

# Paediatric Clinical Assessment Tools For Bronchiolitis



## Purpose of this Guideline

This Guideline is intended to act as a quick reference guide to some of the most common medical conditions for unscheduled healthcare attendances in children and young people (ages 0-16), which are: respiratory tract infections (croup/ bronchiolitis), asthma, fever, gastroenteritis and abdominal pain. It is aimed to assist primary care professionals when treating children and guide appropriate escalation. Parent / Carer information leaflets are included.

**Clinicians are expected to take this guideline fully into account when exercising their clinical judgement.** The guidance does not, however, override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient or carer.

When you feel a GP review in a specific time period is clinically appropriate, but falls outside of the 'in hours' GP service, please advise your patient/family to call NHS 111 (at an agreed time interval/ level of deterioration depending on your concerns) and advise that there is a 'predetermined plan to speak with an Out of Hours GP'.

Please provide your patient/family with a letter detailing your clinical findings and concerns to help the Out of Hours GP. The patient should also be given the appropriate Parent / Carer information leaflets.

The clinical assessment tools were arrived at after careful consideration of the evidence available including, but not exclusively SIGN, NICE Guidelines, Birmingham Children's Hospital guidelines, existing Birmingham Children's Hospital Information Leaflets, EBM date and NHS Evidence.

With thanks to the team at Gloucestershire CCG who produced the original Big 6 Pathways, on which this guideline is based.

# Normal Values

Normal values at different ages (APLS, Edition 5)

Age of child (years)	Under 1	1–2	2–5	5–12	Over 12
<b>Respiratory rate</b>	30–40	25–35	25–30	20–25	15–20
<b>Heart rate</b>	110–160	100–150	95–140	80–120	60–100
<b>Systolic blood pressure</b>	80–90	85–95	85–100	90–110	100–120

Calculations for commonly used emergency drugs (APLS, Edition 5)

	Formula	Maximum dose
<b>Weight (kg)</b>	<b>Child 0–12 months</b> Weight = $(0.5 \times \text{age in months}) + 4$	
	<b>Child 1–5 years</b> Weight = $(2 \times \text{age in years}) + 8$	
	<b>Child 6–12 years</b> Weight = $(3 \times \text{age in years}) + 7$	
<b>Energy (J)</b>	4 J/kg	150–200 J biphasic for first shock 150–360 J biphasic for subsequent shocks
<b>Tube size</b>	<b>Pre-term babies</b> 2.5 mm tube <b>Babies</b> usually 3 or 3.5 mm tube <b>Children &gt;1 year</b> Tube size = $(\text{age in years}/4) + 4$	
<b>Fluid Bolus (IV or IO)</b>	20 mL/kg of 0.9% saline <b>Exceptions:</b> Trauma/DKA/cardiac problems use 10 mL/kg of 0.9% saline	500 mL of 0.9% saline in trauma/ DKA/cardiac problems 1000 mL of 0.9% saline
<b>Lorazepam</b>	100 micrograms/kg (IV or IO)	Max single dose 4 mg
<b>Adrenaline (IV or IO)</b>	10 micrograms/kg (0.1 mL/kg of 1:10,000 strength)	Max single dose 1 mg
<b>Glucose 10% (IV or IO)</b>	2–5 mL/kg of 10% dextrose	150–160 mL of 10% dextrose single bolus

UK immunisation schedule

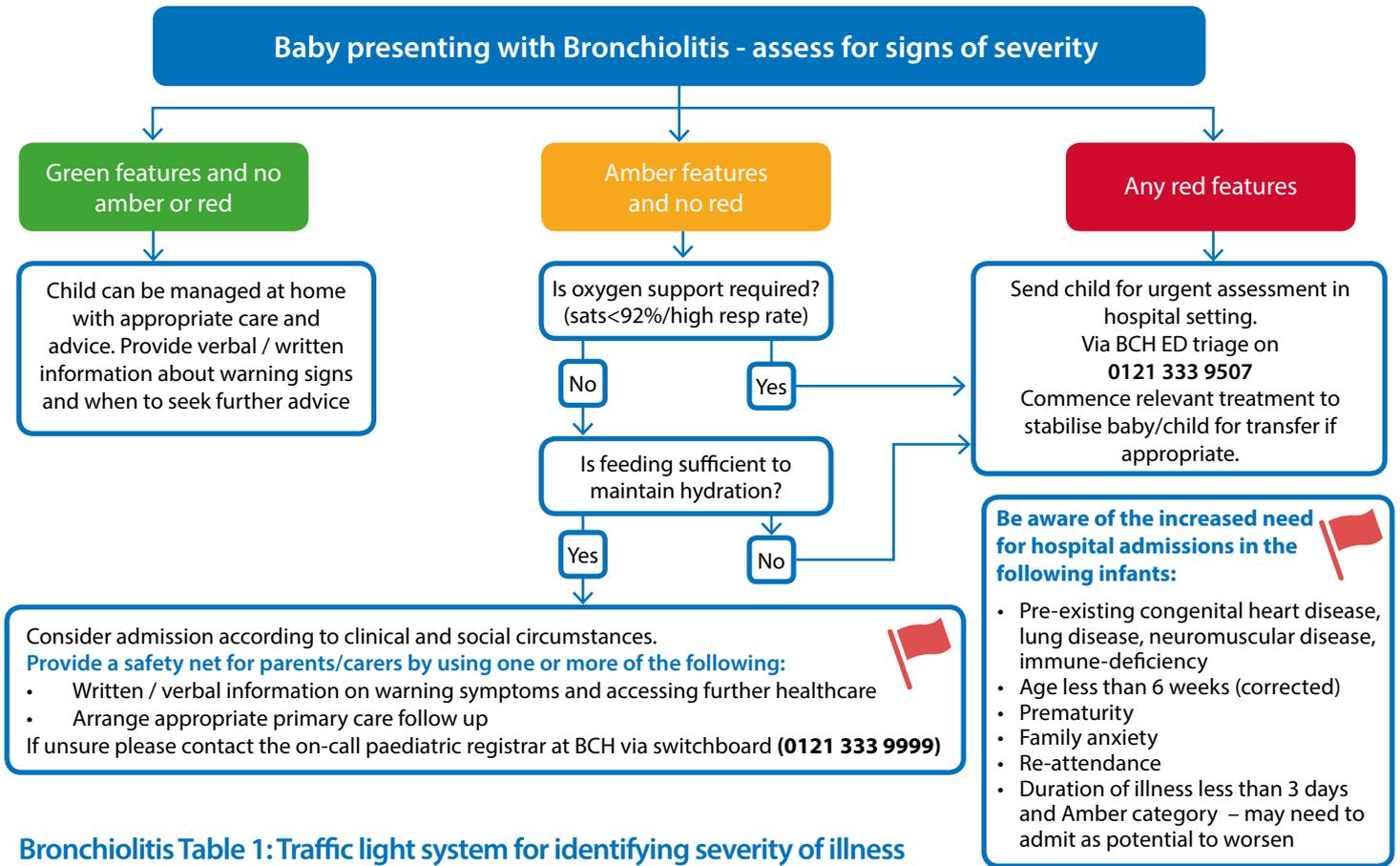
Age of child (months)	Rota virus (oral vaccine)	Diphtheria and tetanus	Pertussus	Polio	Hib	PCV	MenC	MMR	HPV	No. of injections
<b>2 months</b>	✓	✓	✓	✓	✓	✓				2
<b>3 months</b>	✓	✓	✓	✓	✓		✓			2
<b>4 months</b>		✓	✓	✓	✓	✓	✓			3
<b>12 months</b>					✓		✓			1

Neonatal Fluid Requirements

Age	Total volume of fluid required per day (mL/kg)
<b>Day 1</b>	60
<b>Day 2</b>	90
<b>Day 3</b>	120
<b>Day 4 to 28</b>	150

## Clinical Assessment Tool

### Suspected Bronchiolitis in Babies / Children under 1 year



**Bronchiolitis Table 1: Traffic light system for identifying severity of illness**

	Green - low risk	Amber - intermediate risk	Red - High Risk
<b>Behaviour</b>	<ul style="list-style-type: none"> <li>• Alert</li> <li>• Normal</li> </ul>	<ul style="list-style-type: none"> <li>• Irritable</li> <li>• Not responding normally to social cues</li> <li>• Decreased activity</li> <li>• No smile</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to rouse</li> <li>• Wakes only with prolonged stimulation</li> <li>• No response to social cues</li> <li>• Weak, high pitched or continuous cry</li> <li>• Appears ill to health care professional</li> </ul>
<b>Circulation</b>	CRT less than 2 secs	CRT 2-3 secs	CRT over 3 secs
<b>Skin</b>	Normal colour skin, lips & tongue Moist mucous membranes	Pale / mottled Pallor reported by parent/carer Cool peripheries	Pale/mottled/blue Cyanotic lips and tongue
<b>Respiratory rate</b>	Under 12mths: less than 50 Over 12mths: less than 40 No respiratory distress	Under 12mths: 50-60 breaths/minute Over 12mths: 40-60 breaths/minute	All ages over 60 breaths / minute
<b>Sats in air</b>	95% or above	92-94%	less than 92%
<b>Chest recession</b>	None	Moderate	Severe
<b>Nasal Flaring</b>	Absent	May be present	Present
<b>Grunting</b>	Absent	Absent	Present
<b>Feeding/Hydration</b>	Normal - no vomiting	50-75% fluid intake over 3-4 feeds +/- vomiting Reduced urine output	under 50% fluid intake over 2-3 feeds +/- vomiting Significantly reduced urine output
<b>Apnoeas</b>	Absent	Absent	Present*

Refer to page 1 for normal values

CRT - Capillary refill time

Sats- Saturations In Air

\*Apnoea - 10-15 Sec or shorter if accompanied by drop in SATS / central cyanosis / bradycardia

Information for Parents / Carers:

# Caring for your baby/ child with bronchiolitis



## What is bronchiolitis?

Bronchiolitis means inflammation of the bronchioles (tiniest airways in your baby's lungs). Infected bronchioles become swollen and full of mucus. This can make it more difficult for your baby to breathe. It is usually caused by a virus called the Respiratory Syncytial Virus (RSV). Other viruses are sometimes the cause. RSV is a common cause of colds in older children and adults. RSV is spread in tiny water droplets coughed and sneezed into the air.

## Who gets bronchiolitis?

Bronchiolitis in the UK usually occurs in the winter months (November to March). It is estimated that as many as 1 in 3 babies in the UK under the age of 12 months develop bronchiolitis at some point. It most commonly occurs in babies aged 3-6 months old. Most babies get better on their own. Some babies (about 3 in 100), especially the very young ones, can have difficulty with breathing or feeding and may need to go to hospital. Babies at higher risk of developing a more serious illness with bronchiolitis include: premature babies, babies with heart conditions, and babies who already have a lung condition.

## What are the symptoms of bronchiolitis?

- Cold symptoms: a runny nose, cough and mild fever (less than 39°C) are usual for the first 2-3 days.
- After a few days your baby's cough may get worse.
- Fast breathing and noisy breathing may develop as the infection 'travels' down to the bronchioles. The number of breaths per minute may go as high as 60-80.
- You can often see the muscles between the ribs moving inward during each breath. This is because the baby needs more effort to breathe than normal.
- Sometimes in very young babies, bronchiolitis may cause brief pauses in breathing.
- As breathing becomes more difficult, your baby may have difficulty feeding. Your baby may have fewer wet nappies. Your baby may vomit after feeding.

## Bronchiolitis Advice Guide: Babies/Children under 1 year

### How is your child?

 <p>Red</p>	<ul style="list-style-type: none"><li>• Blue lips</li><li>• Unresponsive and very irritable</li><li>• Finding it difficult to breathe</li><li>• Pauses in breathing or irregular breathing pattern</li></ul>	<p><b>You need urgent help</b> Please phone 999 or go to the nearest Accident and Emergency</p>
 <p>Amber</p>	<ul style="list-style-type: none"><li>• Decreasing feeding</li><li>• Passing less urine than normal</li><li>• Baby / child's health gets worse or you are worried</li><li>• If your baby / child is vomiting</li><li>• Your baby's temperature is above 39°C</li></ul>	<p><b>You need to contact a doctor or nurse today</b> Please ring your GP surgery or call NHS 111 - dial 111</p>
 <p>Green</p>	<ul style="list-style-type: none"><li>• If non of the above factors are present</li></ul>	<p><b>Self care</b> Using the advice in this guide you can provide the care your child needs at home</p>

### How can I help my baby?

- If your baby is not feeding as normal, offer feeds little and often.
- If your baby has a fever, you can give them paracetamol at the recommended dose. If your baby is over 3 months you can also give them ibuprofen.
- If your baby is already taking medicines/inhalers, you should continue to use them.
- Bronchiolitis is a 'self-limiting' illness. This means it will normally go as the immune system clears the virus. There is no medicine that will kill the virus. Antibiotics won't help.
- Make sure your baby is **not** exposed to tobacco smoke. Passive smoking can seriously damage your baby's health. It makes breathing problems like bronchiolitis worse.

## How long will bronchiolitis last?

- Typically, symptoms peak in severity 3-5 days after starting.
- Most babies get better within 2 weeks.
- An irritating cough can last longer - up to 6 weeks after other symptoms have gone.
- Your baby can go back to nursery/day care as soon as he/she is well enough.

Name of Child .....

Age ..... Date/Time advice given .....

Further advice / Follow up .....

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Name of professional .....

Signature of professional .....

## Some Useful Phone Numbers

**GP Surgery** (make a note of the number here)

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### **NHS 111 - Dial 111**

(available 24hrs - 7 days a week)

### **GP Out of Hours Service - appointments booked via NHS 111**

(Open from 6:30pm - 8:30am, 7 days a week)

### **For online advice:**

**NHS Choices** [www.nhs.uk](http://www.nhs.uk)

(available 24hrs - 7 days a week)

## Urgent Care Centre

### **Warren Farm Urgent Care Centre**

Warren Farm Road, Birmingham, West Midlands, B44 0PU

8.00am-8.00pm

### **Erdington Health and Wellbeing Walk In Centre**

196 High Street, 1st Floor, Erdington, Birmingham, B23 6SJ

8.00am-8.00pm

### **Washwood Heath Urgent Care Centre**

Clodeshall Road, Washwood Heath, Birmingham, West Midlands, B8 3SN

9.00am-9.00pm

### **The Hill Urgent Care Centre**

Sparkhill Primary Care Centre, 856 Stratford Road,

Sparkhill, Birmingham, B11 4BW

8.00am-8.00pm

## **South Birmingham GP Walk In Centre**

0121 415 2095

15 Katie Road, Selly Oak, Birmingham, B29 6JG.

8.00am-8.00pm

## **Birmingham NHS Walk In Centre**

0121 255 4500

Lower Ground Floor, Boots The Chemists Ltd,  
66 High Street, Birmingham, West Midlands, B4 7TA

Mon-Fri: 8.00am – 7.00pm (last patient seen at 6:30pm)

Sat: 9.00am – 6.00pm (last patient seen at 5:30pm)

Sun: 1.00am – 4.00pm (last patient seen at 3:30pm)

## **Solihull UCC**

Solihull Hospital, Lode Lane, Solihull, B91 2JL

8.00am-8.00pm

## **Summerfield GP and Urgent Care Centre**

Summerfield Primary Care Centre, 134 Heath Street,  
Winson Green, Birmingham, B18 7AL.

8.00am-8.00pm

**If you require an interpreter, inform the member of staff you are speaking with.**

## Data Protection

### Looking after and sharing information about your child

We have a duty of care to help patients and families understand how information about them is kept and shared and we include the following information in all our patient leaflets:

Information is collected about your child relevant to their diagnosis, treatment and care. We store it in written records and electronically on computer. As a necessary part of that care and treatment we may have to share some of your information with other people and organisations who are either responsible or directly involved in your child's care. This may involve taking your child's information off site. We may also have to share some of your information for other purposes, such as research etc. Any information that is shared in this way will not identify your child unless we have your consent. If you have any questions and/or do not want us to share that information with others, please talk to the people looking after your child or contact PALS (Patient Advice and Liaison Service) on 0121 333 8403.

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### **Birmingham Children's Hospital NHS Foundation Trust**

Steelhouse Lane Birmingham B4 6NH

Telephone 0121 333 9999

Fax: 0121 333 9998

Website: [www.bch.nhs.uk](http://www.bch.nhs.uk)

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