The NIHR Systematic Reviews Programme: Opportunities for Greater Impact

An Organisational Perspective

Neil Hawkins, LSHTM
What determines the impact of a review?

When should peripheral venous catheters be replaced?

Review question
What are the effects of replacing a peripheral intravenous catheter when clinically indicated compared to leaving it in situ for up to 96 hours?

Nursing implications
Central lines are permitted to perform peripheral intravenous cannulation for patients who require intravenous therapy. Therefore, from initiating cannulation to catheter removal, nurses play an important role in caring for, and monitoring the catheter to prevent complications such as infection and phlebitis.

Study characteristics
A randomised controlled trial consisting of a total of 2,694 participants were included in the review. The indication for removal of the catheter was based on nurse clinical experience of the need to prevent fluid extravasation. The intervention was the immediate removal of a peripheral intravenous catheter, which was followed by the insertion of a new catheter. The outcomes assessed were catheter-related infections, catheter site complications, pain, and phlebitis. The primary outcome measure was the incidence of device-related infections, phlebitis, and cost.

All trials reported adequate computer-generated randomisation and allocation concealment, but blinding was not possible in any of the trials. Five of the six trials included were free of other potential biases, apart from a reported higher adverse event rate in the ‘eventually replaced’ group in one of the six trials. These five trials also used an intention-to-treat analysis.
We can think of impact as the diffusion of innovation (change in practice)

The “Bass’ Model

The number of new buyers

Imitative

Innovative

Time
Everett M. Rogers

His father loved electromechanical farm innovations, but was highly reluctant to utilize biological–chemical innovations, so he resisted adopting the new hybrid seed corn, even though it yielded 25% more crop and was resistant to drought.

During the Iowa drought of 1936, while the hybrid seed corn stood tall on the neighbor’s farm, the crop on the Rogers’ farm wilted. Rogers’ father was finally convinced.

Backer TE. FORUM: THE LIFE AND WORK OF EVERETT ROGERS—SOME PERSONAL REFLECTIONS
Roger’s Model of the diffusion of innovation

Criticised for:

- Reliance on rationality
- Over-simplification of change process
- Insufficient consideration of networks

Diffusion of Innovations, 5th Edition by Everett M. Rogers
The importance of organisational context

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<td><strong>RESEARCH THEMES</strong></td>
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<tr>
<th>Theme</th>
<th>Dopson &amp; Gabbay</th>
<th>Wood et al.</th>
<th>Dawson et al.</th>
<th>CSAG (Gabbay et al.)</th>
<th>Fitzgerald et al.</th>
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<tbody>
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<td>1. Evidence is not sufficient</td>
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<td>2. Evidence is socially constructed</td>
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<td>3. Evidence is differentially available</td>
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<td>4. Hierarchies of evidence exist</td>
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<td>6. The importance of professional networks</td>
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<td>7. The role of professional boundaries</td>
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<td>8. Context as an influence</td>
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<td>9. The role of opinion leaders</td>
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<td>10. The enactment of evidence</td>
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Key: 1 = Theme is present, 2 = Strong evidence of theme, 3 = Very strong evidence of presence.
The diffusion of innovations in U.K. health care: common core themes (1)

• Robust evidence is not sufficient to facilitate diffusion
• Interpretation of evidence is socially constructed
  • Competing bodies of evidence - differing interpretations
  • Interpretations may vary by stakeholder (profession, group, and individual)
    • Malleability of evidence over time and according to priority
• Evidence is differentially available for different professions
• Hierarchies of evidence exist
• Other sources of evidence are important
  • Tacit / experimental knowledge
  • Craft skills
The diffusion of innovations in U.K. health care: common core themes (2)

• Professional networks shape behaviour
• Professional boundaries inhibit knowledge diffusion
• Context influences diffusions
  • Government policy
  • Regional influences
  • Individual practitioners
• Option leaders as facilitators and inhibitors
  • Expert opinion leaders
  • Peer opinion leaders
• Strength of evidence
What sort of ‘interventions’ might we consider?

Adaptation of RICE’S Four E’s:

- **Education**
  - Printed materials; educational outreach, monitoring

- **Engineering**
  - Managerial interventions: disease management; prescribing targets

- **Economics**
  - insurance and reimbursement; co-payments; financial incentives

- **Enforcement**
  - Generic substitution

And which interventions actually work?

Getting research findings into practice

Closing the gap between research and practice: an overview of systematic reviews of interventions to promote the implementation of research findings

Lisa A Bero, Roberto Grilli, Jeremy M Grimshaw, Emma Harvey, Andrew D Oxman, Mary Ann Thomson on behalf of the Cochrane Effective Practice and Organisation of Care Review Group

Despite the considerable amount of money spent on clinical research relatively little attention has been paid to ensuring that the findings of research are implemented in routine clinical practice. There are many different types of intervention that can be used to promote behavioural change among healthcare professionals and the implementation of research findings. Disentangling the effects of intervention from the influence of contextual factors is difficult when interpreting the results of individual trials of behavioural change. Nevertheless, systematic reviews of rigorous studies provide the best evidence of the effectiveness of different strategies for promoting behavioural change. In this paper we examine systematic reviews of different strategies for the dissemination and implementation of research findings to identify evidence of the effectiveness of different strategies and to assess the quality of the systematic reviews.

Summary points

Systematic reviews of rigorous studies provide the best evidence on the effectiveness of different strategies to promote the implementation of research findings

Passive dissemination of information is generally ineffective

It seems necessary to use specific strategies to encourage implementation of research based recommendations and to ensure changes in practice

Further research on the relative effectiveness and efficiency of different strategies is required

Interventions to promote behavioural change among health professionals

- Consistently effective interventions
  - Educational outreach
  - Reminders
  - Interactive educational meetings

- Interventions of variable effectiveness
  - Audit and feedback
  - Use of local opinion leaders
  - Local consensus processes
  - Patient mediated interventions

- Interventions that have little or no effect
  - Educational materials
  - Didactic educational meetings
So, how do we make them come?
Questions?

• Should Cochrane be concerned about impact and diffusion?
• What type of activities might be undertaken?
• How should Cochrane interact with the relevant organisational structures?