Effects of guidelines on quality of care and patient outcomes

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Background

- Consistent evidence of failure to translate research findings into clinical practice
  - 30-40% patients do not get treatments of proven effectiveness
  - 20–25% patients get care that is not needed or potentially harmful
  - Suggests that implementation of research findings is fundamental challenge for healthcare systems to optimise care, outcomes and costs

Schuster, McGlynn, Brook (1998). *Milbank Memorial Quarterly*

Grol R (2001). *Med Care*
Effects of guidelines on quality of care - 1993

Summary

Although interest in clinical guidelines has never been greater, uncertainty persists about whether they are effective. The debate has been hampered by the lack of a rigorous overview.

We have identified 59 published evaluations of clinical guidelines that met defined criteria for scientific rigour; 24 investigated guidelines for specific clinical conditions, 27 studied preventive care, and 8 looked at guidelines for prescribing or for support services. All but 4 of these studies detected significant improvements in the process of care after the introduction of guidelines and all but 2 of the 11 studies that assessed the outcome of care reported significant improvements.

We conclude that explicit guidelines do improve clinical practice, when introduced in the context of rigorous evaluations. However, the size of the improvements in performance varied considerably.

Lancet 1993; 342: 1317–22
Effects of guidelines on quality of care - 2004

Results (research findings)
Systematic review of the effectiveness and efficiency of guideline dissemination and implementation strategies

In total, 235 studies reporting 309 comparisons met the inclusion criteria. The overall quality of the studies was poor. Seventy-three per cent of comparisons evaluated multifaceted interventions, although the maximum number of replications of a specific multifaceted intervention was 11 comparisons. Overall, the majority of comparisons reporting dichotomous process data (86.6%) observed improvements in care; however, there was considerable variation in the observed effects both within and across interventions. Commonly
Effects of dissemination and implementation strategies on quality of care

<table>
<thead>
<tr>
<th>Intervention</th>
<th># of trials</th>
<th>Median absolute effect</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit and feedback (Ivers 2011)</td>
<td>140</td>
<td>+4.3%</td>
<td>+0.5% - +16%</td>
</tr>
<tr>
<td>Educational meetings (Forsetlund 2009)</td>
<td>81</td>
<td>+6%</td>
<td>+3 – +15%</td>
</tr>
<tr>
<td>Financial incentives (Scott 2011)</td>
<td>3</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Hand hygiene (Gould 2010)</td>
<td>1</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
Do appropriately disseminated and implemented guidelines improve process (and quality) of care?

Yes!
Effects of guidelines on outcome of care

• 1993 – 9/11 studies observed improvements in outcomes of care

• 2004
  • 26/235 studies reported patient outcomes
  • 90/235 studies reported surrogate patient outcomes

Hakkennes, Green (2006). *Implementation Science*

• Fewer studies report effects of guidelines on outcomes of care

• Most studies are underpowered to detect changes on outcomes of care
Effects of guidelines on outcome of care

Function of effectiveness of dissemination and implementation strategy

Process of care

Function of validity of guideline

Outcome of care

After Mason et al (2001) JAMA
Summary point 2

Do appropriately disseminated and implemented *valid* guidelines improve outcome of care?

Probably!
Summary point 3

• Suggests the issue is not whether appropriately disseminated and implemented valid guidelines improve process and outcome of care

• But....

• How do we increase likelihood and effects of appropriately disseminated and implemented valid guidelines on process and outcome of care
Disseminating and implementing guidelines

Ivers N et al. Audit and feedback: effects on professional practice and health care outcomes. *Cochrane Library* 2012

- Larger effects were seen if:
  - baseline compliance was low.
  - the source was a supervisor or colleague
  - it was provided more than once
  - it was delivered in both verbal and written formats
  - it included both explicit targets and an action plan
### Disseminating and implementing guidelines

<table>
<thead>
<tr>
<th>QI strategy</th>
<th>All studies</th>
<th>HbA1c &gt;8%</th>
<th>HbA1c ≤8%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>#RCTs</td>
<td>MD (95% CI)</td>
</tr>
<tr>
<td>Promotion of self management</td>
<td>1</td>
<td>60</td>
<td>-0.57 (-0.83, -0.31)</td>
</tr>
<tr>
<td>Team changes</td>
<td>2</td>
<td>47</td>
<td>-0.57 (-0.71, -0.42)</td>
</tr>
<tr>
<td>Case management</td>
<td>3</td>
<td>57</td>
<td>-0.50 (-0.65, -0.36)</td>
</tr>
<tr>
<td>Patient education</td>
<td>4</td>
<td>52</td>
<td>-0.48 (-0.61, -0.34)</td>
</tr>
<tr>
<td>Facilitated relay</td>
<td>5</td>
<td>32</td>
<td>-0.46 (-0.60, -0.33)</td>
</tr>
<tr>
<td>Electronic patient register</td>
<td>6</td>
<td>27</td>
<td>-0.42 (-0.61, -0.24)</td>
</tr>
<tr>
<td>Patient reminders</td>
<td>7</td>
<td>21</td>
<td>-0.39 (-0.65, -0.12)</td>
</tr>
<tr>
<td>Audit and feedback</td>
<td>8</td>
<td>8</td>
<td>-0.26 (-0.44, -0.08)</td>
</tr>
<tr>
<td>Clinician education</td>
<td>9</td>
<td>15</td>
<td>-0.19 (-0.35, 0.03)</td>
</tr>
<tr>
<td>Clinician reminders</td>
<td>10</td>
<td>18</td>
<td>-0.16 (-0.31, -0.02)</td>
</tr>
<tr>
<td><strong>All interventions</strong></td>
<td></td>
<td>120</td>
<td>-0.37 (-0.45, -0.28)</td>
</tr>
</tbody>
</table>

Disseminating and implementing guidelines

Knowledge to Action cycle

Graham ID et al. Lost in Knowledge Translation: Time for a Map? Journal of Continuing Education in the Health Professions, 2006
Tailored implementation for chronic diseases (TICD): A project protocol

Michel Wensing¹, Andy Oxman², Richard Baker³, Maciek Godycki-Cwirko⁴, Signe Flottorp², Joachim Szecsenyi⁵, Jeremy Grimshaw⁶ and Martin Eccles⁷

Abstract

Background: The assumption underlying tailoring is that implementation interventions are most helpful if these effectively address the most important determinants of practice for improvement in the targeted setting. The aim of the Tailored Implementation For Chronic Diseases (TICD) project is to develop valid and efficient methods of tailoring implementation interventions to determinants of practice for knowledge implementation in chronic illness care.

Methods: The TICD project has organized the planned empirical research in three work packages that follow the three main steps of tailoring: identification of determinants of healthcare practice, matching implementation interventions to identified determinants of practice, and applying and assessing the tailored implementation interventions. These three key steps of tailored implementation will be applied to targeted chronic conditions in five different healthcare systems: cardiovascular disease in the Netherlands, obesity in England, depression in Norway, chronic obstructive pulmonary disease in Poland, and multimorbidity in Germany. The design and interpretation of empirical research will be informed by systematic reviews of previous research on tailoring implementation interventions.

Discussion: The TICD project will provide much needed evidence on the advantages and disadvantages of different methods of identifying important determinants of practice and selecting implementation strategies that take account of those. It will also provide five rigorous evaluations of tailored implementation interventions for five different chronic conditions.
Disseminating and implementing guidelines

Behavioural perspective

- Implementation depends on behaviour
  - Citizens, patients, health professionals, managers, policy makers
- To improve care, we need to change behaviour
- To change behaviour, it helps to understand determinants of current behaviour and how behaviour changes

Disseminating and implementing guidelines

Implementation Science

This Provisional PDF corresponds to the article as it appeared upon acceptance. Fully formatted PDF and full text (HTML) versions will be made available soon.

Developing theory-informed behaviour change interventions to implement evidence into practice: a systematic approach using the Theoretical Domains Framework


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Summary point 4

Dissemination and implementation is a process that needs to be tailored to local barriers and facilitators

Emerging models of how to do this
Supporting guideline dissemination and implementation

• Guideline dissemination and implementation should be seen as a shared responsibility of guideline developers, health care professionals and health care systems

• Most guideline developers have limited responsibility for dissemination and implementation; role of guideline developers to ensure *implementability* of guidelines
  
  • Behaviourally specific language
  • Identification of potential barriers of recommendations
  • Identification of resource implications of recommendations
  • Multiple formats, multiple channels
  • Educational tools
  • Practice support tools
Results: The final implementability framework included 22 elements organized in the domains of adaptability, usability, validity, applicability, communicability, accommodation, implementation, and evaluation. Data were extracted from 20 guidelines on the management of diabetes, hypertension, leg ulcer, and heart failure. Most contained a large volume of graded, narrative evidence, and tables featuring complementary clinical information. Few contained additional features that could improve guideline use. These included alternate versions for different users and purposes, summaries of evidence and recommendations, information to facilitate interaction with and involvement of patients, details of resource implications, and instructions on how to locally promote and monitor guideline use. There were no consistent trends by guideline topic.
Supporting guideline dissemination and implementation

**SDCEP Guidance - Pre-Consultation Period**

**TRiADS - Define Professional Behaviour Outcomes**
- SDCEP Guidance Development Group identify and prioritise professional behaviour outcomes to assess best practice

**SDCEP Guidance - Consultation Period**

**TRiADS - Diagnostic Analysis**
- Identify barriers and enablers to best practice using questionnaires and interviews with GDPs/DCPs
- Measure variation in professional behaviour using routine or bespoke data

- Identify criteria to determine if knowledge translation strategy is required
- Identify theoretical domains and possible knowledge translation interventions

**TRiADS - Identify the Need for, Timing and Design of Knowledge Translation Intervention**

**SDCEP Guidance - Publication and Dissemination Period**
- Identify trend and step changes following publication of guidance

**TRiADS - Evaluation**
- Intervention Required: Develop and test knowledge translation intervention
- Intervention Not Required: Monitor professional behaviour outcomes

**TRiADS - Collect Data from Steps Above and Collate With Each Guidance Experience to Synthesise What is Known About Changing Each Set of Behaviours**

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**Setting**

Imshaw, Marie Johnston, Bonetti, Heather Cassie, Rennie, Doug Stirling.

Practice is a slow and complex. One common policy, but it has been... Additional knowledge and much of this variation is generalisable, theory based,
Supporting guideline dissemination and implementation

- Cochrane Effective Practice and Organisation of Care (EPOC) group undertakes systematic reviews of interventions to improve health care systems and health care delivery
- 89 reviews, 46 protocols
- Over 7000 primary studies identified
- Working with over 600 individuals globally
Supporting guideline dissemination and implementation

Identified, appraised and summarised over 300 systematic reviews of professional behaviour change interventions.
Summary point 5

• Guideline developers should ensure the implementability of their guidelines and develop relationships with their healthcare systems to support dissemination and implementation

• Innovative models emerging for prospectively embedding guideline development activities with dissemination and implementation program development

• Substantial empirical and theoretical base to support development of dissemination and implementation programs
Contact details

• Jeremy Grimshaw - jgrimshaw@ohri.ca
• EPOC – http://epoc.cochrane.org/
• Rx for Change database of appraised reviews of professional behaviour change - www.rxforchange.ca
• KT Canada - http://ktclearinghouse.ca/ktcanada