Addressing Multiple Treatments

I: Cochrane Overviews

Lorne Becker
Denise Thomson
Deborah Caldwell
Outline of the Workshop

• Introduction to Cochrane Overviews: Lorne Becker
• Logistic aspects in planning an Overview: Denise Thomson
• Multiple Treatment Meta-Analysis in Cochrane Overviews: Deborah Caldwell
• Issues and Challenges
Cochrane
Overviews of
Reviews
The Cochrane Vision

That healthcare decision-making around the world will be informed by high quality, timely research evidence
Why Do We Need Overviews?

- A single Cochrane review will rarely address all of the potential interventions for a given condition
- Decision makers may have difficulty finding and comparing all of the relevant Cochrane reviews
Example

- A Common Clinical Question
- What is the best treatment for a child who wets the bed?
Possible Treatments

• Alarm Systems
• Medications
  - Tricyclic Antidepressants
  - Desmopressin
  - Others
• Behavioral interventions
• Complementary medicine approaches
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Year</th>
<th>Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complex behavioural and educational interventions for nocturnal enuresis in children</td>
<td>CMA Glazener, JHC Evans, RE Peto</td>
<td>2004</td>
<td><a href="#">Record</a></td>
</tr>
<tr>
<td>Simple behavioural and physical interventions for nocturnal enuresis in children</td>
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<td>2005</td>
<td><a href="#">Record</a></td>
</tr>
<tr>
<td>Complementary and miscellaneous interventions for nocturnal enuresis in children</td>
<td>CMA Glazener, JHC Evans, DKL Cheuk</td>
<td>2005</td>
<td><a href="#">Record</a></td>
</tr>
<tr>
<td>Desmopressin for nocturnal enuresis in children</td>
<td>CMA Glazener, JHC Evans</td>
<td>2002</td>
<td><a href="#">Record</a></td>
</tr>
<tr>
<td>Drugs for nocturnal enuresis in children (other than desmopressin and tricyclics)</td>
<td>CMA Glazener, JHC Evans, RE Peto</td>
<td>2003</td>
<td><a href="#">Record</a></td>
</tr>
<tr>
<td>Tricyclic and related drugs for nocturnal enuresis in children</td>
<td>CMA Glazener, JHC Evans, R Peto</td>
<td>2003</td>
<td><a href="#">Record</a></td>
</tr>
<tr>
<td>Clinical Reality</td>
<td>7 Cochrane Enuresis Reviews</td>
<td></td>
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<tr>
<td>------------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2 minutes per question</td>
<td>410 pages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 minutes per week</td>
<td>Excluding tables figures and references</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 73 pages</td>
<td></td>
<td></td>
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Overviews

• Designed for busy decision makers
• A “friendly front end”
• Summarizes a group of related reviews
  - Minimum of text
  - 1-3 tables
  - 0-2 figures
• Pointers to the full Cochrane Reviews
Umbrella Review

The Cochrane Library and nocturnal enuresis; an umbrella review

Kelly Russell¹* and Darcie Kiddoo²

¹Alberta Research Centre for Child Health Evidence, University of Alberta, Edmonton, Canada
²Department of Surgery, University of Alberta, Edmonton, Canada
## Table I. Failure to achieve 14 consecutive dry nights during treatment

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<th>Comparison</th>
<th>Number of subjects (studies)</th>
<th>Average control group rate*</th>
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<td>576 (13)</td>
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Development of Overview Format & Methods
2004
Umbrella Reviews Working Group

- Lorne Becker
- Jon Deeks
- Paul Glasziou
- Steff Lewis
- Yoon Loke
- Lara Maxwell
- Andy Oxman
- Deborah Pentesco-Gilbert
- Rebecca Ryan
- Peter Tugwell
- Janet Wale
Role of the Umbrella Reviews Working Group

- Start the ball rolling
- Develop the initial format, RevMan specifications etc.
- Chapter 22 Cochrane Interventions Handbook
- Pass on to CRGs and Editor in Chief for further development & editorial decisions
2010 - Comparing Multiple Interventions Methods Group

- Formed last month
- First meeting yesterday
- Further development of overview methods
2006
Child Health Overviews

- Evidence-Based Child Health Journal
- Produced & Edited by Cochrane Child Health Field
2009
Cochrane Library Overviews

• Two completed Overviews
  - Biologics for rheumatoid arthritis
  - Open, small-incision, or laparoscopic cholecystectomy

• 9 protocols
Differences Between Overviews and Intervention Reviews

- Intervention Review - Summary of evidence from a set of trials
- Overview - Summary of evidence from a set of systematic reviews
Other Differences

- Inclusion criteria
- Search strategy
- Quality of evidence
- Data collection
- Analysis
What to Include in an Overview
What an Overview is NOT

- A textbook chapter
- An opinion-based review

- Aim is to provide a “friendly front end” to Cochrane reviews
Which Cochrane Reviews to Include?

• Context of a decision maker with a single decision
  - Clinician
  - Policy maker
  - Consumer

• Address a single condition - e.g. anxiety or depression, not both

• Address only treatment or prevention - not both
Inclusion of Non-Cochrane Systematic Reviews?

• Sometimes
  - Additional work
  - Additional challenges
  - Accessible to users of *The Cochrane Library*?

• The primary aim of Cochrane Overviews is to summarize Cochrane reviews

• Existing Cochrane reviews may not address all important interventions
Inclusion of Individual Studies

• “beyond the scope of what should be done in a Cochrane Overview”
  - Handbook Chapter 22

• Can be addressed in Discussion section

• Could be addressed in an Intervention review of multiple treatments
Search

- Much simpler than for intervention reviews
- Start with a search of the Cochrane Library
- Expand if necessary to search for other systematic reviews
Quality of Evidence – 2 Levels

• Quality of evidence of the included trials
  - Extracted from the Cochrane reviews if possible
    • With critical appraisal of the methods used by the Review authors
  - Assessment of individual trials may be necessary

• Critical appraisal of the systematic reviews
Data Collection

• Ideally, can extract needed data from the systematic reviews
• Pooled summary data
Analysis – Several Possible Approaches

• Present pooled summary data without further analysis
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Analysis – Multiple Treatments Meta-Analysis

- **MTM of summary data**
  - Debbi Caldwell’s presentation

- **MTM of individual trial data**
  - Basic - Workshop 82 (Friday PM)
  - Advanced - Workshop 55 (tomorrow AM)
Other Uses For Overviews

- Find gaps in coverage of Cochrane reviews
- Help standardize interventions, comparisons, outcomes across related Cochrane reviews
- Planning for a Cochrane Intervention Review comparing multiple interventions
Questions & Comments?