

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










BROWSE

Cochrane Reviews: [By Topic](#) | [New Reviews](#) | [Updated Reviews](#) | [A-Z](#) | [By Review Group](#)

Other Resources: [Other Reviews](#) | [Clinical Trials](#) | [Methods Studies](#) | [Technology Assessments](#) | [Economic Evaluations](#)

[Export All Results](#)

Record Information

- | | |
|--------------------------|---|
| <input type="checkbox"/> | Complex behavioural and educational interventions for nocturnal enuresis in children
CMA Glazener, JHC Evans, RE Peto
Year: 2004
Record  |
| <input type="checkbox"/> | Simple behavioural and physical interventions for nocturnal enuresis in children
CMA Glazener, JHC Evans
Year: 2004
Record  |
| <input type="checkbox"/> | Alarm interventions for nocturnal enuresis in children
CMA Glazener, JHC Evans, RE Peto
Year: 2005
Record  |
| <input type="checkbox"/> | Complementary and miscellaneous interventions for nocturnal enuresis in children
CMA Glazener, JHC Evans, DKL Cheuk
Year: 2005
Record  |
| <input type="checkbox"/> | Desmopressin for nocturnal enuresis in children
CMA Glazener, JHC Evans
Year: 2002
Record  |
| <input type="checkbox"/> | Drugs for nocturnal enuresis in children (other than desmopressin and tricyclics)
CMA Glazener, JHC Evans, RE Peto
Year: 2003
Record  |
| <input type="checkbox"/> | Tricyclic and related drugs for nocturnal enuresis in children
CMA Glazener, JHC Evans, R Peto
Year: 2003
Record  |

Clinical Reality

2 minutes per
question

30 minutes per week

7 Cochrane
Enuresis Reviews

410 pages

Excluding tables
figures and
references
- 73 pages

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

EVIDENCE-BASED CHILD HEALTH: A COCHRANE REVIEW JOURNAL

Evid.-Based Child Health 1: 5–8 (2006)

Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/ebch.13

Umbrella Review

***The Cochrane Library* and nocturnal enuresis; an umbrella review**

Kelly Russell^{1*} and Darcie Kiddoo²

¹Alberta Research Centre for Child Health Evidence, University of Alberta, Edmonton, Canada

²Department of Surgery, University of Alberta, Edmonton, Canada

- 4 Pages
- 2 Tables
- 7 References

Evidence-
Based
Child Health



Enuresis Umbrella Review

Table I. Failure to achieve 14 consecutive dry nights during treatment

Comparison	Number of subjects (studies)	Average control group rate*	Relative risk (95% CI)⁺
Enuresis alarms versus no treatment	576 (13)	96%	0.38 (0.33, 0.45)
Enuresis alarm versus dry bed training	108 (3)	37%	1.33 (0.79, 2.24)
Enuresis alarm versus desmopressin	243 (3)	41%	0.71 (0.50, 0.99)
Enuresis alarm versus imipramine	208 (3)	80%	0.73 (0.61, 0.88)
Alarm versus cognitive treatment/psychotherapy/counseling	155 (3)	63%	0.68 (0.52, 0.90)
Cognitive treatment/psychotherapy/counseling versus control	95 (3)	94%	0.69 (0.55, 0.85)
Dry bed training versus no treatment	60 (2)	93%	0.82 (0.66, 1.02)
Dry bed training and alarm versus no treatment	143 (4)	94%	0.17 (0.11, 0.28)
20 mcg desmopressin versus placebo	288 (5)	99%	0.84 (0.79, 0.91)
40 mcg desmopressin versus placebo	463 (6)	86%	0.81 (0.74, 0.88)
60 mcg desmopressin versus placebo	165 (2)	100%	0.94 (0.89, 0.99)
Diclofenac versus placebo	92 (2)	93%	0.52 (0.38, 0.70)
Imipramine versus placebo	813 (11)	95%	0.77 (0.72, 0.83)



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 Pentescosco-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?**

