## Administration of Short-Acting Beta-agonists for Acute Episodes of Moderate or Severe Asthma by Practice Nurses

### 1. Clinical Condition or situation to which this Patient Group Direction applies

<table>
<thead>
<tr>
<th>Definition of clinical condition/situation</th>
<th>Adults and children aged 2 years and above presenting with increasing symptoms of uncontrolled asthma who are unresponsive to conventional therapy, or in whom conventional therapy has not yet been tried. <em>All initial contact personnel (eg. receptionists) should be aware that asthma patients complaining of respiratory symptoms may be at risk and should have immediate access to a doctor or trained asthma nurse. Patients with severe or life-threatening acute asthma may not be distressed.</em></th>
</tr>
</thead>
</table>
| Criteria for confirmation of condition | Assessment should follow BTS (British Thoracic Society) guidelines, referring to Table 10 for adults and Table 12 for children and should include:  
- Peak expiratory flow (PEF)  
- Symptoms and response to self treatment  
- Heart and respiratory rates  
- Ability to complete a sentence in one breath (children: too breathless to talk or feed)  
- Oxygen saturation level, if possible  
**Severe acute asthma can be fatal & must be treated promptly and effectively.**  
Regard each emergency consultation as being for severe acute asthma until shown otherwise [BTS guidance and BNF (Ch 3.1)]. |
| Patients included in this PGD | All patients presenting as above who are not excluded from treatment |
## PATIENT GROUP DIRECTIONS PGD 18.5

### Administration of Short-Acting Beta-agonists for Acute Episodes of Moderate or Severe Asthma by Practice Nurses

| Special considerations | - Pregnancy - acute severe asthma in pregnancy is an emergency & should be treated vigorously in hospital, but the benefit of inhaled therapy whilst awaiting transfer outweighs risk in this situation. Refer urgently to A&E, giving supplemental high-flow oxygen if available. Foetal monitoring recommended (BTS).
- Beta-agonists cause tachycardia and should be used with caution in hyperthyroidism, cardiovascular disease, arrhythmias, susceptibility to QT-interval prolongation & hypertension.
- If diabetic, slight risk of ketoacidosis due to increased blood glucose levels. Check blood glucose if treatment prolonged or high dose given.
- Hypoxia may occur (concurrent administration of oxygen reduces this risk).
- Lactic acidosis or hypokalaemia may occur with high doses of beta agonists.
- Hypokalaemia may be potentiated by concurrent treatment with theophyllines, corticosteroids & diuretics and by hypoxia.
- If the patient is non-english speaking, or has a learning disability, treatment should be explained in an appropriate format and, where possible, an interpreter used.
- Refer immediately to GP if any doubt about diagnosis.
- Failure to respond at any time requires immediate transfer to hospital.
- Admit patients with any feature of a life-threatening or near-fatal attack to hospital (BTS).
- Admit patients with any feature of a severe attack persisting after initial treatment to hospital (BTS).
- All admissions should be via the ambulance service.

### Factors that increase the risk of fatal/near-fatal asthma (BTS)

A COMBINATION OF:

**SEVERE ASTHMA** recognised by one or more of:
- previous near-fatal asthma, eg previous ventilation/respiratory acidosis
- previous admission for asthma especially if in the last year
- requiring three or more classes of asthma medication
- heavy use of β2 agonist
- repeated attendances at A&E for asthma care especially if in the last year
- “brittle” asthma.

AND

**ADVERSE BEHAVIOURAL OR PSYCHOSOCIAL FEATURES** recognised by one or more of:
- non-compliance with treatment or monitoring
- failure to attend appointments/fewer GP contacts/frequent home visits
- self discharge from hospital
- psychosis, depression, other psychiatric illness or deliberate self harm
- current or recent major tranquilliser use
- denial
- alcohol or drug abuse
- obesity
- learning difficulties
- employment/income problems
- social isolation
- childhood abuse
- severe domestic, marital or legal stress.

| Date Direction comes into force | 30th November 2012 |
| Date Direction expires | 30th November 2014 |
PATIENT GROUP DIRECTIONS PGD 18.5

Administration of Short-Acting Beta-agonists for Acute Episodes of Moderate or Severe Asthma by Practice Nurses

Patients excluded from treatment under this PGD
- If there is any doubt about the diagnosis
- Children under 2 years of age
- Patients with ‘life-threatening’ asthma symptoms (see BNF/BTS guideline for diagnostic criteria) - refer urgently to A&E, ideally giving supplemental high-flow oxygen
- Patients unable/ unwilling to consent to treatment
- Previous hypersensitivity to the treatment proposed, or any excipients [see SPC or PIL]

Action for excluded patients
- Encourage continued use of own reliever medication and refer urgently to GP or A&E depending on severity of symptoms and reason for exclusion
- Record reasons for exclusion
- Document details in patient’s electronic records with clinical observations, advice given and action taken

Patients who refuse treatment, do not complete treatment or have persistent symptoms, unresponsive to treatment
- Encourage continued use of own reliever medication and seek immediate medical support
- Document details in patient’s electronic records with clinical observations, advice given, action taken and treatment given

2. Authorised Staff Characteristics

Authorised staff must hold a current registration with the NMC and be a RN on part 1 or 2 of the register. They have demonstrated to their clinical manager an appropriate level of understanding and knowledge regarding:
- clinical assessment of the condition
- identification of criteria for exclusion from treatment under this PGD
- the medicines, therapeutic value, side-effects, precautions and storage requirements
- use and maintenance of a nebuliser
- have undertaken training in CPR/anaphylaxis within the last 18 months
- have immediate access to a telephone and to adrenaline 1 in 1000 injection for treatment of anaphylaxis

Relevant continuing education requirements
Annual update on treatment of anaphylaxis/CPR including paediatric resuscitation

Date Direction comes into force 30th November 2012
Date Direction expires 30th November 2014
PATIENT GROUP DIRECTIONS PGD 18.5

Administration of Short-Acting Beta-agonists for Acute Episodes of Moderate or Severe Asthma by Practice Nurses

3. Description of Treatment

<table>
<thead>
<tr>
<th>Medicines to be supplied/administered</th>
<th>Name: Salbutamol MDI (100mcg/puff) via a large volume spacer, or Salbutamol or Terbutaline via a nebuliser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route and Dose:</td>
<td><strong>Legal status:</strong> POM</td>
</tr>
<tr>
<td></td>
<td><strong>Salbutamol MDI via large volume spacer</strong> (each puff to be inhaled separately):</td>
</tr>
<tr>
<td></td>
<td><strong>Adult:</strong> give 4 puffs initially, followed by 2 puffs every 2 minutes according to response, up to maximum of 10 puffs.</td>
</tr>
<tr>
<td></td>
<td><strong>Child:</strong> give 2 puffs every 2 minutes according to response, up to maximum of 10 puffs. (BTS)</td>
</tr>
<tr>
<td></td>
<td>[Children aged under 3 years should use a spacer with a close-fitting mask (BNFC 12-13)]</td>
</tr>
<tr>
<td></td>
<td>Max dose 10 puffs in total (BTS) – if symptoms are still moderate/severe after 10 puffs, transfer immediately to hospital [further doses (2 puffs every 2 mins) may be given whilst awaiting transfer – BTS]</td>
</tr>
<tr>
<td></td>
<td><strong>or</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Nebulised Salbutamol/Terbutaline</strong> (oxygen driven if available – flow rate must be 6L/min to drive nebuliser, so if supplied by cylinder a high-flow regulator must be fitted) (BTS):</td>
</tr>
<tr>
<td></td>
<td><strong>Dose</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Drug</strong></td>
</tr>
<tr>
<td></td>
<td>Salbutamol</td>
</tr>
<tr>
<td></td>
<td>Terbutaline</td>
</tr>
<tr>
<td></td>
<td><strong>Monitor response for 15 to 30 mins.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>If response to treatment is poor and symptoms remain, OR there is any uncertainty about response, OR if a relapse occurs within 3-4 hours, send immediately to hospital by ambulance.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Further doses may be given whilst awaiting ambulance.</strong></td>
</tr>
</tbody>
</table>

| Specific administration              | **Check expiry**                                                   |
|                                      | **Shake MDI well before use**                                     |
|                                      | Spacers and masks should only be used once and be disposed of after use | **If patient has COPD or mixed COPD/asthma oxygen may be contra-indicated – check before administration & use MDI or air-driven nebuliser** |
|                                      | **Storage**                                                       |
|                                      | Store drugs below 25°C (room temperature).                        |
|                                      | Do not refrigerate or freeze.                                     |
|                                      | After opening the foil tray, unused nebules should be protected from light.                                      |
|                                      | **Disposal**                                                      |
|                                      | Nebules are classified as medical waste and must be disposed of appropriately.                                  |
|                                      | All equipment used should be properly disposed of at the end of treatment                                       |
|                                      | Uncontaminated outer packaging may be recycled.                                                                 |

Date Direction comes into force: 30th November 2012
Date Direction expires: 30th November 2014
## Administration of Short-Acting Beta-agonists for Acute Episodes of Moderate or Severe Asthma by Practice Nurses

### Patient advice
- If a relapse occurs within 4 hours go straight to hospital
- Provide product information leaflet (PIL) on the medicines administered or supplied, (may be accessed via [http://www.medicines.org.uk/emc/](http://www.medicines.org.uk/emc/)) prior to supply, if possible, and discuss, especially side effects and how to report them
- Side effects may occur including: tremor, palpitations, headache, peripheral vasodilation, paradoxical bronchospasm, sensitivity reaction, urticaria, angioedema, hypotension & collapse
- If administering via nebuliser do not allow the nebuliser solution or mist to enter the eyes.
- After high-dose rescue treatment advise to return to using short-acting beta2-agonist inhaler as required, max four times a day (not exceeding 4-hourly use).
- Explain that this is a rescue treatment and that they must see a GP or appropriate Clinician, for follow up and therapy review (ideally within 48 hours). Make GP appointment if possible.
- Monitor peak expiratory flow rate (PEFR) and symptoms. If symptoms worsen, or PEFR decreases after starting treatment, seek further medical advice.
- Provide any specific instructions in writing
- Give information on who to contact in the event of an adverse reaction or concerns.

### Follow-Up
- Patient should be advised to monitor symptoms and peak flow
- Make appointment with GP/appropriate Clinician within 48 hours
- Try to identify reason for exacerbation
- Set up asthma action plan and check inhaler technique and compliance

### Recording
A computer record of all individuals receiving medication under this PGD should be kept for audit purposes within each practice

The record should include:
- Patient's name, NHS number and date of birth
- Record that informed consent was given
- Details of the clinical assessment
- The name, strength, dose, batch number, expiry date and quantity of medicine given
- Date given and by whom
- Outcome of treatment
- Reason for exclusion and follow up action
- Any other advice given and follow up arrangements
- Refusal of treatment (if appropriate) should also be documented

The entry should be Read-coded to enable audit, using a practice-agreed code. Records should be audited regularly (eg. annually) to identify high-risk patients.

Record unusual or severe adverse drug reactions and, if serious or involving children, ensure that a Suspected Adverse Drug Reaction form (yellow card) be completed and sent to MHRA ([http://yellowcard.mhra.gov.uk/](http://yellowcard.mhra.gov.uk/))

### References
- BNF 64th Edition September 2012
- BTS asthma guideline with update in Jan 2012 ([accessed 14.8.12](http://www.medicines.org.uk/emc/))
- BNF for Children 2012-13

| Date Direction comes into force | 30th November 2012 |
| Date Direction expires | 30th November 2014 |
### 4. Management and Monitoring of Patient Group Direction

<table>
<thead>
<tr>
<th>Date Direction comes into force</th>
<th>PGD number</th>
<th>Date Direction expires</th>
<th>Supersedes</th>
<th>Date D. Direction expires</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.11.2012</td>
<td>18.5</td>
<td>30.11.2014</td>
<td>18.4 [extended]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PGD written by</th>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacist</td>
<td>Lynn Wallis</td>
<td>(Signature)</td>
<td>29/11/2012</td>
</tr>
<tr>
<td>Nurse</td>
<td>Catherine Tutt</td>
<td>(Signature)</td>
<td>29/11/2012</td>
</tr>
<tr>
<td>Doctor (CCCG)</td>
<td>Dr Rajbir Bajwa</td>
<td>(Signature)</td>
<td>29/11/2012</td>
</tr>
<tr>
<td>Doctor (AVCCG)</td>
<td>Dr Saj Zaib</td>
<td>(Signature)</td>
<td>29/11/2012</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PGD authorised by</th>
<th>Name and position</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Buckinghamshire</td>
<td>Dr Geoff Payne Cluster Medical Director NHS Buckinghamshire and Oxfordshire</td>
<td>(Signature)</td>
<td>29/11/2012</td>
</tr>
<tr>
<td>NHS Buckinghamshire</td>
<td>Jane Butterworth Head of Medicines Management</td>
<td>(Signature)</td>
<td>29/11/2012</td>
</tr>
</tbody>
</table>
PATIENT GROUP DIRECTIONS PGD 18.5

Administration of Short-Acting Beta-agonists for Acute Episodes of Moderate or Severe Asthma by Practice Nurses

5. Implementation

Administration of short-acting beta-agonists for the treatment acute severe asthma attacks

I ………………………………………………… on behalf of ………………………………………
(name of GP/Line Manager) (name of practice/employing organisation)

authorise the named Practice Nurses listed below to administer under the terms of this patient group direction.

Health Care Assistants (HCAs) are not eligible to work under a PGD and it is illegal to delegate this responsibility to them.

Signature …………………………………… Date ……………………………………

I confirm that I have read and understood the content of this patient group direction and that I have received the appropriate training in order to implement it.

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualifications</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

Date Direction comes into force 30th November 2012
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