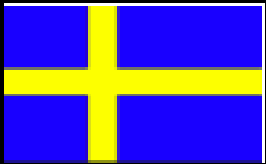


# Evaluating Quality Improvements and Implementation

CLAHRCQIEvalMay14



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# Outcomes

1. Motivation to carry out an evaluation
2. More awareness of pitfalls & solutions
3. Improve an evaluation

# Outline

- Questions to you
- Example of a challenging evaluation
- Challenges and solutions
- Resources for evaluating improvement and implementation in health – inc. Book Aug2014

# Disclosures – bias and interests

## Career theme - Practical & used research

Scientific method as tool directly to make a difference

Evaluation for action

Evidence-based theory – awareness of the constraints to behaviour *and* the resources

Brings out the best and worst in people

1979 Partnership research –social analysis, consultancy  
research clinical sociology

1984 Masters: is action research scientific?

2002 Survive at Karolinska Institutet AMC

practical and scientific contribution

# Disclosures – bias and interests

- Board member of
  - Joint Commission resources/international
  - Implementation science research network
  - AHRQ innovations exchange
- Projects
  - USA VHA complex social interventions and partnership research
  - Coordinating “EU Implement” programme
  - Lead on DHT support for clinical coordination – EU Integrate

# Quick reaction answers please – in general:

Yes, no, it depends

- I am doing an evaluation
- I want to do an evaluation
- Evaluation can tell us if a change is an improvement
- Evaluations often miss negative side effects

## In general: Yes, no, it depends

- Evaluators always know what the change is when they **start** the evaluation
- Evaluators should explain variations in outcomes to be of help to users
- The perfect is the enemy of the useful
- If you want certainty, do religion not evaluation

# Example of a challenging evaluation

“Please evaluate this **information support system** for **shared clinical decisions** about **arthritis treatment**”



# Arthritis co-care supported by clinical data system

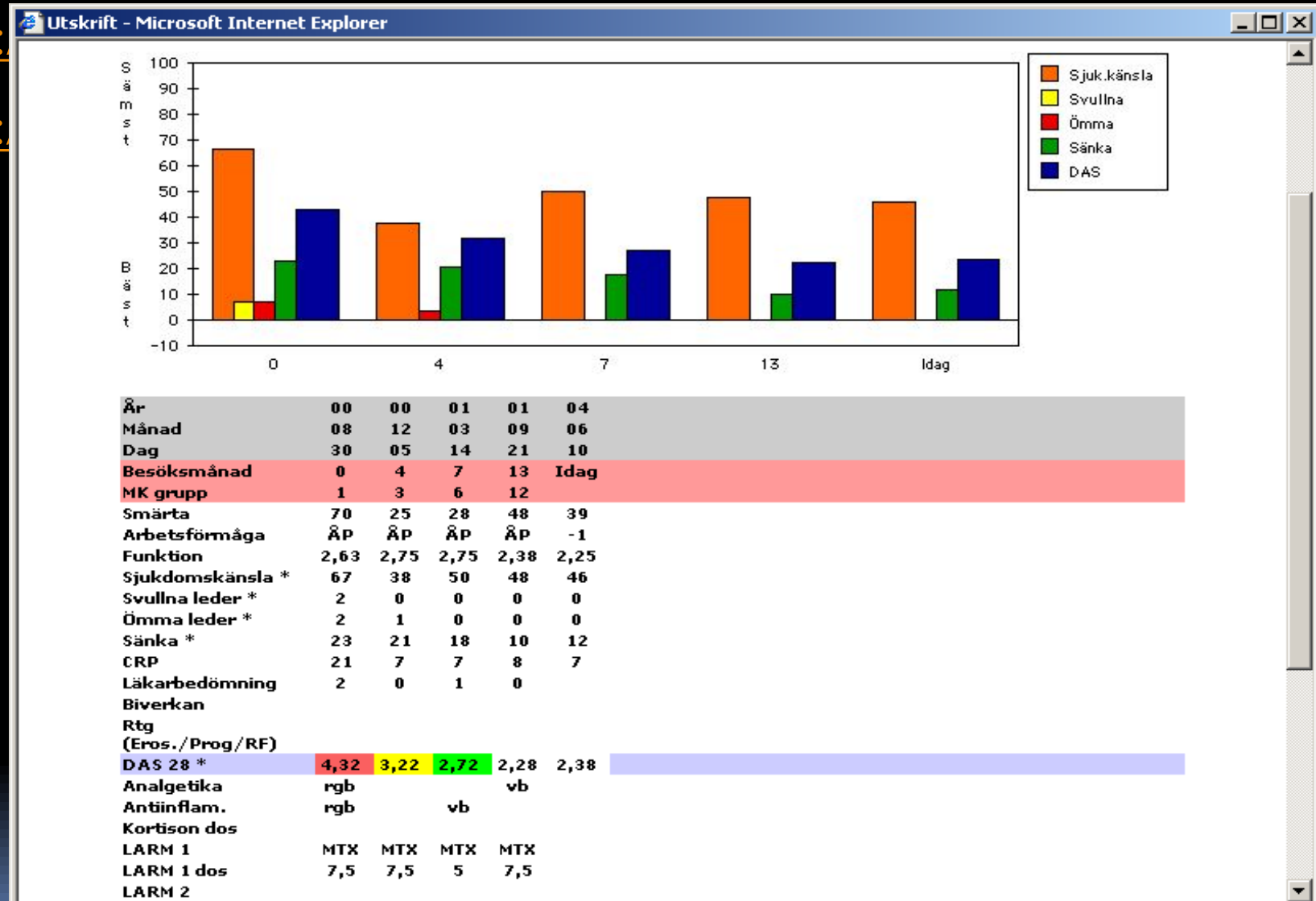
Patient enters data <http://healthstories.se/>

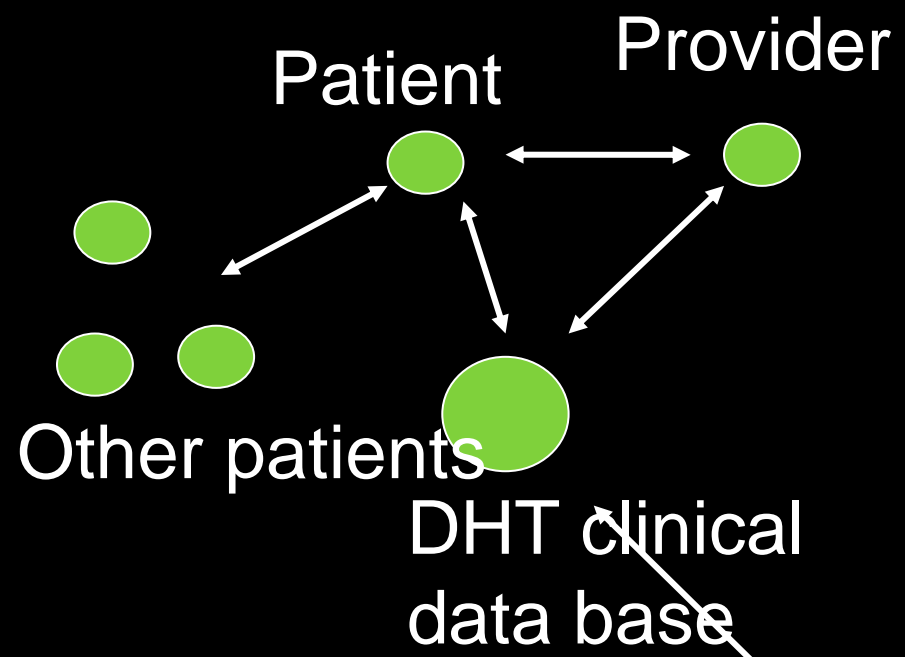
<http://www>



- Then: Clinical data base presents trends in treatment and patient-reported disease score

- <http://>
- <http://>





- Performance comparisons
- Research (genome data base)

# *What are some questions evaluation can answer?*

- Does it make a **difference**?
  - To whom? (stakeholder)
  - in which aspect? (value criteria)
  - = Measure (what?) before & later *and* attribute difference
- How much does it **cost to change** to this way of working?
- What exactly is **“it”**
- How do you most effectively **implement “it”**?

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2

# Challenges

- **Describing** “the intervention”
  - What do the patient and provider do which is different than before?
  - What is the information system which was not there before?
- **Describing the implementation**
  - What was done to change how patient and provider make decisions (apart from the intervention)
  - What was done to establish the information system in operation?

# Helpers, to describe what will be evaluated:

- Break it into **parts**
  - Before = no use by patient and provider of treatment history.  
Later = use this
  - Before = physician does not have fast access to tests and other clinical data. Later = this available
- Describe what is **not** being evaluated
  - The information system – how it was established and operates
  - Include the patient inputting data as part of the “intervention”?
- Did the “**new way**” **change** over the evaluation period?
- Do we include implementation as **part** of the intervention



## Challenge 2: what to measure, to assess “if it

- For CDS evaluation, **works”?**
  - if use lab measures of disease activity (ACPA protein antibodies (anti-citrullinated )
  - And these show lower disease activity
- Is this a good outcome measure to choose?
- Would patients or providers scoring (0-5) on “is this better than the old way?”, allow evaluation of “if it works”?
- Do criteria for valuation of stakeholder help?

1

# Helpers, for “what to measure”?

## 1) Who for?

- One customer not many
- To make a better action/decision

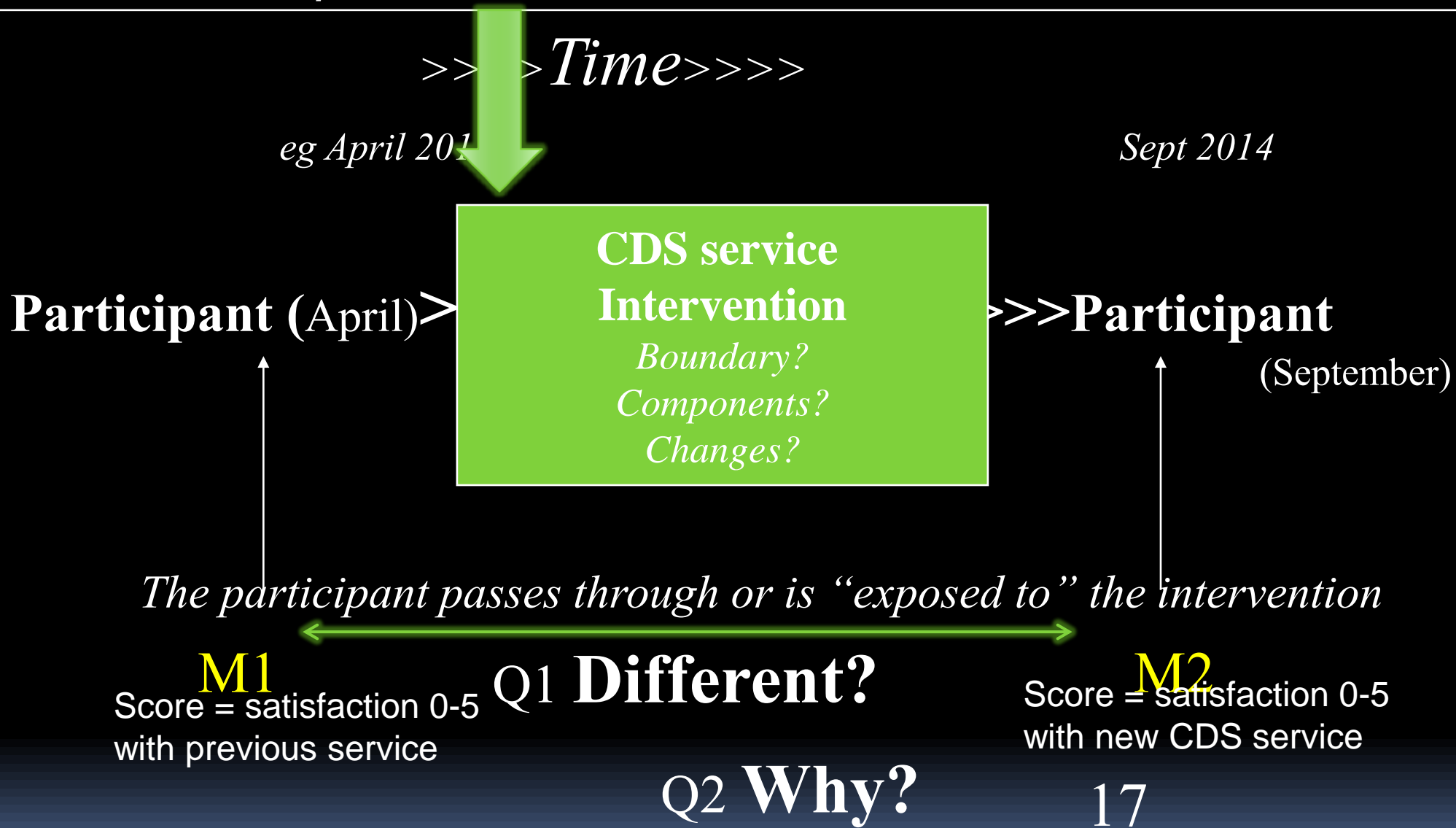
## 2) What need?

- Which outcomes most important?
- Limit data collection - Negotiate from
  - wants to needs, & test if decide differently
  - attribution-uncertainty for cost
  - Proxy /intermediate indicators & already gathered data



# challenge 3: attribution-what caused the “outcomes”

“Implement” CDS



# Challenge 3: what caused the “outcomes”?

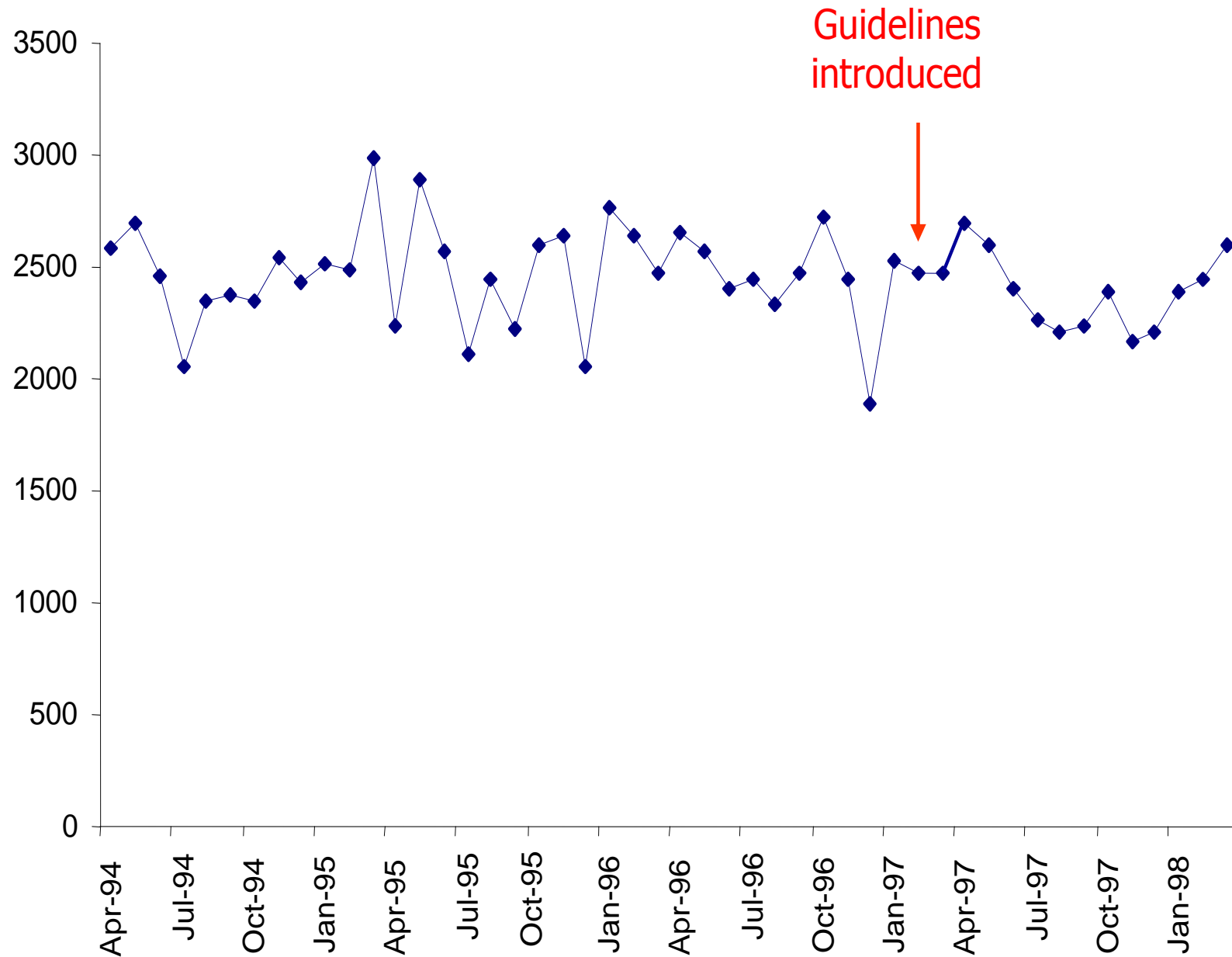
- Is patient/provider **score change** caused by the CDS **or something else**?
- Use **comparison to assess attribution** of change to the intervention
  1. Use comparison group
  2. Use time-series scores (3 before and 3 later)
  3. Ask patients or providers to compare

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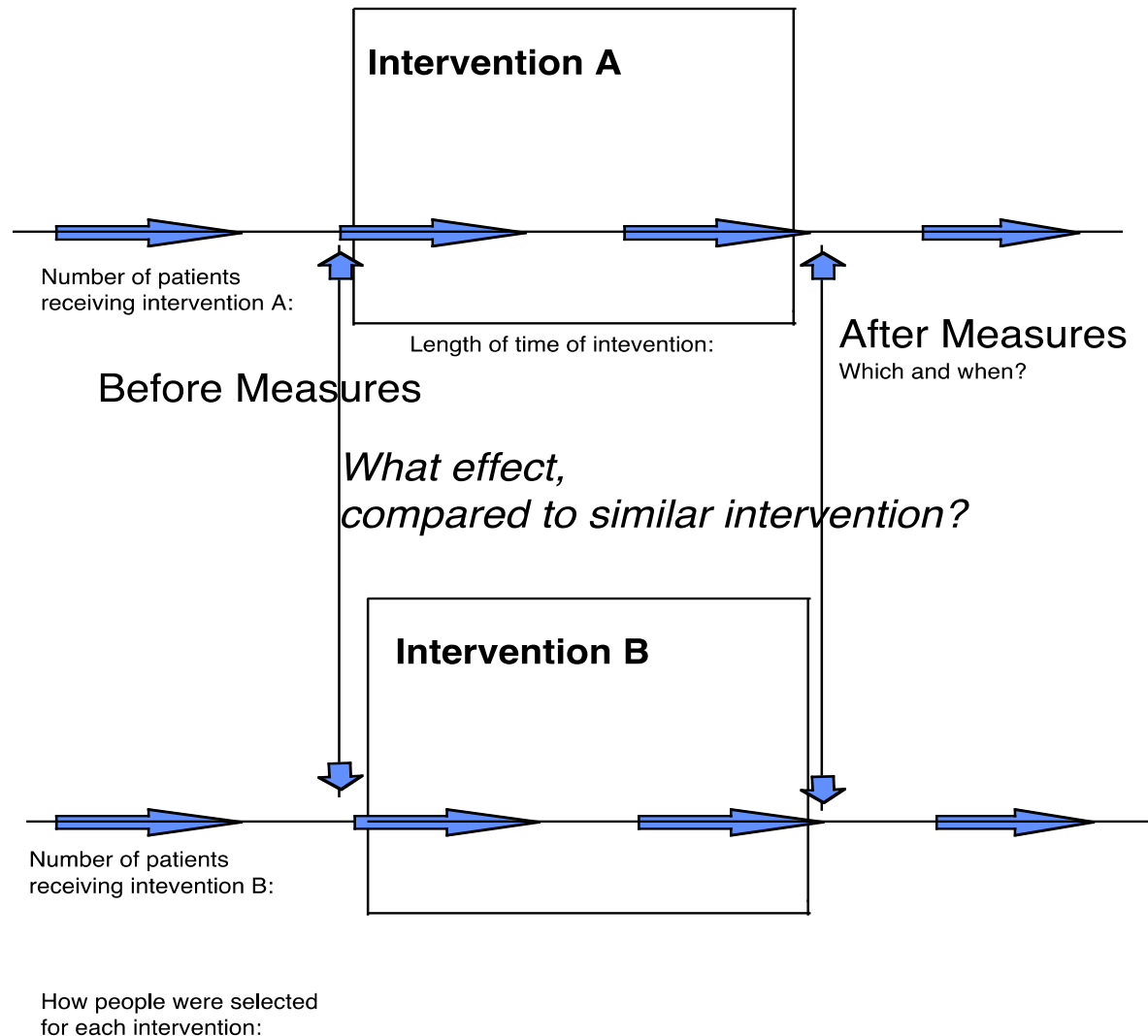
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# Time series (multiple before/after)

**Number  
of x-rays**



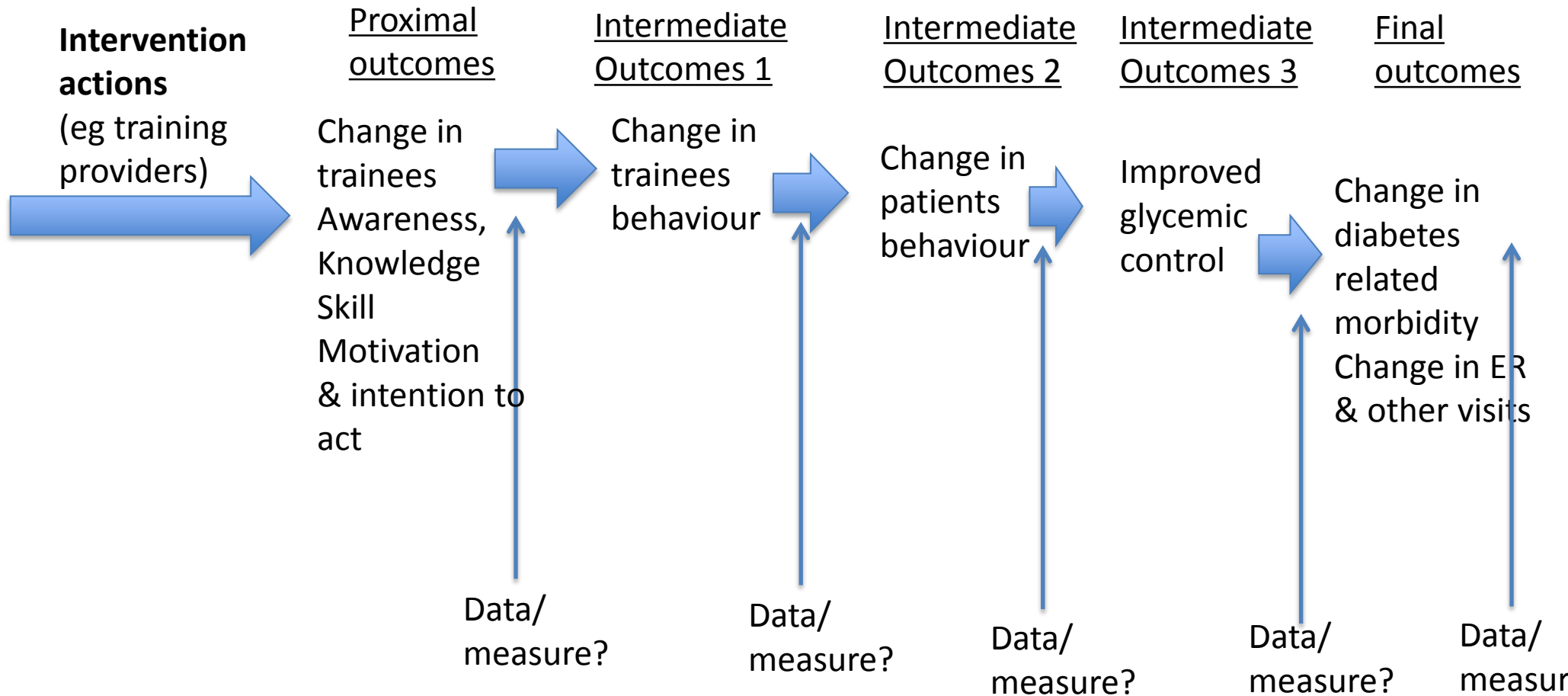
### 3) Experimental intervention: Comparative case



# Causal chain attribution *Logic Model or Programme Theory*

*of influence pathway through outcome stages<sup>T</sup> to final outcomes*

*Objective: nurses educate and help diabetic patients to improve diet, exercise to improve glycemic control, to reduce risks of ER and morbidity*



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

# Proximal and later Outcomes (Proctor 2011)

## Implementation Outcomes

Acceptability  
Adoption  
Appropriateness  
Costs  
Feasibility  
Fidelity  
Penetration  
Sustainability

## Service Outcomes\*

Efficiency  
Safety  
Effectiveness  
Equity  
Patient-  
centeredness  
Timeliness

## Client Outcomes

Satisfaction  
Function  
Symptomatology

# Challenge 4 : would others get the same outcomes?

- Other **services**, other **patient** groups?
- **Define** characteristics which may **affect** outcomes so others can compare
- Evaluate at a number of **sites**

Less generalisable if

- The more controlled, the fewer the services,
- The more the evaluator intervenes

- Your solution to the generalisation challenge?

2

# Challenge 5: Usability and Use

- **Usability**: could inform decisions where people have choice
- **Use**: people do use information to make better decisions
- What can evaluators do to increase usability and use?



# Evidence Based QI and evaluation issues

- Many QI are already proven or promising
  - Eg Bundles, Productive ward,

Is the question

- Was it copied exactly?
- If yes, do we need to measure patient outcomes?

2

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# Evidence Based QI and evaluation issues

**Or** is the question

- Was it adopted and adapted well?

If this question, do we need to measure patient outcomes?

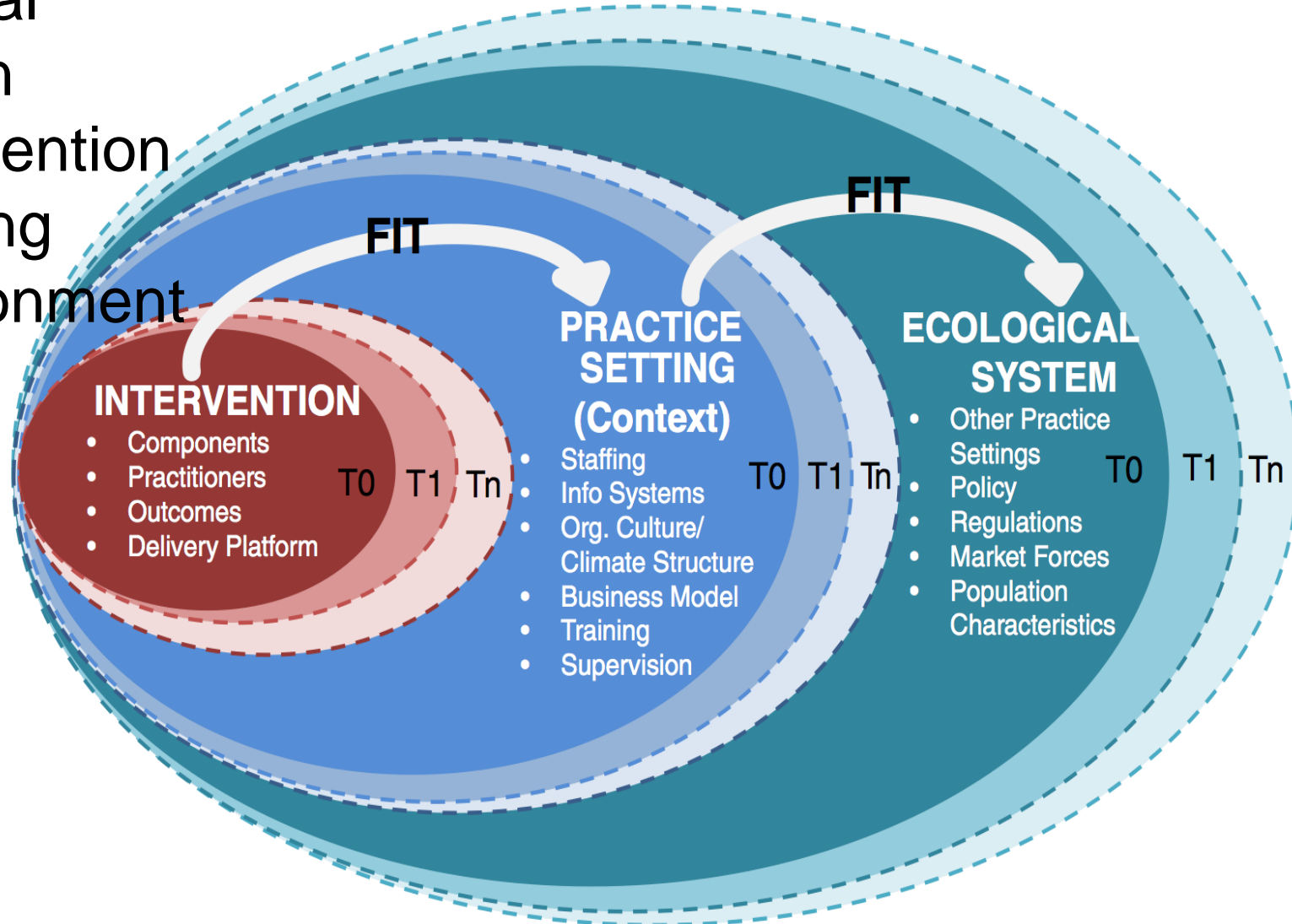
**And** measure changes to provider behaviour and organisation?

2

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# Fidelity and adaptive implementation

Continual  
adaption  
of Intervention  
To Setting  
& Environment



**Figure 2 The dynamic sustainability framework.** Illustrating the goal of maximizing the fit between interventions, practice settings, and the broader ecological system over time (represented by  $T_0, T_1, \dots, T_n$ ), each of which has constituent components that may vary.

# Evaluating adaptive implementation

- Describe the adaptations they make and why
- Measure intermediate outcomes (link to later?)
- Do they use PDSA?
  - If yes, do you also give your evaluation results?
  - If you do – does this affect generalisation to other sites without researchers giving feedback?
  - How do you know how much your feedback<sup>2</sup><sub>8</sub> affected outcomes?

# Any changes to your vote?

- I want to do an evaluation
- Evaluation can tell us if a change is an improvement
- Evaluations often miss negative side effects
- Evaluations always know what the change is when they start the evaluation
- Evaluations should explain variations in outcomes to be of help to users
- The perfect is the enemy of the useful
- If you want certainty do religion not evaluation

2

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# Advice

- Perfect is the enemy of the useful:  
Timely information to enable users decisions, which show limitations
- Use systematic methods to reduce bias and consider other influences on outcomes
- Address the ADAGU challenges

3

0

# Checklist ADAGU

- **Aims**: which information is needed and what are the questions to be addressed?
- **Description**: what are the details of intervention, implementation and context?
- **Attribution**: how confident can we be that the intervention caused the outcomes reported? How do we explain findings, including no change?
- **Generalisation**: can we copy it and get similar results?
- **Usefulness**: in which situations is the intervention and implementation feasible and how do we enable users to use the findings from the evaluation?

# Conclusions

1. Surprises...

2. Useful...

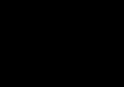
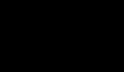
3. Not mentioned ...Look this up...

More innovative research: Be more dog

<http://www.youtube.com/watch?v=iMzgl0nFj3s>



# Resources



3

3

# References.

- Øvretveit, J (2014) Evaluating improvement and implementation for health, McGraw Hill, London.
- Health foundation web site
- NHS Modernisation evaluation guide

## *Key implementation texts:*

- Brownson R Colditz G Proctor E (Eds 2012)  
Dissemination and Implementation Research in Health: Translating Science to Practice, Oxford University Press, Oxford.
- Palinkas L Soydan H 2011 Translation and Implementation of Evidence-Based Practice (Building Social Work Research Capacity) Oxford University Press, USA
- Grol R, Wensing M, Eccles M, (eds) 2005: **Improving Patient Care: The Implementation of Change in Clinical Practice.** Edinburgh; New York: Elsevier<sup>3</sup>  
Butterworth Heinemann; 2005.

# .. RUDAG Checklist for Research

- **Purpose:** use to plan or improve your research.

## *Relevance:*

- Have you asked one person how to make the findings more relevant to practical decisions they make?

## *Use:*

- Have you asked how to make it easier for them to use the research?

## *Description:*

- To reproduce the intervention. Context?

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# . . RUDAG Checklist for Research

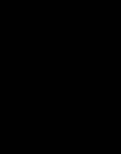
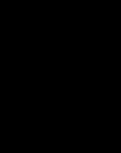
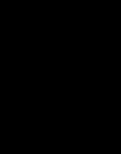
## *Attribution:*

- Other influences listed which could affect any outcomes attributed to the intervention?

## *Generalisation:*

- *Of the intervention*
- *Of the research findings*

# DETAILS



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# Conclusions

1. Surprises...
2. Useful...
3. Not mentioned ...Look this up...