emphasis on social context
 - qualitative and mixed-methods data-gathering valid and best, if done right, for some purposes

Final “preface points”

- Many improvements or implementations refer to changes to health care practices, processes or organisation
 - not to interventions to patients (treatments)
- = “Implementing a treatment” usually refers to enabling providers to use it,
- can refer to what is done to enable patients to use it (adherence)
- Can evaluate a) if providers change, b) impact on patients

I & I = two domains separated by a “common language”

- No precision, no science. - How John will be using the words:

Improvement:

- better than otherwise, for someone, in some respect
= outcome of an “intervention” - eg new treatment,
new care process

Improvement method:

- Systematic approach to make an improvement (QI & gen)
 - (eg process diagram, PDSA, breakthrough collaborative)
 - Some “branded” some not

Implementation : enabling take up of new way

10

Evaluation

- providing systematically gathered information
- to a user, to judge value (using their criteria)
- of "the thing" being evaluated
- by making a comparison

4 types of comparisons - between

- Objectives Vs Achievements
 - (eg Va Blueprint for excellence)
- Plan Vs Reality - what was done
 - (or standards to everyday operations)
- Before on some measure Vs Later in our service
- B Vs L - compared to those in other service not exposed

Observation

1) “intervention” & “outcome” - people mean different things

Intermediate outcome of implementation = “new way” is used

Final outcome = patient/cost difference

(needs full implementation of the intervention-change)

2) Many explanations for observed differences Evaluation design aims to exclude other explanations (e.g. X is implemented by training in one service, by reminders in EMR in other) compare and control

Frontier Implementation research

Fundamentalists

- Implementation is only about evidence based proven interventions

Progressives

- “core” & “adaptable” – give guidance
- Must take dose and 3/day, but can take before or after meals, with without alcohol

Radicals?

3 Radicals: study adaptation

- Will not be used if not adapted
- Adaptation will engage and motivate
 - “Not invented here”
- Learn what works by
 - documenting how they change the intervention content & why
 - how they implement

= Translate in the spirit of the intervention for a context, not “copying to the letter”

1 How to evaluate implementation

Example: Implement CTI

People leaving hospital - support for self help/care – 4 week length

1) Education for self-care

2) Coach Visits 1 & follow up calls 3



RCT evaluated – proven effective

- Research funded version
- Intervention specified in protocol
- Implementation not described

The Care Transitions Intervention

Results of a Randomized Controlled Trial

Eric A. Coleman, MD, MPH; Carla Parry, PhD, MSW;
Sandra Chalmers, MPH; Sung-joon Min, PhD

The intervention was conducted in collaboration with a large not-for-profit capitated delivery system that cares for more than 60 000 patients 65 years or older in Colorado. At the time the study was initiated, the 30-day hospital readmission rate in this delivery system for this particular population was approximately 15%. The delivery system contracts with a single hospital, 8 skilled nursing facilities, and a single home health care agency. Patients received care from hospital-based physicians

Implementation Evaluation – 5Qs – how

1 Describe – intervention, change & the implementation approach

2 Outcomes?

3 Context?

4 Attribution?

(how much the method for implementation vs other influences which led to take up)

5 Generalisation? (where, and for, what would this implementation approach work best/not so well)

Implementation Evaluation

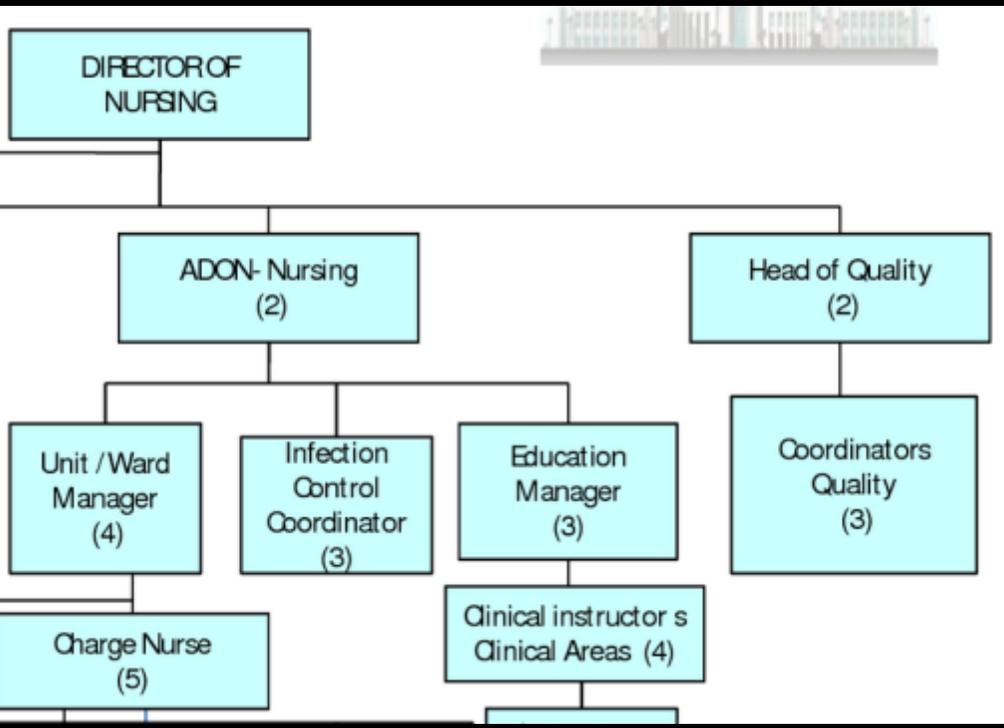
1) **Agree with user** of evaluation what they most need to know to **act more effectively**

Typically:

- What was the “implementation approach” used?
- Did it change practice/organisation?
 - Or enable patients to adhere to X
 - “Intermediate outcome” of the implementation

“3S framework” to describe “Implementation approach”

Structure responsibilities; accountability reporting



Strategy Steps over time

Feb 1) Form project team

March 2) Gather initial data

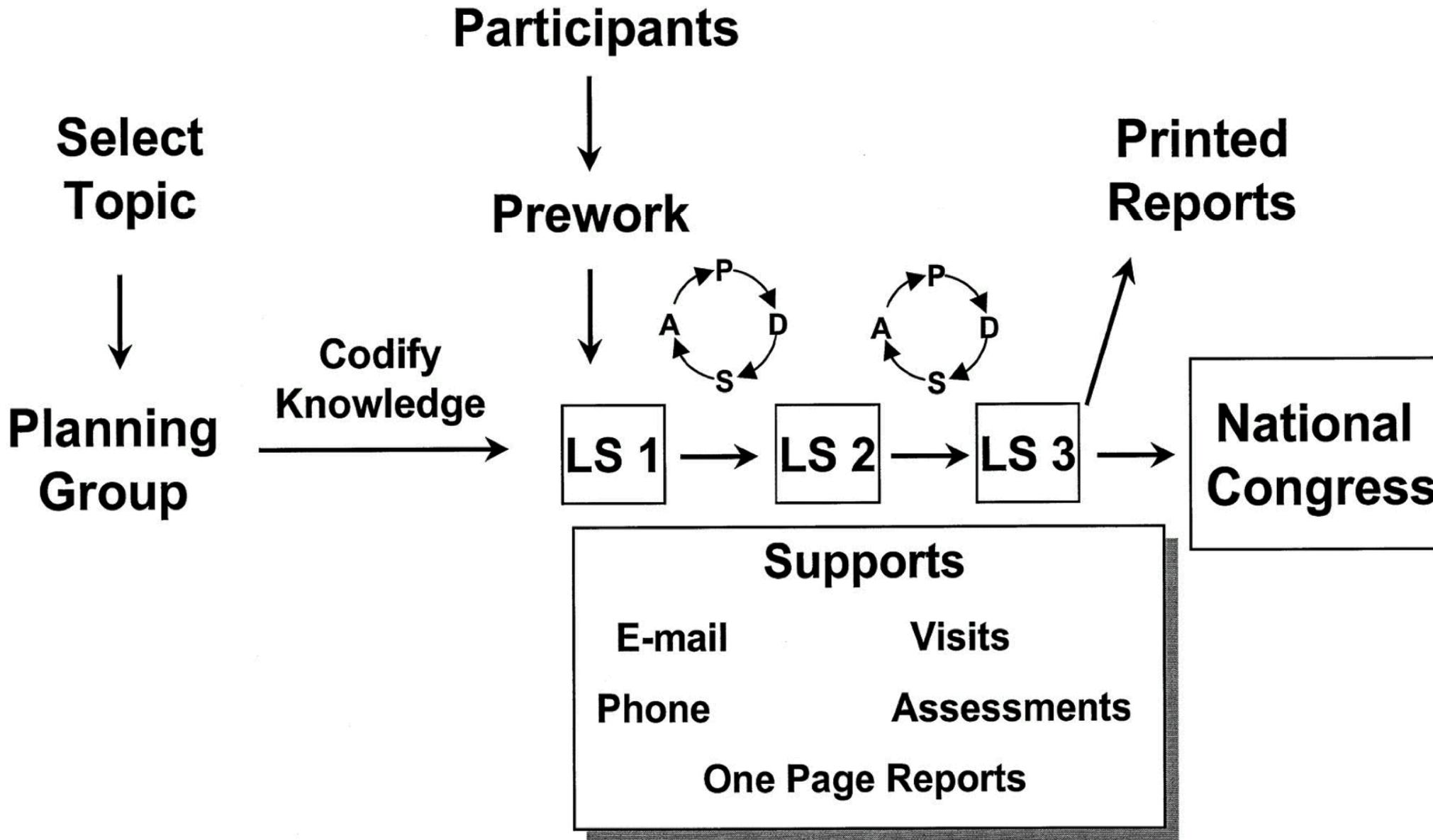
April 3) etc.

Supports

- Systems for data
- Facilitators

Example – QI breakthrough collaborative

Example of 3S elements – QI breakthrough collaborative



List of implementation methods (Øvretveit 2012)

Implementation Strategies | John Øvretveit's list of evidence-based implementation strategies (John Øvretveit, Karolinska Institutet, Sweden jovretbis@aol.com)

Strategies directed at the individual

1 Show the patient's experience

The patient talks about their experience with the old way; another or same patient talks about their experience with the new way.

2 Show the money

Financial incentives for new behaviours - extra income or loss of income, one-off payments for eg education or changes to computer systems.

3 Show the results (of the new way)

Routine, timely feedback on compliance or performance in visual & comparative display. Presenting feedback in terms of time saved or the value of the results to the individual or patient.

4 Training which involves practising new behaviour, with guidance-feedback (eg simulation)

5 Activating patients or carers to expect & ask for the new way of working

For example, in the patient's hospital admissions materials: 'Our staff wash hands before touching you: ask them if they have washed their hands or wear this badge'.

6 Summaries or visual 'job aids' at the point of care (simple 1 page)

7 Reminders

8 Peer-based enabling sessions (ideally led by respected leader)

9 Leader actions

Motivational talks, individual coaching, modelling the new behaviours so all see or hear that they practice it (opinion leaders, clinical champions).

10 Facilitator/coach support

Academic detailing visits or sessions (on-site, one on one or group discussion about an innovation's use in local setting), easy access to expert to ask questions (eg quick telephone support).

11 Management actions

Supportive supervision; escalating levels of disciplinary action for non-compliance; creating supportive environments using the 'indirect strategies' listed below.

12 Education or training

13 Showing the evidence (of benefit)

Show how the change has led to benefits elsewhere compared to how things are done now, through media likely to be read by the individual such as professional journal, newsletter, on-line or conventionally or through other media.

Indirect strategies – changes to the environment

Strategies to create conditions supporting the new behaviours, and to remove barriers.

1 Changing organisation to enable or reinforce new behaviours.

- Changing work-flow or information-flow
- Providing support staff to take over some tasks, so as to release time for others to learn or practice the new behaviours

2 Changing systems to enable or reinforce new behaviours.

- Changing IT to give reminders at point of care or easy access to information relevant to the new behaviour.
- Providing support expertise

3 Changing physical environment of practice to enable or reinforce new behaviours.

- Changing organisation or workflow, reducing noise and interruptions.

4 Higher level changes

- **Regulatory** (eg accreditation standards, licensing changes)
- **Financial** (reimbursement or grants)
- **Policies of professional or organisational associations** 'good practice' documents and clinical guidelines

Imple Eval design - depends on user's needs

1) Was the method effective for implementation?

a) Experimental trial of implementation approaches

Same intervention-change (e.g. guidelines)
implemented differently

= randomise allocation, or match compared subjects

Need time, money and cooperation

b) Case evaluation,

if less time and money

Or understand implementation steps and what helps and hinders

c) Both

Logic Model or Programme Theory

of influence pathway through outcome stages

Objective: nurses educate and help diabetic patients to

improve diet, exercise to improve glycemic control, to reduce risks of ER

and morbidity

Intervention actions

(eg training providers)

Proximal outcomes

Change in trainees
Awareness,
Knowledge
Skill
Motivation
& intention to act

Intermediate Outcomes 1

Change in trainees behaviour

Intermediate Outcomes 2

Change in patients behaviour

Intermediate Outcomes 3

Improved glycemic control

Final outcomes

Change in diabetes related morbidity
Change in ER & other visits

Data/
measure?

Data/
measure?

Data/
measure?

Data/
measure?

Data/
measure?

NB. This is the theory – “outcomes” are intended but not proven

Hasson 2010 – hybrid – implementation/outcome data

Table 1 The logic model of *Continuum of care for frail elderly persons, from the emergency ward to living at home intervention*

Core inputs	Immediate Impacts	Short-Term Impacts	Impacts	Health Outcomes
Geriatric assessment at emergency department,	Contact between emergency department and community case manager,	Community care will have increased information regarding the needs of the older person, increased contact between emergency healthcare and community social care,	Possibilities for earlier discovery of problems, earlier care and rehabilitation efforts and changes in care and rehabilitation plans, better uptake of older people's viewpoints	Maintained functional ability, increased life satisfaction, reduced number of visits to the emergency department,
Case manager and multi-professional team at the community care,	Case manager has early contact with older person at hospital, continuous contact between case manager and older people, early contact with older peoples' families			Reduced number of stays in hospital wards, higher satisfaction with community care and rehabilitation
Care planning after hospital discharge at older person's home		Older people will have more knowledge of whom to contact when they need help, increased participation opportunities for older people and their families in care planning		

Features of Case Evaluation of Implementation design

May be just one case

Causal chain (esp if final outcomes)

Logic model frames data collection

May involve hypotheses about key context influences

Use **multiple data sources** to explain implementation / adaption observed

1) When evaluating an implementation of X,

do we *always* have to evaluate “final” outcomes (patients/costs)?

Depends on

- a) probable that full implementation will produce final outcomes,
- b) no time/money
- c) if adapt intervention

2) Do we always have to **describe features of the environment** helping and hindering implementation?

Context – see details at

Generic Frameworks for deciding which influences to document at different levels of Hc system (or to consider in discussing findings)

CFIR (Damschroder 2009)

PHARIS (Rycroft-Malone 2002)

ORCA readiness - based on PHARIS

MUSIQ (Kaplan et al 2010) - QI

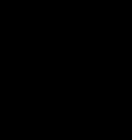
French et al 2009 (review of *context measures for evidence-based practice (EBP)*)

List of help Imple Science can give to improvement practice and science

- Separate improvement change from implementation
- Some best copied exactly
- Some you need to adapt
- Understanding of context
- Use of theory and EB Imple approaches to design and evaluate implementation
- Later: Evaluating fidelity & adaption
- Next – are some Impl methods more effective?



Are some implementation
methods and approaches
more effective?



Implementing proven prevention interventions for falls, CLABSI (ICU), reducing readmissions

- 1) **The same method is effective** for implementing each
- 2) For **one - falls prevention** - the same method is effective
 - a) in **different settings** (“context independent”)
high or low workload/resources
 - b) for enabling **different people to “take up”** new way
High% licensed nurses Vs High % unqualified care

Future research

Distinguish groupings of types of improvement changes to be implemented

E.g. care practices at nursing homes; CDS; ICU

- Specify and measure context influences
- Identify which most influence implementation

Possible direction:

Complexity & how much prescribed (copy exactly)



Which effective?

- Evidence?
- Most on “guideline implementation”

Some common findings – “6Ms”

1 Multiple methods

Training; feedback; leadership; finance

2 Used by multiple levels (nested implementation)

– how enable higher levels to do this to enable lower levels?

– difficult to align & maintain

Which effective?

Some common findings

3 Measures: credible comparative feedback (meaningful)

4 Money: finance powerful & blunt with perverse unintended (measures critical)

5 Medical leadership

6 Management time and persistence

How do we strengthen each to implement the intervention?

“One implementation approach fits all?”

2 How to evaluate improvement

“What” are we evaluating?

Improvement

1) Whether a method for improvement is successfully applied and results in an improvement

(for someone, sometime? = Outcomes which show an improvement)

E.g. was there an improvement when 6 services adopted TQM methods (or lean etc.)

“What” are we evaluating?

Improvement

2) Whether a change (eg proven elsewhere) produced intended results

E.g. Proven transitions in care model

Improvement Evaluation – 5Qs – how ..

1 Describe – improvement method or change evaluated

2 Outcomes?

3 Context?

4 Attribution?

(how much the method for implementation vs other influences which led to take up)

5 Generalisation? (where, and for, what would this implementation approach work best/not so well)

Which of 3 types of improvement research contributes most to better care for Vets?

1. Research evaluation of a “improvement change” – rigorous academic

Experimental CRT

Case evaluation

2. Practitioner research to test a change

Using uncontrolled SPC or PDSA

3. Action evaluation reporting back data during improvement

CHOOSE evaluation design to match evaluation users information needs for

action

1. Ask users
2. Work to define “what” they want evaluated and decisions it will inform
 1. Added value of your evaluation
3. Agree data they need
4. Work with them to get data (use already collected if possible)

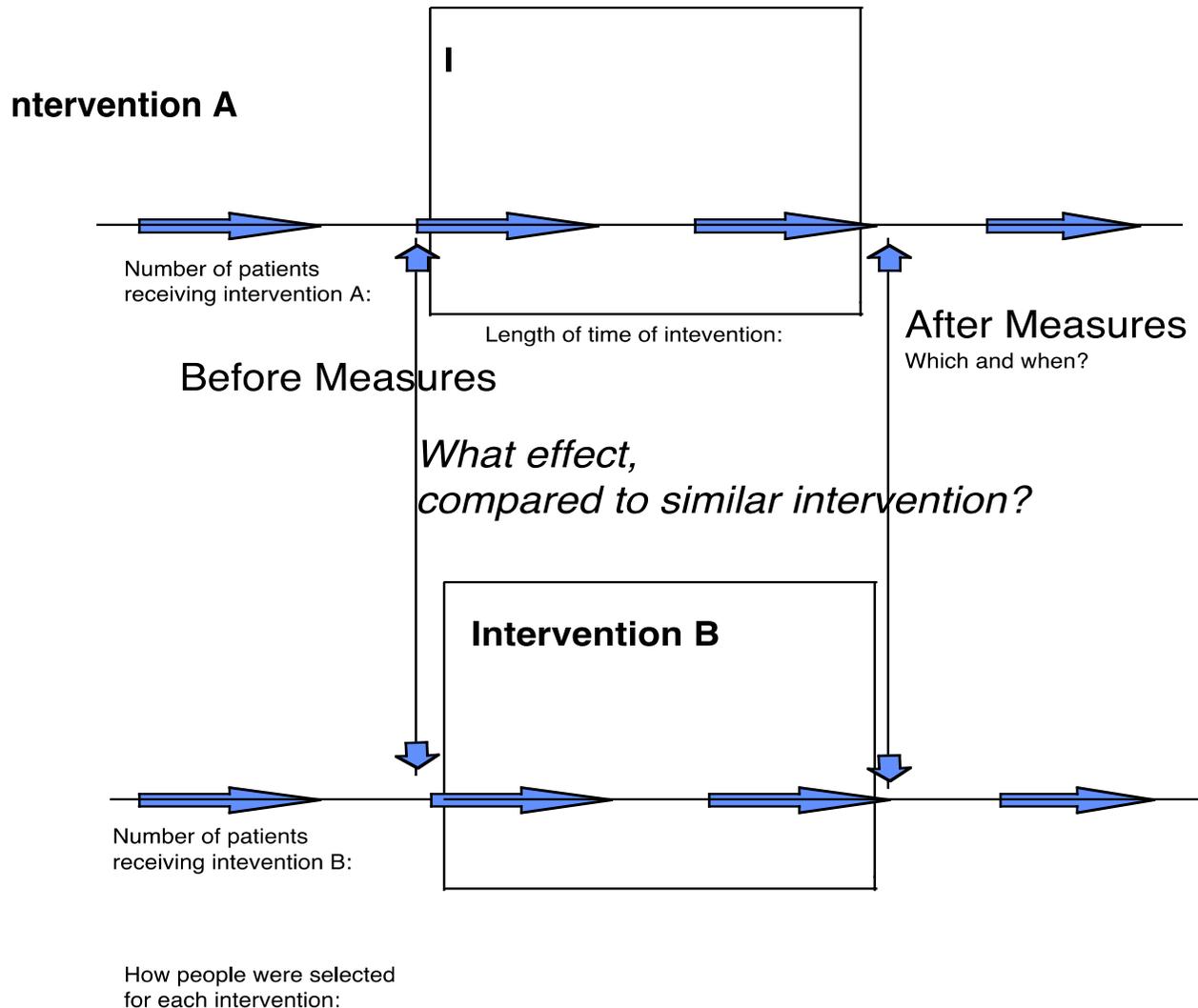
Evaluation

- providing systematically gathered information
- to a user, to judge value (using their criteria)
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4 types of comparisons - between

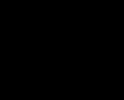
- Objectives Vs Achievements
 - (eg Va Blueprint for excellence)
- Plan Vs Reality - what was done
 - (or standards to everyday operations)
- Before on some measure Vs Later in our service
- B Vs L - compared to those in other service not exposed

Experimental intervention: Comparative case



b) what would “retrospective experimental” look like

- specified intervention ? eg
- control group?
- before after?

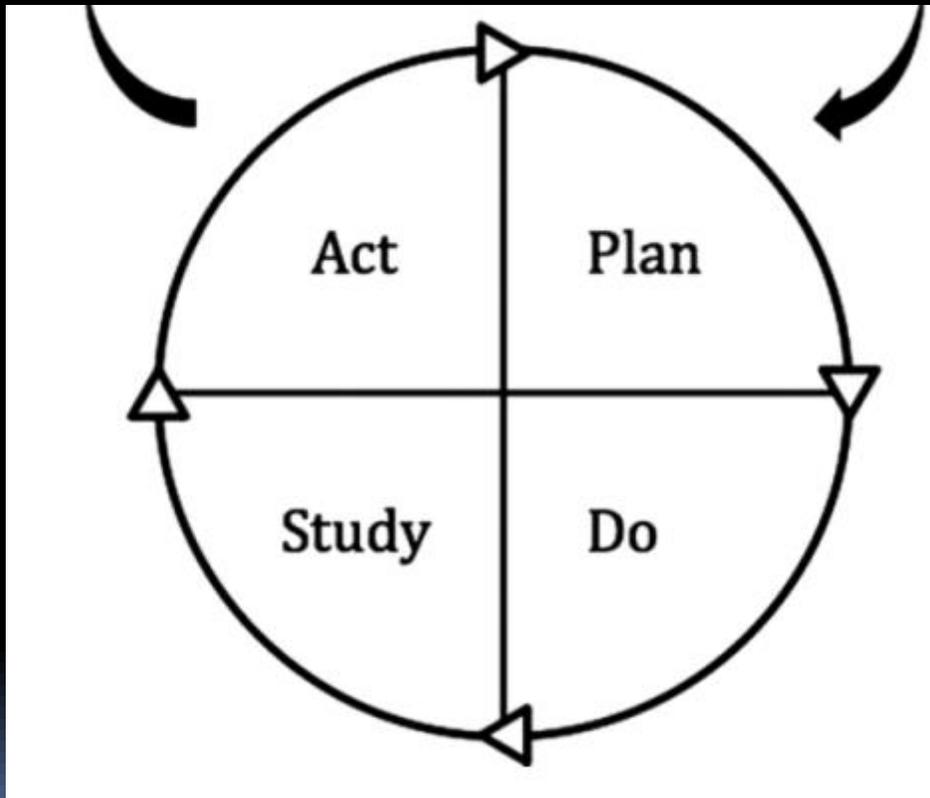


Type Observational evaluations

- No planned experiment
- But use experimental principles to find those exposed to intervention or risk
- Often natural experiments & often retrospective
- Cross sectional
- Cohort

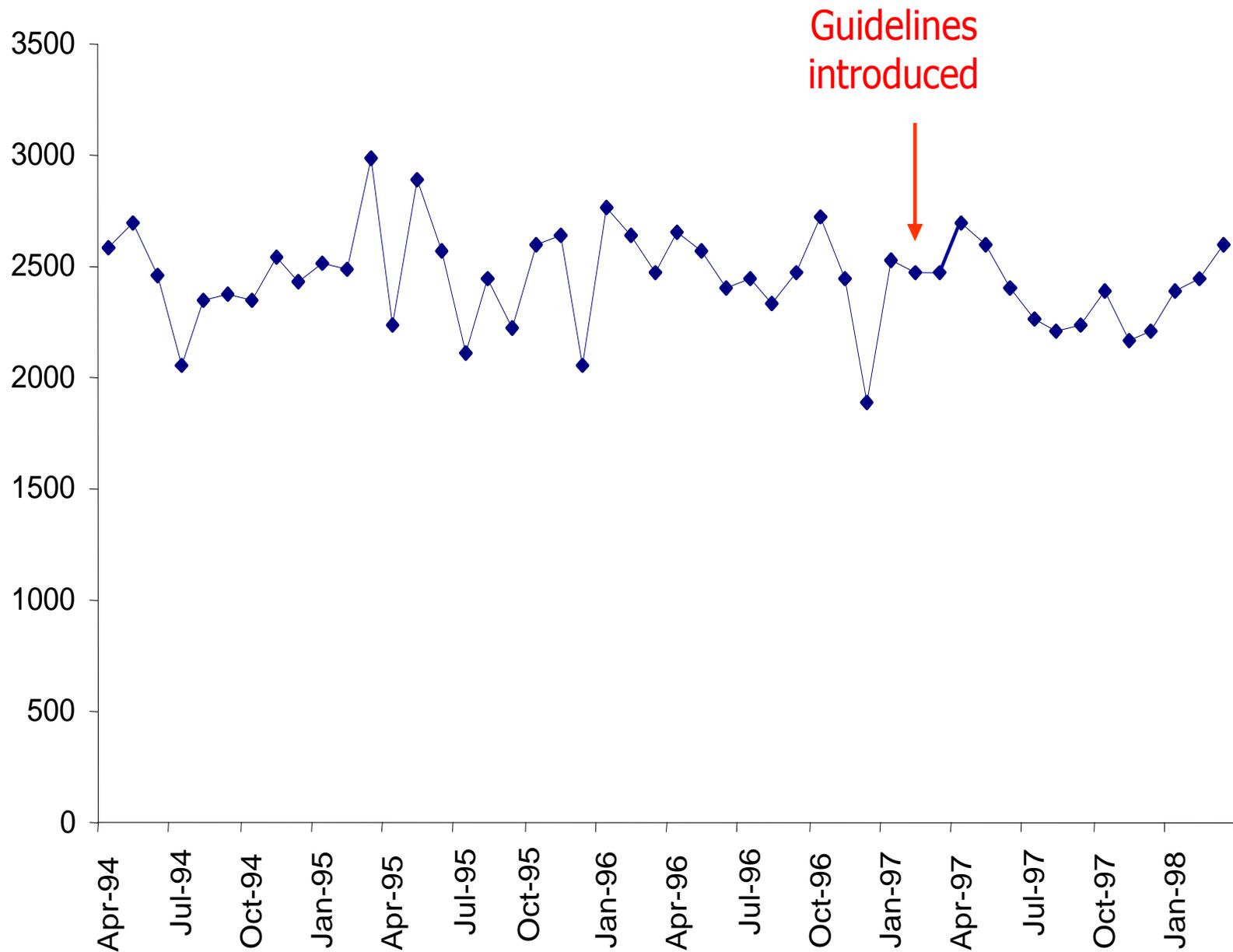
Type adaptive evaluation

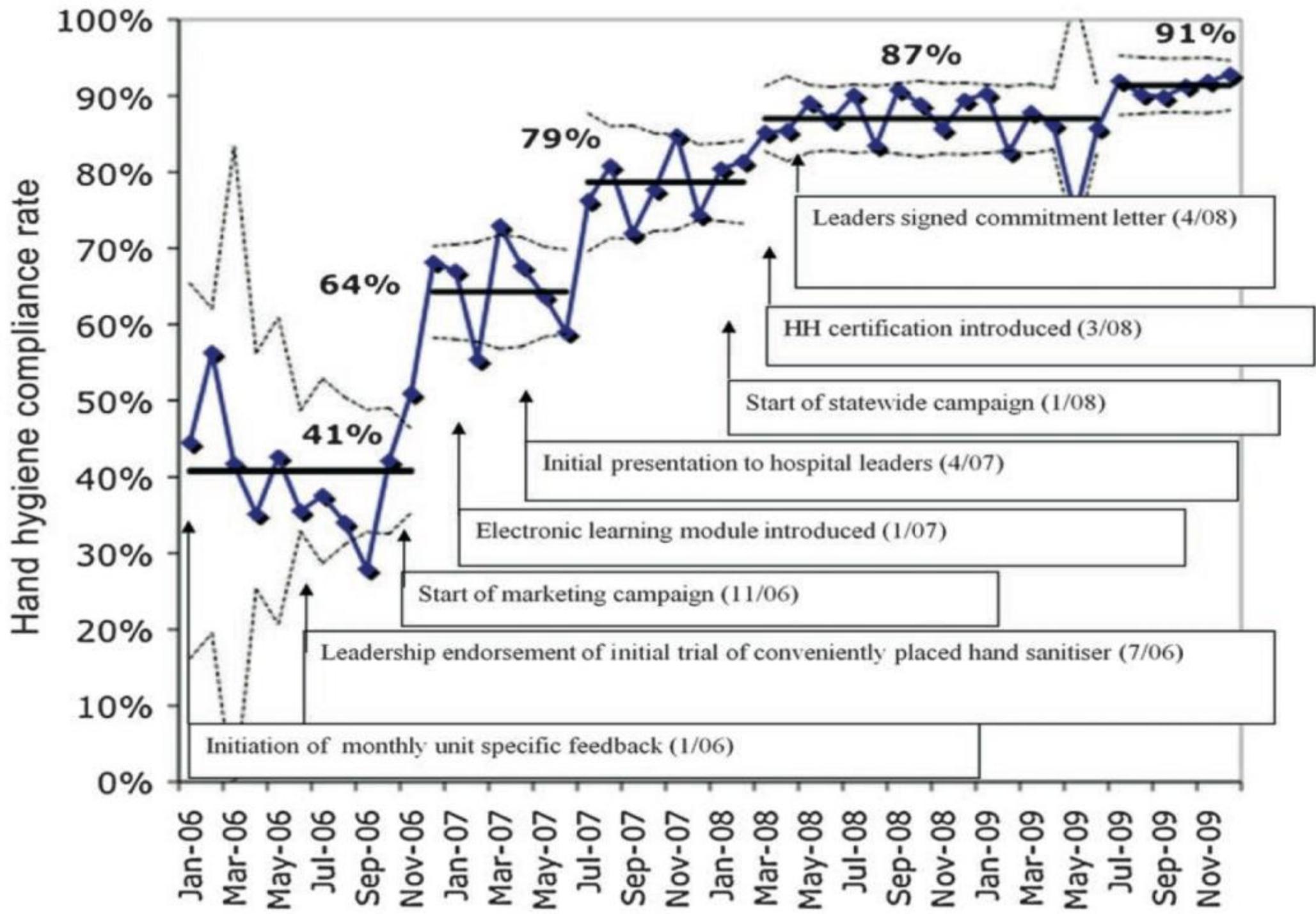
- Small fast test and adapt intervention using what the evaluation found
- Simplest is PDSA or time series



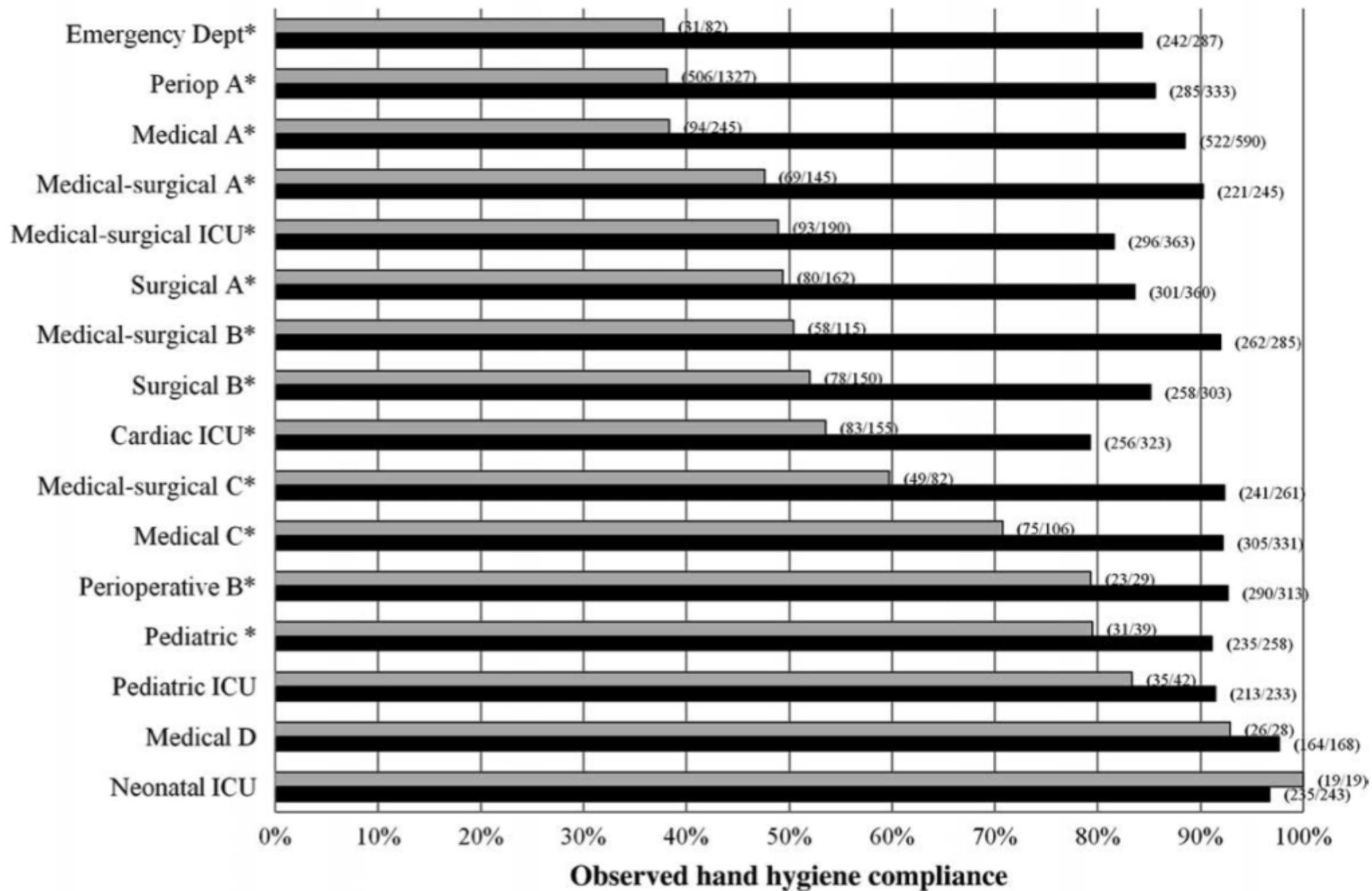
ITS example: total x-ray referrals

**Number
of x-rays**

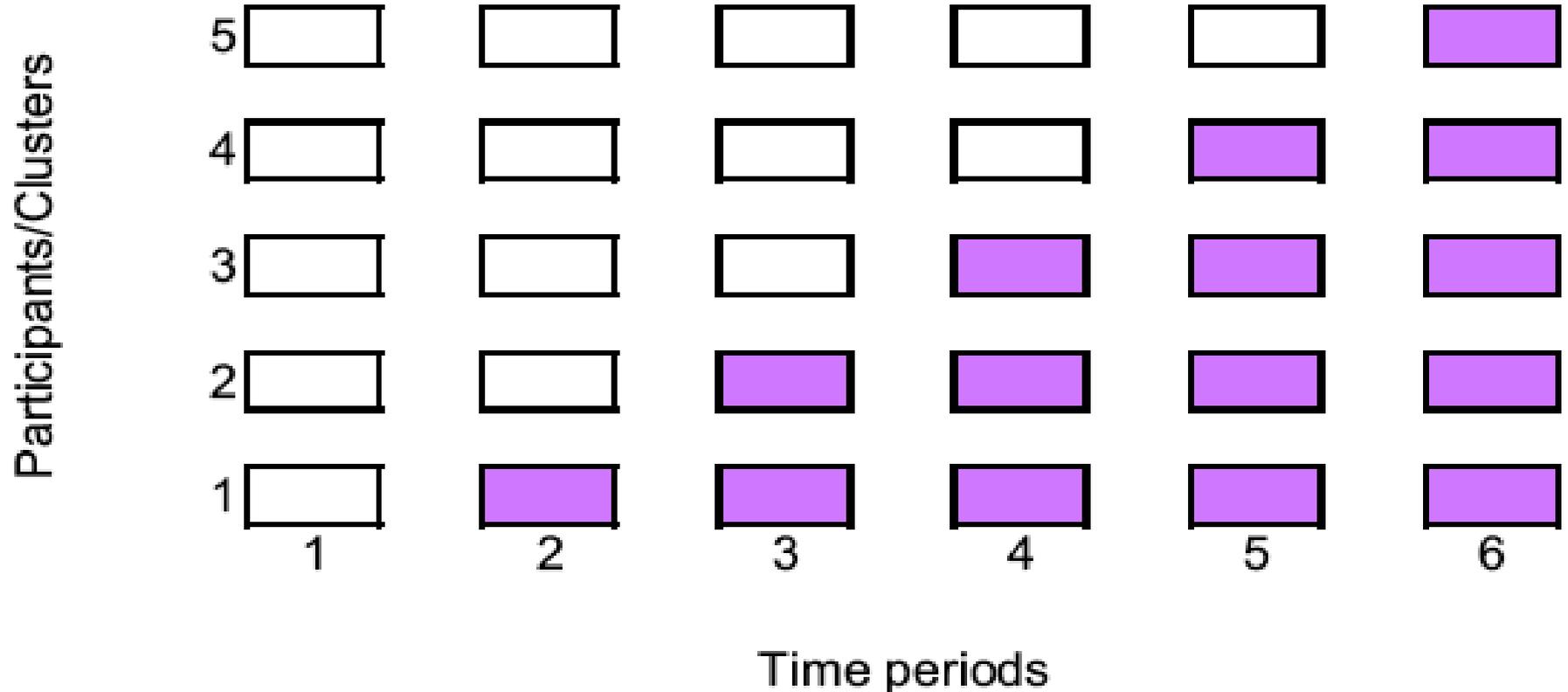




■ 2006 ■ 2009



Stepped wedge design



Shaded cells represent intervention periods
Blank cells represent control periods
Each cell represents a data collection point

3 Difference and overlap between implementation and improvement sciences

“Improvement” – changing meanings

- 1970s Quality audit - standards-based approach to QI
- 1990s TQM/CQI process improvement
 - Model for improvement (Langly 1996).
- Late 90s Implement proven, using PDCA.
- Incorporates safety (IOM 2001)
- 2010 Value improvement (costs/quality).
- Healthcare & health improvement (3aim)

Confusion: Competing definitions & Crowded industry

Key messages



Improvement science is about finding out how to improve and make changes in the most effective way. It is about systematically

Med Care. 2011 Dec;49 Suppl:S6-20. doi: 10.1097/MLR.0b013e3181e1709c.

Implementatic
http://www.in

The science of quality improvement implementation: developing a difference.

Alexander JA¹, Heard LR.

MEETI

+ Author information

Proce
Qual

Abstract

BACKGROUND: Quality improvement (QI) holds promise to improve quality of care; however, we struggle with its implementation. It has been recommended that practitioners, managers, and organizations increase systematic understanding of the structure, practices, and context of organizations to facilitate implementation of QI innovations.

OBJECTIVES: To critically review the empirical research on QI implementation in health care organizations.

RESEARCH DESIGN: A literature review of 107 studies that examined the implementation of QI in health care organizations. Studies were classified into 4 groups based on the types of predictors that were examined.

Arlington,
Edited by
Published:
These abst

Improvement =

- Outcome: whether healthcare (or health) has improved
– *anything* which does this
- Process/method: using a method to improve practice, work process or organisation

Research evaluation of “improvement” =

- is the *method* for improvement effective?

Creating the Evidence Base for Quality Improvement Collaboratives

Brian S. Mittman, PhD

Loaded from qualitysafety.bmj.com on May 5, 2014 - Published by group.bmj.com

Intensive efforts are under way to improve patient safety throughout the United States. These efforts use the quality improvement approach emphasizing collaborative insights and support among a set of organizations. Unfortunately, the widespread approaches are based not on solid evidence and effectiveness.

Systematic review of the application of the plan–do–study–act method to

Application of statistical process control in healthcare improvement: systematic review

Johan Thor, Jonas Lundberg, Jakob Ask, Jesper Olsson, Cheryl Carli, ¹ Darzi,¹ Pukk Härenstam and Mats Brommels

Qual. Saf. Health Care 2007;16;387-399
doi:10.1136/qshc.2006.022194

Research evaluation of “improvement” =

- are outcomes better in some respect?
 - (intermediate process, or final patient/cost)?

Does continuity of care improve patient outcomes?

Michael D. Cabana, MD, MPH, and Sandra H. Jee, MD, MPH

Child Health Evaluation and Research Unit, Division of General Pediatrics,
University of Michigan Health System, Ann Arbor, Mich

Which of 3 types of improvement research contributes most to better care for Vets?

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Implementation science

- Study of what is done to establish a proven improvement in every day working, or patient's lives
- Some implementations use QI methods as part
 - Overlap EBQI implementation of PACT (Rubenstein et al 2014)

History Implementation science

- Public health programmes - eg to reduce cardiovascular disease

More" evidence-based" education, social work & other welfare services

- Early period: copy exactly everywhere - will get same results as trial, if "force-fit"

Evaluation approaches:

- fidelity assessment
- adaption assessment
- report back findings to help implementation ("action evaluations" of implementation)

Is there a difference?

Implementation and Improvement overlapping “domains”

- Research communities
- Practitioners doing Imp and Imp
- Knowledge base (inc. “Imp science”)



4 Evaluating implementation fidelity

Other studies

Implementation - next

POPULATION HEALTH MANAGEMENT
Volume 16, Number 4, 2013
© Mary Ann Liebert, Inc.
DOI: 10.1089/pop.2012.0069

Disseminating Evidence-Based Care into Practice

Eric A. Coleman, MD, MPH, Susan A. Rosenbek, RN, MS, and Sarah P. Roman, MGS

TABLE 2. FACTORS THAT PROMOTE IMPLEMENTATION OF THE CARE TRANSITIONS INTERVENTION

Model fidelity

The home visit is essential for fostering effective patient/family engagement; eliminating the visit is strongly discouraged.

The Transitions Coach focuses on skill transfer and modeling of behaviors that support patients in getting their needs met during current and future care transitions. The Transitions Coach does not have competing roles such as conducting assessments (beyond the Patient Activation Assessment), providing patient education, or performing skilled services.

Model fidelity

The home visit is essential for fostering meaningful and effective patient/family engagement; eliminating the visit is strongly discouraged.

The Transitions Coach focuses on skill transfer and modeling of behaviors that support patients in getting their needs met during current and future care transitions. The Transitions Coach does not have competing roles such as conducting assessments (beyond the Patient Activation Assessment), providing patient education, or performing skilled services.

After training, Transitions Coaches have time to practice with colleagues and receive focused feedback (eg, shadowing each other's home visits).

Selection of Transitions Coach and reinforcement of role

The Transitions Coach attended Care Transitions Intervention training and participates in ongoing learning community calls offered by the Care Transitions Program. The patient-Transitions Coach relationship is continuous over the duration of the 30-day intervention.

The Transitions Coach demonstrates a patient-centered focus through eliciting the patient's goal, exhibiting excellent communication skills, and resisting the urge to control the agenda or complete patient tasks.

The Coach has a professional background in nursing, social work, or related field. The Care Transitions Program does not endorse the use of paid or volunteer layperson Transitions Coaches.

Model execution

The adopting organization defines workflows for Transitions Coaches and other professionals from the time of admission to the end of the 30-day intervention.

The adopting organization clearly defines goals and approach to targeting; articulates realistic time lines to all participating personnel; and ensures that the intervention is aligned with the organization's mission and values.

The adopting organization convenes ongoing meetings that include all relevant stakeholders (eg, hospitals, primary care clinics, home health care agencies, community-based organizations) that provide an opportunity to problem solve operational issues, overcome barriers, and celebrate achieved goals.

Support to sustain the model

The adopting organization defines the criteria to sustain and/or expand the intervention.

The adopting organization creates a strategy for how results will be communicated both within the organization and externally.

The adopting organization plans for recruitment and training of additional Transitions Coaches.

The adopting organization continually refines the business case in response to the changing health care environment.

Did subjects “take up” the change as intended?

- Did they **copy exactly** the plan

Compare what they did, to plan:

- **Inputs: training, educational materials, practice** - data from observations & documents
- **Process outcomes:**
 - Observe coaches sessions
 - Assess case records

5 Types of fidelity

proven intervention

Treatment, practice, service delivery model

- Whatever it takes to reproduce this in every day life and operations

2 Copy the implementation approach

- To enable patients to take the intervention, use exactly the same reminder system they found was effective for enabling patient uptake

3 Copy both *The letter kills but the spirit gives life*

4 Copy the logic of the intervention

4) Copy the logic

The effective ingredients to enable practitioners to follow hand hygiene were:

- Motivation (e.g. patient talks about MRSA)
- Ability (Gell dispensers everywhere, agreement excuse for late/take longer)
- Triggers (reminders)
- Rewards (performance feedback, etc.)

You make the mix which fits your service

Is that adaption or fidelity to logic or both?

5) Fidelity to guidance for adaption for targeting or tailoring

- Following the guidelines for adapting treatments to older patients with multiple morbidity

Guideline Summary NGC-9523

Guideline Title

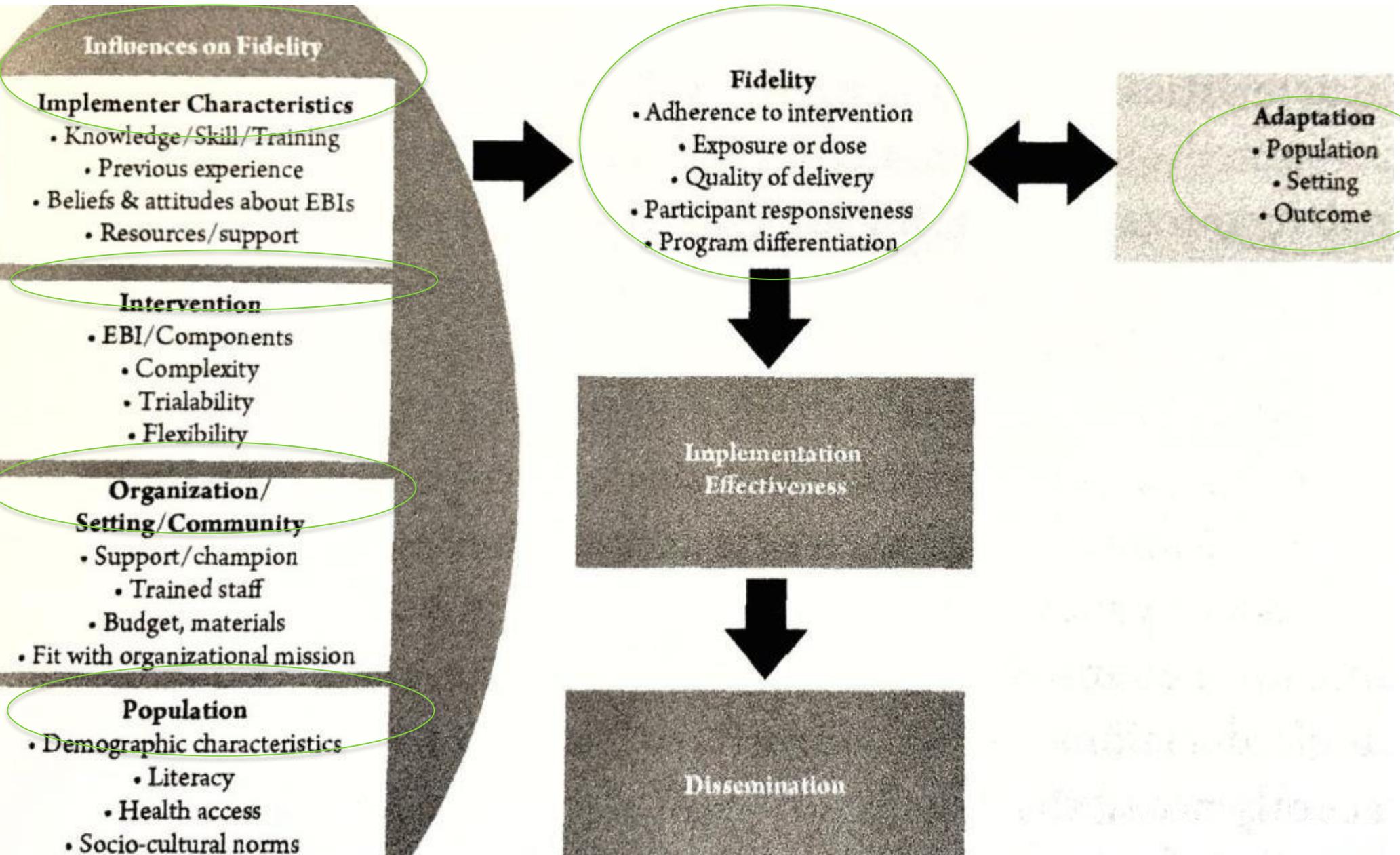
Guiding principles for the care of older adults with multimorbidity: an approach for clinicians.

Bibliographic Source(s)

American Geriatrics Society Expert Panel on the Care of Older Adults with Multimorbidity. Guiding of older adults with multimorbidity: an approach for clinicians. J Am Geriatr Soc. 2012 Oct;60(10):

[PubMed](#)

What influences Fidelity



What do we need to ensure fidelity?

- Guidance from Transitions example Coleman 2013
 - 750 organizations in 40 states adopted CTI,
- Coleman et al reflected on their experience assisting these teams and observation of the success of adaptations (– Research?)
- Next = their judgement of core features – adapting these makes much less effective

Disseminating Evidence-Based Care into Practice

What we need to ensure fidelity of CTI:

1) Model fidelity

- The home visit is essential for fostering meaningful and effective patient/family engagement; eliminating the visit is strongly discouraged.
- The Transitions Coach focuses on skill transfer and modeling of behaviors that support patients in getting their needs met during current and future care transitions.
- The Transitions Coach does not have competing roles such as conducting assessments (beyond the Patient Activation Assessment), providing patient education, or performing skilled services.
- After training, Transitions Coaches have time to practice with colleagues and receive focused feedback (eg, shadowing each other's home visits).
- business case in response to the changing health care environment.

What do we need to ensure fidelity?

2) Selection of Transitions Coach and reinforcement of role

- The Transitions Coach attended Care Transitions Intervention training and participates in ongoing learning community calls offered by the Care Transitions Program.
- The patient–Transitions Coach relationship is continuous over the duration of the 30-day intervention.
- The Transitions Coach demonstrates a patient-centered focus through eliciting the patient’s goal, exhibiting excellent communication skills, and resisting the urge to control the agenda or complete patient tasks.
- The Coach has a professional background in nursing, social work, or related field. The Care Transitions Program does not endorse the use of paid or volunteer layperson Transitions Coaches.

What do we need to ensure fidelity?

3) Model execution

- The adopting organization defines **workflows** for Transitions Coaches and other professionals from the time of admission to the end of the 30-day intervention.
- The adopting organization clearly defines goals and approach to **targeting**; articulates realistic time lines to all participating personnel; and ensures that the intervention is aligned with the organization's mission and values.
- The adopting organization convenes ongoing meetings that **include all relevant stakeholders** (eg, hospitals, primary care clinics, home health care agencies, community-based organizations) that provide an opportunity to problem solve operational issues, overcome barriers, and celebrate achieved goals.

Measuring fidelity

1) Implementer characteristics

Knowledge skills and resources to deliver intervention as planned. (drift from protocol over time)

2) Intervention characteristics

Change in the intervention (e.g. 3 session training not 5)

3) Organisational setting

ie they delivered in PHC not hospital

4) Population

Many under 18 included

(Allen et al 2012 in Brownson et al 2012)

REAIM (ARIEM)

- What data and when would you collect to measure,
- Adoption:
 - by settings and staff invited participating - number, %, (and representativeness)
- Reach:
 - The number and % of invited and eligible participating (and their representativeness)
- Implementation:
 - extent to which a program or policy is delivered consistently, & time and costs
- Effectiveness:
 - The amount of change in outcomes
- Maintenance:
 - extent sustained, modified, or discontinued following initial trial or study period

Points from REAIM case to help your fidelity assessment

- Reach, Adoption etc. interpret in way which makes sense for your study
- Separate the intervention (pain killer) from the implementation actions to enable uptake of the intervention (e.g. alarm bell to remind to take pain killer)
- If you assess effectiveness, it may be a hybrid evaluation of implementation *and* of intervention (the exact copy or the local version)

REAIM (A&R) 1: One interpretation

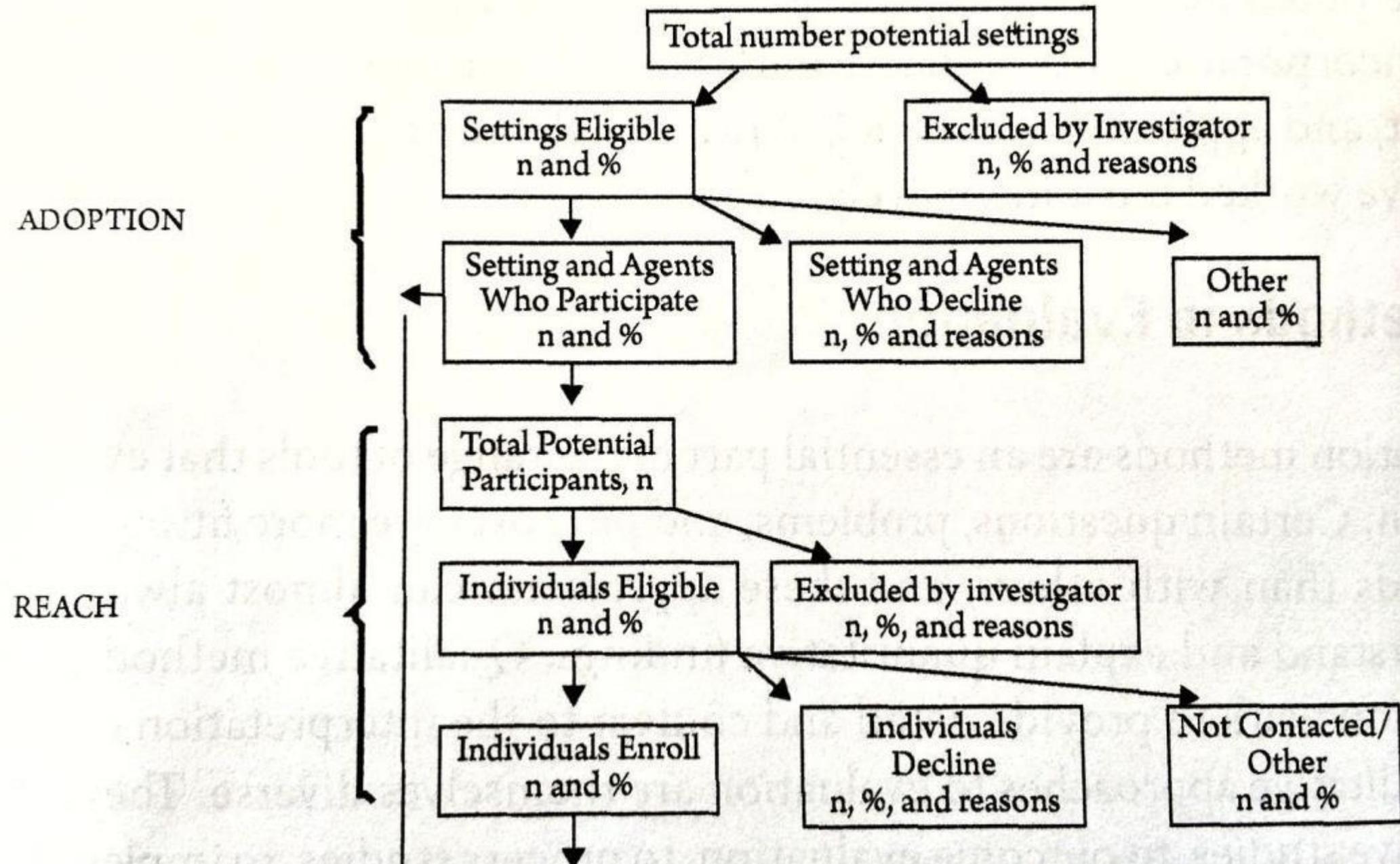


TABLE 16-2. RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact

RE-AIM Element	Guidelines and Questions to Ask
REACH Percent and representativeness of participants	Can the program attract a large and representative percent of the 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 subpopulations? Does the program produce minimal negative side effects and increase quality of life or broader outcomes (i.e., social capital)?
ADOPTION Percent and representativeness of settings and staff that participate	Is the program feasible for the 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?
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?

See www.re-aim.org or <http://www.center-trt.org/index.cfm?fa=webtraining.reaim> for more information.



5 Evaluating adaptions

Disseminating Evidence-Based Care into Practice

Eric A. Coleman, MD, MPH, Susan A. Rosenbek, RN, MS, and Sarah P. Roman, MGS

**Descriptive study, by facilitators, of adaptations
...with unclear evidence of outcomes, but
very useful to practice improvement
- More funding for and research of this type?**

TABLE 2. FACTORS THAT PROMOTE IMPLEMENTATION OF THE CARE TRANSITIONS INTERVENTION

Model fidelity

The home visit is essential for fostering effective patient/family engagement; eliminating the visit is strongly discouraged.

The Transitions Coach focuses on skill transfer and modeling of behaviors that support patients in getting their needs met during current and future care transitions.

Model fidelity
The home visit is essential for fostering meaningful and effective patient/family engagement; eliminating the visit is strongly discouraged.

The Transitions Coach focuses on skill transfer and modeling of behaviors that support patients in getting their needs met during current and future care transitions. The Transitions Coach does not have competing roles such as conducting assessments (beyond the Patient Activation Assessment), providing patient education, or performing skilled services.

After training, Transitions Coaches have time to practice with colleagues and receive focused feedback (eg, shadowing each other's home visits).

Selection of Transitions Coach and reinforcement of role
The Transitions Coach attended Care Transitions Intervention training and participates in ongoing learning community calls offered by the Care Transitions Program. The patient-Transitions Coach relationship is continuous over the duration of the 30-day intervention.

The Transitions Coach demonstrates a patient-centered focus through eliciting the patient's goal, exhibiting excellent communication skills, and resisting the urge to control the agenda or complete patient tasks.

The Coach has a professional background in nursing, social work, or related field. The Care Transitions Program does not endorse the use of paid or volunteer layperson Transitions Coaches.

Model execution
The adopting organization defines workflows for Transitions Coaches and other professionals from the time of admission to the end of the 30-day intervention.

The adopting organization clearly defines goals and approach to targeting; articulates realistic time lines to all participating personnel; and ensures that the intervention is aligned with the organization's mission and values.

The adopting organization convenes ongoing meetings that include all relevant stakeholders (eg, hospitals, primary care clinics, home health care agencies, community-based organizations) that provide an opportunity to problem solve operational issues, overcome barriers, and celebrate achieved goals.

Support to sustain the model
The adopting organization defines the criteria to sustain and/or expand the intervention.

The adopting organization creates a strategy for how results will be communicated both within the organization and externally.

The adopting organization plans for recruitment and training of additional Transitions Coaches.

The adopting organization continually refines the business case in response to the changing health care environment.

Stirman 2009: types of adaptations

1 Who made the
modification?

2 What was modified?

BY WHOM are modifications made?

- Individual practitioner/facilitator
- Team
- Non-program staff
- Administration
- Program developer/purveyor
- Researcher
- Coalition of stakeholders
- Unknown/unspecified

WHAT is modified?

Content
(Modifications made to content itself, or that impact how aspects of the treatment are delivered)

Context
(Modifications made to the way the overall treatment is delivered)

TRAINING AND
EVALUATION
(Modifications made to the way that staff are trained in or how the intervention is evaluated)

Stirman 2013

types of adaptations

At what level
For whom are

Context mods
to what?

What type of
mods are made

**At what LEVEL OF DELIVERY
(for whom/what are
modifications made?)**

- Individual patient level
- Group level
- Individual practitioner level
- Clinic/unit level
- Hospital level
- Network level
- System Level

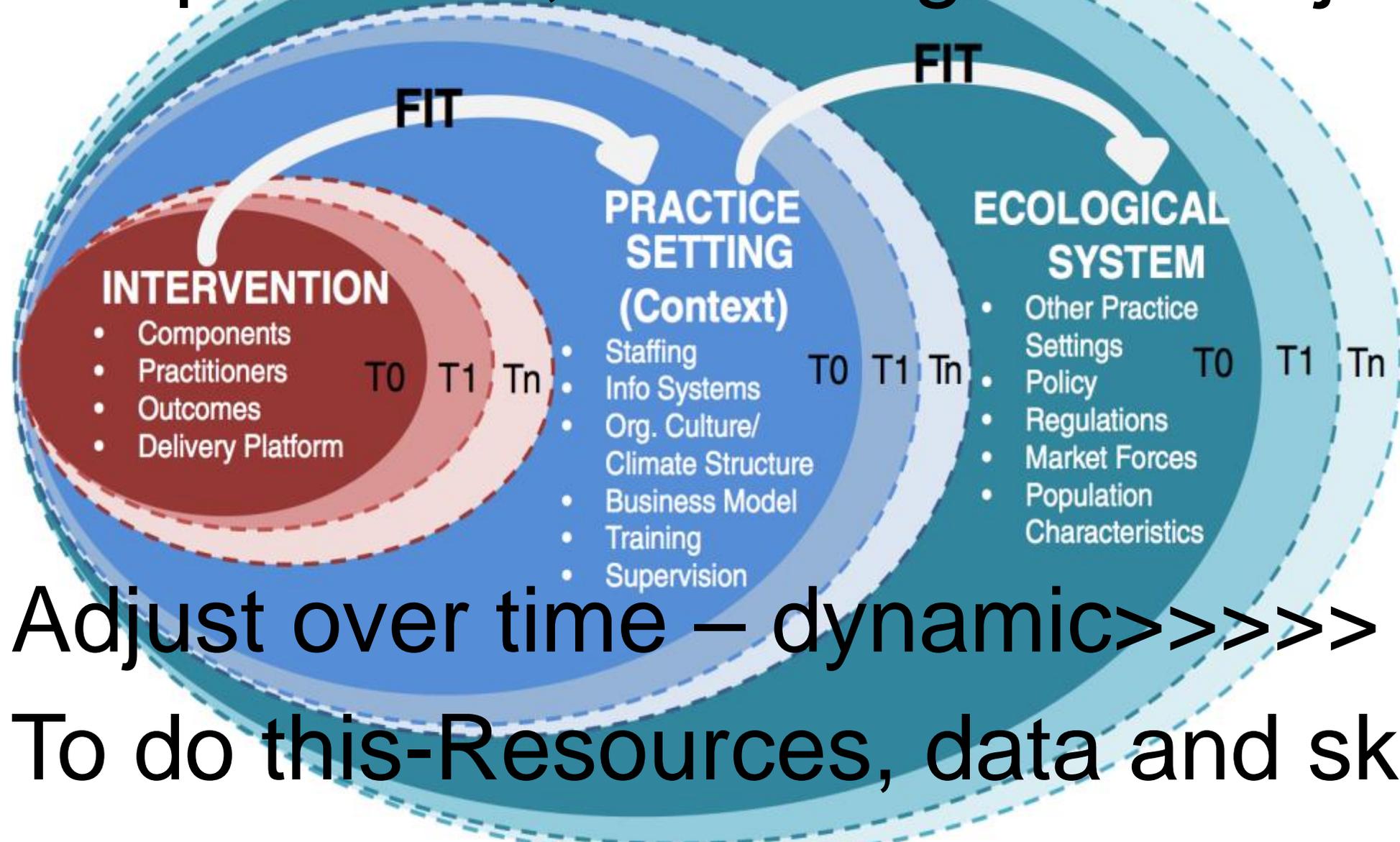
**Context modifications are
made to which of the
following?**

- Format
- Setting
- Personnel
- Population

What is the NATURE of the Content m

- Tailoring/tweaking/refining
- Adding elements
- Removing/skipping elements
- Shortening/condensing (pacing/time)
- Lengthening/extending (pacing/time)
- Substituting
- Reordering of intervention modules
- Integrating the intervention into an
framework (e.g., selecting elements)
- Integrating another treatment into
using the whole protocol and integr
- techniques into a general EBP appro
- Repeating elements or modules
- Loosening structure
- Departing from the intervention ('d

Adapt to “Fit”, to setting and subjects





. 6 Action evaluations to
improve
implementation and
build knowledge

Recap – the story so far..

- *How* intervention it is implemented
 - different structures strategies and supports (Iapproach)
- Some EBPs
 - will only give outcomes expected
 - ...if implemented *exactly* as specified(from original test)
 - ...and don't need to evaluate outcomes of intervention
 - If it is difficult to copy exactly:
 - ...then change the context monitor fidelity,

But, some interventions can only work if they are adapted to context – which, why and how?

Action evaluations

- Describe what was implemented
- Intermediate outcomes
- BUT share data with implementers as it becomes available
- & document their adjustments and reasons for doing so.

Partnership research more necessary – trust and relationship

Example: KI MMC evaluating integrated care 6 month meetings (Øvretveit et al 2010)

7What? Explain all
above please

Implementation & improvement practice and science

Implementation R: Study of what is done to establish a proven improvement in every day working, or patient's lives

Improvement research:

did the intervention improve outcomes?

was the method for improvement effective

Overlaps – especially in adaptive implementation



Imple Science can help improvement practice and science

- Separate improvement change from implementation
- Some best copied exactly
- Some you need to adapt
- Understanding of context
- Use of theory and EB Imple approaches to design and evaluate implementation
- Details Evaluating fidelity & adaption



Uses of imple eval for faster wider improvement

1 Avoid misinterpret “no improvement”

(improvement not implemented; rule out this explanation)

2 Explain if variation in outcomes due to implementation

3 Helps implementers see how others implemented it & results

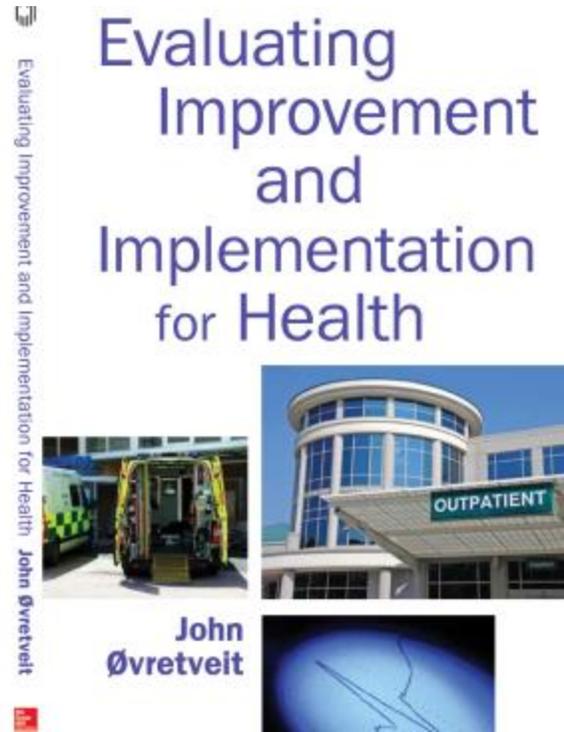
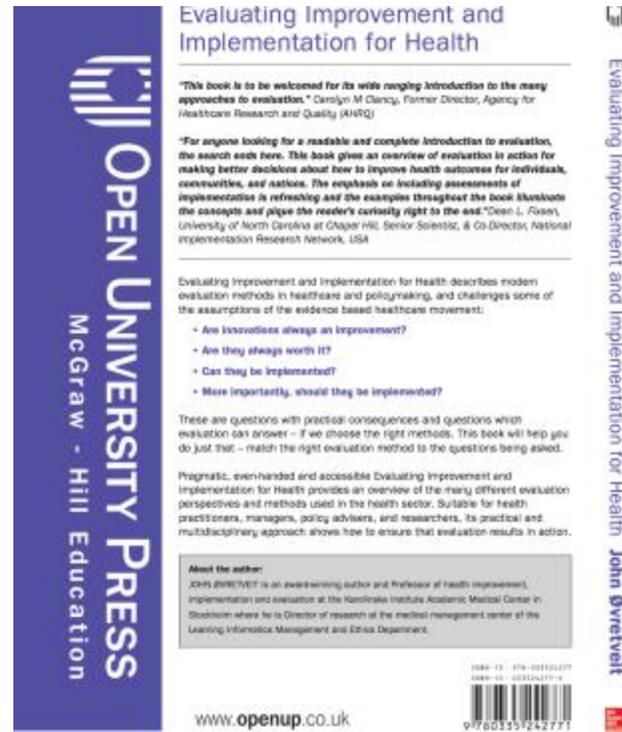
– guidance about what is effective – reduces waste

4 Why some implementations fail and some succeed:

Understand which methods work for which improvements in which settings - build scientific understanding



- Surprises?
- Most useful?
- Might not be true for us?



References and resources

Best web sites with tools guides and references

- Va implementation research and support center CIPRS
<http://www.queri.research.va.gov/ciprs/default.cfm>
- National Implementation Research Network (NIRN)
<http://nirn.fpg.unc.edu/>

Best Texts

- Brownson RC, Colditz GA, Proctor EK, eds. Dissemination and implementation research in health: translating science to practice. Oxford University Press, 2012.
- (easy read text is: Øvretveit, J (2014) Evaluating improvement and implementation for health, McGraw Hill/Open University Press, Milton Keynes, UK. Amazon & Kindle order

Key references - research

- Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. *Med Care* 2012;50:217-26.
- International health summary: Peters et al 2013
Implementation research: what it is and how to do it, *MJ* 2013;347:f6753 doi: 10.1136/bmj.f6753 (Published 20 November 2013)

Recommended practical tools

ORCA

II. Context Assessment

For each of the following statements, please rate the strength of your agreement with the statement, to 5 (strongly agree).

(Culture) Senior leadership/clinical management in your organization:

- a) reward clinical innovation and creativity to improve patient care
- b) solicit opinions of clinical staff regarding decisions about patient care
- c) seek ways to improve patient education and increase patient participation in treatment

strongly disagree	disagree	neither agree nor disagree
1	2	3
1	2	3
1	2	3

Recommended practical tools

HRET change readiness (spread)

4 areas: the innovation, target audience, the organisation, the environment,

Organizational Factors:

					Item Score
1. Leaders in the average organization the innovation needs to spread to are strongly supportive of its implementation:					
Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
5	4	3	2	1	_____
2. Resources needed to implement the innovation are available in the average organization the innovation needs to spread to:					
Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
5	4	3	2	1	_____
3. There are enough persons with quality improvement skill in order to implement the innovation in the average organization the innovation needs to spread to:					
Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
5	4	3	2	1	_____

Recommended practical tools

Brach et al 2008: Will it work here?

II. Should we do it here?

Potential Benefits

(p. 23)

- *What benefits will the innovation generate? (p. 23)*
- *Will the benefits be visible to those who have to implement the innovation, to those who have to support it, and to patients and their families? (p. 24)*

Potential Costs

(p. 27)

- *What resources will we need to implement the innovation and what do they cost? (p. 27)*
- *What are the potential cost offsets? (p. 29)*
- *What are the opportunity costs of adopting the innovation? (p. 30)*

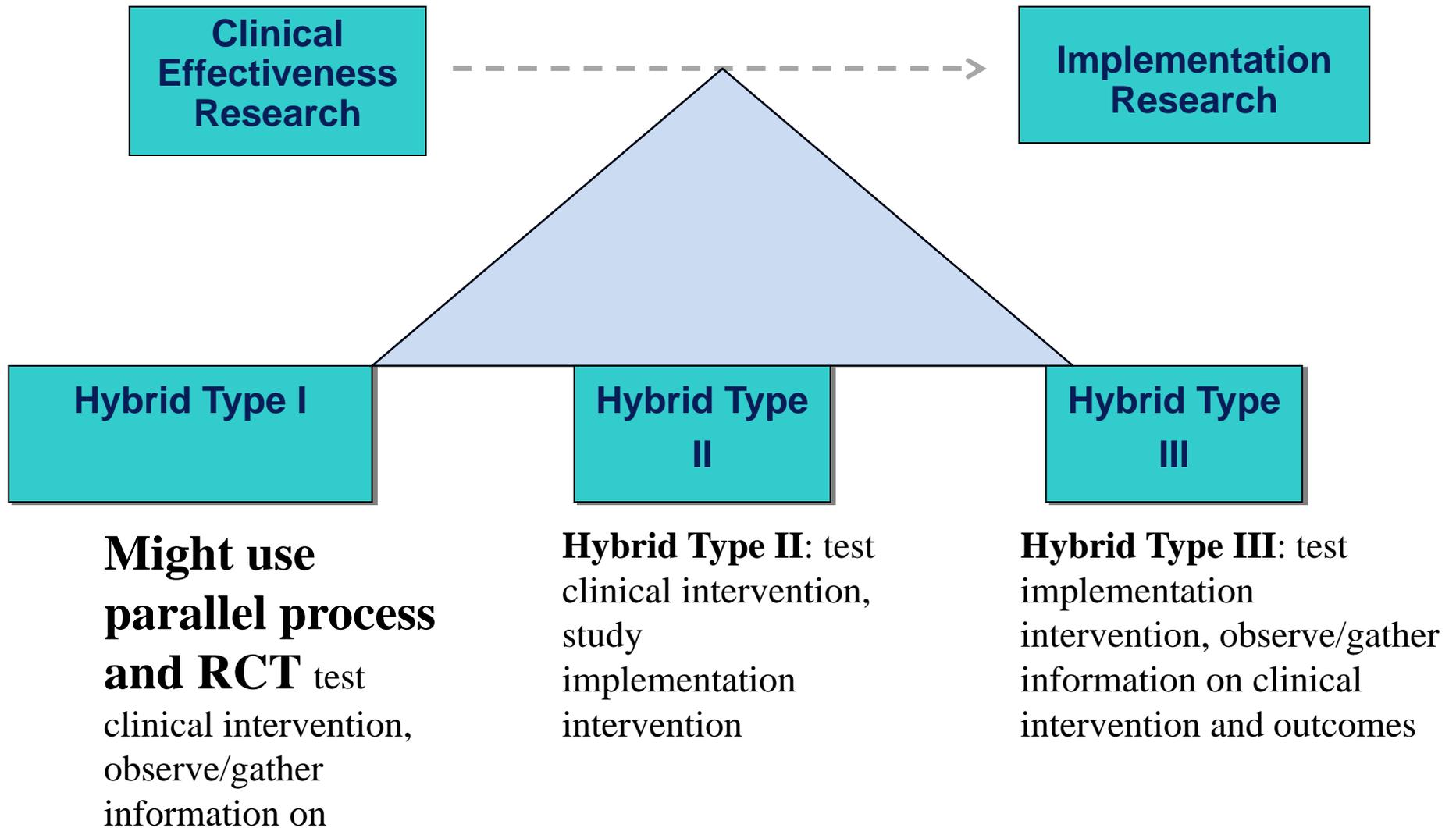
Business Case

(p. 31)

- *How do we prepare a business case? (p. 31)*
- *How can we calculate the return on investment? (p. 32)*
- *Is there a business imperative or strategic advantage for adoption? (p. 33)*

DETAILS

Implementation/outcome evaluation “hybrid” designs (Curran et al 2012)



MUSIO (Kaplan et al 2010)

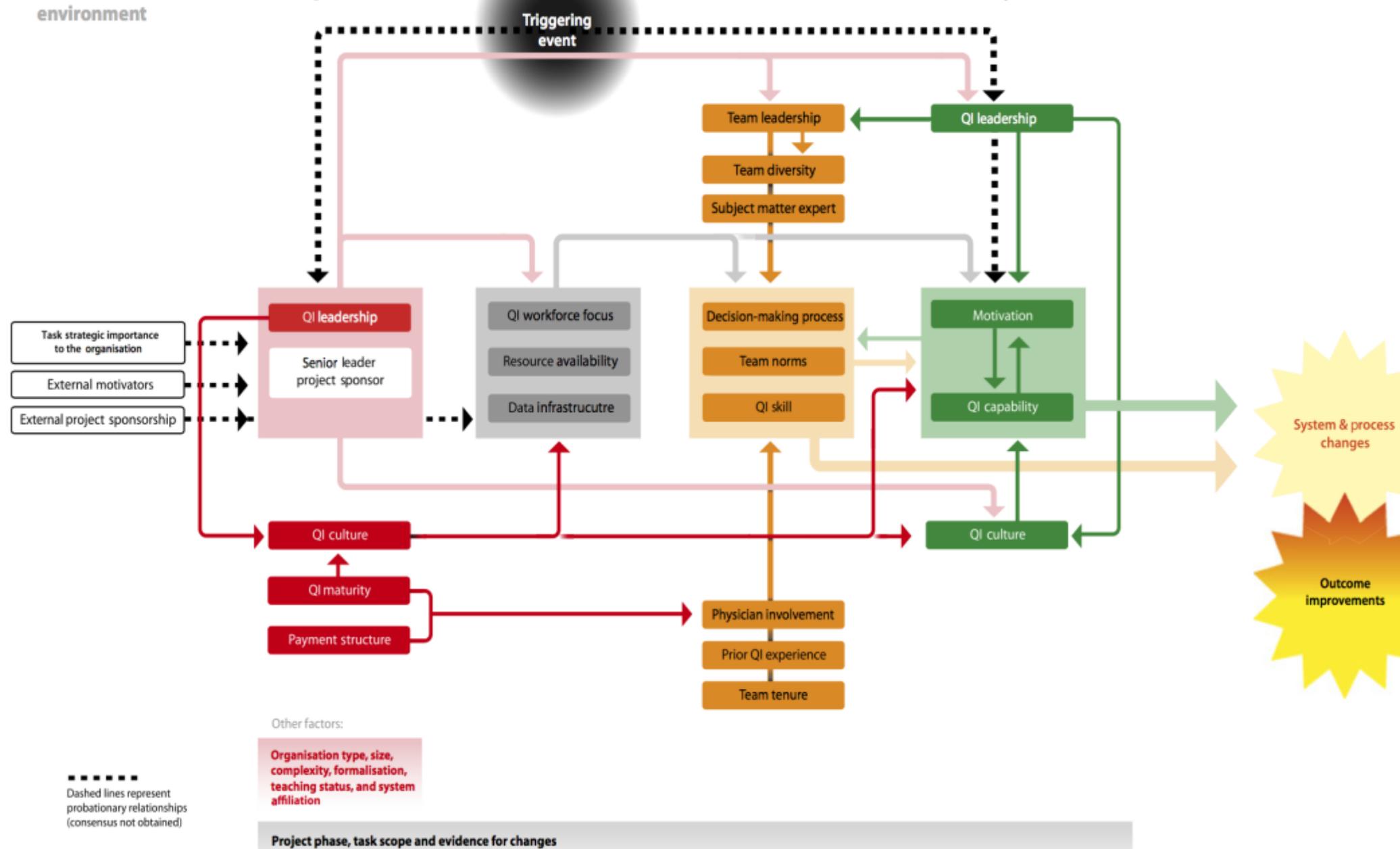
External environment

Organisation

QI team

Microsystem

Triggering event



French et al 2009 synthesis of 30 instruments measuring context

ABSORPTIVE CAPACITY

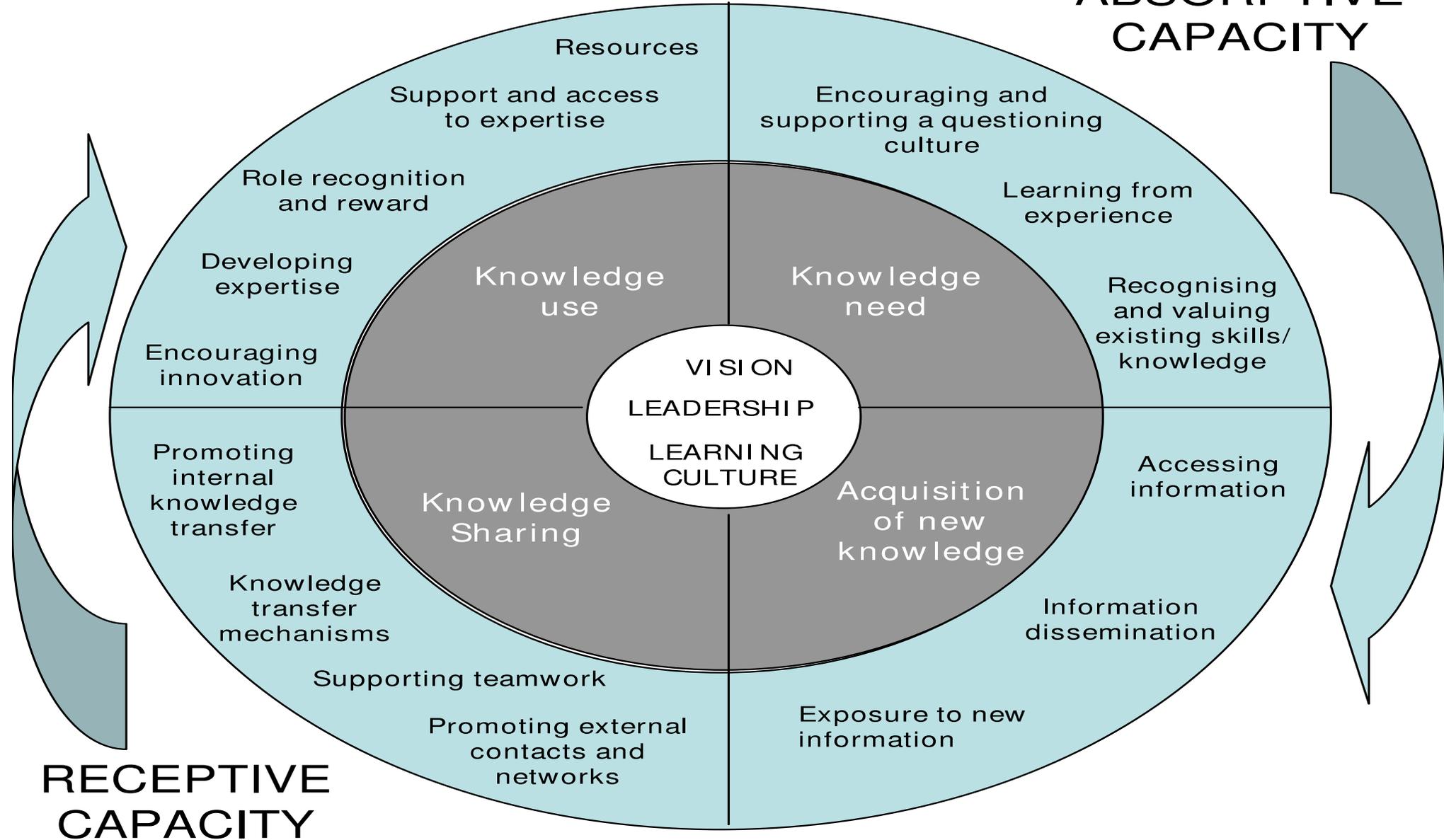


Figure 1
Model of categories and organisational attributes.

Fluid terminology & confusion

....not just because of "immaturity of science"

- defining words in certain ways positions you for grants and to market a new approach
- definitions advance and protect material interests (eg "psychotherapist")
- consensus on terms is political process
 - with winners and losers who become aware when change is proposed

Implementation science

- Study of what is done to establish a proven improvement in every day working, or patient's lives
- scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services and care.

Challenge: No definition of terms = no scientific advance

- Without specified concepts we cannot properly observe & share
 - make a taxonomy implementation approaches
 - find which is best for which intervention in which setting for which subjects
- ...but standardising terms is a social & political process
- We have too much to loose if we translate our sets of concepts – best set anyway for our work