

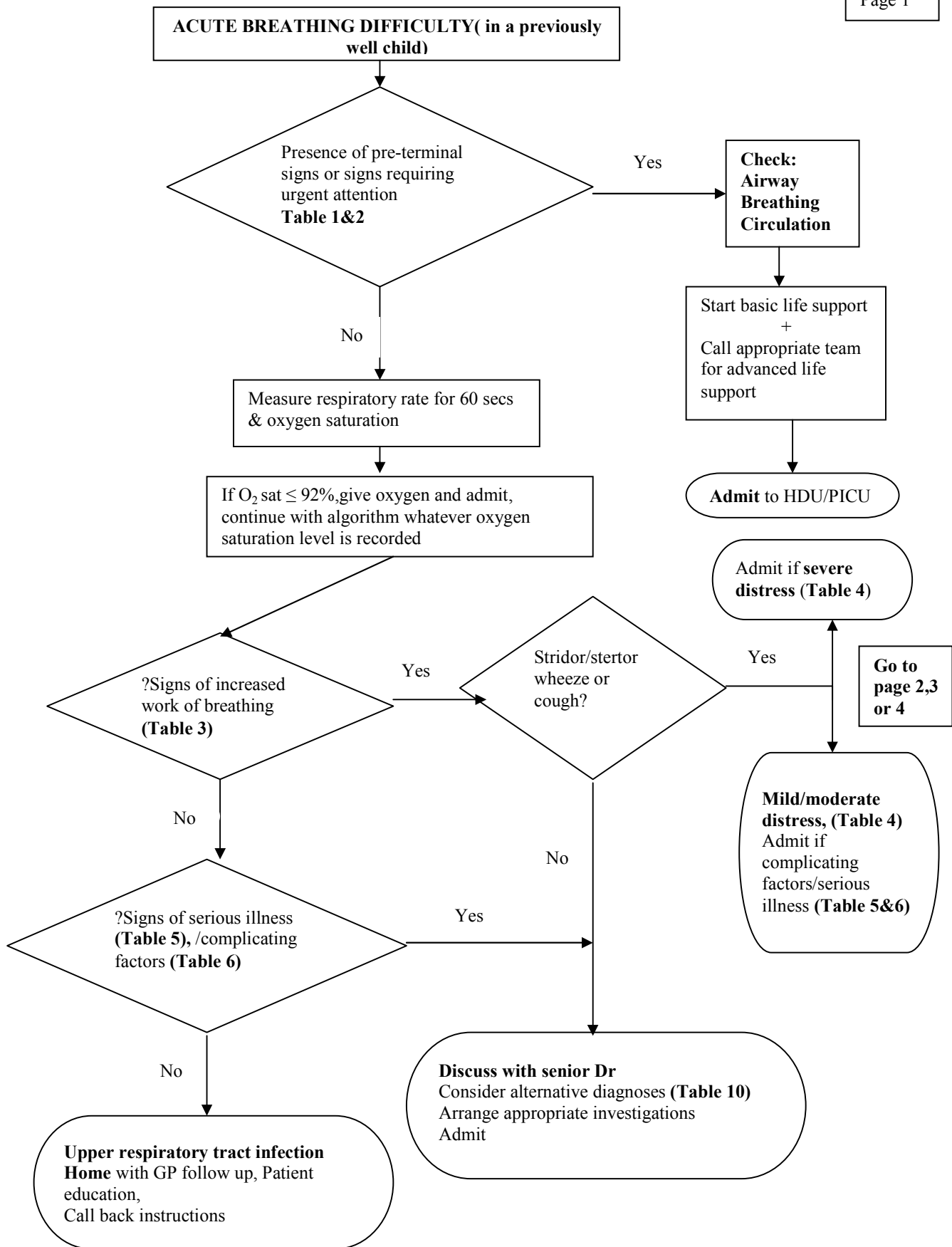
## **Algorithm for the management of children with acute breathing difficulty**

**This algorithm must be used in sequence starting with page 1 and finishing with page 5.**

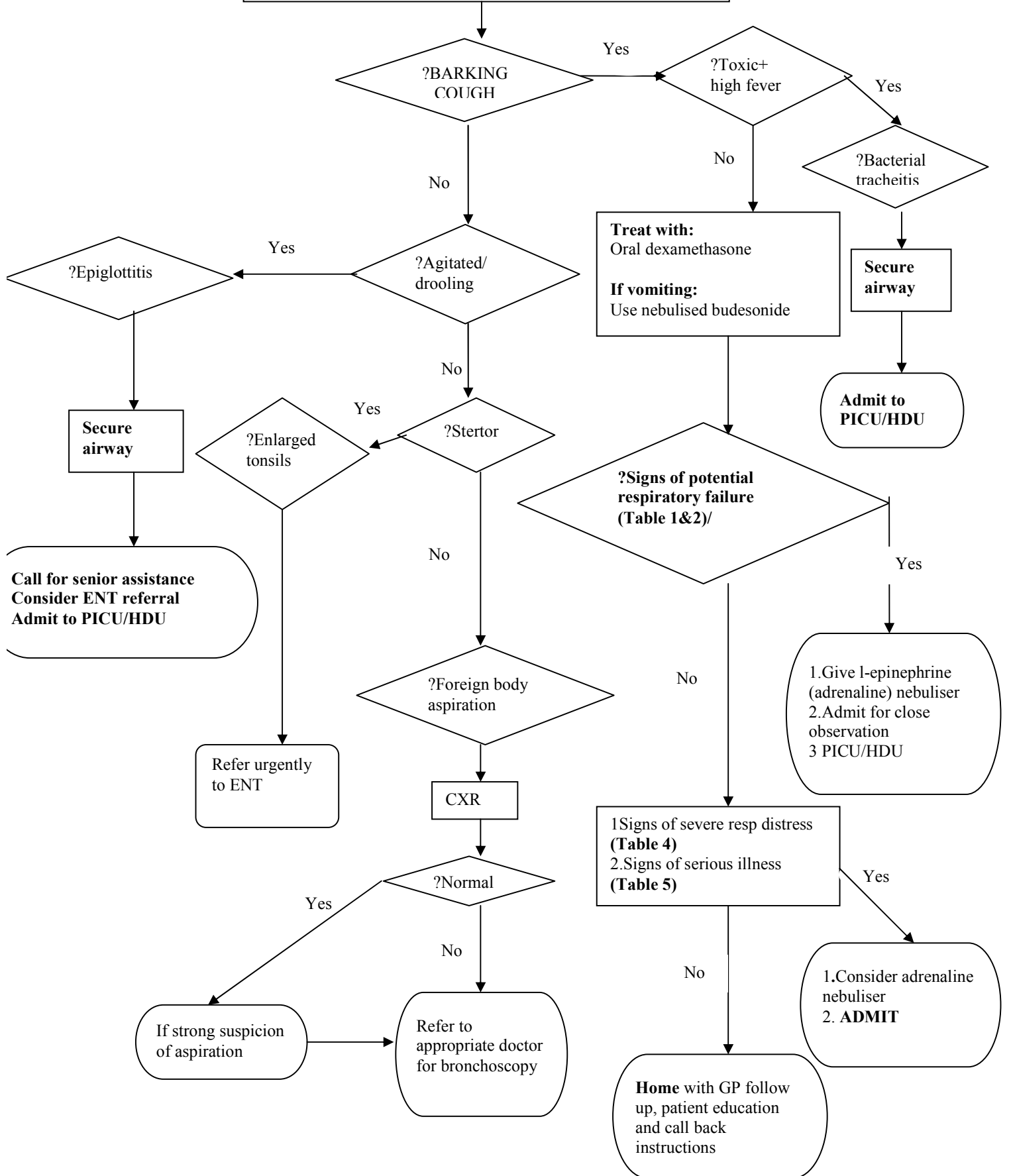
**A glossary of terms and abbreviations has been provided.**

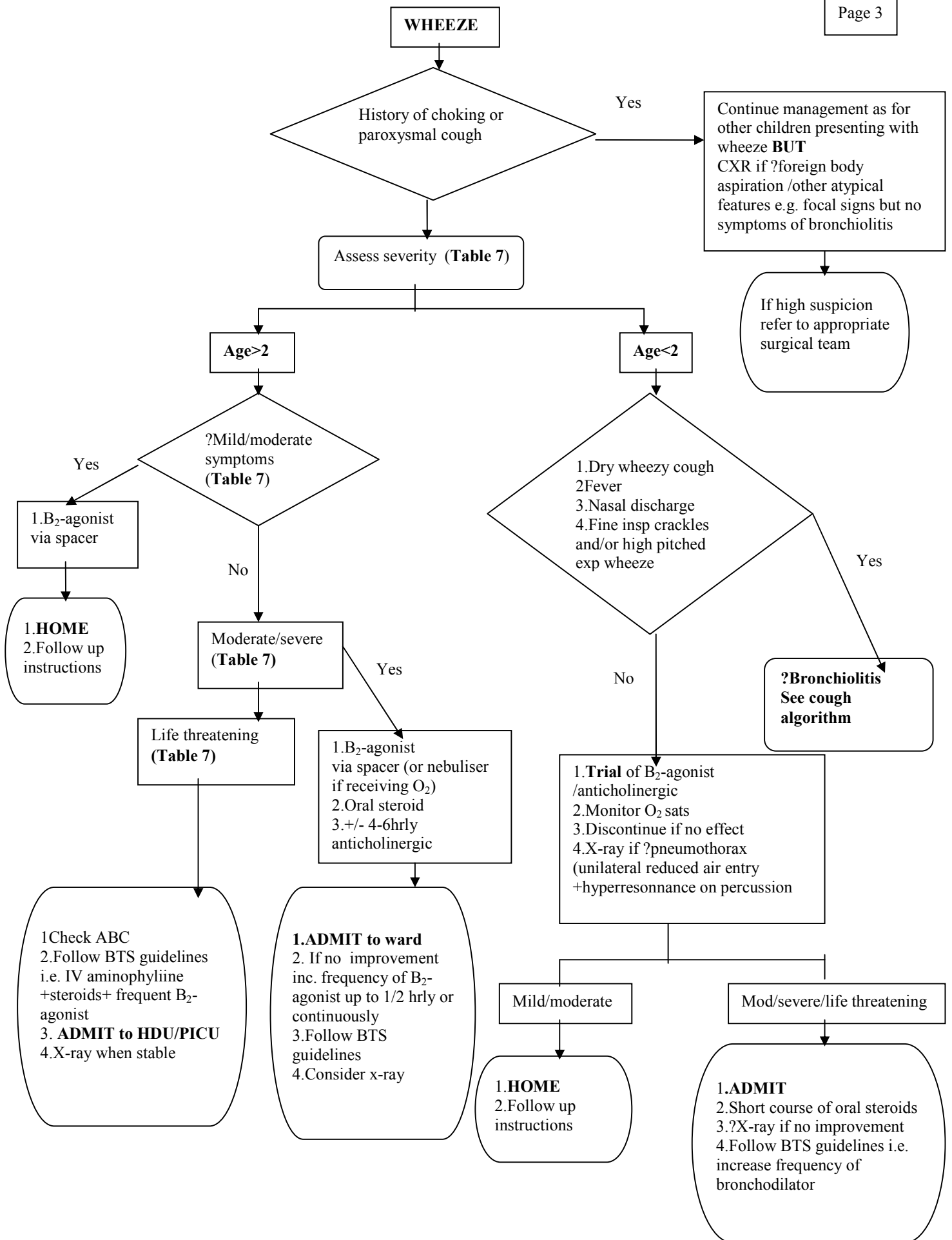
**The relevant tables accompany the guideline.**

**Where drugs are mentioned we have chosen to follow 'medicines for children' until further evidence is available.**



**STRIDOR (limited airflow at larynx or trachea) or STERTOR (noise due to obstruction at pharyngeal level)**





**COUGH**

If accompanied by wheeze or stridor see appropriate algorithm

? Paroxysmal cough or high suspicion of

Yes

**CXR**

? Referral to appropriate team for bronchoscopy

No

1. Dry wheezy cough  
2. Fever  
3. Nasal discharge  
4. Fine insp crackles and/or high-pitched exp wheeze

Yes

**Bronchiolitis**

1. Trial of bronchodilator  
2. Stop if no clinical improvement  
3. Monitor O<sub>2</sub> sat  
4. **No steroids**  
5. **No routine blood tests/x-ray**

No

Combination of cough +breathing difficulty and one or more of:  
1. Fever 2. High resp rate  
3. Grunting  
4. Chest in-drawing

Yes

**Pneumonia**

Mild/moderate distress (Table 4)

Severe distress (Table 4)

1. X-ray child under 2 months/ if no response to antibiotics / recurrent pneumonia  
2. No routine blood tests  
3. Oral antibiotics if clinically suspected  
4. **HOME** with follow up instructions

1. CXR  
2. Oral/iv antibiotics according to local protocol  
3. FBC& B.culture if requires IV antibiotics (Table 9)  
4. No routine blood tests if on oral rx  
5. **ADMIT**

No

Re-assess child

Yes

1. Discuss with senior clinician  
2. Consider trial of nebulised adrenaline  
3. **Admit** for close observation e.g. HDU/PICU

No

**Admit if:**  
1. signs of serious illness (Table 5)  
2. Complicating factors (Table 6)  
3. Increased risk of serious disease (Table 8)

? Severe distress (Table 4)

## Tables included in the algorithm

**Table 1 Pre-terminal signs**

Exhaustion
Bradycardia
Silent chest
Significant apnoea

**Table 2 Signs of severely ill child requiring urgent attention**

Inappropriate drowsiness (difficult to rouse)
Agitation
Cyanosis in air

**Table 3 Signs of increased work of breathing**

Increased respiratory rate
Chest in-drawing (recession)
Nasal flaring
Tracheal tug
Use of accessory muscles
grunting

**Table 4 Assessment of severity of breathing difficulty adapted from WHO management of acute respiratory infections in children. World Health Organisation, Geneva, 1995**

<b>Assessment of severity(breathing difficulty)</b>			
	<b>Mild</b>	<b>Moderate</b>	<b>Severe</b>
Oxygen saturation in air	>95%	92-95%	<92%
Chest wall in-drawing	none/mild	moderate	severe
Nasal flaring	absent	may be present	present
grunting	absent	absent	present
Apnoea/pausing	none	absent	present
Feeding history	normal	Approximately half of normal intake	Less than half normal intake
Behavior	normal	irritable	Lethargic Unresponsive Flaccid Decreased level of consciousness Inconsolable

**Table 5 Symptoms of Serious Illness (adapted from Viral Upper Respiratory Tract Guideline by Institute for Clinical Systems Improvement and the WHO recommendations on the management of children with cough or breathing difficulty)**

<b>&lt; 3 months</b>	<b>3 months -3 years</b>	<b>4 years-adult</b>
<b>Responsiveness and activity</b> <ul style="list-style-type: none"> <li>• flaccid</li> <li>• cannot awaken or keep awake</li> <li>• weak cry or weak suck</li> <li>• inconsolable</li> <li>• refuse feedings</li> </ul>	<b>Responsiveness and activity</b> <ul style="list-style-type: none"> <li>• unresponsive</li> <li>• cannot awaken or keep awake</li> <li>• markedly decreased activity</li> <li>• inconsolable</li> <li>• weak suck or weak cry(if infant)</li> <li>• refuses feeding</li> </ul>	<b>Responsiveness and activity</b> <ul style="list-style-type: none"> <li>• decreased level of consciousness</li> <li>• markedly decreased activity</li> <li>• cannot awaken or keep awake</li> </ul>
<b>Dehydration and vomiting</b> <ul style="list-style-type: none"> <li>• reduced wet nappies &gt; 8 hrs</li> </ul>	<b>Dehydration and vomiting</b> <ul style="list-style-type: none"> <li>• no urine&gt; 6-8 hrs if &lt; 1yr</li> <li>• no urine&gt; 12 hrs if &gt; 1yr</li> </ul>	<b>Dehydration and vomiting</b> <ul style="list-style-type: none"> <li>• no urine&gt; 12 hrs</li> </ul>
	<b>Meningeal signs</b> <ul style="list-style-type: none"> <li>• stiff neck</li> <li>• persistent vomiting</li> </ul>	<b>Meningeal signs</b> <ul style="list-style-type: none"> <li>• stiff neck</li> <li>• persistent vomiting</li> <li>• severe headache</li> </ul>
<b>Other</b> <ul style="list-style-type: none"> <li>• petechial and purpuric rash</li> <li>• convulsions</li> <li>• very high fever</li> <li>• hypothermia</li> <li>• capillary refill &lt;3 sec</li> </ul>	<b>Other</b> <ul style="list-style-type: none"> <li>• petechial or purpuric rash</li> <li>• convulsions</li> <li>• very high fever unresponsive to treatment</li> <li>• capillary refill &lt; 3sec</li> </ul>	<b>Other</b> <ul style="list-style-type: none"> <li>• decreased urination with decreased intake</li> <li>• petechial or purpuric rash</li> <li>• convulsions</li> <li>• very high fever unresponsive to treatment</li> <li>• capillary refill &gt; 3 sec</li> </ul>

**Table 6 Factors contributing to the clinicians decision regarding admission or discharge**

<b>Complicating Factors</b>
Co-morbidity e. g prematurity, congenital heart disease, any chronic lung disease, neurological disorder
Social problems e. g previous non-accidental injury, ill parents, parents having difficulty coping
Infants younger than 2 months of age

**Table7 Severity of Asthma, taken from BTS**

<b>Table of Severity of Asthma Based on BTS Guidelines</b>		
<b>Age</b>	<b>Under 5 years</b>	<b>Over 5 years</b>
Mild to Moderate	Wheeze and cough with tightness and mild dyspnoea, no distress, no speech or feeding difficulty Mild respiratory distress Respiratory rate < 50 Pulse < 140 bpm Saturations > 92% in air	Wheeze and cough with tightness Able to talk PEFR > 50% predicted height Pulse < 120 Saturations > 92% in air
Moderate to Severe	Too breathless to talk Too breathless to feed Respiratory rate > 50/min Pulse > 140/min Use of accessory muscles	Too breathless to talk Too breathless to feed Respiratory rate > 40 Pulse > 120/min PEFR < 50% predicted height
Life Threatening	Cyanosis Silent chest Poor respiratory effort Fatigue or exhaustion Agitation or reduced level of consciousness	Cyanosis Silent chest Poor respiratory effort Fatigue or exhaustion PEFR < 33% predicted height Agitation or reduced level of consciousness