

# Guideline Implementation

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care

# Background

- In order for guideline development efforts to matter, guideline recommendations must be implemented.
- As we look at how KP uses IT tools to improve our implementation efforts, it will help to start with what is known from the research literature about effective implementation practices.
  - Cochrane Reviews
  - NHLBI/Air Review
  - CADTH Rx for Change Resource
- Bottom line: There is not much evidence on implementation practices & what's available has not shown a large impact.

# Discussion Questions

- What do you know about effective implementation?
- What have you found to be effective in your implementation efforts?
- Are there any implementation principles you've found to be true?

# Cochrane Systematic Reviews on Clinician Behavior Change

# Cochrane Reviews: Clinician Behavior Change

- Inter-professional collaboration
- Point of care computer reminders
- Local opinion leaders
- Continuing education meetings
- Educational outreach
- Tailored interventions
- Audit and feedback
- Printed materials
- Electronic access to health information
- Financial incentives

# Point of Care Computer Reminders<sup>1</sup>

- Key findings: small to modest improvements in provider behavior, no specific reminder or contextual factors associated with effect magnitude
- Evidence: median improvement in process adherence of 4.2%; median absolute improvement in dichotomous clinical endpoints of 2.5%
- Definition: on-screen computer reminders delivered to clinicians at the point of care

<sup>1</sup>Shojania KG, Jennings A, Mayhew A, Ramsay CR, Eccles MP, Grimshaw J. The effects of on-screen, point of care computer reminders on processes and outcomes of care. *Cochrane Database of Systematic Reviews* 2009, Issue 3. Art. No.: CD001096

# Local Opinion Leaders<sup>2</sup>

- Key findings: opinion leaders may successfully promote evidence-based practice, impossible to know how to best optimize the effectiveness of opinion leaders
- Evidence: effects of interventions varied, overall 12% absolute increase in compliance with recommended care in the intervention group
- Definition: informal opinion leadership is the degree to which an individual is able to influence other individuals' attitudes and overt behavior informally

<sup>2</sup>Flodgren G, Parmelli E, Doumit G, Gattellari M, O'Brien MA, Grimshaw J, Eccles MP. Local opinion leaders: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews* 2011, Issue 8. Art. No.: CD000125.

# Continuing Education Meetings<sup>3</sup>

- Key findings: effect most likely to be small and primarily in combination with other interventions, unlikely to be effective alone for changing complex behaviors
- Evidence: 81 trials; 11,000+ health professionals; median adjusted improvement in compliance with desired practice was 6%
- Definition: continuing education meetings including courses and workshops in various formats

<sup>3</sup>Forsetlund L, Bjørndal A, Rashidian A, Jamtvedt G, O'Brien MA, Wolf F, Davis D, Odgaard-Jensen J, Oxman AD. Continuing education meetings and workshops: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews* 2009, Issue 2. Art. No.: CD003030.

# Educational Outreach<sup>4</sup>

- Key findings: educational outreach has relatively consistent and small effects on prescribing patterns; unexplained variable effects on other professional performance measures
- Evidence: 69 studies; 15,000 health professionals; median adjusted improvement in compliance with recommended care of 5.6%
- Definition: a personal visit by a trained person to health professionals in their own settings (aka, “academic detailing”)

<sup>4</sup>O'Brien MA, Rogers S, Jamtvedt G, Oxman AD, Odgaard-Jensen J, Kristoffersen DT, Forsetlund L, Bainbridge D, Freemantle N, Davis D, Haynes RB, Harvey E. Educational outreach visits: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD000409.

# Audit & Feedback<sup>5</sup>

- Key findings: generally leads to small but potentially important improvements, effectiveness seems to depend on baseline performance and how feedback is provided
- Evidence: final analysis included 82 comparisons from 49 studies; weighted median improvement in compliance with desired practice was 4.3%
- Definition: a summary of the clinical performance of healthcare provider(s) over a specified period of time

<sup>5</sup>Ivers N, Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, O'Brien MA, Johansen M, Grimshaw J, Oxman AD. Audit and feedback: effects on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews* 2012, Issue 6. Art. No.: CD000259.

# Financial Incentives<sup>6</sup>

- Key findings: use of financial incentives growing, but evidence is insufficient to support such use (or not) to improve quality of primary health care
- Evidence: 7 studies; poor study design, substantial risk of bias (esp selection bias)
- Definition: the use of financial incentives to directly reward clinicians for “performance” and “quality”

<sup>6</sup> Scott A, Sivey P, Ait Ouakrim D, Willenberg L, Naccarella L, Furler J, Young D. The effect of financial incentives on the quality of health care provided by primary care physicians. *Cochrane Database of Systematic Reviews* 2011, Issue 9. Art. No.: CD008451.

# NHLBI Commissioned AIR Review on Evidence-Based Implementation Strategies

# NHLBI Goals: Implementation Literature Review

- Inform selection of implementation strategies to be used by the program /agency;
- Identify contextual or environmental factors supportive to implementation strategies;
- Identify the need for tailored strategies to support implementation in contexts, settings, environments that are less conducive to implementation of evidence-based medicine and clinical guidelines.

# Four implementation interventions of interest:

- Provider reminders, including clinical decision support tools and paper and computerized reminders
- Academic detailing (also known as “educational outreach”)
- Audit and feedback (also known as “patient monitoring and feedback”)
- Provider incentives (specifically, pay for performance)

# Key Questions

- KQ1: Does the evidence support effectiveness of the selected intervention strategies (i.e., academic detailing, reminders, audit and feedback, and provider incentives) in particular practice settings? For particular healthcare professionals?
- KQ2: What are the cost considerations of implementing the selected intervention strategies (i.e., academic detailing, reminders, audit and feedback, and provider incentives)?
- KQ3: What are the contextual barriers (financial, organizational, and regulatory) that hinder or limit provider adherence to, and uptake of guidelines/ evidence-based recommendations?
- KQ4: What policy/regulatory, organizational, and financial characteristics influence the success of these intervention strategies in achieving implementation and affecting professional practice behaviors?

# Categories of Overall Effectiveness\*

- Generally effective: More than 2/3 of the studies in a given review showed positive effects for the intervention.
- Mixed effects: 1/3 to 2/3s of the studies in a given review showed positive effects for the intervention.
- Generally ineffective: Less than 1/3 of studies in a given review showed positive effects for the intervention.

\*Method of Cheung et al (2012)

# Preliminary Findings: Process of care outcomes – examples of the range of outcomes reported

Intervention Type	Outcomes Reported as Median Effects	Other Outcomes Reported
Academic Detailing	<ul style="list-style-type: none"> <li>• 6% (range: -4.0%-17.4%); 11/13 studies</li> <li>• 15% (range: 1.7%-24.0%); 5/6 studies</li> </ul>	<ul style="list-style-type: none"> <li>• 15% - 68% relative improvement; 12/13 studies</li> <li>• Median decrease of 1.4% (range: 3.6%-6.0%); 3/5 studies</li> </ul>
Audit & Feedback	<ul style="list-style-type: none"> <li>• 7.0% (range: 1.3%-16.0%); 5/5 studies</li> <li>• 15.4% (range: 0%-20.3%); 2/4 studies</li> </ul>	<ul style="list-style-type: none"> <li>• Weighted median ARD 4.3% increase (range: 0.5%-16%); 49/49 studies</li> <li>• Weighted median ARD 1.3% increase (range: 1.3%-23.2%); 21/21 studies</li> </ul>
Reminders/ CDSS	<ul style="list-style-type: none"> <li>• 14.1% (range: 1.0%-34.0%); 12/14 studies</li> <li>• 5.4% (range: -1.0%-25.7%); 7/8 studies</li> </ul>	<ul style="list-style-type: none"> <li>• Significant effect on rates of ordering or completing clinical tests, OR=1.72 (CI: 1.47, 2.0); 20/20 studies</li> </ul>
Pay for Performance	N/A	<ul style="list-style-type: none"> <li>• Improvement of 5% from baseline; 29/128 studies</li> <li>• Provider financial incentives had no impact on adult immunization rates; adjusted OR=1.26 (CI: 0.83, 1.90); 29/81 studies</li> </ul>

# Preliminary Findings: Clinical effectiveness outcomes – examples of the range of outcomes reported

Intervention Type	Outcomes Reported
Academic Detailing	<ul style="list-style-type: none"> <li>• Median reduction of 3.8 mmHg systolic blood pressure; 1/6 studies</li> <li>• Median reduction of 2.2 mmHg diastolic blood pressure; 2/6 studies</li> </ul>
Audit & Feedback	<ul style="list-style-type: none"> <li>• Weighted median risk difference -0.4% (range: -1.3%-1.6%); 12/12 comparisons</li> <li>• Improvement in median systolic blood pressure, 1.3 mmHg (range: 0.5-1.6); 9/13 comparisons</li> <li>• Improvement in median diastolic blood pressure 0.6 mmHg (range: 0.5-1.0); 9/13 comparisons</li> </ul>
Reminders/ CDSS	<ul style="list-style-type: none"> <li>• Risk of bleeding rates was not significantly reduced (risk ratio: 0.87, CI: 0.68, 1.10); 7/7 studies</li> <li>• Median effect: 1.9% (range: 1.0%-6.8%), not statistically significant</li> </ul>
Pay for Performance	<ul style="list-style-type: none"> <li>• Reported outcomes not statistically significant; no differences found; Insufficient evidence</li> </ul>

# KQ1 Effectiveness: Summary Findings

- All 4 interventions of interest generally effective for process of care outcomes (e.g. influencing prescribing behaviors)
- Only academic detailing appeared to be generally effective in terms of clinical effectiveness outcomes
- Multifaceted interventions appear to be more effective
- No clear evidence that the specific health condition for which the interventions were targeted affected whether implementation was successful

# KQ2 Costs: Summary Findings

- No general conclusion could be reached about costs
- High quality reviews generally reported cost savings associated with interventions
- But interventions generally multifaceted and attribution of cost savings to specific components of an intervention was difficult

# KQ3 Contextual Barriers: Summary Findings

- Organizational barriers: time, human resources, IT
- Guideline barriers: perceptions of a weak evidence base, inflexibility to individual patient circumstances, care rationing
- Workflow barriers: lack of integration into the workflow, separate IT systems from EMR
- No clear evidence that the timing or duration of the intervention affected whether the implementation was successful

# KQ4 Contextual Facilitators: Summary Findings

- Guideline characteristics: consistency with other guidelines, involvement of end users in development, clear/concise formatting, reduced complexity
- Involving stakeholders in the process of implementation
- Embedding in broader organizational change efforts
- Little evidence that involvement of clinical leaders in implementation, including scope, influenced successful implementation.

# Implications

- Multifaceted strategies are most effective, but more difficult to untangle with respect to contributions of each intervention.
- Local input into design of intervention may encourage multi-faceted strategies.
- Mixed methods evaluation of implementation case examples may provide more appropriate data sources than RCT-heavy systematic reviews

# Canadian Agency for Drugs and Technologies in Health (CADTH): Rx for Change

# CADTH: Rx for Change

- *Rx for Change* is a searchable database containing current research evidence about intervention strategies used to alter behaviours of health technology prescribing, practice, and use.
- The intent of this database is to help inform the choice and use of practical, evidence-based interventions.

[www.cacth.ca](http://www.cacth.ca)>Products>Resources>Rx for Change



## Resources

Generic Drugs

Rx for Change

Search Rx for Change  
Database

Academic Detailing Templates

Finding the Evidence:  
Literature Searching Tools...

CADTH » Resources » Rx for Change

## Rx for Change

[show all](#)

What is the best way to bring about behaviour change in health care? Does evidence show that some intervention strategies are better than others? *Rx for Change* is a searchable database containing current research evidence about intervention strategies used to alter behaviours of health technology prescribing, practice, and use. The intent of this database is to help inform the choice and use of practical, evidence-based interventions.

[Search Rx for Change Database](#)

CADTH would like to thank the following contributing partners for their generous support with *Rx for Change*:



## Related Information

[Frequently Asked](#)[Questions](#)

Browser navigation bar showing address bar with URL: <http://www.cadth.ca/en/resources/rx-for-change/database#>. Includes menu items: File, Edit, View, Favorites, Tools, Help. A search bar contains the text "Search Rx for Change Database | CADTH".

- Resources
- Generic Drugs
- Rx for Change
  - Search Rx for Change Database
- Academic Detailing Templates
- Finding the Evidence: Literature Searching Tools...

Professional

*Interventions that target professionals directly, aiming to improve practice.*

- [Audit and feedback](#) (42) New Evidence
- [Distribution of educational materials](#) (56)
- [Educational meetings](#) (78) New Evidence
- [Educational outreach visits](#) (34)
- [Local consensus processes](#) (8)
- [Local opinion leaders](#) (6)
- [Mass media](#) (4)
- [Multifaceted](#) (129) New Evidence
- [Patient-mediated](#) (15)
- [Professional - other](#) (3)
- [Reminders - computer decision support systems \(drug dosing\)](#) (26) New Evidence
- [Reminders - computer physician order entry](#) (16)
- [Reminders - general](#) (67) New Evidence
- [Tailored interventions](#) (2)

Resources

Generic Drugs

Rx for Change

Search Rx for Change Database

Academic Detailing Templates

Finding the Evidence: Literature Searching Tools...

Consumer

*Interventions that affect drug use by and prescribing for consumers.*

- [Acquiring skills and competencies](#) (31) ? New Evidence
- [Consumer system participation](#) (1) ?
- [Facilitating communication and decision making](#) (20) ? New Evidence
- [Improving quality](#) (37) ? New Evidence
- [Minimising risks or harms](#) (45) ? New Evidence
- [Providing information or education](#) (71) ? New Evidence
- [Support](#) (28) ? New Evidence
- [Supporting behaviour change](#) (78) ? New Evidence

Resources

Generic Drugs

Rx for Change

Search Rx for Change Database

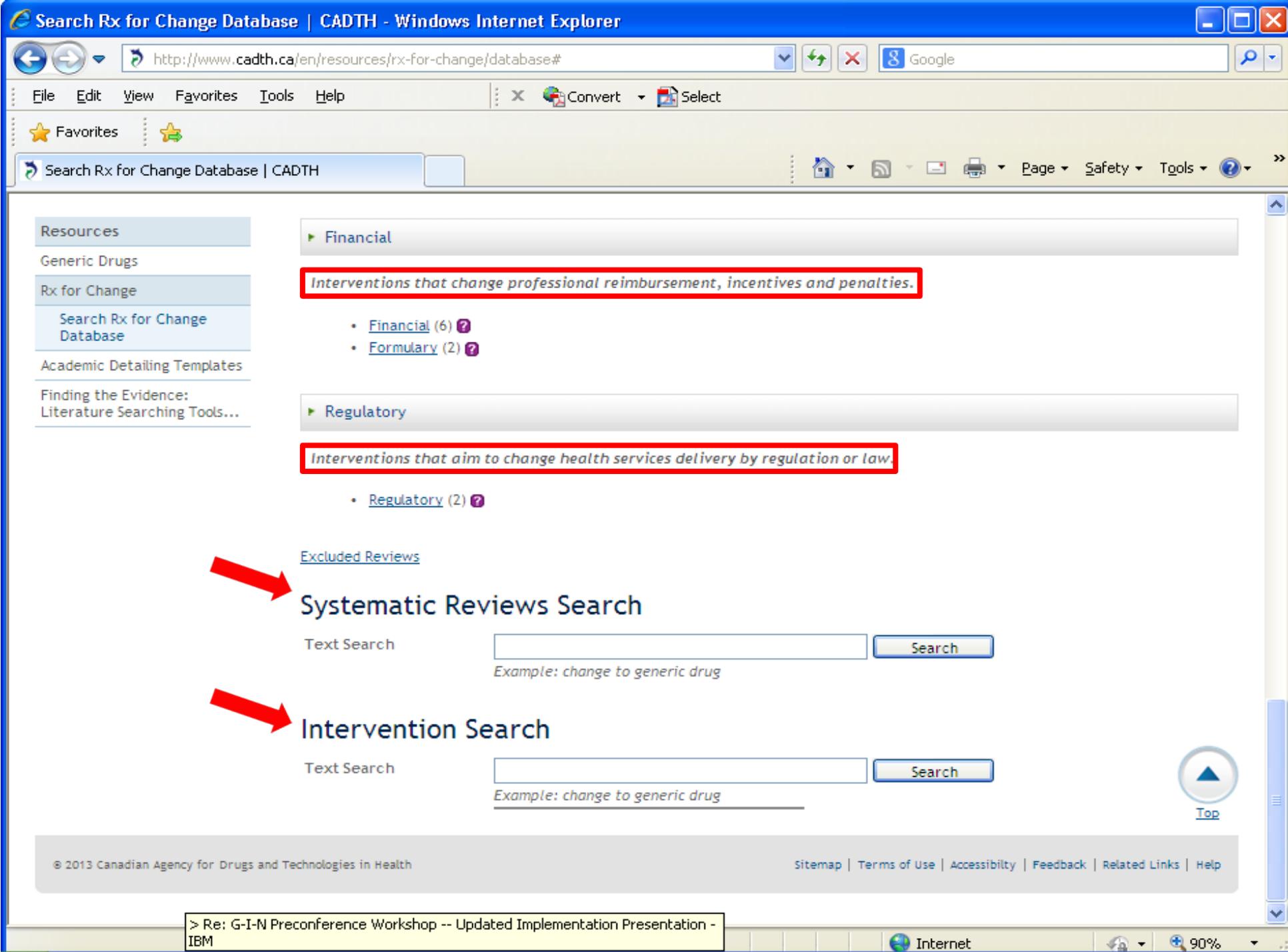
Academic Detailing Templates

Finding the Evidence: Literature Searching Tools...

Organisational

*Interventions that involve a change in the structure or delivery of health care.*

- [Changes in medical records systems](#) (6) ? New Evidence
- [Changes in physical structure, facilities and equipment](#) (2) ?
- [Changes in scope and nature of benefits and services](#) (1) ?
- [Changes to the setting/site of service delivery](#) (4) ?
- [Clinical multidisciplinary teams](#) (11) ?
- [Communication and case discussion between distant health professionals](#) (1) ?
- [Continuity of care](#) (13) ? New Evidence
- [Formal integration of services](#) (4) ?
- [Organisational \(patient oriented interventions\)](#) ? ⚠
- [Organisational \(provider\) - other](#) (3) ?
- [Organisational \(structural\) - other](#) (3) ?
- [Ownership, accreditation, and affiliation status of hospitals and other facilities](#) ? ⚠
- [Quality improvement](#) (2) ?
- [Revision of professional roles - general](#) (5) ?
- [Revision of professional roles - nursing](#) (13) ? New Evidence
- [Revision of professional roles - pharmacy](#) (26) ?
- [Satisfaction of providers with the conditions of work and the material and psychological rewards](#) ? ⚠
- [Skill mix changes](#) (1) ?



Resources

- Generic Drugs
- Rx for Change
  - Search Rx for Change Database
- Academic Detailing Templates
- Finding the Evidence: Literature Searching Tools...

Financial

*Interventions that change professional reimbursement, incentives and penalties.*

- Financial (6) ?
- Formulary (2) ?

Regulatory

*Interventions that aim to change health services delivery by regulation or law.*

- Regulatory (2) ?

[Excluded Reviews](#)

## Systematic Reviews Search

Text Search

*Example: change to generic drug*



## Intervention Search

Text Search

*Example: change to generic drug*



# Questions/Discussion