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# **Respiratory Health Assessment for Children 0 to 12 Years Procedure**

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## **1. Purpose**

The aim of this procedure is to guide community health staff in the prevention, early detection, referral and monitoring of infants and children 0-12 years presenting with respiratory illness. Community health staff include community health nurses and Aboriginal health staff working in teams and as per their scope of practice.

The respiratory system includes all the parts of the body involved with breathing, including nose, throat, larynx, trachea and lungs. Irritation and infection within the respiratory system results in coughing, a protective reflex mechanism which is both involuntary and voluntary. In healthy children it is normal to cough 10 -11 times per day, but rarely at night.<sup>1</sup>

Upper respiratory tract infections (URTI) are extremely common and a major cause of coughing. They are not usually of concern for healthy children. Pre-school children may have up to six or more acute URITs a year with a cough lasting one to three weeks with each episode. In 90% of children the cough will resolve within this timeframe.<sup>2</sup> The most common cause of an acute cough in children is a viral infection.<sup>2</sup>

Cough is one of the most common reasons for paediatric medical consults worldwide.<sup>3,4,5</sup> A chronic wet cough of more than four weeks duration is a hallmark of the syndrome known as chronic suppurative lung disease (CSLD), including protracted bacterial bronchitis (PBB) and bronchiectasis.<sup>3</sup> PBB was only recognized nationally in 2006 and internationally in 2008.<sup>4</sup>

Bronchiectasis is characterised by chronic 'wet' or productive cough and sputum production, recurrent respiratory infections and high-resolution computed tomography (HRCT) evidence of bronchial dilatation.<sup>1</sup> Globally, children with bronchiectasis experience significant morbidity, and if their disease is untreated, they experience poorer clinical outcomes in later life compared to those with adult-onset bronchiectasis.<sup>4,6</sup>

In Australia, bronchiectasis is most prevalent in Aboriginal populations from remote northern communities.<sup>6</sup> Rates for Aboriginal children from disadvantaged communities in Central Australia are estimated to be 1 in 68 children.<sup>6</sup> Aboriginal Australians with bronchiectasis die approximately twenty years earlier than non-Aboriginal adults.<sup>6</sup> It remains an under-recognised and undertreated condition. However, if diagnosed early and treated optimally, it is potentially reversible in children.<sup>6</sup>

Smoking cigarettes and passive smoking is a significant risk factor for those experiencing respiratory conditions, in particular, for children.<sup>2</sup> Smoking during pregnancy and associated low birth weight are also key risk factors. Respiratory infections are also associated with the presence of mould and mildew and more generic housing and hygiene factors.<sup>1,8</sup>

Key prevention strategies should involve culturally appropriate health education to promote immunisation, good hygiene, good nutrition and prevention of smoking/passive smoking.

Other causation factors to consider are exposure to campfire smoke and environmental air pollutants, overcrowding, poor housing quality and limited access to running water.<sup>1, 8</sup>

## 2. Procedure

Refer to flowchart in [Appendix A](#) for an overview of the procedure.

<p><b>Step 1. Promotion and Prevention</b></p>
<p>At every contact, promote key health education messages.</p> <ul style="list-style-type: none"> <li>• Promote immunisation and provide information about local clinics. Encourage family to eat a healthy diet, including iron-rich foods.</li> <li>• Avoid tobacco smoke, passive smoking, smoking in pregnancy.</li> <li>• Breastfeed exclusively for the first six months and continue to 12 months.</li> <li>• Promote good hygiene:             <ul style="list-style-type: none"> <li>○ Children and adults to wash hands with soap and water before eating, after going to the toilet, after coughing or wiping nose, before going to bed.</li> <li>○ Dispose of soiled tissues appropriately</li> <li>○ Keep clean with regular showers</li> <li>○ Regularly wash clothes, bed linen and towels (dry in the sun)</li> </ul> </li> </ul> <p>Provide positive feedback about what is going well for the family and the health promoting activities or practices they have already adopted.</p> <p>Promote adequate supply of fresh water for drinking, washing and cleaning. If not available in community, refer to local government Environmental Health Officer.</p> <p>Refer for concerns about environmental factors (e.g. power supply, dust control, pest control, waste management, food safety, dog health), with consent from the family. For more information about environmental referrals visit <a href="#">Department of Health website</a></p>
<p><b>Step 2. Identify child at risk of respiratory disease</b></p>
<p>Ask key screening questions of parent/carer:</p> <ul style="list-style-type: none"> <li>• Does your child cough, and if so, how often?</li> <li>• Does your child cough at night?</li> <li>• Is it a dry cough or a wet cough?</li> <li>• Does your child get short of breath when running around or exercising?</li> <li>• Does your child wheeze?</li> <li>• Has your child had a cough for more than 4 weeks?</li> <li>• Has your child been in hospital for breathing problems?</li> <li>• Has your child had any recent choking episodes?</li> </ul> <p>Conduct or refer for a respiratory health assessment if there is any evidence of:</p> <ul style="list-style-type: none"> <li>• Wet (productive) coughing</li> <li>• Hospital admission for respiratory problems</li> <li>• Prolonged or recurrent infections</li> <li>• Coughing at night</li> <li>• Wheezing or coughing when physically active</li> <li>• Any respiratory concerns are raised by parent/carer.</li> </ul>

Step 3. Conduct Respiratory Assessment	Additional Information														
<p>Observe:</p> <ul style="list-style-type: none"> <li>• rate, rhythm, pattern, effort and sounds of respiration (breathing)</li> <li>• if available and within scope of practice, apply an SpO<sub>2</sub> monitor (e.g. R to assess oxygen saturation)</li> <li>• observe for signs of increased work of breathing:                             <ul style="list-style-type: none"> <li>○ accessory and/or intercostal muscle use</li> <li>○ rib recession – lower part or edge of rib cage moves as child breathes in</li> <li>○ tracheal tug – downward pull of trachea and larynx</li> <li>○ nasal flaring.</li> </ul> </li> <li>• breathing rate – Count for full 60 seconds (as per age appropriate PARROT chart)<sup>9</sup></li> </ul> <p><b>Practice Point:</b> Rapid breathing and increased respiratory effort is a significant sign of acute deterioration in an infant/child.</p>	<p>Conduct assessment if within the scope of practice and timely medical assessment is not locally available. Use of a stethoscope is advised when assessing rapid breathing.</p> <p>Parameters for normal breathing rates:</p> <table border="1" data-bbox="810 517 1423 994"> <thead> <tr> <th>Age in years</th> <th>Normal breathing rate (breaths/min)*</th> <th>SpO<sub>2</sub> saturation (if appropriate)</th> </tr> </thead> <tbody> <tr> <td>&lt;1</td> <td>30-40</td> <td rowspan="5">SpO<sub>2</sub> ≥92 percent</td> </tr> <tr> <td>1-2</td> <td>25-35</td> </tr> <tr> <td>2-5</td> <td>25-30</td> </tr> <tr> <td>5-12</td> <td>20-25</td> </tr> <tr> <td>&gt;12</td> <td>12-20</td> </tr> </tbody> </table> <p>*Children with cough and fast breathing probably have a respiratory/chest disease and should be discussed with a GP.<sup>1</sup></p>	Age in years	Normal breathing rate (breaths/min)*	SpO <sub>2</sub> saturation (if appropriate)	<1	30-40	SpO <sub>2</sub> ≥92 percent	1-2	25-35	2-5	25-30	5-12	20-25	>12	12-20
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>12	12-20														
<p>Listen for:</p> <ul style="list-style-type: none"> <li>• Coughing – e.g. Wet or productive</li> <li>• Noisy breathing</li> <li>• Wheeze – usually when breathing out</li> <li>• Stridor – vibration sound when breathing in.</li> </ul>	<p>Any child with a cough, rapid breathing and a fever &gt; 38.5°C likely has pneumonia. Always refer to a GP or paediatrician or Emergency Department.</p> <p>Consider use of flip chart or video clip to help educate parents and carers about causes and treatment of chronic suppurative lung diseases (CSLD) - <a href="#">Telethon Kids Institute - Wet Cough</a></p>														
<p>Check for danger signs requiring referral for urgent medical consultation and/or hospital for any acutely unwell child who is:</p> <ul style="list-style-type: none"> <li>• chest in-drawing</li> <li>• uninterested in what is happening, drowsy (lethargic)</li> <li>• not able to eat or feed. If breastfeeding, may often pull off breast to breathe</li> <li>• stops breathing for short periods (apnoea) – mainly younger children (if pulse oximeter available assess O<sub>2</sub> saturation – SpO<sub>2</sub> ≥ 92 percent)<sup>9</sup></li> <li>• looks lethargic/sick</li> <li>• fits/seizures.</li> </ul>	<p>Both asthma and chronic suppurative lung disease can lead to serious adverse outcomes, including death. Early diagnosis and treatment are known to improve both short and long term outcomes and reduces the risk of death.<sup>6</sup></p>														

<p>Consider if child is at risk of severe respiratory disease and refer promptly:</p> <ul style="list-style-type: none"> <li>• growth – static or downward trajectory</li> <li>• preterm birth</li> <li>• two or more chest infections in past year</li> <li>• treated for pneumonia in past four weeks</li> <li>• wet/productive cough more than four weeks</li> <li>• persistent wet cough after four weeks of continuous antibiotics</li> <li>• three hospital admissions for chest problems in child’s life</li> <li>• episode of severe pneumonia</li> <li>• chest deformity - (distension)</li> <li>• abnormal chest sounds when listening with stethoscope (e.g. crackles, unequal air entry, bronchial breathing, wheezing).</li> </ul>	<p>Refer to CAHS policy documents <a href="#">Growth - static or downward trajectory Guideline</a> and <a href="#">Growth - birth to 18 years Guideline</a></p>
<p>Make a clinical judgment about possible respiratory issues and refer accordingly.</p>	<p>Refer to <a href="#">Appendix B</a>: Respiratory problems in children</p>
<p><b>Step 4 Management</b></p>	
<p>Refer for medical assessment and care as required.</p>	<p>Always refer to a GP or paediatrician.</p>
<p>Plan follow-up contact (within one month) to monitor progress and need for support.</p>	<p>All children with CSLD should have a multidisciplinary care plan developed and reviewed at least six monthly, involving parents/carers, child, primary health care team, allied health and specialist services.</p>
<p>Continue to monitor growth as per the Enhanced Child Health Schedule.</p>	<p>Refer to <a href="#">Child Health - Enhanced Child Health Schedule</a> resources on the WACHS Intranet.</p>
<p>Reinforce health education messages.</p>	<p>Consider use of flip chart or video clip to help educate parents and carers about causes and treatment of chronic suppurative lung disease - <a href="#">Telethon Kids Institute - Wet Cough</a></p>

### 3. Roles and Responsibilities

**Community Health staff conducting health assessments for children aged 0-12 years:** Enhanced Child Health Schedule (ECHS), Children in Care checks, community health assessments or other opportunistic health checks on children are responsible for:

- completing training via the MyLearning Learning Management System. Respiratory Health in Children Declaration (RHIC EL2); WebPAS Child at Risk Alert (WCAR EL2).
- identifying children with respiratory health concerns.
- conduct respiratory health screening and/or assessment for children **IF** in scope of practice **OR** promptly refer for assessment.

- referring and/or managing respiratory conditions and infections as described in this document.
- developing and applying cultural capabilities to deliver a culturally safe and responsive service, ensuring the right, views, values and expectations of Aboriginal people and people of diverse cultural backgrounds are recognised and respected.

**All staff** are required to work within policies and guidelines to make sure that WACHS is a safe, equitable and positive place to be.

## 4. Monitoring and Evaluation

### 4.1 Monitoring

Monitoring of compliance with this document is to be carried out annually, in partnership with the Director of Population Health and Central Office Population Health, using CHIS reports and audits of respiratory health assessment, referrals and outcomes.

### 4.2 Evaluation

Evaluation of this document is to be carried out annually by the Population Health Program Officer. Evaluation measures will include analysis of service activity data and outcomes and client responses to post-service survey and case studies.

## 5. Compliance

This policy is aligned to the *Health Services Act 2016*.

Failure to comply with this procedure may constitute a breach of the WA Health Code of Conduct (Code). The Code is part of the [Integrity Policy Framework](#) issued pursuant to Section 26 of the [Health Services Act 2016](#) and is binding on all WACHS staff which for this purpose includes trainees, students, volunteers, researchers, contractors for service (including all visiting health professionals and agency staff) and persons delivering training or education within WACHS.

WACHS staff are reminded that compliance with all policies and procedures is mandatory.

## 6. References

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16. Royal Children's Hospital [Internet]. 2024 [cited Mar 12]. Available from: [https://www.rch.org.au/clinicalguide/guideline\\_index/Recognition\\_of\\_the\\_seriously\\_unwell\\_neonate\\_and\\_young\\_infant/](https://www.rch.org.au/clinicalguide/guideline_index/Recognition_of_the_seriously_unwell_neonate_and_young_infant/).



## 7. Definitions

Term	Definition
<b>Asthma</b>	A chronic lung disease which can be controlled but not cured. It is clinically defined by the presence of (1) excessive variation in lung function; (2) respiratory symptoms e.g. wheeze, shortness of breath, cough, chest tightness) that vary over time and may be present or absent at any point in time. <sup>9</sup>
<b>Bronchiectasis</b>	Chronic dilation of bronchi or bronchioles as a sequel of inflammatory disease or obstruction often associated with heavy sputum production. <sup>10,11</sup>
<b>Chronic Cough</b>	The presence of daily cough of more than 4 weeks duration (in children $\leq 14$ years). <sup>2,12</sup>
<b>Chronic Suppurative Lung Disease</b>	Chronic Suppurative Lung Disease (CSLD) is a clinical syndrome involving symptoms of chronic endobronchial suppuration with or without HRCT evidence of radiological bronchiectasis. Presenting symptoms include a prolonged wet cough, exertional dyspnoea, features of reactive airway disease, growth failure, recurrent chest infections and a wet cough responsive to antibiotics. <sup>6,15</sup>
<b>Pneumonia</b>	Is an infection of the lungs causing the alveoli to become inflamed and swollen. It is usually caused by bacteria or a virus. It can also be caused by fungi or inspired irritants. Symptoms range from mild to severe and may include; cough, fever, productive cough, dyspnoea, rigors and chest pain. <sup>2,10,13,14</sup>
<b>Protracted Bacterial Bronchitis (PBB)</b>	PBB is characterised by a chronic wet or productive cough caused by persistent endobronchial infection and inflammation that may cause airway wall destruction if untreated. <sup>3</sup>
<b>Rapid breathing</b>	Rapid and often shallow breathing in a child indicating significant respiratory effort <sup>16</sup>
<b>Upper Respiratory Tract Infection (URTI)</b>	An acute infection involving the nose, sinuses, pharynx or larynx. Common signs and symptoms include fever, cough, running nose, sneezing, sore throat, headache, muscle aches, fatigue and malaise. <sup>2,10</sup>

## 8. Document Summary

<b>Coverage</b>	WACHS wide
<b>Audience</b>	Community Health staff
<b>Records Management</b>	Clinical: <a href="#">Health Record Management Policy</a>
<b>Related Legislation</b>	<a href="#">Health Services Act 2016</a>
<b>Related Mandatory Policies / Frameworks</b>	<ul style="list-style-type: none"> <li>• <a href="#">Clinical Services Planning and Programs</a></li> </ul>
<b>Related WACHS Policy Documents</b>	<ul style="list-style-type: none"> <li>• <a href="#">Enhanced Child Health Schedule Guideline</a></li> <li>• <a href="#">WebPAS Child at Risk Alert Procedure</a></li> </ul>
<b>Other Related Documents</b>	<ul style="list-style-type: none"> <li>• CAHS <a href="#">Child Health Services Policy</a></li> <li>• <a href="#">HealthPathways WA – Respiratory – Child – Chronic Cough</a></li> <li>• <a href="#">Kimberley Aboriginal Health Planning Forum - Clinical Protocols and Guidelines</a></li> <li>• <a href="#">WACHS – CHILD HEALTH – Enhanced Health Schedule Resources</a></li> <li>• <a href="#">WACHS - Enhanced Child Health Schedule Practice Guide</a></li> </ul>
<b>Related Forms</b>	<ul style="list-style-type: none"> <li>• <a href="#">MR140E Paediatric Acute Recognition and Response Observation Tool (PARROT &lt;3 M)</a></li> <li>• <a href="#">MR140F Paediatric Acute Recognition and Response Observation Tool (PARROT 3-12 M)</a></li> <li>• <a href="#">MR140G Paediatric Acute Recognition and Response Observation Tool (PARROT 1-4 Yr)</a></li> <li>• <a href="#">MR140H Paediatric Acute Recognition and Response Observation Tool (PARROT 5-11 Yr)</a></li> </ul>
<b>Related Training Packages</b>	Via <a href="#">MyLearning</a> : <ul style="list-style-type: none"> <li>• Respiratory Health in Children Declaration (RHIC EL2)</li> <li>• Child Growth Assessment (CGA EL2)</li> <li>• WebPAS Child at Risk Alert (WCAR EL2)</li> </ul>
<b>Aboriginal Health Impact Statement Declaration (ISD)</b>	ISD Record ID: 3178
<b>National Safety and Quality Health Service (NSQHS) Standards</b>	2.10; 5.10; 5.11; 6.01; 8.04, 8.06, 8.08, 8.10, 8.13
<b>Aged Care Quality Standards</b>	Nil
<b>Chief Psychiatrist's Standards for Clinical Care</b>	Nil



## 9. Document Control

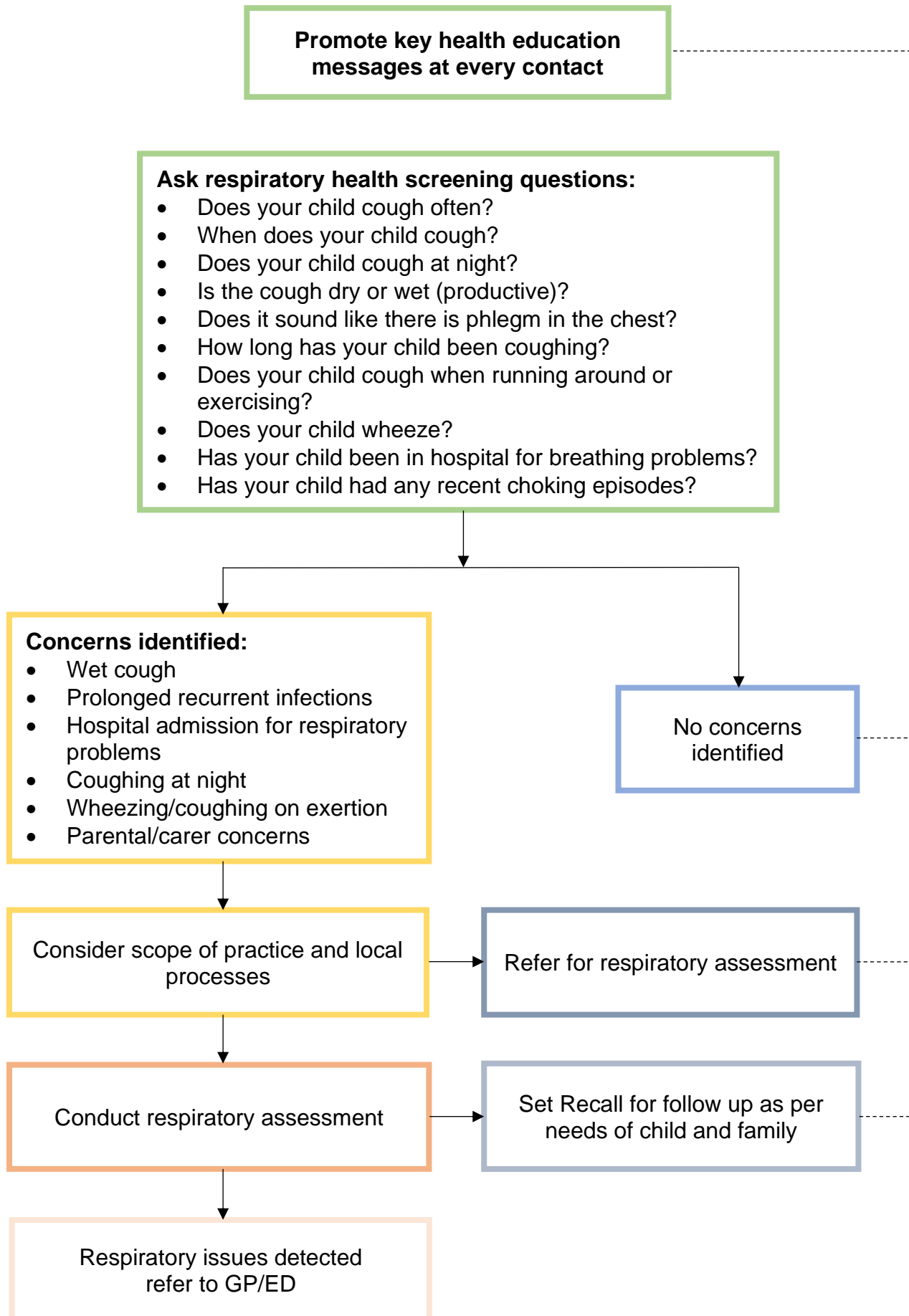
Version	Published date	Current from	Summary of changes
2.00	15 May 2024	15 May 2024	<ul style="list-style-type: none"> <li>change to title</li> <li>updated background to reflect current research and evidence base</li> <li>Step 3: Conduct Respiratory Assessment – Observation to align with current PARROT chart criteria</li> <li>updated Related Training Packages.</li> </ul>

## 10. Approval

<b>Policy Owner</b>	Executive Director Clinical Excellence
<b>Co-approver</b>	Executive Director Nursing and Midwifery
<b>Contact</b>	Senior Policy and Portfolio Officer
<b>Business Unit</b>	Population Health
<b>EDRMS #</b>	ED-CO-20-31347
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**This document can be made available in alternative formats on request.**

## Appendix A: Respiratory Health Assessment for Children 0-12 years Care Pathway



## Appendix B: Respiratory Presentations in Children

Signs and Symptoms	Likely Problem	Action
Wet cough every day for the last four weeks	Protracted bacterial bronchitis	Refer for urgent medical consultation
Recurrent episodes of chronic wet or productive cough	CSLD	Refer for medical consultation and management plan
Infant 2 months or under with fast breathing, laboured breathing, apnoea (stopping breathing, fever >38°	Serious infection	Refer for urgent medical consultation or hospital
Child with fast breathing, fever >38°, looks unwell	Respiratory infection	Refer for urgent medical consultation
Child with cough, tachypnoea, wheeze, afebrile	Respiratory infection	Refer for medical consultation. Bronchodilator may be useful for children 12 months+
Wheeze, cough, known history of asthma, wheeze or dyspnoeic on physical exertion, frequent night coughing.	Asthma or viral induced wheeze	Refer for medical consultation and asthma action plan
Barking cough, stridor (noisy breathing)	Croup	Refer for medical consultation
Coughing in spells, with or without whoop. Vomiting, going red in face, cyanosis, apnoea with coughing spells.	Whooping cough	Refer for prompt medical consultation
Noisy breathing, wheeze, cough after choking on something	Inhaled foreign body	Refer for urgent medical consultation
Child with diabetes and tachypnoea, with or without fever	Consider diabetic ketoacidosis	Check blood glucose, urinalysis. Refer for medical consultation
Child with heart disease and tachypnoea, with or without fever	Cardia failure, chest problem	Refer for medical consultation