In their asthma guideline, the British Thoracic Society (BTS) and Scottish Intercollegiate Guidelines Network (SIGN) advocate a stepwise approach to symptom control. Pharmacological treatment should be started at a level appropriate for the severity of symptoms; the lowest effective dose of inhaled corticosteroid (ICS) should be used; treatment should be regularly reviewed; and once the asthma has been under control for a sustained period, the medication dose should be reduced (BTS/SIGN, 2016). However, this ‘stepping down’ of asthma therapy does not always happen, leaving many patients overtreated and at increased risk of adverse effects (O’Byrne et al, 2010).

This article presents and discusses the findings of a qualitative study examining primary care staff’s perceptions and practices regarding stepping down asthma treatment in patients aged 12 and over. The aim of the study was to improve understanding of why staff may be reluctant to reduce doses.

**Keywords** Asthma/Inhaled corticosteroid/Personalised plans

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**Abstract** Asthma management guidelines recommend an individualised approach, in which pharmacological treatment is reduced when appropriate to ensure the lowest effective dose of inhaled corticosteroid is being used. However, primary care practitioners do not always have the confidence to ‘step down’ their patients’ asthma treatment. A qualitative study examined the perceptions and practices of primary care staff at Ipswich and East Suffolk Clinical Commissioning Group, and the barriers they face, in relation to stepping down asthma treatment, and their responses were compared with those of more experienced and more specialised staff. This article reports on the study and its findings, concluding with recommendations to help primary care practitioners overcome their patients’ and their own reluctance to reduce inhaled asthma medication doses.

**Key points**

- Stepping down asthma treatment should be considered when a patient’s symptoms have been under control for at least three months on stable therapy
- Barriers to asthma treatment step down can include practitioners’ lack of confidence and time as well as patients’ reluctance
- Primary care practitioners may benefit from local formulary guidance on asthma treatment
- Personal asthma action plans and the Asthma Control Test are valuable tools for effective asthma management

**Managing asthma in primary care**

In primary care, asthma is traditionally managed by practice nurses, nurse practitioners and respiratory nurse specialists with input from GPs. Revalidation requires nurses to keep their knowledge up-to-date in line with national guidance, and clarity on best practice is critical to ensure patient safety and effective management of long-term conditions such as asthma. However, as the remit of primary care nurses continues to extend to new disease areas, maintaining the required level of knowledge across all areas of responsibility is an ever-increasing challenge.

The BTS/SIGN guideline recommends an individualised approach to care supported by a self-management or personal asthma action plan (PAAP). An ICS is the drug of choice for preventive therapy, and an inhaled long-acting β-agonist (LABA) is the first add-on drug to consider before increasing the ICS dose. Treatment adherence and inhaler technique must be
checked before increasing the ICS dose. If optimal asthma control is not achieved after the addition of an inhaled LABA, and after adherence and inhaler technique have been found to be optimal, the ICS dose should be increased in a stepwise fashion (BTS/SIGN, 2016).

The BTS/SIGN guideline also suggests that combination inhalers (containing both an ICS and an inhaled LABA) may help patients adhere to therapy while ensuring that the LABA is not taken without the ICS. The appropriate combination should be prescribed in line with the products’ indications (BTS/SIGN, 2016).

Both national and international bodies recommend stepping down treatment once asthma has been under control for at least three months on stable therapy (Global Initiative for Asthma, 2017; BTS/SIGN, 2016; National Institute for Health and Care Excellence, 2013). Studies have shown that asthma can continue to be successfully controlled after stepping down combination treatment (Usmani et al, 2017; Papi et al, 2012). However, in practice, asthma treatment is rarely stepped down, which may lead to overtreatment, increased risk of adverse effects and unnecessary costs (O’Byrne et al, 2010).

Why step down asthma treatment?
There are many reasons why asthma treatment should be stepped down when possible. High-dose ICSs can produce side-effects such as a sore throat, voice hoarseness and oral candidiasis, and these can undermine long-term adherence to treatment. The risk of these side-effects is reduced if users rinse their mouth after inhaler use, while using spacer devices limits the oropharyngeal deposition of the drug (Dahl, 2006).

High-dose ICSs are also thought to be associated with an increased risk of systemic adverse effects including decreased bone mineral density, skin thinning, cataracts, adrenal axis suppression, bruising, immunosuppression, reduced ability to fight infection (particularly infection with varicella zoster virus) and impaired growth in children (Dahl, 2006). Lowering the dose of ICS may reduce the risk of these adverse effects developing (Crossingham et al, 2017; BTS/SIGN, 2016).

The BTS/SIGN guideline states that all patients receiving high-dose ICS treatment should carry a steroid safety card – such as those provided by the London Respiratory Network (bit.ly/LRNSteroidCard) – containing information on risks and guidance on appropriate actions should side-effects occur (BTS/SIGN, 2016).

Another reason to step down treatment is cost. Asthma UK estimates that asthma treatment currently costs the NHS around £1.1bn per year (Asthma UK, 2016). Reviewing asthma therapy and stepping it down when possible can help reduce the costs associated with prescribing high-dose medications.

Exploring primary care practice
On the patient side, adherence to treatment has been highlighted as a barrier to stepping down asthma treatment (Saito et al, 2017), however, there has been little research on what influences the decisions of health professionals. The qualitative research presented here was conducted in 2015 to improve our understanding of how primary care practitioners manage asthma, what tools they use to assess symptom control, their attitudes towards treatment step down and the challenges they face.

A questionnaire was distributed to:
● Those attending respiratory educational meetings organised by Ipswich and East Suffolk Clinical Commissioning Group (test population);
● Those attending the Primary Care Respiratory Society UK (PCRS-UK) Leaders meeting (control population).
The test group comprised 70 participants, of which 58% were practice nurses, 16% were nurse practitioners and 24% were GPs. The control group comprised 19 participants, of which 41% were practice nurses, 14% were nurse practitioners and 5% were GPs. Attendees of the PCRS-UK meeting were chosen as the control group as the meeting is aimed at those with a respiratory interest.

Participants were asked to indicate:
● How confident they were regarding stepping down asthma treatment;
● Which tools they use to assess asthma symptom control;
● What barriers to treatment step down they commonly encounter.

Confidence
Participants’ confidence levels were measured on a scale of 1–5 (1 = not very confident; 5 = very confident). In the test group, 63% rated their confidence at 4 or 5, versus 90% in the control group. In the test group, among participants who gave themselves a score of 5, a large majority were practice nurses but none were nurse practitioners, the latter rating their confidence at 2, 3 or 4 (Fig 1).

Guidance
In the test group, 83% of participants said they had referred to the BTS/SIGN guideline in the previous six months to guide their management of asthma, while the figure was 95% in the control group. Among participants who rated their confidence at 4 or 5, both in the test and the control group, 75% had access to a local formulary for asthma management. In contrast, less than 50% of those who rated their confidence 3 or below had access to local formulary guidance.

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**Box 1. Tools used to assess symptom control**

The Royal College of Physicians’ 3 Questions (RCP3) test assesses asthma control during the day, at night and with activity. The questions are:

In the last month
- Have you had difficulty sleeping because of your asthma symptoms (including cough)?
- Have you had your usual asthma symptoms during the day (for example, cough, wheeze, chest tightness or breathlessness)?
- Has your asthma interfered with your usual activities (for example, housework, work or school)?

**Peak expiratory flow rate (PEFR)**
An effort-dependent test which measures airflow in the larger airways and can be used as a measure of asthma control

**Reliever usage**
The BTS/SIGN asthma guideline (2016) advises that use of salbutamol more than twice a week is indicative of poor asthma control

**Asthma Control Test (ACT)**
Assesses the frequency of shortness of breath and general asthma symptoms, use of rescue medications, the effect of asthma on daily functioning and overall self-assessment of asthma control, over the last four weeks.
Assessment tools
Nearly all respondents in the test group said they used the Royal College of Physicians 3 Questions (RCP3) (89%), peak expiratory flow rate (PEFR) (91%) and reliever usage (94%) to assess symptom control, but only 27% said they used the Asthma Control Test (ACT) (Fig 2) (Box 1).

Those who used the ACT tended to be more confident in stepping down treatment: 79% of those using the ACT rated their confidence at 4 or 5. This is in line with findings in the control group, in which 74% of those who rated their confidence 4 or 5 used the ACT.

Practices and challenges
In the control group, 84% of participants said they would step treatment down within six months of maintaining good asthma control (this includes three months of good control and up to a further three months). In the test group, only 68% said that they would consider stepping down treatment after six months of good asthma control, while 32% preferred to wait up to a year or more before suggesting a dose reduction. When asked about the challenges they faced, participants in both groups cited mostly lack of time and resistance on the part of patients.

Discussion
This study provides a snapshot of perceptions and practices concerning the stepping down of asthma therapy in primary care. In both populations (test and control), a majority of respondents were practice nurses and nurse practitioners, mirroring the fact that, after diagnosis, patients are mainly supported by nurses rather than GPs.

It is likely that participants in the test population had an interest in respiratory medicine or were motivated to improve their practice in that area, as they were attending local education meetings. They may not be representative of all primary care practitioners, which is a limitation of the study. However, the range of perceptions and confidence levels reported suggest that some participants required more support at a local level to proceed with treatment step-down. Control group participants were more confident, but since they were attending the PCRS-UK Leaders meeting it is likely that most were respiratory specialists with in-depth knowledge and more extensive experience of asthma management than their counterparts in the test population.

Large majorities in both groups had referred to the BTS/SIGN guideline in the previous six months, although this did not appear to be associated with greater confidence in reducing asthma medication doses. Access to local formulary guidance on asthma treatment seemed to be associated with higher confidence levels: specific
and locally relevant guidance may reassure staff that their care is in line with that of their colleagues, as well as within budget.

To assess symptom control, most participants used the RCP3, PEFR and reliever usage, but these tools, unlike the ACT, did not appear to be associated with higher confidence levels. This finding was the same in both study groups. A majority of participants in the control population routinely used the ACT and tended to take a more proactive approach to adjusting the medication dose.

Lack of time during review appointments was cited as one reason for not discussing treatment step down with patients. This is an ongoing issue that must be addressed if asthma is to be effectively managed in primary care. Staff need time to assess symptom control (which should be done at each review appointment with tools such as the ACT or RCP3), check inhaler technique and discuss patients’ PAAPs.

Another reason cited to explain why treatment step down did not occur was patient resistance. Twelve respondents were concerned that their patients’ asthma would be less well-controlled after step down. Patients themselves are often worried that their symptoms will return if their ICS dose is reduced. Some prefer to continue taking high doses despite the risks. Reducing drug doses should be one of the treatment goals agreed with patients as part of their PAAPs. Ongoing management should include discussing seasonal symptoms, side-effects of medications and other factors that may underpin decisions to adjust medication doses. Patients also need to understand what action to take if their symptom control deteriorates.

### Conclusion

Primary care health practitioners in this study often used the BTS/SIGN guideline to inform their management of asthma, but many still lacked the confidence to routinely step down treatment. Access to a local formulary seemed to reassure them that they were making the right choices. If they used the ACT to assess symptom control, they were more likely to adopt a more proactive approach to reducing medication doses.

Primary care practitioners need to consider treatment step down at every asthma review appointment. Discussing PAAPs and treatment goals with patients is an opportunity to inform them of the risks associated with the long-term use of high-dose ICSs. This is key to helping patients proactively manage their asthma, lower their resistance to dose reduction and improve their safety.

### Box 2. Key recommendations

- Use an objective assessment tool such as the ACT or RCP3 to assess symptom control
- Check adherence with existing treatment and review inhaler technique
- Eliminate trigger factors as much as possible
- Ensure that patients have a PAAP and understand their treatment goals
- Only step down treatment once asthma has been controlled for at least three months on stable therapy
- Aim to reduce the ICS dose by 25-50% every three-to-six months and review regularly
- For consistency and clarity, use the same ICS brand when reducing dose

ACT = Asthma Control Test; ICS = inhaled corticosteroid; PAAP = personal asthma action plan, RCP3 = Royal College of Physicians 3 Questions

Sources: Global Initiative for Asthma (2017), BTS/SIGN (2016)

### Box 3. Online resources

- Global Initiative for Asthma: Bit.ly/GINAStrategy2017
- MPG Guidelines: Bit.ly/MGPGuidelinesAsthma
- NHS London Respiratory Team: Bit.ly/LRTAsthmaGuidance
- National Institute for Health and Care Excellence: Bit.ly/NICE_QS25

Boxes 2 and 3 feature key recommendations and online resources for stepping down asthma treatment.