

Australasian Bronchiolitis Guideline Consultation Feedback & Response

Who From	Section	Comments	Response
Paediatric Respiratory Physician	Purpose/Aim	0-12 months seem young and many of the referenced studies enrolled patients older than that and/or exclude neonates. Why not 6 weeks to 18/24 months? I think they will be utilised beyond the 12 month age range	It was a deliberate choice to aim the guideline at management of infants aged 0-12 months as in the Australasian setting, infants aged greater than 12 months are not routinely regarded as bronchiolitis. This has been justified in the Methodology section and the Purpose and Aim; however application of these guidelines for children over 12 months may be relevant.
Paediatric Respiratory Physician	Diagnosis /Features Page 4	Definitions are not the same (page 8 requires fever, page 4 does not).	The Guideline Committee agree and changes have been made to address this. All definitions have been aligned and include fever.
Paediatrician	Diagnosis	<p>No mention is given to possible important differential diagnoses. A wise Paediatrician once told me that anyone can diagnose bronchiolitis our job is to pick the baby with heart failure, bacterial pneumonia, or inhaled foreign body.</p> <p>Like many guidelines this guideline is written from the position of having diagnosed bronchiolitis. Does there need to be any acknowledgement that some of these infants will present with fevers/apnoea etc. and therefore get a full septic work up, antibiotics etc. before they manifest the signs of bronchiolitis?</p>	While we appreciate the diagnostic dilemma and that people may want to include extensive information on differential diagnosis we determined it was outside of the scope of the guideline process. Our aim was to provide a guideline for management of bronchiolitis once the diagnosis had been made.

Paediatric Emergency Physician	Features Page 4	Delete “some of” and insert “one or more of”	The Guideline Committee agree and changes have been made to address this.
Paediatric Respiratory Physician	Diagnosis /Features Page 4	The term “some” applying to the list that follows this stem implies bronchiolitis can be diagnosed without crackles or wheeze, or without tachypnoea, or without retractions. Consistency: cough and fever are not mentioned, yet are mentioned in first box page 8. Features Bronchiolitis typically begins with an acute upper respiratory tract infection followed by onset of respiratory distress with cough, and some of	The Guideline Committee agree and wording throughout the guideline has been changed to: Viral bronchiolitis typically begins with an acute upper respiratory tract infection followed by onset of respiratory distress and fever and one or more of...
Paediatric Respiratory Physician	Diagnosis Page 4	Definitions will include all bronchopneumonia, some lobar pneumonia and possibly some heart failure. Most study definitions require wheeze or at least hyperinflation I think consistent with bronchiolitis have a significant small airways component.	Our guideline definition is consistent with all international guidelines and the best evidence available. Most of these diseases do not have an URTI.
Paediatric Respiratory Physician	Diagnosis /Features Page 4	There is no guidance on how to differentiate pneumonia from bronchiolitis. Viral bronchopneumonia may not matter. New-borns with pneumonia, infant with staph pneumonia, etc. – would matter. Guidance at both presentation and along the way would seem appropriate.	The aim of the guideline is to provide guidance on management of bronchiolitis, not how to make the diagnosis.

Nursing College	Diagnosis /Features Page 4	<p>Page 4 in the Features section and Page 8 in Diagnosis 1. Section - the words "...and some of:" are used prior to a list of further symptoms and wondered if this was grammatically correct. ?</p> <p>"Further possible features include:" would read better, or something similar.</p>	The Guideline Committee agree and changes have been made to ensure consistency.
Paediatric Emergency Physician	Risk Factors Page 4	Age at presentation < 10 weeks – is this corrected or uncorrected??	Any reference to age throughout the guideline now is referred to as chronological age.
Paediatrician	Risk Factors Page 4	<p>While the list of risk factors looks good, there is concern in our department that if the RMOs admitted every baby with in-utero smoke exposure, breast fed less than 2 months and Maori or pacific island ethnicity we would quickly run out of beds.</p> <p>What we currently do is consider admitting <37 week gestation infants and <10 week old infants even if only mild symptoms and for any child not requiring admission ensure there is a clear plan for how the family will seek medical help if the child's condition deteriorates, and what symptoms and signs would indicate deterioration.</p>	The guideline states “consider “when assessing an infant and does not necessarily refer to or mandate admission. There is lack of evidence that demonstrates that one risk factor is more important than the other and so wording has been changed within the guideline to specify postnatal exposure to cigarette smoke.
Paediatric Respiratory Physician	Risk Factors Page 4	<p>Consistency of wording: Risk factors page 4 says less, page 8 says fewer as in breast feeding for fewer than two months;</p>	The Guideline Committee agree and the wording has been corrected to ensure consistency of risk factors and ethnicity. There was a lack of information to the contrary concerning chronic heart and neurological conditions, however members of the Guideline Committee thought these should be included in

		<p>Risk Factors Page 4 says Aboriginal, Torres Strait Islander, Maori or Pacific Island ethnicity, page 8 says being an indigenous infant, Don't leave out Pacifica infants! I think that the ethnicity groups should be either at the beginning or the end of the list.</p> <p>Risk factors Page 4 change chronic lung disease to any chronic lung disease</p> <p>Risk factors Page 4 also has congenital heart disease and chronic neurological conditions. I suggest they should be collapsed into chronic heart or neurological disease (this will then include e.g. cardiomyopathies, otherwise excluded), and then add this to the relevant box on page 8</p> <p>Risk factors Page 4 change infants with these risk factors to infants with any of these risk factors</p>	<p>the recommendation.</p>
<p>Paediatric Respiratory Physician</p>	<p>Risk Factors Page 4</p>	<p>Described as a guideline for both ED and General Paediatrics. Provides risk factors for severity/admission but I think there needs to be more on Identifying and intervening on risk factors. If there is smoking, poor housing, etc. then intervention ought to be offered to improve recovery, reduce risk of recurrence and reduce risk to other</p>	<p>This is outside the scope of the guideline.</p>

		<p>family members.</p> <p>There ought to be guidance on the repeat presenters / never fully recover patients. This guideline will cover many infants presenting to hospital with lower respiratory tract infections and certainly in NZ (judging from recent healthy lungs study in South Auckland) a surprisingly large percentage will have persistent symptoms, radiology and bronchiectasis downstream. Some will have underlying CF, immunodeficiency, chronic aspiration, congenital malformation, heart disease or an inhaled foreign body. Suggest it needs some guidance about when to investigate further and when to arrange follow up</p>	<p>This guideline has been developed to provide an evidence based clinical framework for the management of infants (0 -12 months) with bronchiolitis treated in Australasian emergency departments (EDs) or general paediatric wards. The guideline is aimed at acute management and as such, the management of repeat presenters, interventions for risk factors is outside of the scope of the guideline.</p>
Paediatric Emergency Physician	Initial Assessment Table Page 4	Oxygen saturations – are the numbers provided for saturations done in room air?	The Guideline Committee agree and it has been included in the tables that baseline saturations are measured in room air.
Paediatrician	Initial Assessment Table Page 4	We wondered if 'in ED' was necessary when talking about assessment and observation in the Likelihood of admission and Observation sections of the table. As many hospitals have different set ups for where paediatric patients are assessed and observed.	The Guideline Committee agree and the reference to ED has been removed from the table.
Paediatric Respiratory Physician	Initial Assessment Table Page 4	I can't see any guidance on how to use this. Does one feature make it moderate or severe or do you need them all?	This table is meant to provide guidance in order to stratify severity. The more symptoms the infant has in the mod-severe categories, the more likely they are to develop severe disease. An explanation for use of the table has been included.

Paediatric Respiratory Physician	Initial Assessment Table Page 4	Moderate apnoea – “May have brief apnoea’s” I have always regarded ANY apnoea’s as severe	This table is meant to provide guidance in order to stratify severity. The Guideline Committee believe no additional changes to the table are required in regard to apnoea.
Paediatric Respiratory Physician	Initial Assessment Table Page 4	SpO2 targets seem unrealistically precise (90-92% make it moderate) though perhaps this row will just split into mild/severe.	This table is meant to provide guidance in order to stratify severity.
Nursing College	Page 4 Initial Assessment	There is some mild concern in that children with oxygen saturations of 93% would be classed as “Mild”. The concern is that this seems quite low and may lead clinicians into a false sense of security.	The existing evidence (and indeed evidence available since this guideline was written) supports our SpO2 cut-offs
Nursing College	Initial Assessment table Page 4	1) Education; “the initial assessment grid which does not include colour assessment (cyanosis) or assessment of wheeze (which would require the assessor to use a stethoscope) and I fear that junior staff will over value the use of the oximeter rather than use their assessment skills”.	Everything that has been included is evidenced based. There is no evidence that supports the presence of colour change and grunting is indicative of the diagnosis of bronchiolitis. In the Australasian setting, the use of oximetry is an acceptable expectation for practise. We include wheeze as a diagnostic criteria but not as a management guiding sign consistent with the evidence available.
Professional/ Government Body	Initial Management Table Page 5	While EWT are mentioned there should be more explicit language around escalation. <i>Suggested amendment:</i> Inclusion of a section “Escalation” separate to “Disposition” and in moderate & severe note the engagement of paediatricians/senior clinician/paediatric NP/CNC – particularly when there is no or poor response to treatment. Could relocate dot points “Severity does not improve; Persistent	Disposition and escalation considerations have been reviewed and included in the Initial Management Table.

		desaturations; significant or recurrent apnoea's associated with desaturations into new "Escalation" section	
Paediatric Emergency Physician	Initial Management Table Page 5	Also HFNC and hypertonic saline are both "consider" for moderate and severe disease, however hypertonic saline doesn't make it into the table.	<p>Evidence for HFNC was reviewed and despite widespread use still has only a mild/moderate evidence base. The Guideline Development Committee is aware of one large RCT that is nearing completion which will provide further information in 2017.</p> <p>Following feedback, the evidence surrounding hypertonic saline was further reviewed after consultation. A number of additional systematic reviews had subsequently been published and presented at international meetings. While these systematic reviews did not include new studies, they explored the data in more detail and have allowed greater understanding of the heterogeneity. Importantly, removal of two studies with overall length of stay considerably longer than current clinical practice in Australia and New Zealand, and with a primary outcome definition considerably different than that used in Australia and New Zealand for discharge (no respiratory signs or symptoms for 12 hours), partially explains the heterogeneity and results in a pooled estimate suggesting no effect. Furthermore, analysis restricted to the four largest trials, all at lower risk of bias, again suggests no benefit. A number of studies included in the meta-analysis also appear to be unbalanced with regards to duration of illness prior to treatment in the hypertonic saline arms.</p>
Nursing College	Initial Management: Oxygen saturation/oxygen requirement MODERATE	Consider HFNC if hypoxic with recessions. Is HFNC the recognised term? Some clinical areas currently use the acronym HFNP (High flow nasal prong) rather than High flow nasal cannula – clarity of the	There are multiple acronyms for this therapy - for consistency we have elected to use HFNC and have defined this in the guideline.

	Page 5	acronym would be helpful.	
Paediatric Respiratory Physician	Initial Management Table Page 5	Likelihood of admission Moderate – change physician to paediatrician	Depending on the location, a paediatrician is not always available; therefore no change has been made.
Nursing College	Page 5 Initial Management Feeding Hydration - Moderate	Refers to non-oral hydration – recommendations of the method of non-oral hydration i.e. Nasogastric or intravenous hydrations, may be helpful	The Guideline Committee agree and “non oral hydration” has been changed to reflect IV or NG hydration.
Paediatric Respiratory Physician	Initial Management Table Page 5	Suggested change of wording – Disposition: Consider further medical review if early in the illness and risk factors are present or if child develops increasing severity after discharge.	The Guideline Committee agree and the wording has been changed to: <i>Consider further medical review if early in the illness and any risk factors are present.</i>
Professional/ Government Body	Initial Management Table Page 5	There is little practical guidance regarding the use of Humidified High Flow Gases, despite increasing reports of benefit	Evidence for HFNC was reviewed and despite widespread use still has only a mild/moderate evidence base. The Guideline Development Committee is aware of one large RCT that is nearing completion which will provide further information in 2017.
Paediatric Emergency Physician	Initial Management Table and management - O2 Therapy Page 4 & 6	I am not sure that HFNC fits under Oxygen therapy – should this be a separate setting as the key idea is to admin HFNC without oxygen	The Guideline Committee agree and respiratory support has been added as a separate section within the Initial Management table.
Paediatric Respiratory Physician	Investigations Page 6	CXR not recommended based on no benefit for “typical bronchiolitis” but I don’t think there is any guidance	The Guideline Committee agree and the wording has been changed to: Chest X-Ray is not routinely indicated in infants presenting with

		provided on what constitutes “atypical bronchiolitis” at presentation or progress e.g. toxic appearance, absence of wheeze/hyperinflation, persistent spiking fevers, dullness on percussion, very young infant, etc.	bronchiolitis and may lead to unnecessary treatment with antibiotics with subsequent risk of adverse events
Nursing College	Investigations Page 6	Possible additional wording required. "May be considered if (there is) a temperature over 38 degrees in an infant less than two months of age."	The Guideline Committee agree and the wording has been changed to: Urine microscopy and culture may be considered to identify urinary tract infection if a temperature over 38 degrees Celsius in an infant less than two months of age with bronchiolitis.
Paediatrician	Investigations Page 6	Our local Paediatric Respiratory specialist noted that he finds virological testing helpful in severely unwell infants both to explain why they have been affected so severely and to consider future complications, he cited some severe cases of adenovirus responsible for both deaths and bronchiectasis. In these very unwell infants an NPS can also be helpful by adding a little more information when making decisions around starting and stopping antibiotics. As these decisions are made at a consultant level for individual patients they may be outside the scope of this guideline.	The Guideline Committee agree. As these patients are likely to be severe and admitted to ICU, virology testing may be appropriate. This is therefore outside of the scope of this guideline.
Medical College	Investigations Page 6	Urine microscopy and culture – Our college supports the recommendation relating to urine microscopy and culture for infants presenting to hospital and/or hospitalised with bronchiolitis, who have a temperature of over 38 degrees and are less than two months of age. Whilst the	The Guideline Committee agree and changes to the Guideline have been made to reflect this. Wording now states: Urine microscopy and culture -May be considered to identify urinary tract infection if a temperature over 38 degrees Celsius in an infant less than two months of age with bronchiolitis.

		clinical recommendations state that physicians can consider collecting a urine sample for microscopy if there is clinical uncertainty regarding the presence of a urinary tract infection (UTI), our college considers that this recommendation should also be included in the investigations section of the Guideline.	
Paediatric Respiratory Physician	Investigations Page 6	Suggested change of wording – Urine: May be considered to identify urinary tract infection if a temperature over 38 degrees in an infant less than two months of age	The Guideline Committee agree and the wording has been changed to: Urine - May be considered to identify urinary tract infection if a temperature over 38 degrees in an infant less than two months of age with bronchiolitis.
Knowledge Translation Consultant	Management Page 6	Do you want to include the recommendation regarding not using a scoring system?	The Guideline Development Committee considered this and although there is insufficient evidence to currently recommend a scoring system at this stage have elected to not state “do not use” in the practical “bedside” section of the guideline. The evidence surrounding the use of scoring systems is available for developers of local guidelines in the evidence tables to PICOT question 6.
Medical College	Management: Oxygen therapy Page 6	In order to clarify the first recommendation relating to oxygen therapy, and ensure that it is easily understood by those using the Guidelines, our college suggests the following change: <i>Oxygen therapy: Should be instituted when oxygen saturations are persistently less than 92%.</i>	The Guideline Committee agree and the word “sustained” has been removed.

Knowledge Translation Consultant	Management: Oxygen therapy Page 6	Do you want to include a statement that it should be discontinued when above 92%?	The Guideline Committee agree and the following statement has been included: Oxygen should be discontinued when oxygen saturations are persistently equal to or greater than 92%.
Paediatric Emergency Physician	Management: Oxygen therapy Page 6	“Persistently sustained”- to me this means the same??	The Guideline Committee agree and changes have been made to address this.
Paediatric Emergency Physician	Management: Oxygen therapy Page 6	I am not sure that HFNC fits under Oxygen therapy – should this be a separate setting as the key idea is to admin HFNC without oxygen	The Guideline Committee agree and a heading for Respiratory Support has been included and HFNC has been included under this.
Professional/ Government Body	Management – Monitoring Page 6 and Clinical Recommendations - Management Number 13, Page 9	<p>Concern exists regarding “Continuous oximetry should not be routinely used to dictate medical management unless disease is severe”.</p> <p>While it may not be necessary and clinical assessment should suffice in moderate cases, ongoing continuous monitoring to detect early deterioration is imperative as nurses are not at the bedside all the time.</p> <p>Not monitoring oxygen saturations poses a risk of failing to recognise deterioration e.g. apnoea’s and decreasing oxygen saturations. If they are sick enough to be receiving oxygen in an acute presentation, monitoring their respiratory status with continuous oximetry is vital. This again will assist in early escalation if there is deterioration.</p>	<p>Evidence does not support the use of continuous oximetry – our statements included within the guideline are consistent with the NICE and AAP Guidelines and does not replace clinical assessment.</p> <p>Continuous oximetry should not be routinely used to dictate medical management unless disease is severe.</p>

		Suggest "Continuous oximetry should be used in moderate and severe disease to monitor for deterioration e.g. apnoea's and desaturations." +/- "However it should not dictate medical management unless disease is severe."	
Knowledge Translation Consultant	Management: Hydration/Nutrition Page 6	Do you need the recommendation 'Supplementary hydration is recommended for infants who cannot maintain hydration orally' and then that either methods are acceptable?	No change required – This information is already contained within the table.
Knowledge Translation Consultant	Management: Medication Page 6	Do you want to mention those with a positive response to beta 2 agonists?	The Guideline Committee agree that this is not required.
Paediatric Emergency Physician	Management: Medication Page 6	<p>Beta 2 agonists - What about if the child is 11.5 months of age with URTI symptoms and wheeze? When is a "trial of bronchodilators" reasonable? Is there a group of kids (say with recurrent wheezing episodes and aged over 10 months) where a trial can be "considered?"</p> <p>Hypertonic Saline - Who do I "consider it" in? Everybody? Mild disease? Moderate disease?</p> <p>Some recommendation on who to consider it in would be useful.</p>	<p>The evidence doesn't support the use of bronchodilators in this even in this subgroup of patients and hence we have elected to have a definitive statement on this therapy</p> <p>Following feedback the evidence surrounding hypertonic saline was further reviewed after consultation. A number of additional systematic reviews had subsequently been published and presented at international meetings. While these systematic reviews did not include new studies, they explored the data in more detail and have allowed greater understanding of the heterogeneity. Importantly, removal of two studies with overall length of stay considerably longer than current clinical practice in Australia and New Zealand, and with a primary outcome definition considerably different than that used in Australia and New Zealand for discharge (no respiratory signs or symptoms for 12 hours), partially explains the heterogeneity and results in a pooled estimate suggesting no effect. Furthermore, analysis restricted to the four largest trials, all at lower risk of bias, again suggests no benefit. A number of studies included in the meta-</p>

			analysis also appear to be unbalanced with regards to duration of illness prior to treatment in the hypertonic saline arms.
Paediatric Emergency Physician	Management: Medication Page 6	<p>The comment that azithromycin hasn't been studied for indigenous Australian kids with bronchiolitis at risk of non-CF bronchiectasis haven't been studied seems incorrect/out-of-date. Please refer to: http://journal.frontiersin.org/article/10.3389/fped.2015.00032/full</p> <p>Also - I'm not sure why the qualifier about antibiotics not being indicated for 'uncomplicated' bronchiolitis. Are antibiotics indicated for 'complicated' bronchiolitis?? I would have thought antibiotics are indicated for bacterial pneumonia.</p>	<p>This was a negative study and supports the conclusion of the guideline. This reference has been added to the guideline and changes made accordingly.</p> <p>The Guideline Committee agree and the word “uncomplicated” has been removed.</p>
Medical College	Management: Medication Page 6	<p>Our college also suggests the following addition to the adrenaline recommendation: Adrenaline – do not administer adrenaline (nebulised, IM or IV) except as part of the Paediatric Advanced Life Support (ALS) Guideline 12.4.1 1 The Australian Resuscitation Council and the New Zealand Resuscitation Council, Guideline 12.4 – Medications and Fluids in Paediatric Advanced Life Support, 2016. Whilst cardiac arrest in bronchiolitis is rare, our college considers that, if cardiac arrest does occur, physicians should</p>	<p>The Guideline Committee agree and the following statement has been included under the Medications heading: “Adrenaline – do not administer adrenaline (nebulised, IM or IV) except in a peri arrest or arrest situation”.</p>

		follow the Australian Resuscitation Council (ARC) and New Zealand Resuscitation Council Paediatric ALS Guideline 12.4 and administer adrenaline if necessary.	
Paediatric Emergency Physician	Management: Nasal Clearance Page 6	Superficial nasal suction can be considered in who?	The Guideline Committee agree and the following wording has been included: Nasal suction is not routinely recommended. Superficial nasal suction may be considered in those with moderate disease. Nasal saline drops may be considered at time of feeding.
Nursing College	Management: Hydration/Nutrition Page 6	Hospital; "I would err on the side of restricting total IV fluid to about 60-70% of usual "maintenance" requirements. The fact that there is grade A evidence against bronchodilator therapy in infants with bronchiolitis may be of interest to our American colleagues in the ED? (Paediatrician) I have previously restricted feeds (NG) to 80% and IVT to 70% "maintenance" initially but some children get very hungry on this. (Paed Reg)"	The following statement has been included in the Guideline and has been made on the basis of evidence available. "The ideal volume of IV or NG fluids required to maintain hydration remains unknown; between 60% to 100% of maintenance fluid is an appropriate volume to initiate"
Medical College	Management: Feeding/Hydration Page 6	Our college notes that, in the 'management' description of hydration/nutrition, intravenous (IV) or nasogastric (NG) hydration is recommended when non-oral hydration is required. In order to maintain consistency and avoid ambiguity, our college suggests that under the 'initial management' description of	The Guideline Committee agree and the guideline now states: IV and NG fluids" and the wording "non oral" have been deleted.

		feeding/hydration, the terms IV or NG are also utilised.	
Paediatrician	Management: Feeding/Hydration Page 6	Many of us thought 'non oral hydration' was a slightly confusing phrase, which is then explained later on. Is IV/NG fluids too clunky?	The Guideline Committee agree and the guideline now states: IV and NG fluids" and the wording "non oral" have been deleted.
Paediatric Emergency Physician	Management: Hydration/Nutrition Page 6	If IV fluid is used it should be 0.9% Normal Saline - this is fine for older infants but in a 1 month old I am not sure there is enough evidence in 21C evidence (or elsewhere) to support this?	The evidence does not extend to Infants less than one month of age, and fluids should comply with local guidelines.
Paediatric Emergency Physician	Management: Hydration/Nutrition Page 6	"0.9% normal saline" usually expressed as "0.9% sodium chloride", ""dextrose" usually as "glucose"	The Guideline Committee agree and changes have been made to address this.
Paediatric Respiratory Physician	Management: Medication Page 6	Interesting choices about what is/isn't recommended. Hypertonic saline recommended. I'm not sure this is justified especially if you restrict to studies not utilising concurrent bronchodilators and age under a year but will have to take another look. Trial of bronchodilator may be appropriate I think for some especially beyond 9-12 months	Following feedback the evidence surrounding hypertonic saline was further reviewed after consultation. A number of additional systematic reviews had subsequently been published and presented at international meetings. While these systematic reviews did not include new studies, they explored the data in more detail and have allowed greater understanding of the heterogeneity. Importantly, removal of two studies with overall length of stay considerably longer than current clinical practice in Australia and New Zealand, and with a primary outcome definition considerably different than that used in Australia and New Zealand for discharge (no respiratory signs or symptoms for 12 hours), partially explains the heterogeneity and results in a pooled estimate suggesting no effect. Furthermore, analysis restricted to the four largest trials, all at lower risk of bias, again suggests no benefit. A number of studies included in the meta-analysis also appear to be unbalanced with regards to duration of illness prior to treatment in the hypertonic saline arms.

Paediatrician	Management: Medication Page 6	There were various thoughts about the statement Beta 2 agonists - 'Do not administer' while this may be true for definite bronchiolitis we have had the occasional child presenting with very early onset reactive airways disease and rarely Beta agonists turn out to be a significant part of their management.	There is no evidence to support the use of Beta 2 agonists.
Paediatrician, Professional/ Government Body	Management: Medication Page 6	I've just had a quick look at the PREDICT bronchiolitis draft guideline. It looks very good. Only comment is that hypertonic saline is still in as "to be considered". The latest RCT published in Pediatrics showed no efficacy and it sounds as if the more trials that are done, the more are showing lack of efficacy	Following feedback the evidence surrounding hypertonic saline was further reviewed after consultation. A number of additional systematic reviews had subsequently been published and presented at international meetings. While these systematic reviews did not include new studies, they explored the data in more detail and have allowed greater understanding of the heterogeneity. Importantly, removal of two studies with overall length of stay considerably longer than current clinical practice in Australia and New Zealand, and with a primary outcome definition considerably different than that used in Australia and New Zealand for discharge (no respiratory signs or symptoms for 12 hours), partially explains the heterogeneity and results in a pooled estimate suggesting no effect. Furthermore, analysis restricted to the four largest trials, all at lower risk of bias, again suggests no benefit. A number of studies included in the meta-analysis also appear to be unbalanced with regards to duration of illness prior to treatment in the hypertonic saline arms.
Paediatric Respiratory Physician	Management: Medication Page 6	Mention azithromycin here too, as it pops up in the clinical recommendations boxes	The Guideline Committee agree and this has been corrected and azithromycin has been included in all sections.
Nursing College	Management: Medication Page 6	Antibiotics: are still heavily prescribed by general practitioners. Are recommendations concerning their use being included in the guidelines?	The use of antibiotics for infants with Bronchiolitis has been addressed within the guideline.

<p>Paediatric Emergency Physician</p>	<p>Management: Medication Page 6</p>	<p>I would like some recommendation on a safe dose for hypertonic saline</p>	<p>Following feedback the evidence surrounding hypertonic saline was further reviewed after consultation. A number of additional systematic reviews had subsequently been published and presented at international meetings. While these systematic reviews did not include new studies, they explored the data in more detail and have allowed greater understanding of the heterogeneity. Importantly, removal of two studies with overall length of stay considerably longer than current clinical practice in Australia and New Zealand, and with a primary outcome definition considerably different than that used in Australia and New Zealand for discharge (no respiratory signs or symptoms for 12 hours), partially explains the heterogeneity and results in a pooled estimate suggesting no effect. Furthermore, analysis restricted to the four largest trials, all at lower risk of bias, again suggests no benefit. A number of studies included in the meta-analysis also appear to be unbalanced with regards to duration of illness prior to treatment in the hypertonic saline arms.</p>
<p>Paediatric Respiratory Physician</p>	<p>Discharge planning and community- based management Page 7</p>	<p>Discharge on home O2. Just a note that this would be “short term community oxygen therapy” so this could be set up but would be a completely different funding/provision than the existing community oxygen services which are for ~long term indications (MOH/PBS).</p>	<p>The Guideline Committee agree and the following statement has been added: Discharge on short term home oxygen can be considered after a period of observation as per, if appropriate, community short term oxygen therapy is available.</p>
<p>Professional/ Government Body</p>	<p>Discharge planning and community- based management Page 7</p>	<p>Referral to “community nursing services” is open to interpretation. In our state a “community nurse” generally would not have acute care skills to be able to expertly review a sick infant and make a clinical decision on continuing care i.e. home or admit.</p>	<p>The Guideline Committee agree and the reference to Community nursing services has been removed and the following statement included: Follow up and Review as per local practise.</p>

		Suggest inclusion of “community based clinicians” with the necessary acute care paediatric skills e.g. Paediatric NP/CNC or General Practitioner.	
Professional/ Government Body	Discharge planning and community-based management Page 7 AND Recommendation 19, Page 10	Discharging on home oxygen for acute illness is such an unusual concept, fraught with so many difficulties and medico-legal vulnerability. Suggest discharging on home oxygen is removed lest it be encouraged.	The Guideline Committee agree and changes have been made to address this.
Nursing College	Discharge planning and community-based management Page 7	Please clarify the recommendations for the use of home oxygen. This takes a lot of organizing and would be impossible to organise out of hours. Is this recommendation for infants who are already having this treatment option?	The Guideline Committee agree and changes have been made to address this.
Paediatric Respiratory Physician	Discharge planning and community-based management Page 7	Need some guidance on: what to do with recurrent episodes of acute bronchiolitis, when to suspect other diseases like bronchiectasis or CF when to investigate further when to arrange medical follow up In NZ especially when to deal with environmental factors like substandard housing I don’t agree with discharge on home O2 for our state.	The guideline addresses management of simple bronchiolitis. Management for other diagnosis is outside the scope of the guideline. Wording around home O2 is detailed to say that it should only be used if available, with appropriate community support. We realise that not all health services will offer it.

Medical College	Discharge planning and community-based management Page 7	Our college notes that it is rare that infants who have been treated for bronchiolitis will be referred to community nursing. Our college therefore suggests that the recommendation relating to discharge planning and community based management is removed, in order to avoid confusion if this is not the preferred or recommended practice of the physician	The Guideline Committee agree and changes have been made to address this.
Paediatric Respiratory Physician	Education (Parents/Caregivers) Page 7	<p>Add a first bullet point: Assess the health literacy pertinent to bronchiolitis</p> <p>Second bullet point suggested change of wording: <i>From</i> - Parents should be sent home with information about the illness, the expected progression <i>To</i> - Parents should be educated about the illness, and sent home with information about the illness, the expected progression.</p>	<p>The Education section has been revised and the following statements included:</p> <p>Parents should be educated about the illness, and the expected progression and when and where to seek further medical care.</p> <p>A bronchiolitis Parent Information Sheet should be provided.</p>
Nursing College	Education (Parents/Caregivers) Page 7	Is it worth suggesting children breathe better in an upright position to sleep, rather than lying flat? This reinforces the concept of position of comfort.	This area is outside the scope of the guideline. The Parent Information Sheet will include information which would advise parents when to return for reassessment.
Medical College	Education (Parents/Caregivers) Page 7	The Education (parent/care-giver) section on page 7 advocates for the provision of information through disseminating a	A Parent Information Sheet will be developed and disseminated shortly after the Guideline.

		<p>bronchiolitis Parent Information Sheet. However, a Parent Information Sheet is not provided in the Guideline.</p> <p>Our college suggests that such a sheet would be a useful inclusion. The development of an information sheet, to be included in the draft Guideline, would ensure consistency in the provision of parent education regarding Bronchiolitis, in particular “the expected progression [of the illness] and when and where to seek further medical care.”</p>	
Nursing College	Community Page 7	<p>While not directly related to the guidelines, community nurses suggest that there is notification to well child providers of hospital admission and routine discharge plan. “Well Child services would then follow up with a home visit and provide smoking cessation, family support, home hygiene, including home ventilation, hand washing, care of the infant in relation to clothing, feeding etc., timely immunisations. In other words support and health promotion to optimize child health outcomes and reduce hospital readmissions”.</p>	<p>Health promotion is outside the scope of the Guideline, and a local issue in regard to local service provision.</p>
Nursing College	Safety Initiatives	<p>Use simple infection control practices such as hand washing. The interpretation of the guideline is that droplet precautions are not necessary in all bronchiolitis patients. If this is the case,</p>	<p>The evidence searched for infection control practises. We looked at individual approaches to support any one particular mode in infection control to making a difference in patient outcomes. Droplet precautions were not identified from the search as having evidence to support their use. The Guideline</p>

		our college would request clarification of this to avoid any misinterpretation.	Committee have elected not to change the wording in the practical “bedside” section of the guideline. The evidence surrounding the use of infection control practices is available for developers of local guidelines in the evidence tables to PICOT question 22.
Paediatric Emergency Physician	Clinical Recommendations – Diagnosis Number 1, Page 8	If they don't have fever, they don't have bronchiolitis???	The Guideline Committee agree and changes have been made to address this.
Paediatric Emergency Physician	Clinical Recommendations – Diagnosis Number 2, Page 8	Corrected age??? Should “being and indigenous infant...” be a new sentence?	The Guideline Committee agree and changes have been made to address this.
Paediatric Emergency Physician	Clinical Recommendations – Diagnosis Number 2, Page 8	Neurological conditions omitted from clinical recommendations diagnosis paragraph	The Guideline Committee agree and changes have been made to address this.
Paediatric Respiratory Physician	Clinical Recommendations – Diagnosis Number 3, Page 8	CXR not recommended based on no benefit for “typical bronchiolitis” but I don’t think there is any guidance provided on what constitutes “atypical bronchiolitis” at presentation or progress e.g. toxic appearance, absence of wheeze/hyperinflation, persistent spiking fevers, dullness on percussion, very young infant, etc.	The guideline addressed the management of simple or typical Bronchiolitis. The clinician should use clinical assessment in decision making for the management of atypical bronchiolitis.
Paediatric Emergency Physician	Clinical Recommendations – Diagnosis Number 4, Page 8	What about a venous / capillary gas in severe illness?	Severe illness is outside the scope of the guideline. If a child is deteriorating, venous/capillary gas would be appropriate on clinical assessment. However there is a lack of evidence that venous or capillary blood gas results are effective in determining clinical outcome (or severe disease)

Medical College	Clinical Recommendations – Diagnosis Number 5, Page 8	Our college notes that recommendation 5 of the Diagnosis - Clinical Recommendations, does not recommend routine use of diagnostic virology. Whilst this may not alter the clinical management of the disease, from a public health perspective, diagnostic virology is valuable in the identification of the extent of Bronchiolitis cases in the community. Epidemiological monitoring is an important tool to collate population health data to track disease outbreaks and changes in disease prevalence, with the aim to provide information to the community regarding disease awareness and prevention. A website to consider including is: https://surv.esr.cri.nz/PDF_surveillance/Virology/VirAnnRpt/VirAnn2014.pdf	Epidemiological monitoring of local viruses is important; however viral testing for this should be done for the purpose of epidemiologic management rather than individual bronchiolitis management.
Paediatric Emergency Physician	Clinical Recommendations – Management Page 9	I am wondering about the order of things in the management part of the Clinical recommendations section – should we order this by escalating treatments – it’s a bit mixed up with physio after HFNC then CPAP, then artis...(I know would then also have to reorder the evidence summaries and the NHMRC ?grade summaries...)	We recognise that the order of the guideline is arbitrary however the formatting presented is of similar formatting to how other international guidelines are presented.
Paediatric Respiratory Physician	Clinical Recommendations - Management Number 7, Page 9	Box 7: This sentence does not make sense – too many ideas in one sentence, not adequately qualified, e.g. implies social support is a risk factor, whereas	The Guideline Committee agree and changes have been made to address this.

		lack of social support is the risk factor: Oxygen saturations, adequacy of feeding, age (infants younger than eight weeks), and social support should be considered at the time of discharge as a risk for representation.	
Professional/ Government Body	Clinical Recommendations - Management Number 8a, Page 9	Regarding children >6 months with wheeze, there is agreement with the argument it is hard to judge effect, but would not rule out a 'trial' of beta 2 agonists as before.	Our recommendation is consistent with the evidence base and the American Academy of Paediatrics.
Paediatric Respiratory Physician /Emergency Physician	Clinical Recommendations - Management Number 10, Page 9	Consider the new reviews on this topic: Management: inhaled hypertonic saline is not beneficial and should not be recommended in the guidelines	Following feedback the evidence surrounding hypertonic saline was further reviewed after consultation. A number of additional systematic reviews had subsequently been published and presented at international meetings. While these systematic reviews did not include new studies, they explored the data in more detail and have allowed greater understanding of the heterogeneity. Importantly, removal of two studies with overall length of stay considerably longer than current clinical practice in Australia and New Zealand, and with a primary outcome definition considerably different than that used in Australia and New Zealand for discharge (no respiratory signs or symptoms for 12 hours), partially explains the heterogeneity and results in a pooled estimate suggesting no effect. Furthermore, analysis restricted to the four largest trials, all at lower risk of bias, again suggests no benefit. A number of studies included in the meta-analysis also appear to be unbalanced with regards to duration of illness prior to treatment in the hypertonic saline arms.
Paediatric Emergency Physician	Clinical Recommendations - Management Number 10, Page 9	It would be nice to have some guidance as to who to consider this in...	Please see above.

Paediatric Emergency Physician	Clinical Recommendations - Management Number 11b, Page 9	...but we shouldn't have given beta 2 agonists anyway (according to advice provided in 8a and 8b)	The guideline committee agree and as such, the recommendation is reinforcing this.
Professional/ Government Body	Clinical Recommendations - Management Number 12a, Page 9	In section 12a, oximetry of 92 or greater would be an indication to reduce but not necessarily discontinue O2.	The 92% oxygen saturation level is a conservative measure as the evidence base actually now suggests oxygen discontinuation at 90% [potentially is safe. The American Academy of Paediatrics now refers to 90% oxygen saturations for discontinuation of oxygen in their Bronchiolitis guideline.
Knowledge Translation Consultant	Clinical Recommendations - Management Number 16a, Page 9	Include the statement superficial may be used?	The Guideline Committee agree and changes have been made to address this
Paediatric Respiratory Physician	Clinical Recommendations - Management Number 16a, Page 10	16a, add to the sentence but <i>can be considered</i>	The Guideline Committee agree and changes have been made to address this.
Paediatric Respiratory Physician	Clinical Recommendations – Management Number 17, Page 10	17 add the word <i>nasal</i> between <i>intermittent</i> and <i>saline</i>	The Guideline Committee agree and changes have been made to address this.
Professional/ Government Body	Clinical Recommendations – Management Number 21c, Page 10	There are concerns about this subsection; there is a greater danger of dehydration than hyponatraemia, especially if a low limit of 60% maintenance is given as mentioned on page 6 of the document. Page 25 - The reference discusses caution in the use of hypotonic saline and this will be avoided if isotonic normal saline with dextrose is used. This is also mentioned on page 6.	The Guideline Committee agree it is important that these children are not dehydrated. The studies were done in times when hypotonic fluids were used. There are no studies which specifically address the types of fluids and so no evidence which states 100% is better than 60%. The Guideline Committee agree and changes have been made to address this.

		<p>Due to the risk of dehydration in these babies there is concern that mentioning 60% maintenance fluids (as an option) presents a potential risk that further dehydration will be caused.</p> <p>Recommendation should be to give maintenance volumes according to the usual calculations. – “To avoid potential hyponatraemia and dehydration use isotonic fluid (0.9% Normal Saline + Dextrose) at maintenance according to the usual calculations.”</p>	
Medical College	Clinical recommendations – Management Number 22, Page 10	<p>“Hand hygiene is the most effective intervention to reduce hospital acquired infections and is recommended. There is inadequate evidence for benefits in cohorting infants with bronchiolitis.”</p> <p>Our college is concerned that such an assertive recommendation is based upon an evidence base ranked as a level D. Our college strongly suggests that this recommendation is reviewed with consideration of issues relating to bed management and the potential spread of infection in a hospital setting.</p>	Individual decision making made on bed management are outside the scope of this guideline. The guideline does not find evidence to support cohorting and a lack of evidence to support enhanced infection control measures which has been referenced in the guideline. Individual hospitals need to make their own decision in regard to bed management based on local issues.
Paediatric Emergency Physician		Under hydration: if IV fluid is used it should be 0.9% NSaline- this is fine for older infants but in a 1 month old I am not sure there is enough evidence in 21C evidence (or elsewhere) to support this?	The Guideline Committee agree and changes have been made to address this.

Paediatric Clinical Nurse Consultant		Routine use of continuous oximetry is not required for medical management of non-hypoxic (saturation $\geq 92\%$) infants not receiving oxygen, or stable infants receiving oxygen - Wording is different to the wording in the Q13 later on in the document	The Guideline Committee agree and changes have been made to address this.
Professional/ Government Body	Methodology Page 11	The methodology does refer, at the end of para 1, to the existence of state and local guidelines, but these are not referenced in the bibliography nor discussed further	References to local guidelines have been included in the Reference List.
Knowledge Translation Consultant	Methodology Page 11	Paragraph 2 – include date of first Lit search	The Guideline Committee agree and the search date has now been included in the Methodology section.
Paediatrician	Evidence Tables Page 22	“For the important outcome of feeding there is very low quality evidence that maintaining feeding decreases the course of the disease or hospital length of stay” on page 22 was a bit confusing. Perhaps “for the important outcome of feeding there is very low quality evidence that the disease course or hospital length of stay is altered by maintaining feeding”?	The Guideline Committee agree and changes have been made as suggested.
Medical College	Prophylaxis	The use of palivizumab prophylaxis (Synagis) is not referenced in the Guideline. We are aware the American Academy of Paediatrics (AAP) has a conditional recommendation on the use of Synagis and is also licensed in Australia and New Zealand for treating high risk populations, primarily infants presented	The Guideline committee made the decision at the beginning of the development process that this topic would be outside the scope of the guideline – for the management of infants with bronchiolitis treated in the emergency department and ward areas. A paragraph has been included in the methodology section to define this.

		<p>with respiratory syncytial virus (RSV). Our college recommends that the Guideline discuss the conditions at which this drug may be appropriately administered, which has demonstrated to have some effectiveness and is cost effective for treating high risk populations. The American Academy of Paediatrics' Summary of Guidance on the use of palivizumab prophylaxis can be found here: http://pediatrics.aappublications.org/content/134/2/415</p>	
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General Feedback

<p>Medical College</p>		<p>The length of the Guideline is considered to be problematic, if intended as a clinical document.</p> <p>As the clinical recommendations table is useful, it is suggested that this table be presented early in the document, and then followed by the additional information relating to assessment and management. This would allow physicians to access the necessary information more efficiently.</p> <p>In order to further enhance the usability of the Guideline, it is strongly suggested that it is made clearer that the Guideline is targeted for treatment of 0-12 month old patients, by including this in the title.</p>	<p>We have tried to do this in a way that is logical for those using the guideline. We recognise there will be decreasing interest or accessing on line and so will make the guideline available in 4 separate pdfs – guideline, recommendations, evidence tables and complete whole guideline</p> <p>The table of contents will be divided into 3 sections – guideline, clinical recommendations and methodology and evidence tables sections.</p> <p>The guideline development committee do not feel it is appropriate to add the age range to the title; however the age has been noted in the first sentence of the guideline as this does have a huge amount of relevance to the cohort aged older than one year and the cut off for bronchiolitis is unclear.</p>
<p>Nursing College</p>		<p>Overall the Guidelines seem very comprehensive and evidence for the clinical management of symptoms is comprehensive.</p> <p>The Guideline frequently makes reference to “local hospital guidelines”. There is concern that the local hospital guidelines may be of a lower standard than what is proposed. Our college proposes that the Initial Management guideline is stated to be the minimum</p>	<p>We agree that the evidence base behind this is of a high and comprehensive standard. We are aware that local resources dictate management and in order to have safety of care, these guidelines do need to be translated to local requirements.</p>

		standards and exclude the reference to local hospital guidelines.	
Nursing College		<p>I would like to take the opportunity to congratulate you and your team on an excellent document. I took the opportunity to seek opinion from our members throughout Australia and New Zealand.</p> <p>Our college is happy to endorse the document and we have provided some comments for your consideration. It was also a strong recommendation from the reviewers that this document would be an excellent resource for the General Practitioner.</p> <p>Comments on bronchiolitis guidelines:</p> <p>Page 5 – Initial Management Oxygen Saturation/Requirement: Oxygen is often distressing to infants, so removing this as a necessity unless the saturations are <92 is very good.</p> <p>Page 6 – Investigations X-Rays: Many junior residents want X-rays which exposes infants to unnecessary radiation, so this is an important point. Bloods: Again, it is important for inexperienced RMO's to realise this is not a requirement.</p>	

		<p>Page 6 – Management</p> <p>Monitoring: The point about continuous oximetry dictating medical management is excellent. Clinicians should be looking at the infant & that it is WOB that will give a stronger clinical picture, not just their saturations.</p> <p>Hydration: Within non-oral hydration, is there a place for subcutaneous hydration?</p> <p>Medication: Many medical officers still want to use steroids especially in the community, so this is an important point. This also applies to Beta2 agonists. Some medical officers still want to “try & see” if they will work.</p>	<p>The statement included within the guideline is worded strongly to deter this.</p>
Paediatric Emergency Physician	PICOT Questions Page 13	<p>Were “clinically relevant endpoints” defined anywhere? Who decided if they were relevant or not?</p> <p>8a. i) what are “clinically relevant end points?”</p> <p>8a. ii) how was “older” defined?</p>	<p>Clinically relevant end-points were decided following consensus agreement with members of the Guideline Development Committee. Outcomes from previous systematic reviews (including Cochrane), and the widespread clinical expertise of the Guideline Development Committee, was the initial focus of discussions.</p>
Paediatric Emergency Physician	Clinical Recommendations Evidence Summaries Page 19	<p>Question 11b. Positive response to beta 2 agonists – “didn’t you just tell me earlier that beta 2 agonists don’t work?”</p>	<p>Beta agonists may have short term improvement in clinical scores but have no impact on meaningful outcomes for the patient.</p>
Paediatric Emergency Physician	Research Recommendations Page 125	<p>No. 1 – I am interested in what the guideline writers would consider the “gold standard” with which to compare</p>	<p>Agreed establishing a gold standard would be an important part of answering this research question. The Guideline Development Committee are aware of an international Task</p>

		<p>all of these clinical criteria...</p> <p>No. 2 – Relative risk for what? Increased risk of what?</p> <p>No 4. Research on the subpopulations KNOWN to have a high risk of UTI, or research to determine WHICH subpopulations have a high risk for UTI?</p> <p>No. 6 – I’m not sure what this means... What are the “patient centred outcomes” that are important? Have these been defined?</p> <p>No. 10 – Haven’t you done this already???</p>	<p>Force, led by the European Respiratory Society, and including members from Australia and New Zealand, which is addressing this very question. Changes made as suggested.</p> <p>We would expect the current research question to address both.</p> <p>These have not been defined, and would have to be addressed as part of an attempt to answer the research question.</p> <p>This has not been undertaken as it would require individual patient data from the previous completed studies.</p>
Medical College		<p>Our college notes that, whilst the clinical recommendations outlined on pages 8-10 are assertive, the majority of their evidence bases are rated either a C or D. These rankings indicate that they are considered to be either level three studies with a low risk of bias; level one or two studies with a moderate risk of bias; or level one, three or four studies with a high risk of bias. Due to the lower rankings of the studies, our college strongly suggests that the clinical recommendations table include the ranking of the recommendation, using the evidence provided in the evidence summaries.</p> <p>If intended as a clinical document, this</p>	<p>The Guideline Committee agree and changes have been made as suggested: The strength of recommendations has been included in the Clinical recommendations.</p>

		would again allow physicians to more efficiently access the necessary information in order to make an informed judgement regarding patient treatment	
Family Advisory Committee		<p>Recommendation: Communication guidelines for staff about their explanation process is important.</p> <p>Recommendation: GPS need to be included in the local roll out of the guideline for consistent messaging.</p> <p>Recommendation: Develop a pictorial brochure for parents and families that capture the points above.</p> <p>Recommendation: Provision of electronic information also important – e.g. a website where you can listen to the sound of a bronchiolitic cough or visualise key symptoms.</p>	As part of this process we are going to work with local consumer groups to develop a Parent Information sheet for parents.
Paediatrician		In view of recent meta analyses it is hoped the hypertonic saline recommendation is reviewed.	The hypertonic saline recommendations have been reviewed.