Improving Outcomes in Asthma

Asthma Care Bundle

The National Review of Asthma Deaths (NRAD) report, *Why asthma still kills*¹, aimed to identify avoidable factors associated with asthma deaths and made a number of recommendations to improve care and reduce the number of deaths. At the invitation of the National Clinical Director for Respiratory Medicine, one of the responses of the British Thoracic Society (BTS) has been to develop a care bundle for asthma.

Over the past few years, BTS has expanded its programme of quality improvement work to include a comprehensive national clinical audit programme and the development of quality standards, and more recently has undertaken a pilot study on the development and introduction of care bundles for COPD and community acquired pneumonia². The pilot provided evidence for the effectiveness of care bundles in those areas and supported the findings of other studies demonstrating the value of care bundles in UK hospital settings³.

In September 2014, BTS convened a small working group, charged with developing a care bundle for asthma. The group drew on a number of resources including the NRAD report recommendations, guidelines and quality standards for asthma⁴, ⁵, and the report of the BTS pilot care bundle project; and sought input from colleagues via the British Paediatric Respiratory Society, Paediatric Emergency Research in the United Kingdom and Ireland, and the National Paediatric Respiratory and Allergy Nurse Group.

Aim of the care bundle

A care bundle is a structured way of improving the process of care leading to an improvement in patient outcomes. It is a small, straightforward set of evidence-based clinical interventions or actions, which when performed reliably, improve patient outcomes. The bundle resembles a list, but is a cohesive unit where all elements must be completed to achieve the best outcomes. The value of care bundles for a number of treatment areas has been demonstrated in UK hospital settings, where a fall of 18.5 points in the hospital standardised mortality occurred following bundle implementation for 13 diagnoses³.

Five elements were selected by the working group as the actions most likely improve the care of patients and to produce an improvement in the outcomes being measured:

- Assessment of inhaler technique
- Review of medications
- Provision of a written action plan and patient self-management
- Consideration of triggering and exacerbating factors
- Appropriate follow up arrangements

The asthma care bundle is designed to be used primarily for patients discharged from accident and emergency/emergency departments following an acute asthma attack, but will also be suitable for use in admissions wards where circumstances permit. The bundle can be applied to both adults and children, although special considerations may apply to children under 5 years of age.

Next steps

BTS hopes that this new care bundle will be widely piloted and adopted. The bundle addresses a number of the issues identified by the NRAD, particularly in relation to the key area of communication between secondary and primary care services and referral to specialist care; and it is hoped that the bundle as a whole will help patients to manage their asthma and reduce hospital admissions. BTS will continue to support quality improvement in this area and will update the 2016 BTS adult asthma audit to reflect the care bundle elements.

22 April 2016
This Asthma Care Bundle should be used for discharging patients (adults and children) with an acute asthma attack/exacerbation.

**Entry criteria/considerations**
The care bundle should be used when the usual criteria for discharge have been met, and can be applied to adult patients and children from the age of 2 onwards, although patients under 5 may not always be suitable.

The following specific points should be considered in order to confirm eligibility for entry to the care bundle:

For children under 5 years old - ensure that a correct diagnosis of asthma has been established. In this age group, asthma-like symptoms can be caused by viral infections or congenital abnormalities of airway structure and/or function. Optimal preventer therapy for children aged between 2 and 5 years with recurrent episodes of acute ‘viral wheeze’ and minimal interval symptoms is unknown. As a group, children with viral wheeze do not respond to inhaled corticosteroid preventer treatment. Children under 5 with frequent and/or severe wheeze attacks requiring hospital attendance should have a specialist review. Diagnosis should also be carefully considered in older patients particularly those with a smoking history. Further information on diagnosis can be found in the BTS/SIGN British guideline on the management of asthma. This issue should be revisited at the planned review.

The acronym **TAPES** is proposed as useful shorthand for the care bundle.

**TAPES**
- Technique and Medication
- Action Plan
- Environment
- Subsequent care

**Bundle Statement 1:**
All patients (or family members/carers administering medicines) should have their inhaler technique assessed prior to discharge.

Correct use of inhalers is associated with improved outcomes for patients including a reduction in risk of exacerbations and hospital admission. Repeated instruction is required to ensure that inhaler technique is optimised. Every opportunity must be taken to promote good inhaler technique in order to ensure adequate delivery of therapy.

- **Inhaler technique checked**
  - Yes/No
- **Inhaler use instruction provided**
  - Yes/No

**Bundle Statement 2:**
All patients should have their medications assessed. The importance of medication adherence to good asthma control should be reinforced to patients (and/or any family members or carers administering medicines) prior to discharge.

Review of medication is vital following a hospital attendance or admission as intentional and unintentional non-adherence to preventer therapies (principally inhaled corticosteroids) frequently causes deterioration in asthma control.

- **Medication classes reviewed**
  - Yes/No
- **Doses reviewed (increasing/decreasing as necessary)**
  - Yes/No
- **Was the importance of adherence to preventer medication discussed with the patient/family**
  - Yes/No
Bundle Statement 3:
A written asthma action plan for how to manage care should be provided to patients and families/carers.

Self-management/action plans for asthma provide information for patients and their families on how to carry out disease specific elements of self-care. There is strong evidence that providing written self-management/action plans, in addition to verbal information, is associated with improved patient/carer understanding of asthma and thereby reduces risk of further attacks and hospitalisation⁷.

A written action plan has been provided \(\text{Yes}/\text{No}/\text{Already has a plan}\)

Bundle Statement 4:
Triggering and exacerbating factors in the patient’s overall environment should be considered.

Attacks may have an identifiable trigger which should be recognised in order to minimise exposure and reduce risk of further asthma attacks. Trigger factors include NSAIDs smoking/smoke exposure in the home, psychosocial instability and other issues such as pets. Explicit attention should be paid to potential occupational factors. Recognition of these and other potential causes was identified as an important factor in the NRAD report⁴.

Have “Trigger factors” * with the patient’s environment been considered?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Yes/No/Uncertain/NA</th>
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<tbody>
<tr>
<td>NSAIDs</td>
<td></td>
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<tr>
<td>Smoking/smoke exposure in the home</td>
<td></td>
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<tr>
<td>Occupational</td>
<td>Yes/No/Uncertain/NA</td>
</tr>
<tr>
<td>Other</td>
<td>Yes/No</td>
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</tbody>
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* ‘proving’ triggers e.g. occupational exposure, pets, NSAIDs may require further investigation at follow-up.

Bundle Statement 5:
Subsequent care: follow-up in the community to be arranged within 2 working days plus specialist care according to criteria* within 2 weeks.

National guidance clearly recommends early primary care follow up to improve outcomes⁸. Local discussions may need to be held in order to fit this into local systems and care pathways.

* See BTS/SIGN British guideline on the management of asthma⁴, sections 8.6.3 and 8.9.5.

<table>
<thead>
<tr>
<th>Follow-up</th>
<th>Yes/No</th>
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<tr>
<td>Community follow up arranged within 2 working days</td>
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<tr>
<td>Specialist follow up arranged within 2 weeks</td>
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Resources

A template care bundle data sheet is at Annex 1 and may be reformatted or revised for local use. For information on implementing care bundles please see Annex 2. Example asthma action plans are provided at Annex 3. See also:

- further information on adult self-management: [https://www.asthma.org.uk/advice/manage-your-asthma/adults/](https://www.asthma.org.uk/advice/manage-your-asthma/adults/)
- information for patients recently discharged from hospital: [https://www.asthma.org.uk/recently-hospitalised/](https://www.asthma.org.uk/recently-hospitalised/).

Annexes
1. Care bundle sheet
2. Care bundle implementation
3. Asthma UK action and recovery plans ([https://www.asthma.org.uk/advice/resources/](https://www.asthma.org.uk/advice/resources/))

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References


8. NHS Improvement - Lung National Improvement Projects - improving adult asthma care: Emerging learning from the national improvement projects 2010 [https://adultservicesconsortium.files.wordpress.com/2012/05/asthmaimprovement.pdf](https://adultservicesconsortium.files.wordpress.com/2012/05/asthmaimprovement.pdf)

Acknowledgements

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