

searches were identified and removed by the librarians before sending the abstracts to the two authors (A. B. C. and J. J. O.) who independently reviewed the abstracts.

Data Extraction and Quality Assessment

The two reviewers fully agreed on which full-text articles to retrieve to assess for potentially eligible studies. It was planned that disagreements that could not be resolved by consensus would be adjudicated by a third reviewer (R. S. I.), but there were no disagreements. As previously done,^{10,11} it was also planned that data would have been extracted by a single author and checked by a second and that a GRADE-based quality assessment independently undertaken for any randomized controlled trial (RCT). However, as there were no relevant studies, our planned methods were not relevant.

Recommendation/Suggestion Framework

We used a standard method⁹ as previously described¹²: “The methodology used by the CHEST Guideline Oversight Committee to select the Expert Cough Panel Chair and the international panel of experts, perform the synthesis of the evidence and develop the recommendations and suggestions has been published.^{9,13} Key questions and parameters of eligibility were developed for this topic. Existing guidelines, systematic reviews, and primary studies were

assessed for relevance and quality, and were used to support the evidence-based graded recommendations or suggestions. A highly structured consensus-based Delphi approach was employed to provide expert advice on all guidance statements. The total number of eligible voters for each guideline statement varied based on the number of managed individuals recused from voting on any particular statement(s) because of their potential conflicts of interest. Transparency of process was documented. Further details of the methods have been published elsewhere.^{9,13} Consistent with recent recommendations from the National Academy of Medicine (previously referred to as the Institute of Medicine), the Panel conducted a comprehensive, systematic review of the literature to provide the evidence base for this guideline.” During the Delphi approach, those with a ‘conflict of interest’ were not permitted to vote. The committee has a patient representative who approved the suggestions/recommendations during the voting process.

The CHEST approach separates the process of rating the quality of evidence from that of determining the strength of recommendation. The quality of evidence is based on the five domains of risk of bias, inconsistency, indirectness, reporting bias, and imprecision. Where there is insufficient evidence, ‘suggestions’ are formulated instead of recommendations.

Results

The search results and Preferred Reporting Items for Systematic Reviews and Meta-Analyses diagrams for all KQs are presented in [e-Appendix 1](#). The duration of cough relating to the various interventions, including antibiotics (KQ1), asthma medications (KQ2), and hypertonic saline (KQ3), was examined as an outcome in the National Institute for Health and Care Excellence guideline.¹ However, none of the data fulfilled our KQ criteria as in all the studies, children with acute bronchiolitis were recruited and none of the studies reported on the duration of cough at or beyond 4 weeks. Combining this with our own searches, the summary is presented below.

Summary of Evidence and Interpretation

The single paper included in KQ1 was a recently updated Cochrane systematic review.⁴ The systematic review compared antibiotics with controls (placebo or no treatment) administered in the post-acute phase of bronchiolitis (> 14 days) but included antibiotics started in the acute phase. The Cochrane review concluded that “there was insufficient evidence to inform whether antibiotics should be used to treat or prevent persistent respiratory symptoms in the post-acute phase of bronchiolitis.”

There were no prospective studies that have specifically recruited children with chronic cough post-bronchiolitis. A study involving only Aboriginal Australian children hospitalized for bronchiolitis described that the presence of cough at follow-up (at 3 weeks post-discharge) was significantly associated

with future identification of radiological bronchiectasis (OR, 3 [95% CI, 1.1-7]; $P = .03$).¹⁴ However, these data cannot be applied to the general mainstream population, given the narrow population profile.

In our previous systematic reviews on the etiology¹¹ and the use of pediatric-specific cough pathways when managing children with chronic cough,¹⁵ none of the various cohorts mentioned whether the chronic cough was related to bronchiolitis. However, given the young median age in some cohorts, it is possible (although remains unknown) how many of these cohorts included children with recent bronchiolitis. Given the burden of chronic cough including the negative effect on quality of life,⁶ until more data specific to chronic cough post-acute bronchiolitis become available, we suggest that these children are managed in accordance with current CHEST pediatric cough guidelines.^{11,15,16} Of the total of 23 recommendations/suggestions from these guidelines, the ones most likely applicable are the recommendations to evaluate for the presence of cough pointers and the use of 2 weeks of antibiotics targeted to common respiratory bacteria (*Streptococcus pneumoniae*, *Haemophilus influenzae*, *Moraxella catarrhalis*) and local antibiotic sensitivities managing in children with wet or productive cough unrelated to an underlying disease and without any specific cough pointers (eg, coughing with feeding, digital clubbing).^{15,16}

No relevant papers were identified for KQ2 or KQ3. Post-publication of the American Academy of Pediatrics² and Scottish Intercollegiate Guidelines