Implementation Strategies

Selected Strategies: Audit with feedback and network interventions
Objectives

• Describe implementation strategies
  • Define audit with feedback as an implementation strategy
    • Discuss theories underlying feedback interventions
    • Describe the evidence for effective design and use of feedback interventions
    • Describe how audit with feedback can be applied to address barriers to implementation of an evidence based practice
    • Describe measurement of uptake of feedback interventions
  • Define network interventions as implementation strategies
    • Describe different types of network interventions
    • Discuss network theory applied to designing network interventions
    • Describe how network interventions could be applied to address implementation barriers
    • Describe measurement of network interventions and their outcomes
What are implementation strategies?

• Term has been used in various ways in the past
• Becoming standardized in part through the work of the Expert Recommendations for Implementing Change (ERIC) project

  • [link](https://implementationscience.biomedcentral.com/articles/10.1186/s13012-015-0209-1)
73 strategies are described

- Currently listed alphabetically
- Generally operate at varying levels
  - Many are policy strategies (macro) or organizational strategies (meso)
- A more recent paper attempted to group according to clusters
These are distinct from behavior change techniques

- Developed by a consortium led by Susan Michie at University College, London
- Operate at a more individual (micro) level
We are still figuring out how to use these discrete elements

- Designing implementation interventions likely requires a combination across multiple levels
  - Policy/legislation at a macro level
  - Organizational policies and procedures at a meso level
  - Individual behavior change activities at a micro level
Some strategies may be more globally useful than others

- Audit with feedback
  - Widely used
  - More used in practice than in research
  - Over 140 research studies report on RCTs conducted on audit with feedback interventions in health care

- Social network interventions
  - Less widely used
  - Considerable interest
  - Some studies in health care
  - [http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0041911](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0041911)
Defining feedback interventions in health care

• Focus is on clinical performance data
  • Requires data on performance
  • Aggregated over a time period and over a population
  • Allows monitoring, evaluating, and changing behavior
How we use feedback

• Increasingly, with electronic data accessibility, feedback reports are being used
  • Public feedback
  • Internal feedback
    • Numerous examples—generally behind organizational firewalls
  • Often report on numerous data points
    • Can range upwards of 100 different indicators
  • Hard to know what actions to take to change behavior
  • Often used for reward or punishment
    • Increasingly, these are financial in nature
    • Often “collective punishment”—entire team or organization suffers because of perceived poor performance on indicators
We use feedback all the time

• Feedback reports/feedback interventions are among the most common approaches to effecting behavior change
  • How they work
    • Multiple theories for the way feedback interventions change behavior
      • Self-regulation theory
      • Motivation/cognitive dissonance
      • Goal setting theory
      • Social influence
    • Still need research to understand how they work in health care settings
      • Feedback effects are often not in the direction planned or desired
Commonly identified barriers to implementation

- Lack of knowledge about current performance
- Unclear what performance goals are
- Unclear outcomes for patients
- Lack of motivation or tension for change

Designing feedback reports with some care can overcome some of these barriers
What do we know about feedback interventions?

• On one hand, a lot
  • Two Cochrane reviews, most recent 2012 (Ivers et al.)
  • Reviews over 140 reports of RCTs involving audit with feedback interventions for the purpose of changing behavior of health care professionals
  • Median effect is modest but positive—about 4% absolute change in the desired direction
    • But change ranges from negative to positive

• On the other hand, not what we need to know
  • Foy et al. 2005: Pitfalls in applying evidence from systematic reviews of audit with feedback
    • We don’t know why they work when they do work
    • We don’t know why they don’t work when they don’t
    • We don’t know how to design effective feedback reports
Implementation strategies are an important design element in implementation interventions

- Expert Recommendations for Implementing Change (ERIC) project describes 73 discrete implementation strategies
  - Built on review of 41 prior compilations and reviews
  - Used three rounds of a modified internet-based Delphi process to refine and arrive at consensus for important strategies
  - Not currently grouped by domains
    - Alphabetic list
  - Ranges from “Access new funding” to “Work with educational institutions”
  - Strategies tend to be broad and over-arching
  - Require design to achieve specificity to the issues that are encountered in a specific set of contexts dealing with specific problems of implementing evidence-based practice
Audit with feedback is an important implementation strategy

- Widely used throughout health care organizations
  - In some cases, used so much that it becomes “background” rather than seen as foreground and clearly associated with implementation
- Has been widely studied
  - Two Cochrane reviews to date
    - 2006 Jamtvedt et al.
    - 2012 Ivers et al.
  - Over 140 RCTs testing effectiveness of audit with feedback interventions in health
    - Median absolute improvement in desired practice of 4.3%
    - Interquartile range 0.5 to 16%
  - AF vs. control seen as “stagnant science” (Ivers et al. JGIM 2014)
    - No change in median improvement for over a decade of new trials
“Stagnation” is not because audit with feedback doesn’t require further study

• But simple tests of effectiveness without more understanding of delivery and mechanism will not increase our knowledge about how to use this implementation strategy most effectively, efficiently, and reliably

• “No more business as usual” in audit with feedback studies (Ivers et al. ImpSci 2015)
  • Need best practices in
    • Design of audit with feedback interventions
    • Understanding components of audit with feedback
      • Data validity
      • Timeliness
      • Who the data refer to
      • Repeated over time
      • How feedback is delivered
      • Where data come from
      • Comparison with relevant others
      • Nature of behavior change expected
      • Action planning
Action planning and goal setting

• Audit with feedback alone is likely necessary in any implementation intervention
• But is unlikely to be sufficient alone
  • Needs clear action planning
    • What can be done to improve if improvement is necessary?
  • Support for action planning
    • Likely requires additional strategies
      • Facilitation
      • Learning collaboratives
      • Technical assistance
      • Educational meetings
      • Educational outreach
      • Academic partnerships
      • Educational materials
      • Identify and prepare champions
      • Inform local opinion leaders
      • Make training dynamic
      • Shadow other experts
Message content and sign

• Content of a feedback message needs careful attention
  • Goal is to motivate improvement
  • Whether or not there is a gap in performance is very important
    • Little gap means little room for improvement
      • Ceiling effect
      • Low motivation (“We’re doing fine”)
    • Too much gap can be de-motivating
      • Can lead to helplessness

• Sign of a feedback message is critically important
  • Positive vs. negative message
  • How negative matters
    • Subjective perception is important
    • Context of message receipt is critical
      • Can the recipient control the behavior required for improvement?
      • Is the environment punitive or supportive?
Best practices for optimizing practice feedback

• Reflects ongoing international collaboration on improving audit with feedback interventions in health care
  • Brehaut et al. Annals of Internal Medicine 2016
    • Nature of desired action
      • Actions consistent with established goals and priorities
      • Actions that can improve and are under control of recipient
      • Recommend specific actions
    • Nature of the data
      • Multiple feedback reports; as soon as possible and individual rather than general
      • Feedback report frequency depends on how often new data are generated
      • Comparators that reinforce desired behavior change
    • Feedback display
      • Closely link display and summary message; more than one method of display; minimize extraneous cognitive load
    • Delivery of feedback intervention
      • Address barriers to feedback use; short, actionable messages; address credibility of data; prevent defensive reactions; construct feedback through social interaction
Make sure recipients get the feedback

- We rarely measure whether or not the people whose behavior we want to change actually receive the feedback
  - Most studies do not attempt to measure whether feedback reached the intended recipient
  - Many do not even specify an intended recipient
    - Feedback uptake scale
      - Did you receive the feedback?
      - Did you read it (if in written form)?
      - Did you understand it?
      - Do you plan to act on it?
      - Did you discuss it with anyone?
Delivering the feedback intervention

• Address barriers to using the feedback
  • Did they get it?
  • Did they read it?
  • Did they understand it?
  • Can they act on it?

• Provide short, actionable messages with optional detail

• Address credibility of the data
  • “Data grief” – reasons not to believe the data undermine the feedback intervention
  • Who gives the feedback matters

• Prevent defensive reactions
  • Negative reactions can lead to reduced motivation to change behavior
  • Punitive environments also lead to reduced motivation
A tale of two reports

One from the VA Hospital Compare web site
The other from a study done in nursing homes (Sales et al. Implementation Science 2015, 2016)
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DICE Project
Feedback Report, June 2009

PAIN

Figure 1. Residents with moderate to severe pain

- The information in Figure 1 is from the Health Conditions section (Section 1) of the RAI-MDS 2.0, items J2a and J2b
- The pain scale uses these two items to measure how often and how much pain is experienced by the residents
- In February, there was a small decrease in the proportion of residents in F1U2 with moderate to severe pain; it was lower than the other 8 units
Thinking about social networks
Networks are ubiquitous

- Human social structure is composed of networks
  - We are social animals
  - Our lives are socially constructed
  - We seldom fully recognize the networks in which we are embedded
Long history of considering social influences

• Rogers Diffusion of Innovation (1940s on)
  • Adoption curves are largely due to processes of social influence in spread
  • Widely used by many different kinds of researchers and thinkers

• James Coleman: study of social networks among physicians in adopting antibiotic (1950s)
  • Less well known
  • Demonstrated empirically that Rogers’ insights work as well with physicians as with farmers

• Recent scoping review of social network studies in health from group in York
Data for improvement and clinical excellence: protocol for an audit with feedback intervention in long-term care

Anne E Sales¹, Corinne Schalm²

The impact of social networks on knowledge transfer in long-term care facilities: Protocol for a study

Anne E Sales*¹, Carole A Estabrooks¹ and Thomas W Valente²
Data for Improvement and Clinical Excellence (DICE)

- Designed as a 12 month project to deliver feedback reports to all direct care providers in four nursing homes (9 units) in Edmonton, Alberta, Canada
- Provide feedback reports to all staff
  - Previous studies only provided reports to professional staff
- Measure resident outcomes
- Understand how feedback interventions work in LTC settings
  - Measuring social networks and their interaction with the intervention
  - Measuring context using the Alberta Context Tools (not presented)
- Time series design with control (non-intervention) retrospective comparison
  - Interrupted time series using segmented regression analysis
  - Assessment of social networks embedded within study
Social network methods

- Paper survey, hand distributed
- Obtained lists of all staff working on the six nursing units as well as staff working on multiple units
  - Unit based staff are mostly nursing staff (registered nurses, licensed practical nurses, health care aides)
  - Multiple unit staff are mostly allied health professionals (occupational therapy, physical therapy, pharmacy, social work)
- Asked questions about five types of networks
  - Relevant to this discussion: “Who did you discuss the feedback report with?”
Networks discussing feedback report varied widely by unit
Ways to use the network analysis

- Units appear to have very different networks for advice and discussing the feedback reports
  - Different actors relating in different ways
    - Suggests that advice was not necessarily the focus of discussion
  - Focus only on CM (care manager/unit manager) in these two units
    - One is very central; one is very peripheral
    - Coaching for peripheral CM might be useful
  - Considerable utility in deciding where to focus qualitative work to understand more about uptake and other issues
Barriers addressed by network interventions

• Team functioning
• Poor communication
• Information bottlenecks
• Lack of shared goals and values
Additional approaches to modifying social influences

• Social network diagnostics and feedback as an intervention
  • Gesell et al. 2013 paper
• Types of network interventions
  • Individuals—opinion leader type interventions
    • Formal leaders vs. boundary spanners
  • Groups or segmentation interventions
    • Group detection—existence of bridges among groups
    • Using existing bridges
  • Induction interventions
    • Social media types of interventions
      • May not map the network but uses it
• Network alteration
  • Adding/deleting nodes
  • Adding/deleting links
  • Rewiring existing links
Are social networks magic bullets?

• Some social network scientists believe they are
  • Sufficient knowledge of social networks permit highly effective intervention
  • But networks may not be easily manipulated
    • Especially once people start trying to do so

• But the prospect brings to mind a dark question about implementation research in general
  • How effective do we want to be?
  • Is the time to adoption of innovation protective?
    • Protective of what and whom?
Take home messages

• Audit with feedback is ubiquitous
  • It is often very poorly used and poorly designed
    • Little thought goes into deciding how to design a feedback report other than esthetics
  • We have a lot of theory that can make feedback reports more effective, more reliable

• Social networks are ubiquitous
  • May be very powerful tools and levers for managing change
  • Currently not well understood
    • Particularly as applied to health care professionals
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