



Implementation strategies

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What is an implementation strategy?

Clinical intervention: The 'what-to' implement component, e.g. exclusive breastfeeding

Implementation strategy: The 'how-to' implement component, e.g. lecture, training, audit-feedback etc.

The *implementation strategy* is essentially the *intervention* tested in a implementation science project



Implementation strategy definition

“methods or techniques used to enhance the adoption, implementation, and sustainability of a clinical program or practice”

Proctor et al, 2013



The problem

As far as optimizing quality and safety of patient care is concerned, there is no convincing evidence that any particular strategy is more effective than another in any particular situation.

Effective implementation

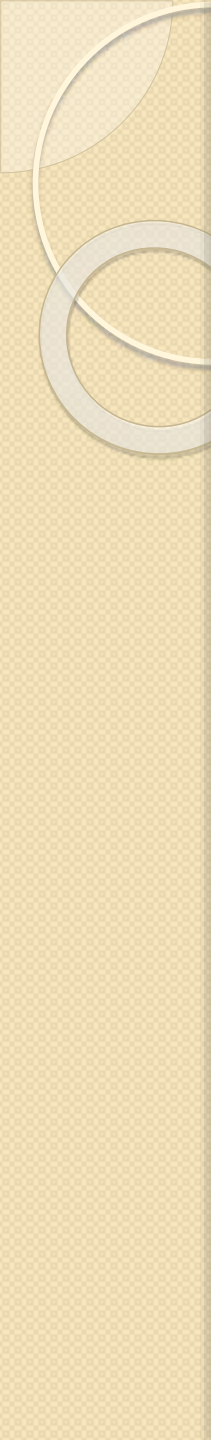
- Assessing the actual performance and mapping the problems relating to the practice change
- Analyzing the target group and the setting: what factors are stimulating or hampering the process of change?
- Formulating a concrete, well-developed and attainable proposal for change with clear targets including a description of developed or selected strategies for change.

Effective implementation cont.

- Developing and executing an implementation plan containing activities, tasks, time schedule and clear roles
- Integrating the improvement within the normal practice routines
- Evaluating and revising the plan: continuous monitoring on the basis of indicators

Phases of change

- **Orientation**: promote awareness, stimulate interest and involvement
- **Insight and understanding**: create understanding, develop insight into the own routines
- **Acceptance**: develop positive attitude for change, create positive intentions or decisions to change
- **Change**: try out change in practice, confirm benefit and value of change
- **Maintenance**: integrate new practice into routines, embed new practice in the organization



Effective Practice and Organization of Care group (EPOC) taxonomy

To undertake systematic reviews of educational, behavioural, financial, regulatory and organisational interventions designed to improve health professional practice and the organisation of health care services.

<http://epoc.cochrane.org/our-reviews>

EPOC cont.

- **Delivery arrangements:** Changes in how, when and where healthcare is organized and delivered, and who delivers healthcare
- **Financial arrangements:** Changes in how funds are collected, insurance schemes, how services are purchased, and the use of targeted financial incentives or disincentives
- **Governance arrangements:** Rules or processes that affect the way in which powers are exercised, particularly with regard to authority, accountability, openness, participation, and coherence
- **Implementation strategies:** Interventions designed to bring about changes in healthcare organizations, the behaviour of healthcare professionals or the use of health services by healthcare recipients

EPOC – Implementation strategies

- Interventions targeted at healthcare organisations (n=3): Strategies to change organisational culture
- Interventions targeted at healthcare workers (n=33): Audit and feedback, Clinical incident reporting, Continuous quality improvement, Educational meetings, Educational games, Inter-professional education and reminders
- Interventions targeted at specific types of practice, conditions or settings (n=58)



An example: Interventions targeted at specific types of practice, conditions or settings

Interventions that will increase and sustain the uptake of vaccines in low- and middle-income countries

Giving information about vaccination to parents and community members, handing out specially designed vaccination reminder cards, offering vaccines through regular immunisation outreach with and without household incentives (rewards), identifying unvaccinated children through home visits and referring them to health clinics, and integrating vaccination services with other services may lead to more children getting vaccinated. However, offering parents money to vaccinate their children may not

Audit and Feedback

“Any summary of clinical performance of health care over a specified period of time given in written, electronic or verbal format”

Cochrane review	Number of trials	Median change on dichotomous performance measures
Audit and feedback (<i>Ivers, 2012</i>)	108	+4.3%

Conclusion: Audit and feedback generally leads to small but potentially important improvements in professional practice. The effectiveness of audit and feedback seems to depend on baseline performance and how the feedback is provided. Future studies of audit and feedback should directly compare different ways of providing feedback.

Educational outreach visits

“Describe a personal visit by a trained person to health professionals in their

Cochrane review	Number of trials	Median change on dichotomous performance measures
Educational outreach visits (<i>O'Brien 2007</i>)	34	+5%

Conclusion: Education outreach visits alone or when combined with other interventions have effects on prescribing that are relatively consistent and small, but potentially important. Their effects on other types of professional performance vary from small to modest improvements.

(Electronic) Reminders

Includes paper-base and computer-based reminders

Cochrane review	Number of trials	Median change on dichotomous performance measures
Electronic reminders (<i>Arditi, 2012</i>)	32	+7% (+4% if together with other strategies)

Conclusion: There is moderate quality evidence that computer-generated reminders delivered on paper to healthcare professionals achieve moderate improvement in process of care. Two characteristics emerged as significant predictors of improvement: providing space on the reminder for a response from the clinician and providing an explanation of the reminder's content or advice. The heterogeneity of the reminder interventions included in this review also suggests that reminders can improve care in various settings under various conditions.

Financial incentives

“Financial incentives are sources of motivation when an individual receives a monetary transfer which is made conditional on acting in a particular way”

Cochrane review	Number of trials
Financial incentives (<i>Flodgren, 2011</i>)	32

Conclusion: Financial incentives may be effective in changing healthcare professional practice

Inter-professional education

”An intervention where the members of more than one health or social care profession, or both, learn interactively together, for the explicit purpose of improving interprofessional collaboration or the health/well being of

Cochrane review	Number of trials
Inter-professional education (<i>Reeves 2013</i>)	15

Conclusion: These studies reported some positive outcomes, due to the small number of studies and the heterogeneity of interventions and outcome measures, it is not possible to draw generalisable inferences about the key elements of IPE and its effectiveness.

Which strategies work best?

Strategy	Conclusions
Educational materials	Mixed effects
Conferences, courses	Mixed effects
Interactive small group meetings	Mostly effective, but limited numbers of studies
Educational outreach visits	Especially effective for prescribing/prevention
Use of opinion leaders	Mixed effects
Education with different educational strategies	Mixed effects, dependent on combination of strategies
Feedback on performance	Mixed effects, most effective for test ordering
Reminders	Mostly effective, particularly for prevention
Computerised decision support	Mostly effective for drug dosing and prevention
Introduction of computers in practice	Mostly effective
Substitution of tasks	Pharmacist: effect on prescribing; nurse: mixed effects
Multiprofessional collaboration	Effective for a range of different chronic conditions
Mass media campaigns	Mostly effective
Total quality management/continuous quality improvement	Limited effects, mostly single-site non-controlled studies
Financial interventions	Fundholding and budgets effective, mainly on prescribing
Patient-mediated interventions	Mixed effects; reminding by patients is effective in prevention
Combined interventions	Most reviews: more effective than single interventions; not confirmed in recent reviews.

Challenges relation to effect measures

Use mass media

Use media to reach large numbers of people to spread the word about the clinical innovation

Distribute educational material

Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically

Modifiable elements of audit and feedback

- **Content**: Comparative or not, anonymous or not?
- **Intensity**: Monthly, quarterly, semi-annually, annually?
- **Method of delivery**: By post, peer, or non-peer?
- **Duration**: Six months, one year, or two years?
- **Context**: Primary care or secondary care?

288 combinations

Eccles et al., 200

Challenges relation to effect measures

- Terms and definitions for implementation strategies are inconsistent
- Inconsistent use of words (same word has multiple meaning/different terms having the same meaning)
- Description of implementation strategies too often do not include sufficient detail to enable either scientific or real-world replication

Prerequisites to measuring implementation strategies

Name and **define** the implementation strategies in ways that are consistent with the published literature, and carefully specify the following elements:

- **Actor**: who enacts the strategy?
- **Action(s)**: what are the specific actions, steps, or processes that need to be enacted?
- **Action target**: what constructs are targeted? What is the unit of analysis?

Prerequisites to measuring implementation strategies cont.

- **Temporality:** when is the strategy used?
- **Dose:** what is the intensity?
- **Implementation outcome:** what implementation outcome(s) are likely to be affected by each strategy?
- **Justification:** what is the empirical, theoretical, or pragmatic justification for the choice of implementation strategy?

Proctor et al., 2013

ONE OR SEVERAL STRATEGIES?

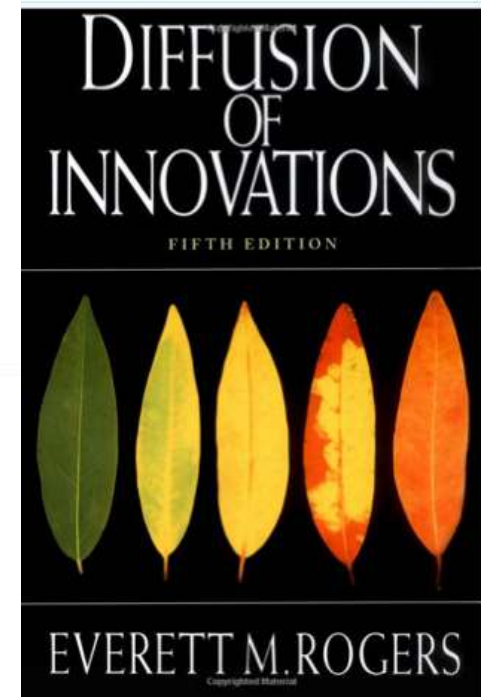
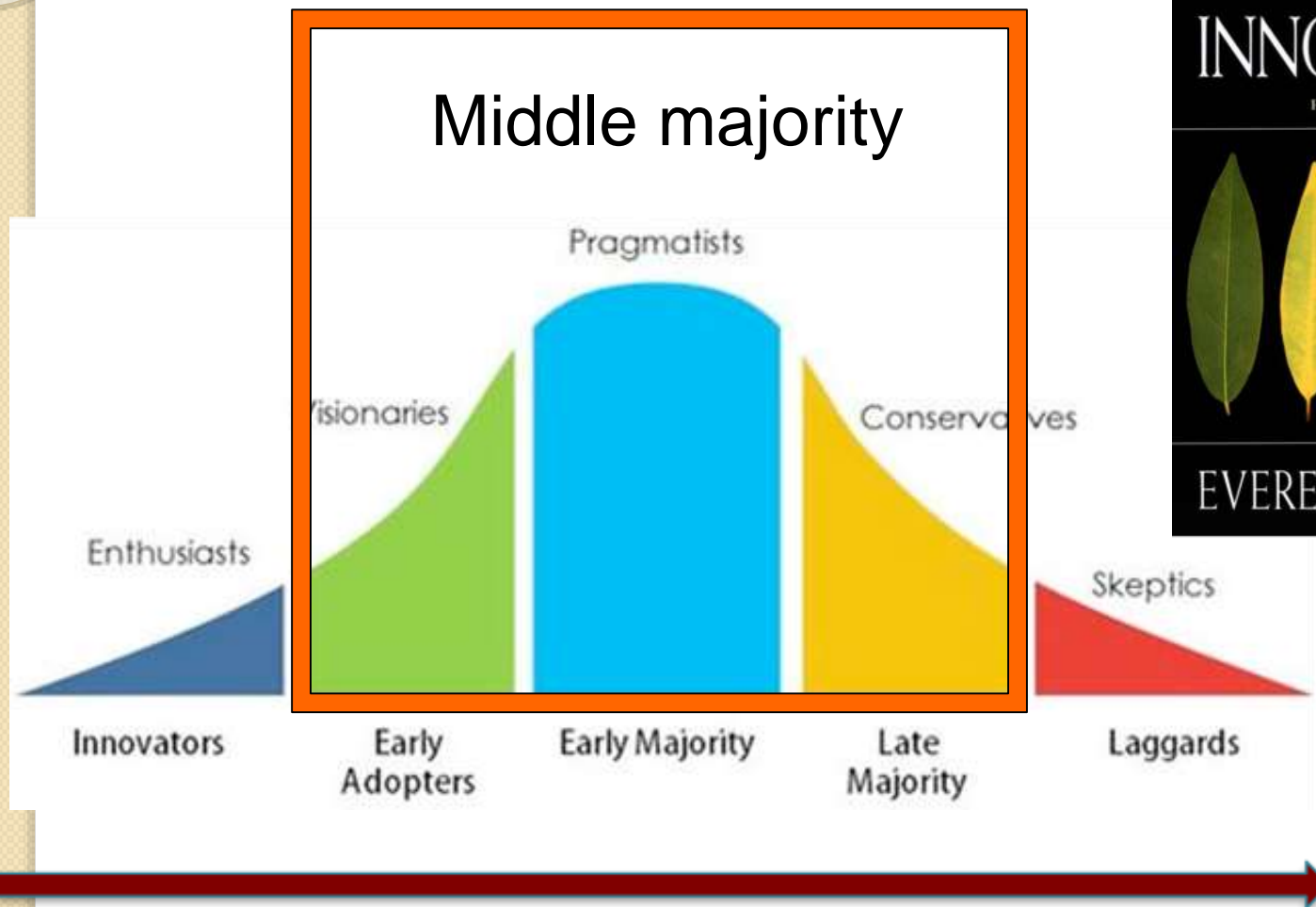
Effective implementation of improvements

- **The cognitive approach** - considering and weighing rational arguments. *Selected strategy:* Evidence-based medicine and guidelines
- **The motivational approach** - driven by internal motivation. *Selected strategy:* Problem based learning
- **The marketing approach** - attractive messages
Selected strategy: Needs analysis, using various channels

Effective implementation of improvements cont.

- **Social interaction** - learn and change by the example
Selected strategies: opinion leaders, outreach visits
- **Management approach** - poor quality care is a 'systems problem'. *Selected strategies:* redesigning care processes, teambuilding
- **Control and compulsion** - the power of external pressure. *Selected strategies:* legislation, inspection, performance indicators

Adopter categories



Sub-groups response to strategies

	Innovators	Middle majority	Laggards
Motivation to change	Intrinsic, seeing the advantages	Belonging to a group, relation to others	Extrinsic, coercion, economic pressure
Effective influence	Aimed at cognition	Aimed at attitude	Aimed at behavior
Methods	Good information, credible sources, written methods	Personal sources, opinion-leaders, activities with colleagues, feedback from colleagues	Regulations and agreements, reward and sanctions, help with practical problems, clear



The problem

As far as optimizing quality and safety of patient care is concerned, there is neither convincing evidence that any particular strategy is more effective than another in any particular situation...

...nor if it is better to use one or multifaceted strategies

Tailoring

Strategies that are designed to achieve desired changes in healthcare practice based on an assessment of determinants of healthcare practice.

Systematic tailoring entails three key steps:

- **Identification of factors** influencing of healthcare practice
- **Designing implementation** strategies appropriate to the identified factors
- **Application and assessment** of implementation strategies that are tailored to the identified factors.

Barriers and facilitators

Factors that might prevent or enable improvements, including factors that can be modified and non-modifiable factors that can be used to target interventions

Oxman, 2011

- The innovation
- The users ('different levels')
- The practice setting (local context)
- The organization
- The outer context

The innovation

- Underlying knowledge sources
- Clarity
- Degree of fit with existing practice and values (compatibility or contestability)
- Degree of novelty
- Useability
- Relative advantage
- Trialability
- Observable results

The users (recipients)

- Motivation
- Values and beliefs
- Goals
- Skills and knowledge
- Time, resources and support
- Local opinion leaders
- Collaboration and teamwork
- Existing networks
- Learning environment
- Power and authority
- Presence of boundaries



Inner context (practice setting)

- Formal and informal leadership support
- Culture
- Past experience of innovation and change
- Mechanisms for embedding change
- Evaluation and feedback processes



Inner context (organizational level)

- Organisational priorities
- Leadership and senior management support
- Culture
- Structure and systems
- History of innovation and change
- Absorptive capacity
- Learning networks



Outer context

- Organisational priorities
- Policy drivers and priorities
- Incentives and mandates
- Regulatory frameworks
- Environmental (in)stability
- Inter-organisational networks and relationships



Known barriers and facilitators

- Knowledge management (overload)
- Structural barriers (*e.g.* financial disincentives),
- Organizational barriers (*e.g.* inappropriate skill mix, lack of facilities or equipment)
- Peer group barriers (*e.g.* local standards of care not in line with desired practice)
- Professional (*e.g.* knowledge, attitudes and skills)

How to identify these factors?

- Qualitative methods (interviews, focus groups)
- Direct observations (NB: ethics!)
- Surveys

No standard approaches available yet



Assignment (only a few examples!)

- Could your study inform the selection of implementation strategy/strategies?
- Are barriers and facilitating factors for selecting implementation strategy something that would be of interest to study in your PhD?
- Is adoption and maybe modification of implementation strategies something that would be of interest to study in your PhD?
- Would it make sense to investigate the characteristics of the innovation, the recipients or the context in which the OHEP is implemented?
- Could your study evaluate the effect of an (or a package of!) implementation strategies?

Why what works where

Understanding 'context' is regarded as a priority field in implementation science including the need to systematically study the attributes of context influencing the implementation of interventions.

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Bergström et al. *Implementation Science* (2015) 10:120
DOI 10.1186/s13012-015-0305-2



RESEARCH

Open Access

Health system context and implementation of evidence-based practices—development and validation of the Context Assessment for Community Health (COACH) tool for low- and middle-income settings



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Context Assessment for Community Health (COACH) tool

Investigating why what
works where in low- and
middle-income settings

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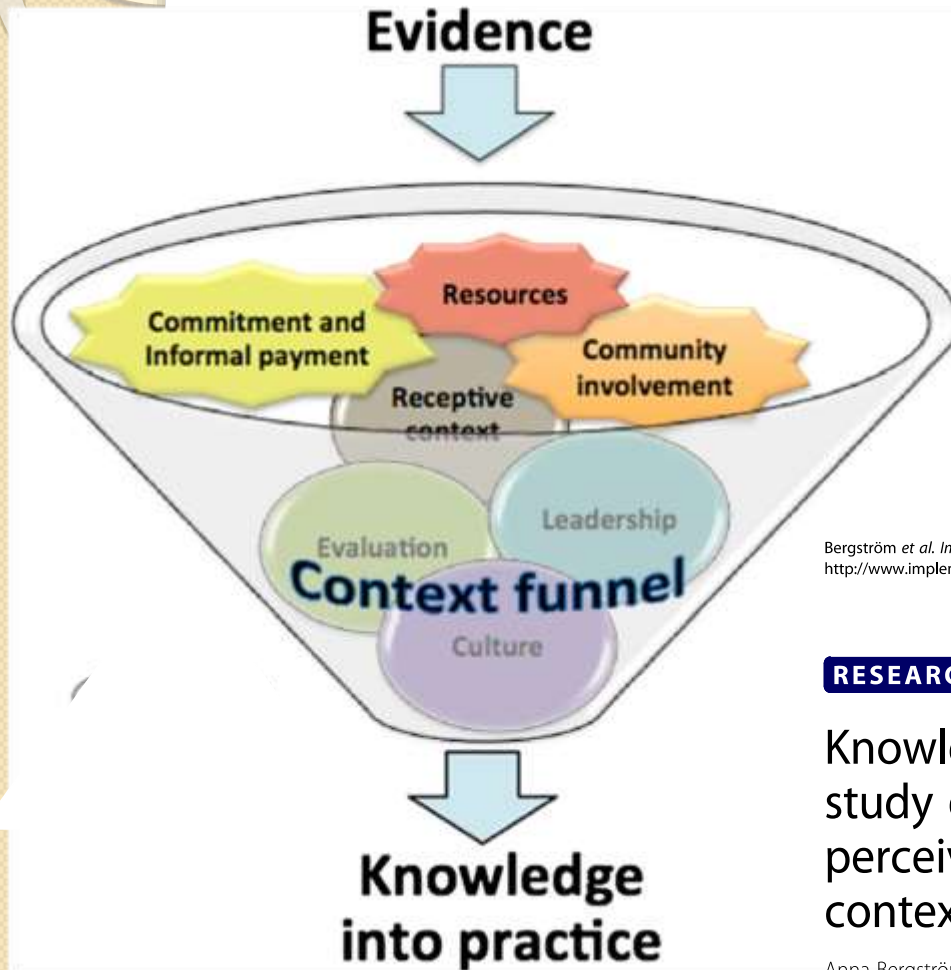
Context

The environment or setting in which the proposed change is to be implemented.

Kitson A, Qual Health Care, 1998



Evidence to practice



Bergström et al. *Implementation Science* 2012, **7**:117
<http://www.implementationscience.com/content/7/1/117>

 **IMPLEMENTATION SCIENCE**

RESEARCH

Open Access

Knowledge translation in Uganda: a qualitative study of Ugandan midwives' and managers' perceived relevance of the sub-elements of the context cornerstone in the PARIHS framework

Anna Bergström^{1,2*}, Stefan Peterson^{1,2,3}, Sarah Namusoko³, Peter Waiswa^{1,3} and Lars Wallin^{4,5}

COACH dimensions and definitions

Dimension	Definition
Organizational resources	The availability of resources that allow an organization (unit) to adapt successfully to internal and external pressures.
Community engagement	The mutual communication, deliberation and activities that occur between community members and an organization (unit).
Monitoring services for action	The process of using locally derived data to assess performance and plan how to improve outcomes in an organization (unit).
Sources of knowledge	The availability and use of sources of knowledge in an organization (unit) to facilitate best practice.
Commitment to work	The individual's identification with and involvement in a particular organization (unit).
Work culture	The way 'we do things' in an organization (unit) reflecting a supportive work culture.
Leadership	The actions of a formal leader in an organization (unit) to influence change and excellence in practice achieved through clarity and engagement.
Informal payment	Payments or benefits given to individual(s) in an organization (unit), which are made outside the officially accepted arrangements, to acquire an advantage or service.

e.g. Work culture

Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
30. My unit is willing to use new healthcare practices such as guidelines and recommendations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. My unit helps me to improve and develop my skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. I am encouraged to seek new information on healthcare practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. My unit works for the good of the clients and puts their needs first.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Members of the unit feel personally responsible for improving healthcare services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Members of the unit approach clients with respect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

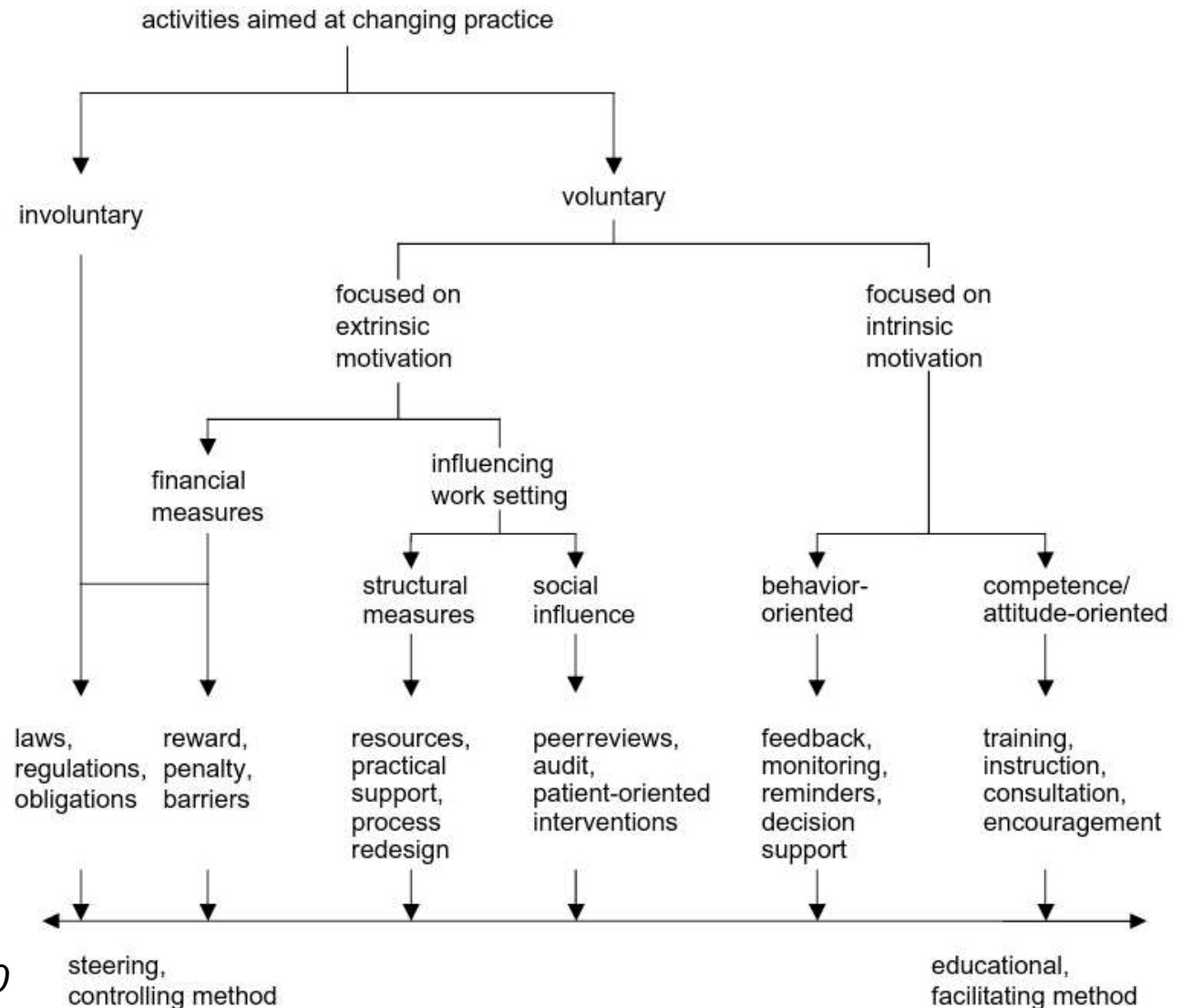
Conclusion

We foresee alternative ways of applying the COACH tool:

- As means of **characterizing context ahead of implementing** health interventions – tailoring
- To **deepen the understanding of the** outcomes of implementation efforts.
- To **address and act** on locally identified shortcomings of the health system

OTHER TAXONOMIES

Van Woerkom taxonomy



Adapted from Woerkom 1990

Plas et al. taxonomy

- Strategies targeted at individuals (end users): mass media, personal material, large group meetings
- Strategies aimed at organizational structures: Changes in skill mix, role (revisions), physical environment
- Strategies aimed at work processes: standardizing/ redesigning work processes
- Strategies aimed at organizational processes: Changes in internal/external