PREDICT Paediatric Research in Emergency Departments International Collaborative

Government of Western Australia
Department of Health
Child and Adolescent Health Service

Curtin University

Development of the Australasian Bronchiolitis clinical practice guideline

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Background Rationale:

- Bronchiolitis is common
- Most frequent cause of hospitalisation in infants under 6 months of age [1,2]
- Characterized by: acute inflammation, oedema and necrosis of epithelial cells lining small airways, increased mucus production, and bronchospasm.
- Treatment is well defined[3,4]
- Substantial variation in practice patterns in Australasia[5,6]
- A clear need to improve the consistency of care using a high quality guideline[7]

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Definition

- Guidelines are "*statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options*"

Institute of Medicine

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When Should We Develop Guidelines?

Failure to translate research findings into clinical practice means (Schuster 1998, Grol 2001)

- 30-40% of patients do not get treatments of proven effectiveness
- 20-25% of patients get care that is not needed or potentially harmful

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Significance:

Potential to:

- Standardise care for infants
- Minimise or even avoid unnecessary interventions and hospital admission, and therefore reduce health costs
- Close evidence practice gaps

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Current Guideline Development Practice

- 1-2 people draft a guideline (non-systematic lit search)
- Email to group of clinicians locally/*Guidelines editor*
- Published on web-site
- Referenced on another States guideline

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Aim:

- Develop an evidence based, and consensus led guideline for the management of bronchiolitis in infants presenting to, and admitted into hospital.

Target Audience

- Australasian EDs and general paediatric wards

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Guideline Working Group

A PREDICT Advisory Group:

- 3 paediatric emergency physicians
- 1 paediatrician
- 1 project coordinator

Guideline Working Group:

- Emergency nurses, nurse practitioner, general paediatricians, emergency physicians, paediatric intensive care physicians, paediatric respiratory physicians and clinicians.

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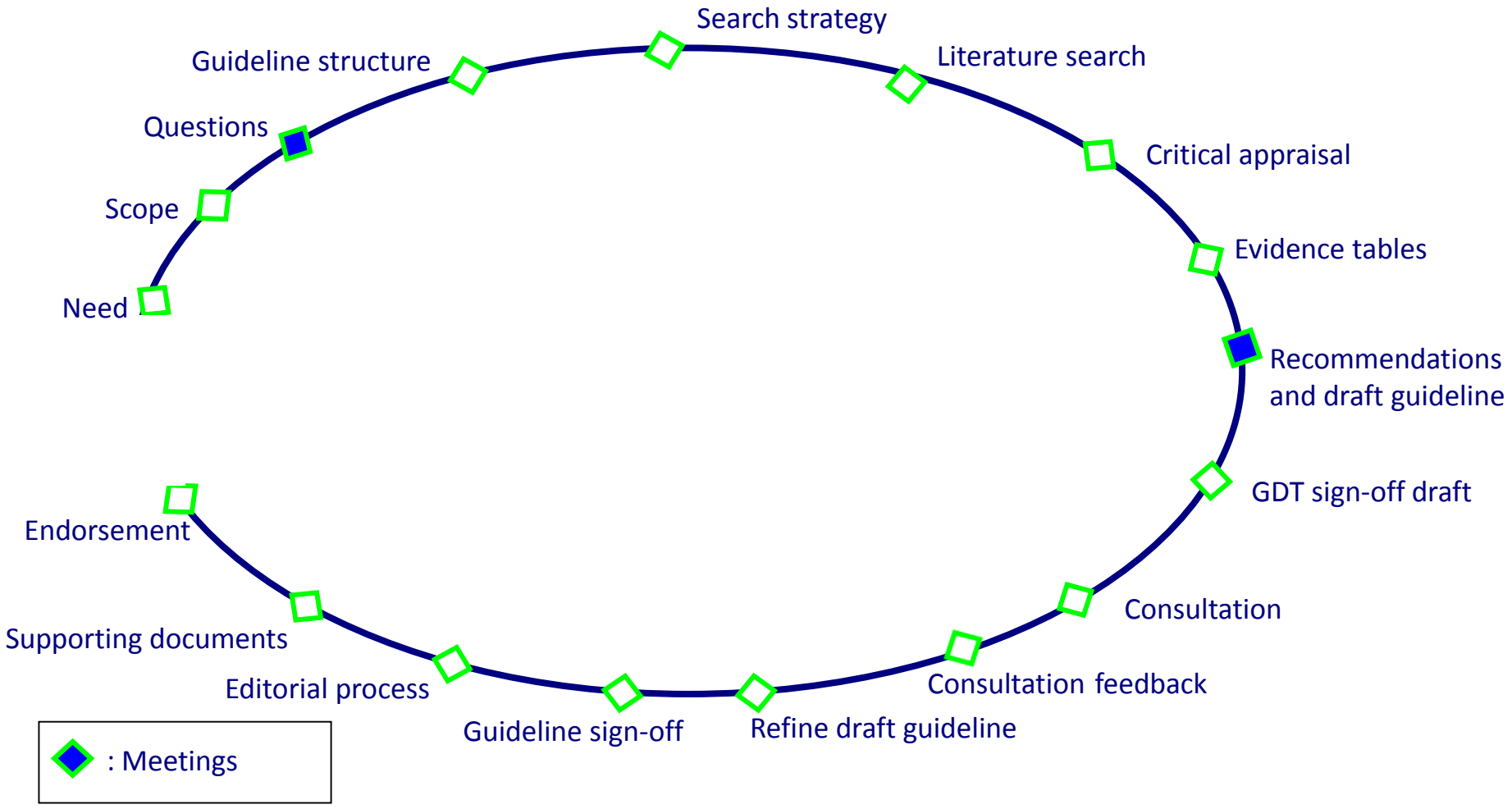
Guideline Development Process



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Guideline Development Process

Scope:

- Emergency department and general ward management of bronchiolitis
- Exclude:
  - Primary Care management
  - Intensive Care management
  - Public health prevention

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Guideline Development Process

Target Audience:

- Clinical staff and policy makers supporting Australasian emergency departments and general paediatric wards.

Structure:

- Useable clinical interface with bed-side functionality
- Descriptive summary of evidence base and evidence based tables

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Guideline Development Process

PICOT Questions:

- Key topics included were identified from the American Academy of Paediatrics (AAP) 2014 bronchiolitis statement[9], other international guidelines and recent Cochrane Reviews.

- Each question included the population, intervention, comparator, outcomes and time of interest (PICOt).

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Guideline Development Process

Undertook a systematic literature

- This included: Medline, Ovid, Embase, PubMed, CINAHL, and Cochrane Review library
- Search Dates - 1 January 2000 to 1 May 2015
- Second Lit Search = 1 May – 17 Dec 2015

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Guideline Development Process

Literature search:

- **Step 1:** Screening papers by title and abstract

- **Step 2:** Where insufficient to make a decision as to relevance, the complete article was sourced and reviewed utilising the same inclusion and exclusion criteria

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Guideline Development Process

Data Extraction and Quality Assessment

The GRADE Method [10]

- Assessment of the quality of a body of evidence for each individual outcome, including risk of bias (methodological quality), directness of evidence, heterogeneity, precision and risk of publication bias
- Is transparent
- Criteria for downgrading and upgrading quality of evidence
- Final rating of quality for each outcome: high, moderate, low or very low

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Guideline Development Process

Data Extraction and Quality Assessment

NHMRC Grading System[11]-

- Rating of the five key components of the 'body of evidence' for each recommendation:
  - The evidence base
  - Level of evidence and quality of studies (risk of bias)
  - Consistency of the study results
  - Potential clinical impact
  - Generalisability and applicability

Guideline development process

NHMRC

Grade of recommendation	Description
A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
D	Body of evidence is weak and recommendation must be applied with caution

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Guideline Development Process

Data Extraction and Quality Assessment

- Evidence tables and summaries of evidence were prepared for each PICOt question.

- Agreement reached between 2 reviewers, otherwise resolved through discussion or third reviewer (member of the Advisory Group).

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Guideline Development Process

Data Extraction and Quality Assessment

- Evidence presented is based on systematic reviews and randomised controlled trials.

- Where there is only low levels of evidence, clinical care statements outlining current accepted practice points are included.

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Guideline Development Process

- Consensus was sought using nominal group technique (NGT)[12] principles to formulate the clinical practice recommendations and practice points for the guideline

- Consultation with and reviews by key paediatric health professional bodies

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Challenges

- Committee members being located over two countries and 5 time zones
- Variable baseline knowledge of evidence grading
- Over 12,000 articles
- Limited experience using Endnote

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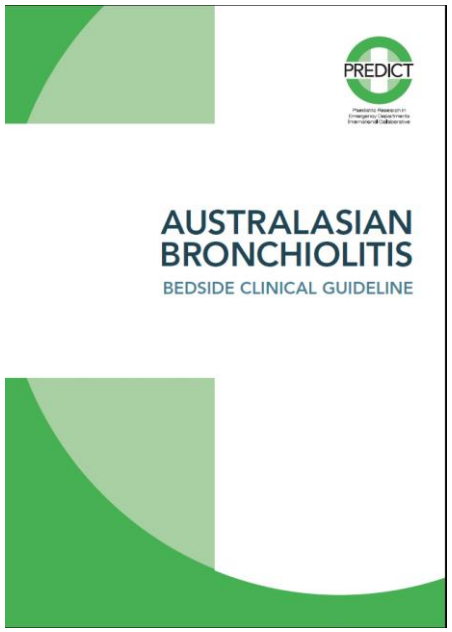
The draft guideline has been reviewed by key stakeholders within Australia and New Zealand. Feedback was incorporated and the Australasian Bronchiolitis Guideline will be ready for distribution by the end of November 2016.



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