

Management of Children Presenting to 1° care with Viral Lower Respiratory Tract Infections (Bronchiolitis and Viral induced wheeze)

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| Clare Harris (Primary Care Lead, Hampshire CCGs) | Sanjay Patel (Paediatric ID consultant and Programme Lead, Healthier Together) |
| Zena Penny (Primary care lead, Southampton) | David James (Paediatric EM Consultant and Emergency Care Lead, Healthier Together) |
| Sally Robins (Primary care lead, SE Hampshire) | Julia Shaw (Paediatric Lead, HHFT) |
| Natalie Smith (Primary care lead, North Hampshire) | Jo Borbone (Paediatric Lead, QA Hospital, Portsmouth) |
| Kathryn Bannell (Primary care lead, SE Hampshire & Portsmouth) | Mark Alderton (Paediatric Lead, Southampton Children's Hospital) |
| Olie Morris (GP and Primary Care Lead, Healthier Together) | Sian Butterworth (Paediatric Lead, St Mary's Hospital, IoW) |

Aim of this document:

- There is evidence to suggest an imminent and significant increase in viral lower respiratory tract infections (LRTI) in pre-school children (bronchiolitis and viral induced wheeze).
- This document sets out to provide guidance for 1° care staff on the assessment and management of children presenting with viral LRTIs (bronchiolitis and viral induced wheeze), including criteria for when to refer a child to secondary care.
- It promotes a consistent approach for clinicians working across the urgent care pathway.
- It aims to enhance parent education and empowerment by providing clear information about when to seek healthcare consultations. This can be sent by GP practices to parents/carers via MJOG and/or ACCURX (<https://what0-18.nhs.uk/worried-your-baby-unwell-under-3-months-2/worried-about-your-baby> / <https://what0-18.nhs.uk/parents/carers/worried-your-child-unwell>) .
- **The content of this document has also been made available on a free webinar – click [here](#)**

Background:

- The non-pharmacological interventions implemented during the COVID-19 pandemic not only reduced transmission of SARS-CoV-2 but also significantly reduced the transmission of all other respiratory viruses.
- There were almost no cases of bronchiolitis during the winter of 2020/21.
- Data from the Southern hemisphere showed an interseason surge in babies and young children presenting with RSV in late 2020 following the easing of COVID-19 restrictions, and a significant rise in RSV is currently being seen in the North West of England.
- NHSE have recently restarted the Palivizumab (passive immunisation against RSV) programme for the most vulnerable young children and plan to offer monthly doses for the next 7 months.
- Modelling performed by Public Health England has estimated a possible 100% increase in bronchiolitis cases compared to winter averages.
- Rates of RSV in the South of England has been steadily rising over the summer but whether we see a surge in respiratory virus infections when the school term restarts remains unclear. It is likely that the main paediatric presentations associated with a surge in respiratory viruses will be bronchiolitis (in children up to 2 years of age) and viral induced wheeze.

Although an increase in hospital admissions is predicted, the majority of presentations will be to 1° care.

Approach:

- It is suggested that 1° care clinicians use the approach described in the Healthier Together clinical pathways for [bronchiolitis](#) and [viral induced wheeze](#). If in doubt about the diagnosis please use the clinical pathway for [Cough & Breathlessness in children <2 years](#).
- It is recommended that 1° care clinicians are able to accurately measure oxygen saturations using paediatric saturation probes as part of a full respiratory assessment. In general, sats of <92% should generate a discussion or referral to secondary care. Although most children with moderately severe disease (amber features) can be managed at home with clear safety netting information, there should be a low threshold for referring babies under 6 weeks or those with significant comorbidities (see below).
- Viral LRTIs generally present with cough and difficulty breathing. The child may be coryzal, febrile and have difficulty feeding or drinking.
- Traditionally, bronchiolitis has been viewed as a condition affecting those under 1 in the UK. However this year we are expecting more children 1-2 to present with a more 'bronchiolitic' phenotype than traditional wheeze.
- The main reason to differentiate between the conditions is to provide timely bronchodilator therapy to those wheezers who will benefit while NOT administering this to younger babies with more classical bronchiolitis.

Here is a table to help differentiate the assessment and treatment of Bronchiolitis and Viral Induced Wheeze:

| | Bronchiolitis | Viral Induced Wheeze |
|--|--|---|
| Age | Most commonly <1 year. Can be up to 2 | 1+ |
| History | Often starts with coryza leading to cough and breathlessness | Often starts with coryza leading to cough and breathlessness |
| Examination | May have tachypnoea and respiratory distress Course bilateral scattered crackles | May have tachypnoea and respiratory distress Bilateral wheeze or crackles heard only on expiration May have reduced air entry |
| Worrying features in history | Early on in illness (often gets worse over 3-4 days) Under 6 weeks Co-morbidities (congenital heart disease, immunocompromised, chronic lung disease, age <6 weeks, Prematurity, Neuromuscular weakness) | Previous episodes requiring HDU/ITU care Previous episodes requiring IV therapy |
| Treatment in 1° care | Supportive Establish feed plan little and often | Salbutamol up to 10 puffs up to 4 hourly Prednisolone 1mg/kg OD for 3 days or Dexamethasone 0.3mg/kg x 1 if history of atopy |
| Safety netting advice sheet | Bronchiolitis :: Healthier Together (what0-18.nhs.uk) | Viral induced wheeze :: Healthier Together (what0-18.nhs.uk) |
| Referral details for your local hospital | Hospital advice/referral contact details :: Healthier Together (what0-18.nhs.uk) | Hospital advice/referral contact details :: Healthier Together (what0-18.nhs.uk) |

Acute community paediatric nursing services are available in North Hampshire and Portsmouth, SE Hants and Fareham & Gosport – referral may be considered for amber patients being managed at home (click [here](#) for contact details).

Assessment and Treatment of Severe disease:

Bronchiolitis

This is taken from the Healthier Together Bronchiolitis pathway – the full version is [here](#)

ASSESSMENT FEATURES: ANY of the following

| Clinical Findings | Red – high risk |
|---------------------------|--|
| Behaviour | Unable to rouse No response to social cues Wakes only with prolonged stimulation Weak or continuous cry Appears ill to a healthcare professional |
| Skin | CRT > 3 seconds Cyanosis Grey/Mottled |
| Respiratory Rate | >70 breaths /minute Apnoeas |
| Oxygen sats in air | |
| Chest recession | Severe |
| Nasal Flaring | Present |
| Grunting | Present |
| Feeding/Hydration | <50% fluid over 2-3 feeds/12 hours Appears dehydrated Significantly reduced urine output |
| Other | |

ACTIONS

Urgent Action

Consider commencing high flow oxygen support
Refer immediately to emergency care – Urgent ambulance
[Alert Paediatrician](#)
Commence relevant treatment to stabilise child for transfer
Send relevant documentation

Assessment and Treatment of Severe disease:

Viral Induced Wheeze

This is taken from the Healthier Together Wheeze pathway – the full version is [here](#)

ASSESSMENT FEATURES: ANY of the following

| ASSESSMENT | High Risk SEVERE - RED | IMMEDIATELY LIFE- THREATENING - PURPLE |
|--|--|--|
| Behaviour | May be agitated; Unable to talk freely or feed | Can only speak in single words; Confusion or drowsy; Coma |
| O2 Sat in air | < 92%; Pale | < 92%; Cyanosis; Grey |
| Heart Rate | Under 5yr >140/min Over 5 yr >125/min | Under 5yr >140/min Over 5 yr >125/min Maybe bradycardic |
| Respiratory Peak Flow ^o (only for children > 6yrs with established technique) | Under 5 yr >40 breaths/min Over 5 yr >30 breaths/min Moderate Respiratory distress: moderate recession & clear accessory muscle use PEFR <50% l/min best/predicted | Severe Respiratory distress Poor respiratory effort: Silent chest Marked use of accessory muscles and recession PEFR <33% l/min best/predicted or too breathless to do PEFR |

ACTIONS:

| URGENT ACTION | ACTION IF LIFE THREATENING |
|---|---|
| <p>Refer immediately to emergency care by 999 Alert Paediatrician</p> <ul style="list-style-type: none"> • Oxygen to maintain O₂ Sat > 94%, using paediatric nasal cannula if available • Salbutamol 100 mcg x 10 'puffs' via inhaler & spacer <p>OR Salbutamol 2.5 – 5 mg Nebulised</p> <ul style="list-style-type: none"> - Repeat every 20 minutes whilst awaiting transfer - If not responding add Ipratropium 20mcg/dose - 8 puffs or 250 micrograms/dose nebulised mixed with the salbutamol. - Oral Prednisolone start immediately: 2-5 years 20 mg/day Over 5 years 30-40 mg/day • Paramedics to give nebulised Salbutamol, driven by O₂, according to protocol • Stabilise child for transfer and stay with child whilst waiting • Send relevant documentation | |
| | <p>Repeat Salbutamol 2.5 - 5 mg via Oxygen-driven nebuliser whilst arranging immediate hospital admission - 999</p> |

- Nebulised salbutamol should be reserved for severe / life threatening wheeze and given pending transfer to hospital. Nebulisation is not an aerosol generating procedure (AGP) and therefore does not require you to wear full PPE or an FP3 mask.

Assessment and Treatment of Moderate disease:

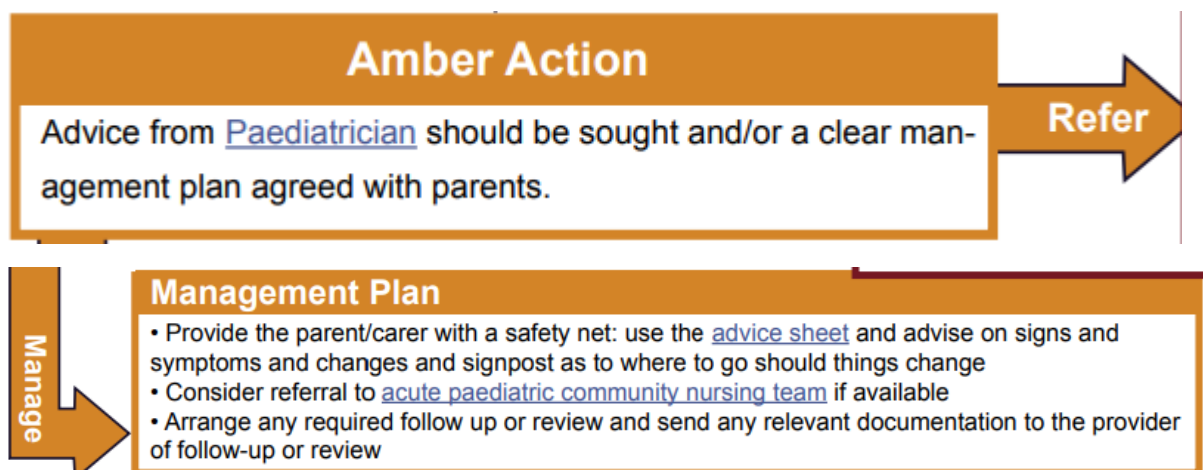
Bronchiolitis

This is taken from the Healthier Together Bronchiolitis pathway – the full version is [here](#)

ASSESSMENT FEATURES: ANY of the following

| Clinical Findings | Amber – Intermediate risk | |
|--------------------|--|---|
| Behaviour | Irritable Decreased activity Reduced response to social cues No smile | |
| Skin | CRT 2-3 seconds Cool peripheries Pale | |
| Respiratory Rate | 50-70 breaths / minute | |
| Oxygen sats in air | <92% | |
| Chest recession | Moderate | |
| Nasal Flaring | May be present | |
| Grunting | Absent | |
| Feeding/Hydration | 50-75% fluid intake over 3-4 feeds Reduced urine output | |
| Other | Pre-existing lung condition Immunocompromised Congenital heart disease Additional parent/carer support needed | Age < 6 weeks Prematurity Re-attendance Neuromuscular weakness |

ACTIONS:



Assessment and Treatment of Moderate disease:

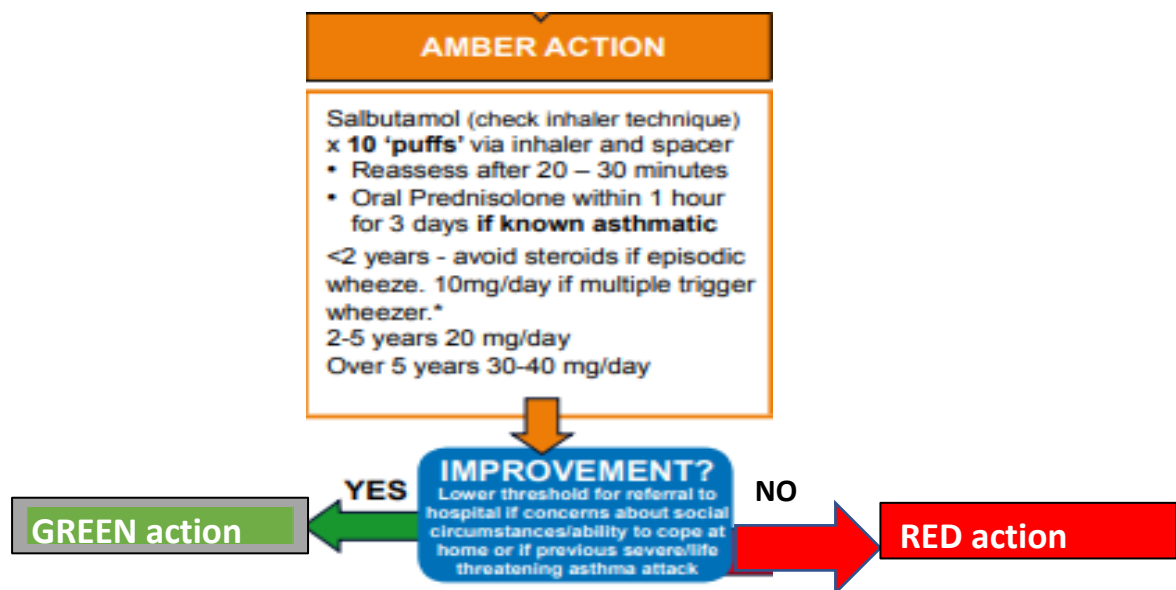
Viral Induced Wheeze

This is taken from the Healthier Together Bronchiolitis pathway – the full version is [here](#)

ASSESSMENT FEATURES: ANY of the following

| Clinical Findings | Amber – Intermediate risk |
|----------------------|--|
| Behaviour | Alert Some increased work of breathing |
| Oxygen sats in air | 92-94% Pink |
| Heart Rate | Under 5: <140 Over 5: <125 |
| Respiratory Rate | Under 5: <40 breaths / minute Over 5: <30 breaths / minutes |
| Respiratory Distress | Mild (including mild recession and some accessory muscle use) |
| Peak Flow (6y+) | 50-75% l/min best / predicted |

ACTIONS:



Assessment and Treatment of Mild disease:

Bronchiolitis

This is taken from the Healthier Together Bronchiolitis pathway – the full version is [here](#)

ASSESSMENT FEATURES:

| Clinical Findings | Green – Low risk |
|--------------------|--|
| Behaviour | Alert Normal |
| Skin | CRT<2 seconds Normal colour skin, lips and tongue Moist mucous membranes |
| Respiratory Rate | <50 breaths / minute |
| Oxygen sats in air | 92% or above |
| Chest recession | Mild |
| Nasal Flaring | Absent |
| Grunting | Absent |
| Feeding/Hydration | Normal – 75% or more fluid intake Occasional cough induced vomiting |
| Other | |

ACTIONS:



Green Action

Provide appropriate and clear guidance to the parent / carer and refer them to the [patient advice sheet](#).
Confirm they are comfortable with the decisions / advice given.

Assessment and Treatment of Mild disease:

Viral Induced Wheeze

This is taken from the Healthier Together Bronchiolitis pathway – the full version is [here](#)

ASSESSMENT FEATURES:

| Clinical Findings | Green – Low risk |
|----------------------|--|
| Behaviour | Alert No increased work of breathing |
| Oxygen sats in air | >95% Pink |
| Heart Rate | Under 5: <140 Over 5: <125 |
| Respiratory Rate | Under 5: <40 breaths / minute Over 5: <30 breaths / minutes |
| Respiratory Distress | None Normal respiratory effort |
| Peak Flow (6y+) | >75% l/min best / predicted |

GREEN ACTION

Salbutamol 2-5 'puffs' via inhaler & spacer (check inhaler technique) - use higher dose if Tx started by parent as per asthma action plan.

Advise – Person prescribing ensure it is given properly

- Continue Salbutamol 4 hourly as per instructions on safety netting document.

Provide:

- Appropriate and clear guidance should be given to the patient/carer in the form of an [Acute exacerbation of Asthma/Wheeze safety netting sheet](#).
- If exacerbation of asthma, ensure they have a [personal asthma plan](#).
- Confirm they are comfortable with the decisions / advice given and then think "Safeguarding" before sending home.
- Consider referral to [acute paediatric community nursing team](#) if available