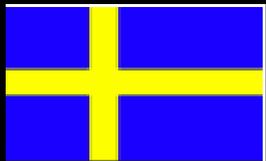


Complex Social Interventions - Implementing and Evaluating them



John Øvretveit,

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



Example 1

- HIV/AIDSs care and prevention
- Multiple component
 - Health education.
 - Blood safety, testing
 - Counselling
 - Home based care.
 - Micro finance
 - School programm
 - Orphan assistance



Effective pilot – scale up?

- Scale up failed (“dissemination” strategy)
- Outcome evaluation did not give information needed to scale up

Description Limited

Components details and principles

Conditions – extra **resources** for pilot/special, **committed chiefs**

Need all components – can we adapt?

Evaluate local adaptations - Tools & skills

= Too complicated, no resources for scale up,
cant evaluate adaptations

Pilots & special evaluation

Irrelevant (now)



Real world



- 1) feasible co-design
- 2) implementation 3S support?

Next>>

>> example 2

Mary: 84 yrs obstructive airways (COPD) and heart disease

Stable at home on meds,
very independent



*Unpaid motivational coach
and security-guard - "Matty"*

Mary - six weeks later

- Mary, after hospitalisation
- Sent home with no support
- Readmitted in emergency
- Avoidable cost to health system
4600ECU



Improvements could have helped Mary

1) **System for planned return to home** and support

Community team to support Mary's transition home.

2) **Medications list** – electronic

3) **Transitions model** – Coleman

Not implemented because

- How to implement – copy exactly? Conditions for implementing?
- BUT ALSO **Finance**: no investment to implement or sustain (even with ROI BsCs)

Lessons

Knowledge needed is more than

*“Is it effective under X
conditions”*

What conditions needed? Feasible
other?

Cost?

Implementation: Structure,

Strategy. Supports

Hands up if you spend most of your time

1. Education
2. Doing research
3. Practical improver or implementer
4. Manager
5. Policy advisor or consultant

Other examples of CSIs

- More appropriate use – prescribing
- Hand hygiene programmes
- Bundles – CLABSI VAP
- RRT (MET)
- Breakthrough collaborative – (Intvn to an org)
- Improving cardiovascular health – to community
- Establish chronic care model

“Different to before” List

Version Group Health Cooperative of Puget Sound CCM for Diabetes

Community

Health System:

Self- Management Support: Right Track Notebook/Phone Program, Lorig Support Groups	Decision Support: Guidelines, Expert Team, Provider Education	Delivery System Design: Multidisciplinary Group Visits, Planned visits, Retinal Screening Program	Clinical Information Systems On-line Registry, Practice Reports, Reminders, Patient Summaries
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**Informed,
Activated
Patient**

**Productive
Interactions**

**Prepared,
Proactive
Practice Team**

Functional and Clinical Outcomes:

- Increased retinal, foot and renal screening rates,**
- Increased Hemoglobin A1c testing,**
- Increased proactive/planned care,**
- Reduced costs,**
- Increased satisfaction for patient and provider**

McCulloch et al Eff.
Clin Prac 1998;1:12,
Dis Mgmt 200;3:75



Features of CSIs

- Multiple – component
- Multi – level
 - Intervention to managers
 - To create “hungry and helping context” for
 - Project team and clinical practice
- Deliberate later change e.g. take away one component because of cost
 - Wider context changes - so need revisions
- Sequenced
 - Implementation Synchronise > problem awareness > training > use training immediately > feedback > revision

1

2

Types of CSI – “copy principles” or “copy exactly”

Principle changes

7 components of chronic care model

Prescribed changes

Drug = standardised dose and instructions

Implementation = conditions needed to follow instructions

Detailed description of exactly what and how to change

1

Implementation success & sustainment

>>>>more context sensitive >>>>

3

Questions

How do researchers know

a) how to implement these changes so as to test them?

b) if effective at test site

c) if effective elsewhere for other patients?

High certainty before going national

1

Questions

How do practitioners decide

a) if can implement,

b) if they adapt – effective?

c) Peers experience (Harvest?)

Answers - to come

- Assume unpredictable
 - Get feedback about outcomes
 - Assume other changes can influence Os
- Use RCT when can;
- Or theory-informed case evaluation or time series;
- Use already collected digital data

References – see end PPT

- VHA published reports on evaluating CSIs and Partnership research
- Evaluations of national quality programmes and collaboratives
- 3 evidence reviews of changes improving quality and saving money
- Evaluating implementation and improvement
- Sweden smart quality registers projects
- EU integrated care digital support
- EU implementing improvements in chronic care

Next

- Example: Care transitions evaluation and reports
- Designs
- Mean for you?
- Questions to you

Reduce avoidable readmissions

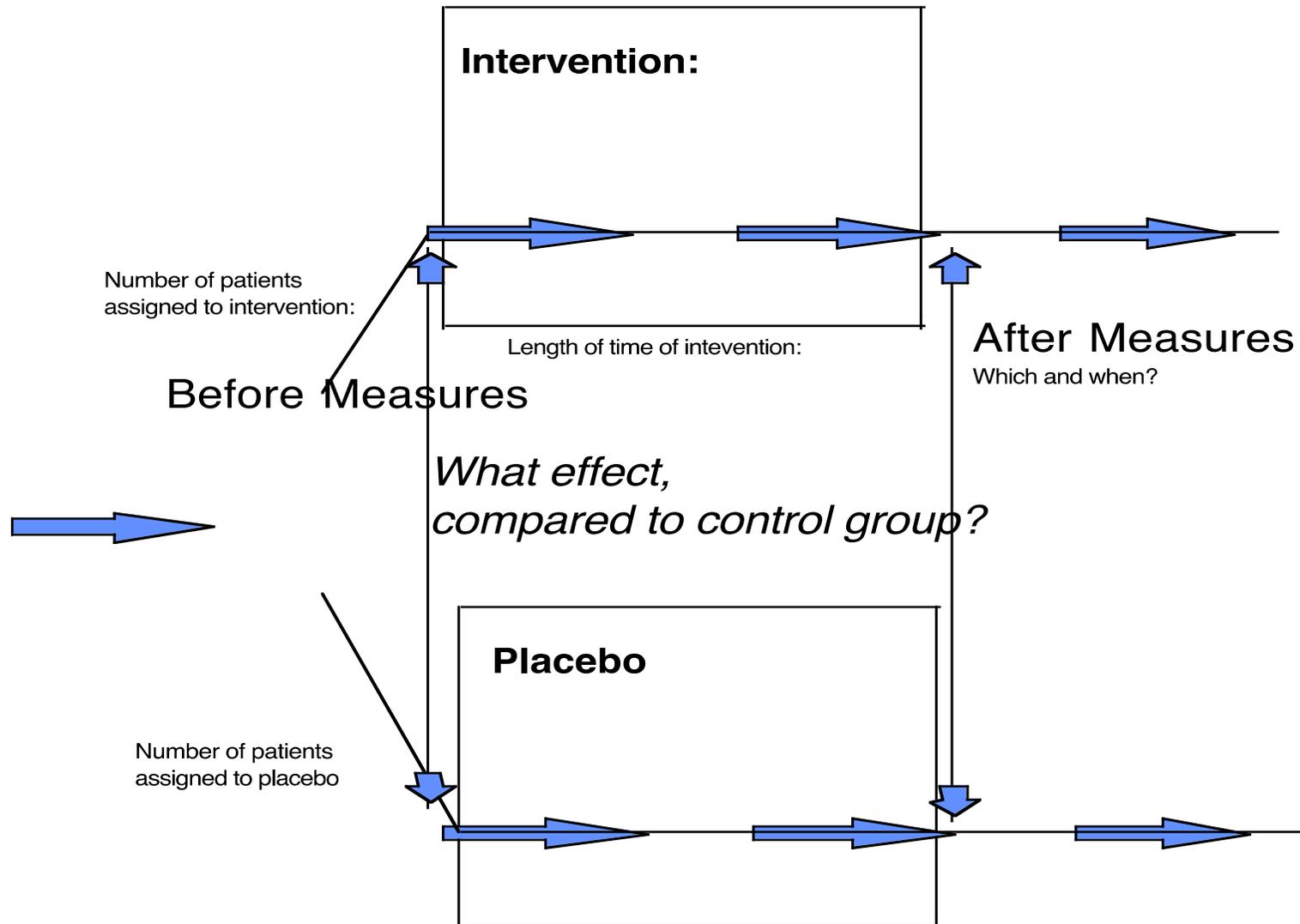
Coleman care transitions model = people leaving hospital - support for self care

1) Education

2) Coach support at home



Controlled Experimental (Type 5)



RCT evaluated – proven effective

- Research funded version
- Intervention specified in protocol
- Implementation

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

POPULATION HEALTH MANAGEMENT

Volume 16, Number 4, 2013

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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

Abstract

The Centers for Medicare and Medicaid Services (CMS) has launched the Partnership for Patients initiative, promising a 20% reduction in readmissions nationally across all payers by December 31, 2013. To address this ambitious goal, CMS has awarded grants to Hospital Engagement Networks, Pioneer Accountable Care Organizations, and the Community-based Care Transitions Program, as well as instituted new penalties for excessive readmission that began in October 2012. National efforts aimed at realizing this goal are predicated, in part, on our effectiveness in disseminating evidence-based care models into practice to improve outcomes and reduce costs. The Care Transitions Intervention (CTI) has been developed, tested, and disseminated to over 750 health care organizations in 40 states nationwide. Four factors promote wide-scale CTI dissemination. The first factor focuses on model fidelity whereby adopters are given insight into which elements of the intervention can be adapted and customized. The second factor concerns the selection of Transitions Coaches and reinforcement of their role through training and participation in a national peer learning network. The third factor relates to model execution with attention to integrating the intervention into existing workflows and fostering relation-

Designs –choose to match information needed

- RCT if possible & internal vs external validity
- Matched comparison
 - Exposed vs non-exposed; Stepped wedge version
- Case evaluation – theory informed 1-5 cases (description)
- Time series
- PDSA

2

3

Impact of a hospital-wide hand hygiene initiative on healthcare-associated infections: results of an interrupted time series

Kathryn B Kirkland,^{1,2,3} Karen A Homa,² Rosalind A Lasky,² Judy A Ptak,³
Eileen A Taylor,³ Mark E Splaine²

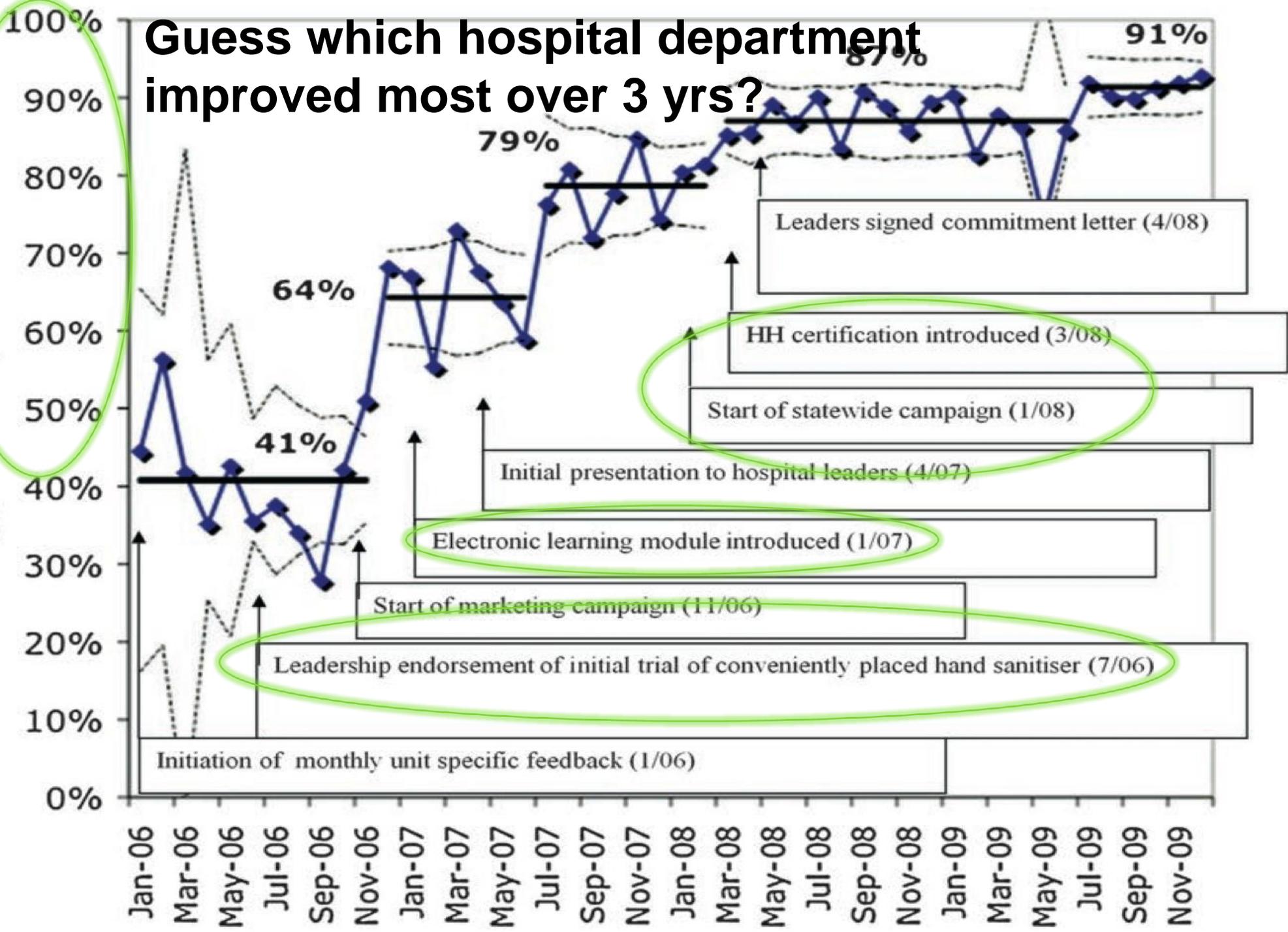
ABSTRACT

Background: Evidence that hand hygiene (HH) reduces healthcare-associated infections has been available for almost two centuries. Yet HH compliance among

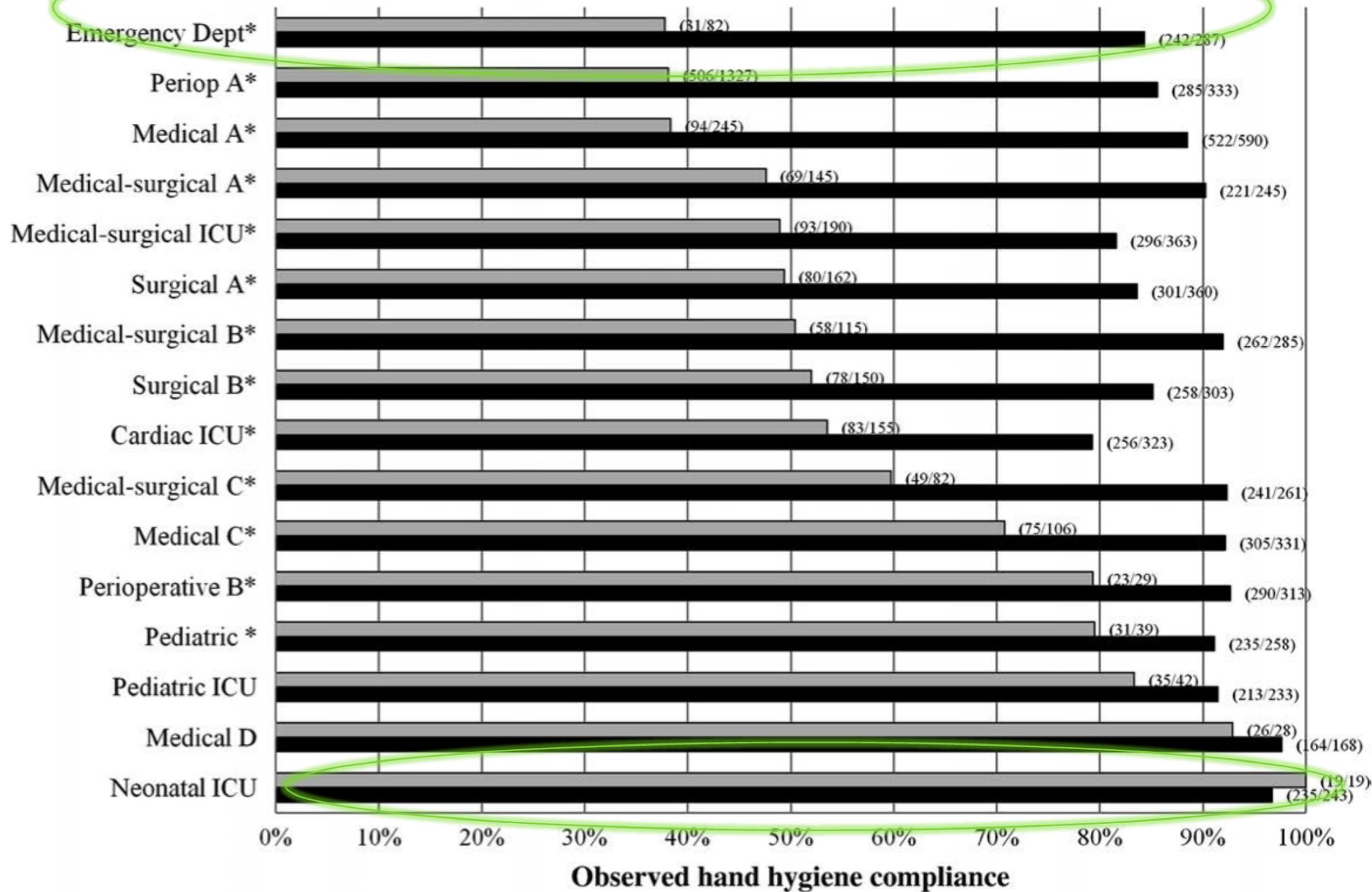
performance among different groups requires further study.

Guess which hospital department improved most over 3 yrs?

Hand hygiene compliance rate



■ 2006 ■ 2009



4)

Recommendations:
choosing,
implementing and
evaluating CSIs

2

7



Implementation: Is there guidance for

1) Previous reports (research or Q projects) for:

- A) conditions under which change introduced
- B) methods used to enable take up of the new way

Ask:

- How different are we?
- What might we need to do to differently?

2) Use change readiness and adaption tools (see resources)

3) Find a way to get objective feedback

2

8

Does our version still work?

- How certain do you need to be?

National investment?

- Proof proportional to a) possible harm + b) cost vs c) probable reduction in suffering
 - RRT low harm, some cost, probable reduction in suffering
 - Do we need RCT in many different hospitals before implementing?
- To spread RRT – which method?
 - Can not use RCT report - other evaluations

Does our version still work?

How certain do you need to be?

Local testing – same proportionality criteria

- Proof proportional to possible harm + cost vs probable reduction in suffering
- For Coleman, is 1 hr training vs 3hrs still effective?
 - 1) Ask cross-section – look for patterns
 - 2) Consider already collected data (avoidable readmissions)
 - time series before (3hrs) vs after (1hr)
 - 3) Use comparison 2 different wards & matched patients

The 10;20;30;40 change success theory

Seed



Gardener/planting & nurture



Soil / climate



Personalities 20%

Idea 10%

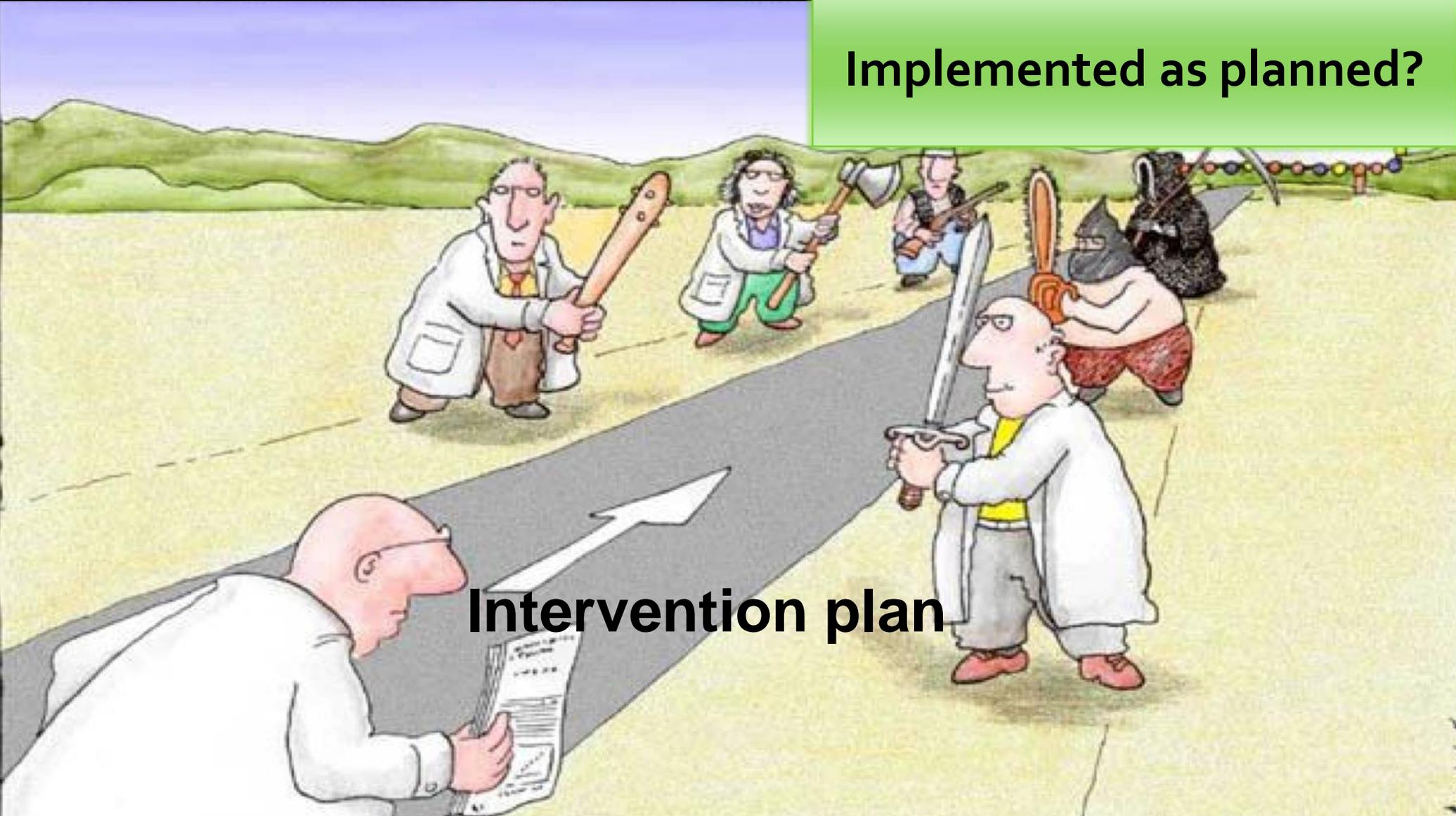
Adaption/Implementation 30%

Soil receptive – staff
readiness

& wider Climate 40%

No intervention survives first contact with context

Implemented as planned?



Intervention plan

Ways forward

Balance external and internal validity

- More external validity
 - Generalisation More sites & variety human subjects
- Strengthen certainty of attribution of outcomes to the intervention with theory
- Better descriptions
- Use digital: post descriptions on web & harvest to understand who does best 3
- Action evaluation

Strengthen practice based investigations

Higher level expertise & facilitation by...

Which data to gather and how

How to validly-attribute outcomes to intervention

= researchers or dedicated units (e.g. IMC, Kaiser, VA)

Reporting

Formats for documenting the intervention and context

Best example: AHRQ Innovations Exchange

Digital systems auto-capture & report analyses of data about improvement impact

Groups of interventions

In terms of **conditions required** for their successful implementation

Provide specific **self assessments** for probability of success given our conditions

Implications for Researchers

- To get published - **pre-study** review to shape data gathering
- Match design <> information needed by the customer
- First **describe the change** and **implementation**
- Observational designs: plan to account for other causes of outcomes
- Use – already collected data
 - Know data available – Q reg and access
- Estimate costs and conditions to implement

Implications for Practitioners

- Look for “proven” changes for your problem
- Assess conditions for success
 - Use tools to show leaders chances of success
- Plan feedback about progress and results
- Review and adjust frequently

Implications for Managers

- Cost
 - If savings, can we get investment and track?
- Can we implement?
 - Conditions needed
 - Can we adapt and check adaption
- Limited research – use when can
 - Poor descriptions (espec conditions)
- Look for Q project case reports
 - BMJ O&S AHRO IE Other

Questions to you - Which was most surprising, interesting or useful?

- Copy exactly >>> copy principles
- Skillful adaption to fit
- Get feedback about effectiveness of our version
 - Reduce subjective bias of thinking our efforts must have an effect
 - Purpose – good enough to check – time series
 - Purpose – more certainty – comparisons to exclude other explanations
- Use already collected digital data
- Project reports
 - Format for description and outcome measures
 - Select 5 most and least successful
 - Understand and explain
- Estimate cost of problem, of solution & if savings

Stirman: 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)

To describe “implementation approach”

Collect data about

The plan (planned strategy)

The structure of responsibilities

The actions actually carried out (achieved strategy)

The systems and supports

The situations in which implemented

...As well as describe the change intended to be implemented.

INTERVENTION ELEMENTS

Procedure(s)

Use in Specific Context(s)

Specific Set of Users

Achieve Defined Outcomes

For Defined Population(s)

CONTEXTUAL FIT ELEMENTS

Need

Precision

An Evidence-Base

Efficiency

Skills/
Competencies

Cultural Relevance

Resources

Administrative/
Organizational Support

PROCESS ELEMENTS

Selecting EBI

Initial Implementation of EBI

Ongoing Implementation and Scaling Up of EBI

1) E
key

2012: VHA “we need guidance for researchers for
a) more actionable research
b) complex interventions, challenging for trial designs”

Evaluating Complex Social Interventions Volume 2: Guidance, Tools and Resources

John Øvretveit, jovret@aol.com

Director of Research, and

Professor of Health Innovation, Implementation, and Evaluation

The Medical Management Centre,

The Karolinska Institutet, Stockholm

Reference citation: Ovretveit, J 2013 Evaluating Complex Social Interventions: Volume 2: Guidance
resources, CIPRS, Veterans Health Administration, Sepulveda, Ca.

From amazon

Evaluating Improvement and Implementation for Health

"This book is to be welcomed for its wide ranging introduction to the many approaches to evaluation." Carolyn M Clancy, Former Director, Agency for Healthcare Research and Quality (AHRQ)

"For anyone looking for a readable and complete introduction to evaluation, the search ends here. This book gives an overview of evaluation in action for making better decisions about how to improve health outcomes for individuals, communities, and nations. The emphasis on including assessments of implementation is refreshing and the examples throughout the book illuminate the concepts and pique the reader's curiosity right to the end." Dean L. Fixsen, University of North Carolina at Chapel Hill, Senior Scientist, & Co-Director, National Implementation Research Network, USA

Evaluating Improvement and Implementation for Health describes modern evaluation methods in healthcare and policymaking, and challenges some of the assumptions of the evidence based healthcare movement:

- Are innovations always an improvement?
- Are they always worth it?
- Can they be implemented?
- More importantly, should they be implemented?

These are questions with practical consequences and questions which evaluation can answer – if we choose the right methods. This book will help you do just that – match the right evaluation method to the questions being asked.

Pragmatic, even-handed and accessible Evaluating Improvement and Implementation for Health provides an overview of the many different evaluation perspectives and methods used in the health sector. Suitable for health practitioners, managers, policy advisers, and researchers, its practical and multidisciplinary approach shows how to ensure that evaluation results in action.

About the author:

JOHN ØVRETVEIT is an award-winning author and Professor of health improvement, implementation and evaluation at the Karolinska Institute Academic Medical Center in Stockholm where he is Director of research at the medical management center of the Learning Informatics Management and Ethics Department.

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Evaluating Improvement and Implementation for Health John Øvretveit

Evaluating Improvement and Implementation for Health



John Øvretveit



31 savings pay for costs – certainly (“almost”)

Does improving quality save money

A review of evidence of which improvements in quality reduce costs to health service providers

Dr John Øvretveit
September 2011

Evidence: Does clinical coordination improve quality and save money

Volume 1: A summary review of the evidence
Dr John Øvretveit

June 2011

Evidence:

Do changes to patient-provider relationships improve quality and save money?

A review of evidence about value improvements made by changing communication, collaboration and support for self-care

Dr John Øvretveit

June 2012

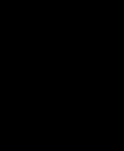
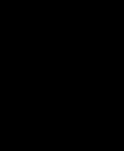
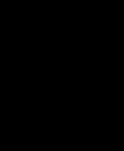


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- Øvretveit, J 2013b Evaluating Complex Social Interventions and their Implementation: Volume 2: Guidance tools and resources for researchers, Center for Implementation Practice and Research, (CIPRS), Veterans Health Administration, Sepulveda, Ca.

References

•



Improvement
concept

- Tea Bag
- Heater
- Sweetner

Implementation actions

- 1 Get tea bag and put it in
- 2 Plug in warmer
- 3 Add Sweetner

1) Was this done?

2) Was tea the
outcome?

A
Water

How?

An improvement-
change

B
Tea

Surrounding "context" helps and hinders

Power outlet

Tea available

3) Not "satisfaction of tea

drinker – this is intended
outcome of improvement-
change

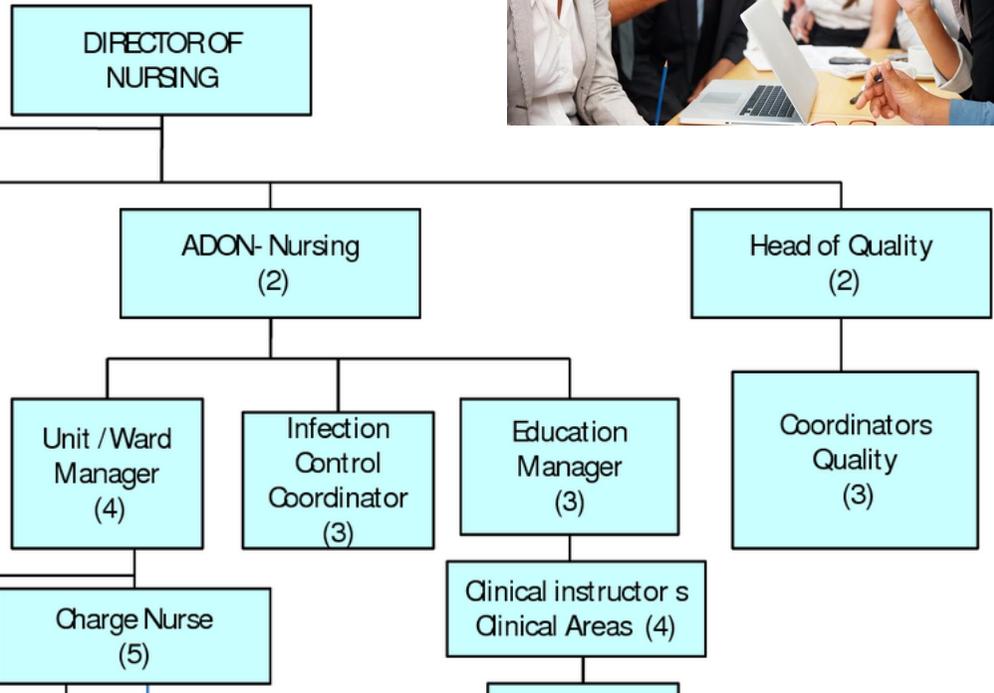
Nothing gets implemented without “3 S”

Structure



Strategy Steps over time

- 1) Form project team
- 2) Gather initial data
- 3) Planning & politics
- 4) Training



Project team structure

Supports

- Systems for data
- Facilitators

10/6



Does the improvement – change

- Rigorous research & projects

QI projects that seek to make inferences, especially public inferences, about the impact

The Joint Commission Journal on Quality and Patient Safety

Forum

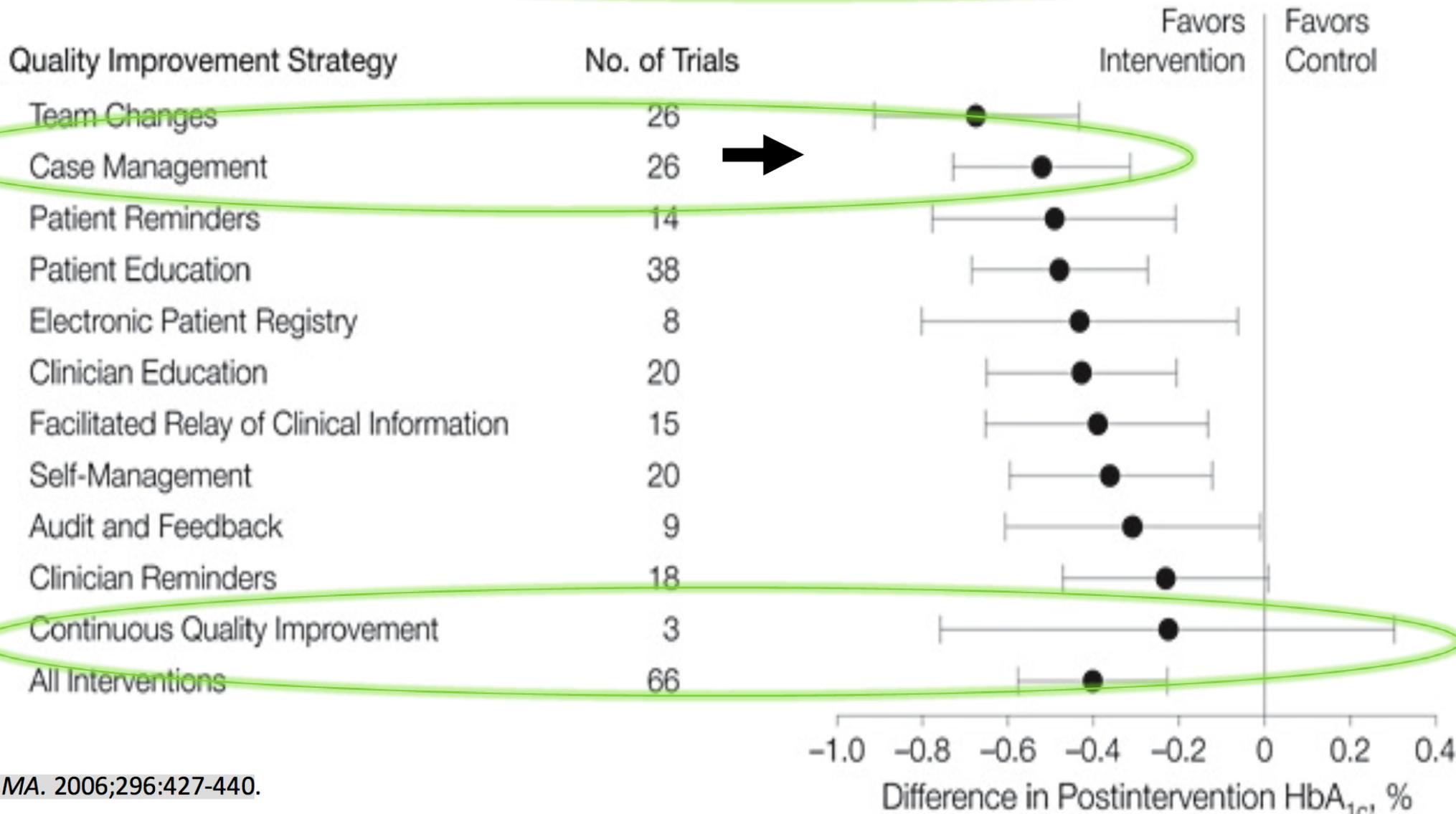
Improving the Quality of Quality Improvement Projects

Sean M. Berenholtz, M.D., M.H.S.; Dale M. Needham, M.D., Ph.D.; Lisa H. Lubomski, Ph.D.; Christine A. Goeschel, R.N., M.P.A., M.P.S., Sc.D.; Peter J. Pronovost, M.D., Ph.D.

project. Our patients deserve nothing less.

RCT evidence of effectiveness Improvement strategies

Effects of QI Strategies for Type 2 Diabetes on Glycemic Control



JAMA. 2006;296:427-440.

Points

- 2 or 3 outcomes associated with presence of intervention
- RCT & SR for maximum certainty
- If practical and delay reducing suffering or costs is justifiable
- Degree of certainty for purpose
- Effectiveness not the only

5

2

Message

Implementers have other important questions

- Can we implement it here?
- Costs, savings & sustainment of the change or the activity of improvement?
- Certainty proportional to risk, costs and ease of implementation here

5
3

EVALUATION : To inform which decisions?

1) Nation-wide new safety practice or type of improvement programme

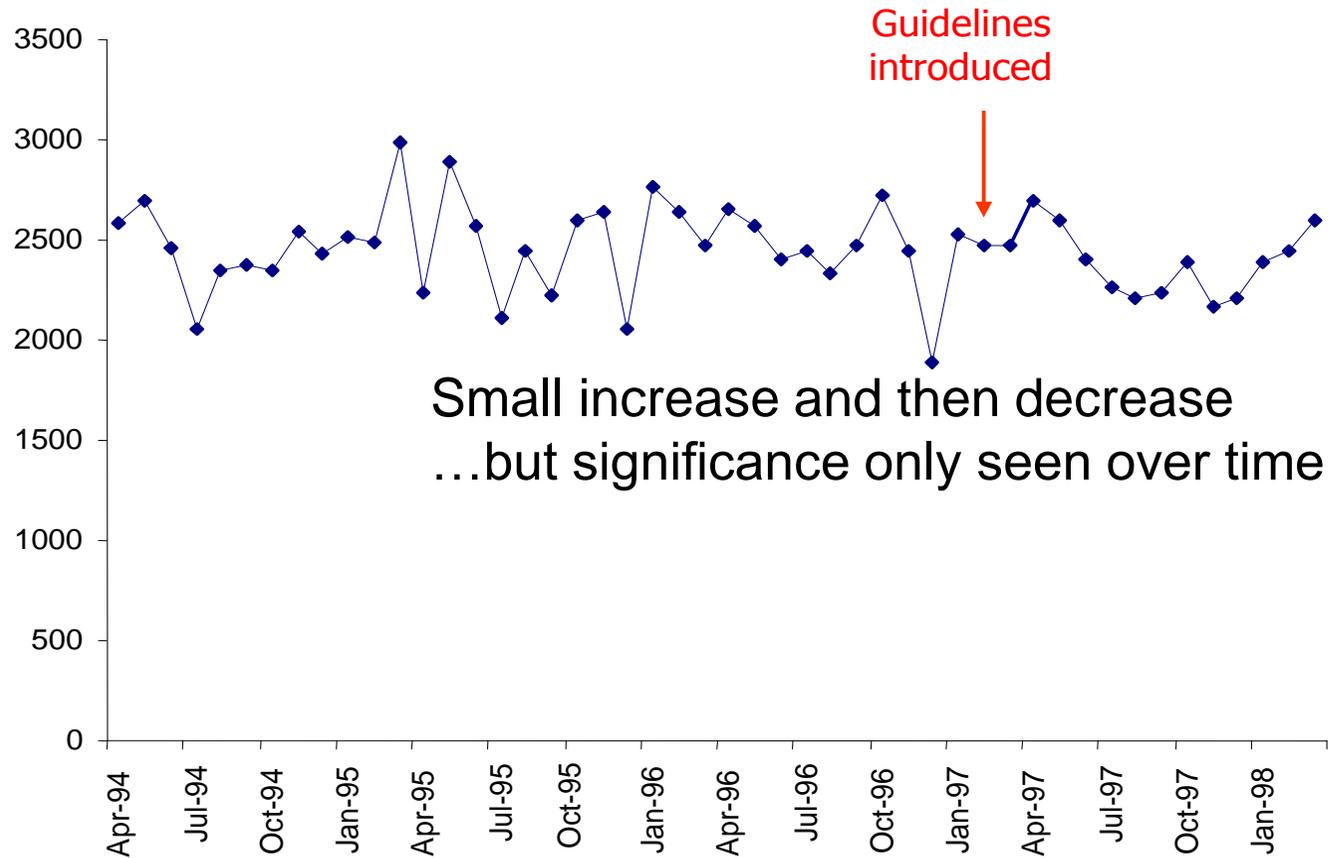
- RRT, CCM, transitions/readmissions models,
- Spread by collaborative or other approach?
- Statins; Clot busters; CBT for some depressions
- Rigorous scientific standards – RCT more difficult but possible

2) Local take up

- Mandated or recommended
- Conditions we need for success; what do we copy exactly and how?
- Have we taken up as recommended?

Time series (multiple before/after)

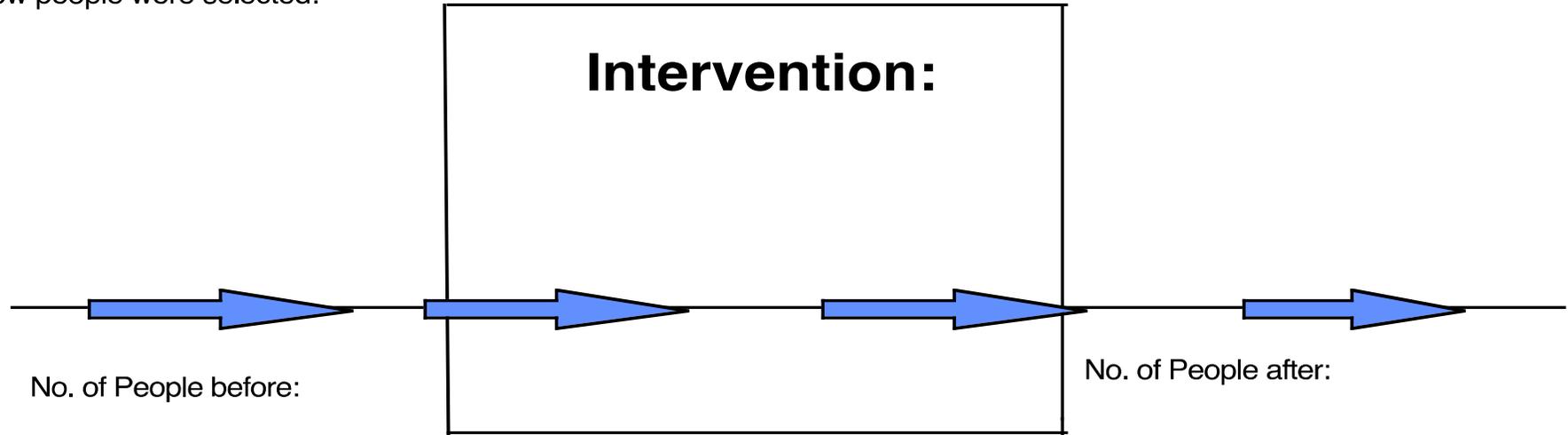
Number
of x-rays



Outcome (Type 3)

Before-after comparison

How people were selected:



No. of People before:

Measures

Which and when?

Length of time of intervention:

What effect?

No. of People after:

Measures

Which and when?

*Confounding variables and controls:
what, apart from the intervention, could have
produced the change in the measures?*

Version Group Health Cooperative of Puget Sound CCM for Diabetes

Community

Health System:

Self-
Management
Support:
**Right Track
Notebook/Phone
Program,
Lorig Support
Groups**

Decision
Support:
**Guidelines,
Expert
Team,
Provider
Education**

Delivery
System
Design:
**Multidisciplinary
Group Visits,
Planned visits,
Retinal Screening
Program**

Clinical
Information
Systems
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Summaries**

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Increased proactive/planned care,
Reduced costs,
Increased satisfaction for patient and provider**

McCulloch et al Eff.
Clin Prac 1998;1:12,
Dis Mgmt 200;3:75



Subject

- What information do we want from evaluations:
 - Make better decisions about improvements
 - Policy, county, hospital, PHC, clinical teams
- CSI (improvement-change) proven elsewhere
- Difficult to copy exactly
- Does our version still work?
- Is there guidance for adaptation

5

8

Subjects

- What information do we want from evaluations:
 - Make better decisions about improvements
 - Policy, county, hospital, PHC, clinical teams
- Not just “are fewer infections associated with the presence of Y change” - efficacy

5

9

References

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