Asthma is reversible and can be controlled with good education and management. However, it is estimated that every 10 seconds someone in the UK has a life-threatening asthma attack (Asthma UK, 2019) and, according to the British Lung Foundation, 1,200 people a year are recorded as dying from the condition in the UK (Bit.ly/BLFAsthmaStats). Findings from the National Review of Asthma Deaths (NRAD) suggest that two-thirds of these deaths are preventable (Royal College of Physicians, 2014). The Annual Asthma Survey 2018 of 10,000 people with asthma found 81% had poor symptom control and many had not been given basic asthma reviews, personal asthma action plans or had their inhaler technique checked. This article describes improvements in the care and management of prisoners with asthma that has lessons for improving asthma care in other healthcare settings.

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Abstract Asthma causes 1,200 deaths in the UK annually but, with good education and management, two-thirds of these are preventable. Asthma management aims to leave patients symptom free and able to lead a normal, active life. An Asthma UK national survey showed 81% of responders had poor symptom control and many had not been given basic asthma reviews, personal asthma action plans or had their inhaler technique checked. This article describes improvements in the care and management of prisoners with asthma that has lessons for improving asthma care in other healthcare settings.

Citation Roche K, Alsop M (2020) Improving standards of asthma management in a prison setting. Nursing Times [online]; 116: 2, 49-51.

What is asthma?
Asthma is a long-term condition that affects the airways. The Global Initiative for Asthma (GINA) (2019) defines it as a collection of symptoms – such as wheezing, chest tightness, shortness of breath and cough – that vary in frequency and may be mild, moderate or severe. Many factors can cause asthma symptoms; these ‘triggers’ vary between individuals and include viral infections, occupational triggers, house dust mites, pollens, tobacco smoke, exercise, stress and some medication such as beta-blockers, aspirin and non-steroidal medication (SIGN and BTS, 2019). Recommendations for good asthma care and management are shown in Box 1.

Key points

- Approximately three people die of asthma in the UK every day, and two-thirds of these deaths are preventable.
- Although good asthma management can leave people symptom free, 81% of patients have poor symptom control.
- All patients with asthma should be reviewed at least once a year by a health professional trained in asthma management.
- Education of patients, carers and health professionals is vital to manage symptoms and acute episodes when they occur.
- All individuals with asthma should have a personal asthma action plan.

In this article...

- Reducing asthma deaths through better education and management
- Improving standards of asthma care in a prison setting
- Educating patients on symptom control and managing exacerbations

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normal, active life. This is achieved through treatment tailored to the individual and patients learning to recognise what provokes their symptoms and avoid the triggers as much as possible (GINA, 2019). Close monitoring by health professionals is also important to ensure treatment is stepped up and down as required in accordance with national guidance.

Improving care in a prison setting
NHS England commissions primary healthcare in prisons from the NHS or private healthcare providers. There is a drive to ensure:

- Prisoners receive equitable care;
- Care given in prison meets the highest standards of care in the community.

This is reflected in key performance indicators laid out by justice providers and the Prisons and Probation Ombudsman (2019).

A case study (Box 2) shows how the care of a patient with asthma in Her Majesty’s Prison (HMP) Brinsford was not meeting best-practice recommendations; this prompted a review of how care was delivered. The case demonstrated that acute asthma could be controlled using both pharmacological (inhaler) and non-pharmacological (patient positioning) approaches. However, it also highlighted that five years after the RCP’s (2014) NRAD was published, its recommendations had not been incorporated into clinical practice. Improvements were needed to:

- Upskill health professionals in caring for and managing patients with asthma;
- Review the amount of beta₂ agonists and inhaled corticosteroids prescribed;
- Encourage patient adherence by checking use of prescribed medication;
- Implement personal asthma action plans;
- Provide peak flow meters for use in emergencies and for daily use by patients who need them following risk assessment;
- Educate patients on their condition and the use of medication;
- Encourage patients to use spacers to improve their inhalation technique, and provide spacers for emergency use to improve medication distribution;
- Introduce peak flow diaries for patients to self-manage and monitor their condition;
- Educate patients in non-pharmacological management, including trigger avoidance and breathing exercises.

Translating theory into practice
When the incident in the case study occurred, the primary care nurse was studying a master’s module in the care and management of asthma and chronic obstructive pulmonary disease (COPD) at Staffordshire University; this provided the principles to translate theory into practice and drive service improvement in the prison setting.

The prison healthcare provider had recently implemented the Ardens clinical decision support tool for the SystmOne electronic medical record, giving prison health professionals easy access to the latest evidence-based resources. As the provider was commissioned for multiple prisons in the region, a ‘regional’ Ardens template was implemented for conducting asthma reviews. This helps health professionals conduct and document a comprehensive clinical review using evidence-based recommendations from SIGN and BTS guidance (2019) as well as the RCP’s NRAD (2014).

Patients now receive a structured asthma review by an appropriately trained health professional, which includes asking them three questions to assess asthma control (Box 3). Ongoing care is described below.

Personal asthma action plans
Only 23% of patients who died had a personal asthma action plan (RCP, 2014) and the recommendation that all patients have such a plan was not being followed in the prison. Asthma action plans have now been implemented, and patients are encouraged to accept and use them.

Box 1. Recommendations for good asthma care

- Asthma reviews should be performed by a competent health professional
- Patients’ inhaler technique and use of prescribed medicines should be reviewed at every consultation and at annual review
- All patients should be educated about the seriousness of asthma and how to use their medication
- Every patient should have a personal asthma action plan
- Patients should be taught to monitor their peak flow and keep an asthma diary to monitor their condition

Sources: Scottish Intercollegiate Guidelines Network and British Thoracic Society (2019); Royal College of Physicians (2014)

Box 2. Case study

Colin Jenkins,* a young man with a diagnosis of asthma, experienced an episode of breathlessness and wheezing. His cellmate alerted the prison officer, who immediately contacted primary healthcare services. When health professionals arrived at the scene, Mr Jenkins was presenting with signs and symptoms that suggested an asthma exacerbation: tachypnea (22 breaths/min), tachycardia (113 beats/min), mild breathlessness, audible wheeze and chest tightness. He was speaking in short sentences and lay on the floor with no accessory muscle usage, which suggested a mild asthma exacerbation. Chest auscultation revealed a bilateral wheeze, combined with reduced oxygen saturations (94% on air) – clinical evidence of an acute asthma episode according to SIGN and BTS (2019) guidance and Bickley and Szilagyi (2017).

Peak flow meters were not available in the prison as part of emergency resuscitation equipment, so staff could not assess Mr Jenkins’ peak flow reading to accurately assess and monitor him. However, he could sit up and lean forward to ease his breathing difficulty; this brought his oxygen saturation levels to within normal range. He had no personal asthma action plan.

Staff saw that Mr Jenkins had three blue inhalers with reliever medication (short-acting beta₂ agonists) and two brown inhalers with preventer medication (corticosteroids), but he was adamant he only ever needed the blue inhaler. In line with SIGN and BTS (2019) and GINA (2019) guidance, he was encouraged to use his blue inhaler as a first-line treatment (2-10 puffs every 10-20 minutes). His inhaler technique was observed to be poor, but his symptoms began to ease after 10 minutes using two puffs. Staff booked him in for a follow-up assessment the next day.

Mr Jenkins was left with one brown and one blue inhaler (which were checked by staff to make sure they were in date) and educated on the importance of using an inhaled corticosteroid to prevent further exacerbations.

The prison GP assessed Mr Jenkins as soon as he had been stabilised, and prescribed oral prednisolone (40mg). This was administered one hour after the incident and continued once a day for five days as recommended by guidance (SIGN and BTS, 2019).

* The patient’s name has been changed.
Clinical Practice

The plans can be based on peak respiratory flow rate and/or symptoms, although evidence suggests a combination of the two works best (Kouri et al., 2017). Action plans are effective when patients use peak flow measurements to adjust their therapy following the steps agreed therein. Plans also list individuals’ asthma triggers, so they can take action to avoid or reduce them, particularly if their asthma is severe.

Risk assessment
Public Health England (2016) advocates supporting prisoners to effectively self-manage long-term conditions through frequent clinical reviews. However, clinical need must be balanced with security risk, especially in the custodial system, and providing effective community care to this vulnerable group can be challenging (Ismail and de Viggiani, 2018; National Institute for Health and Care Excellence, 2016; World Health Organization, 2014).

Medical devices, along with other items, may be used as weapons, so appropriate risk assessments must be undertaken when prescribing and administering such devices in custodial settings (Royal College of General Practitioners, 2019). Triggers for the patient in Box 2 included an e-cigarette device used by his cellmate – the cellmate was moved to limit trigger exposure.

Medication monitoring and review
The NRAD recommended regular monitoring and review of prescribed/dispensed asthma medication, including urgent review of any patient issued with 12 inhalers or more in one year (RCP, 2014). The patient in the case study had three relievers in his asthma medication, including urgent monitoring and review of prescribed/dispensed medication. However, the function they serve (RCP, 2014). This is now fully addressed via patient education.

Monitoring inhalers, especially short-acting beta, agonists used for immediate relief of asthma symptoms, has now been introduced through the creation of a local database. This includes monitoring patients who use a reliever more than twice a week to ensure they are on the correct dose of preventer (inhaled corticosteroid).

Patient education
Patients with asthma are educated about their condition and taught the correct inhaler technique; this is vital as poor technique increases exacerbation frequency (GINA, 2019). Asthma UK videos, demonstrating effective inhaler techniques for different types of inhaler (asthma.org.uk/advice/inhaler-videos), are a valuable educational tool. Use of placebo inhalers in clinical reviews also allows patients to practise their technique safely; they contain no medication and ‘tactile’ reinforcement enables patients to feel the benefit of their improved technique.

Another NRAD finding, which was also illustrated in the case study, was poor understanding among patients of the difference between preventer medication (corticosteroids in the brown inhaler) and reliever medication (bronchodilators in the blue inhaler), when to take them, and the function they serve (RCP, 2014). This is now fully addressed via patient education.

The asthma reviews also explore tobacco and cannabis use; it is known that tobacco smoke can exacerbate asthma symptoms (GINA, 2019), but the effect of cannabis is not fully understood (Prince and Conner, 2018). Conversations on these two risk factors are used as a chance to educate patients on other smoking risk factors, such as the increased risk of developing cardiovascular disease and COPD. Smoking-cessation schemes are offered by prison healthcare professionals can do to improve asthma care and management, such as monitoring patients’ symptoms regularly, checking peak flows and educating patients, carers and health professionals on how to manage symptoms and exacerbations. The measures discussed in this article can be used in any healthcare setting to improve management and care of patients with asthma and reduce unnecessary deaths. Educating staff about key aspects of asthma management, including early signs of deterioration, peak flow management and the use of personal asthma action plans, is vital to improve routine asthma care and the management of acute situations in all settings. NT.

References