Efficient and effective implementation strategies

Jeremy Grimshaw

Ruth Thomas, Graeme Maclennan, Luke Vale, Cynthia Fraser, Craig Ramsay, Martin Eccles, Paula Whitty, Lloyd Matowe, Michel Wensing, Rob Dijkstra

Background

- Clinical practice guidelines increasingly common.
- Guidelines have the potential to improve care.
- The development and introduction of guidelines are not themselves without costs.
- In some circumstances, the costs of development and introduction are likely to outweigh their potential benefits.
- Local health care organisations have relatively few resources for clinical effectiveness activities.
- Decision makers need to consider how best to use these to maximise benefits.

Objective

- Systematic review of the effectiveness and efficiency of guideline dissemination and implementation strategies to promote improved professional practice.

Inclusion criteria

- Study designs – RCTs, CCTs, CBAs, ITS
- Participants – medically qualified health care professionals
- Interventions – guideline dissemination and implementation strategies
- Outcomes – objective measures of provider behaviour and/or patient outcome

Search strategies

- Cochrane Effective Practice and Organisation of Care group's search strategy
  - Medline (1966 – 1998)
  - EMBASE (1980 – 1988)
  - Cochrane Controlled Clinical Trials Register (4th edition 1998)
  - HEALTHSTAR (1975 – 1998)
  - SIGLE (1980 – 1998)
- Bibliographies of previously published reviews

Analytical approach (1)

- Previous systematic reviews of dissemination and implementation strategies have used vote counting techniques:
  - Problems handling studies where statistical significance of comparison is uncertain (eg studies with unit of analysis errors)
  - Don’t provide any estimate of effect size

Analytical approach (2)

- Single effect size for each type of endpoint identified for each study – either primary measure (as stated by author) or median measure
- Presentation focuses on process dichotomous endpoints from cluster and patient randomised trials

Results – included studies

- Search strategy identified approx 150,000 hits
- 5,000 hits identified as potentially relevant
- Full text 863 reports retrieved
- Included 285 reports of 235 studies, yielding 309 separate comparisons

Results – methodological quality

- Overall methodological quality poor (eg unit of analysis errors common)
- 29.4% comparisons reported any economic data
- 4 studies provided sufficiently robust data for consideration

Results – single interventions

- 84 comparisons evaluated single intervention against no intervention control including:
  - 38 studies of reminders
  - 18 studies of educational materials
  - 12 studies of audit and feedback
  - 3 studies of educational meetings
  - 3 studies of other professional interventions
  - 2 studies of organisational interventions
  - (8 studies of patient mediated interventions)

Results – single interventions

Intervention	Number of RCTs	Median effect size	Range
Educational materials	5	+8.1%	+3.6%, +17.0%
Audit and feedback	5	+7.0%	+1.3%, +16.0%
Reminders	14 CRCTs 8 PRCTs	+14.1% +5.4%	–1.0%, +34.0% –1.0%, +25.7%

Results – multifaceted interventions

- 136 comparisons evaluated 68 different combinations of interventions against no intervention control group (maximum number of comparisons of same combination of interventions was 11)
- 85 comparisons evaluated 58 different combinations of interventions against an intervention control group

Results – multifaceted interventions

Number of components in study arm	Median effect
1	10.2 (n=52)
2	7.4 (n=36)
3	11.0 (n=25)
4	4.0 (n=11)
5	21.8 (n=4)
6	15.0 (n= 1)
7	-

Results – multifaceted interventions

Multifaceted interventions including educational outreach

- 13 CRCT
  - Median effect +6.0% (range –4% to +17.4%)

Conclusions

- Imperfect evidence base for decision makers
- Reminders most consistently observed to be effective
- Educational outreach only led to modest effects
- Dissemination of educational materials may lead to modest but potentially important effects (similar effects to more intensive interventions)

Conclusions

- Multifaceted interventions not necessarily more effective than single interventions
- Lack of information on resources required for guideline development, dissemination and implementation
- Feasibility and affordability of most interventions uncertain in UK NHS settings

Conclusions

- Decision makers need to use considerable judgement about how best to use the limited resources for implementation based upon consideration of:
  - the potential clinical areas for clinical effectiveness activities;
  - the likely benefits and costs required to introduce guidelines;
  - and the likely benefits and costs as a result of any changes in provider behaviour.