

## Personal Asthma Action Plans

### What are Personal Asthma Action Plans?

Personal asthma action plans (PAAPs), formerly called self-management plans, are designed to encourage people with asthma (and their carers) to take more responsibility for the management of their asthma in partnership with health care professionals.

PAAPs are a written record of what action to take when symptoms and/or peak flow readings deteriorate. They should include information about when to seek medical help or when to access emergency services.

Plans are aimed at people who get regular symptoms, who are at risk of having an asthma exacerbation, and individuals who wish to become involved in self-managing their own asthma. In order to prevent severe asthma attacks the action plan involves an explanation by a doctor or nurse regarding the signs and symptoms of deteriorating asthma control and information about prescribed medication.

Most severe attacks do not happen suddenly - they are usually predictable and preventable - and patients need to know what they can do to recognise and prevent worsening symptoms and how they can be treated.

Successful education and self-management programmes vary considerably but should encompass:

- Structured education, reinforced with written PAAPs.
- Specific advice about recognising loss of asthma control. This may be assessed by symptoms and/or peak flow measurements.<sup>1,2</sup>
- Action to take if asthma deteriorates, including seeking emergency help, commencing steroid tablets (if the patient has been given an emergency supply of steroids) and, if appropriate, recommencing or temporarily increasing inhaled steroids.<sup>3</sup>

Any patients who have stopped their preventative medication should be reminded to recommence their inhaled steroids.

### Types of Plans

#### 1. Peak flow-based asthma action plan

These are designed for people who wish to be closely involved in their asthma management, those with regular symptoms, or those who are at risk of attacks.

They inform people how to measure a peak expiratory flow rate (PEF) and how to interpret the measurements. They also include instructions on how to respond in the event of an asthma attack.

They are appropriate for patients:

- With more severe asthma
- Who have had frequent courses of oral steroid tablets
- Who have been previously admitted to hospital as a result of their asthma

Setting peak flow targets is a useful way of establishing a framework for a peak flow-based action plan. The fundamental prerequisite is to obtain the patient's best peak flow reading (assessed once treatment has been optimised and peak flows are stable) and then to use this as the level against which subsequent peak flow readings can be measured and calculated as a percentage of the best value. Action levels then correspond to different percentages of the patient's best reading. Best PEF should be updated every few years in adults and more frequently in growing children.

The 'Be In Control' Asthma UK materials, which include peak flow-based plans, are available from [www.info@asthma.org.uk](http://www.info@asthma.org.uk). They also include advice for healthcare professionals on how to complete these plans.

The most recent BTS/SIGN Asthma Guideline<sup>4</sup> 2008 recommends the following:

- PEF <80% of best: increase inhaled steroids, however, increasing inhaled steroids is usually ineffective if patients are already taking moderate or high doses (>400mcg daily) and these patients should move straight to the oral steroid step.
- PEF <80% of best: those on low doses e.g. 200mcg of inhaled steroid daily may be advised to increase the dose substantially e.g. to 1200mcg daily at the onset of a deterioration<sup>5</sup>.
- PEF < 60% of best: commence oral steroids
- PEF <40% of best: seek urgent medical advice

There is no single measure of asthma severity that is 100% sensitive, 100% specific, and works for all patients. The choice of measures to be used will vary between patients and between clinical settings. The most recent BTS/SIGN asthma guidelines<sup>4</sup> recommend the measurement of PEF rate in ascertaining the severity of asthma and as a useful tool in monitoring recovery following an acute attack.

Many patients can manage their asthma by monitoring their symptoms. However, some individuals are poor at judging the severity of their condition and children may not do this reliably. In these cases a measure of PEF and comparing this to the patient's best recorded PEF can determine if changes in treatment or an admission is required.

#### 2. Symptom-based action asthma plan

Asthma symptoms occur frequently as a result of viral infections or on exposure to a known asthma trigger factor. Symptoms indicating worsening control include:

- Night-time waking due to cough and wheeze
- Exercise-induced symptoms

The 'Be in Control' asthma action plan recommends the following:

#### ZONE 1

- Asthma is under control if the patient has no or minimal symptoms during the day or night (no wheezing, cough, tightness in the chest or shortness of breath)
- Normal activities are easily carried out without inducing asthma symptoms
- Patients are advised to continue their usual asthma medications (which are written in the management plan)

#### ZONE 2

- Asthma is getting worse if the reliever inhaler is required more than once/day
- The patient is having difficulty sleeping because of asthma symptoms
- Patients are advised to increase their preventer medication (see previous comments re current dose of inhaled steroids) and use their reliever inhaler as required.

#### ZONE 3

- Asthma is more severe if the reliever inhaler is required every four hours or more, and the patient is experiencing constant symptoms
- Patients are advised to start oral prednisolone - assuming they have their own supply - for 5 days or until symptoms have improved, and to inform their doctor or nurse within 24-36hrs. Alternatively they should make arrangements to be seen at the surgery that day.

#### ZONE 4

- It is an asthma emergency if the reliever inhaler is not alleviating symptoms
- The symptoms are getting worse
- The patient is too breathless to speak in sentences

Obtain emergency help and phone 999 if symptoms do not improve.

In the meantime, patients are advised to take their reliever inhaler as often as required. Parents can administer multi-doses of salbutamol (10 puffs) or equivalent, via an MDI and spacer. Adults can take up to 20 puffs.

#### Budesonide/formoterol Combination

Patients on the combination product budesonide/formoterol (Symbicort®) who

are using the SMART approach i.e. a single inhaler used as rescue medication instead of a short-acting beta<sub>2</sub>-agonist, in addition to its regular use as a controller treatment will need the following asthma action plan (see also Box 1):

- Take regular daily maintenance inhalations every day
- If having asthma symptoms :
  - Take one additional inhalation of budesonide/formoterol
  - If the symptoms do not improve after five minutes take a further inhalation
  - Take no more than six inhalations on a single occasion for relief of symptoms and no more than 12 inhalations on the same day (total of maintenance and relief)
  - If more than 12 inhalations in the same day are required the patient should be advised to see their doctor or nurse as soon as possible
  - In an emergency - the Symbicort inhaler is not helping the patient should seek medical advice immediately by calling their doctor or an ambulance and go directly to hospital.

#### Implementation

Patients need to be offered certain basic facts and acquire certain skills in order to monitor their own condition and to understand the significance of certain symptoms.

- Self management advice should be offered to most patients; asthma action plans encourage patients to take a more central role in controlling their own condition, thereby preventing attacks
- This should include advice on how to make lifestyle changes or treatment changes
- Every asthma consultation is an opportunity to review, reinforce, and extend, knowledge and skills
- A hospital admission represents a window of opportunity to review self-management skills. No patient should leave hospital without a written PAAP and if appropriate, their own peak flow meter.
- An acute consultation offers the opportunity to determine what action the patient has already taken to deal with the exacerbation. Their self-management strategy may be reinforced or refined and the need for

#### Box 1

Asthma Treatment Plan for:

**Take Symbicort® every day**  
(one dose in the morning and one in the evening)

**If needed, take an extra dose for relief**  
(repeat if necessary)

Contact your doctor or nurse if you require more than X inhalations in a day

Additional information

Doctor/nurse: \_\_\_\_\_ Tel: \_\_\_\_\_ Date: \_\_\_\_\_

consolidation at a routine follow-up considered

- A consultation for an upper respiratory tract infection (URTI) or other known trigger is an opportunity to rehearse with the patient their self-management in the event of their asthma deteriorating<sup>4</sup>
- Self-management programmes will only achieve better outcomes if the prescribed asthma treatment is appropriate and within guideline recommendations, and there is some evidence that patients provided with an asthma action plan receive more effective treatment<sup>7</sup>. ■

#### References

1. Adams RJ, Boath K, Homan S, *et al.* A randomized trial of peak flow and symptom-based action plans in adults with moderate-to-severe asthma. *Respirology* 2001;**6(4)**: 297-304.
2. Yoos HI, Kitzman H, McMullen A, *et al.* Symptom monitoring in childhood asthma: a randomized clinical trial comparing peak expiratory flow rate with symptom monitoring. *Ann Allergy Asthma Immunol* 2002; **88(3)**: 283-91.
3. Madge P, McColl J, Paton J. Impact of a nurse-led home management training programme in children admitted to hospital with acute asthma: a randomised controlled study. *Thorax* 1997;**52**:223-8.
4. British Thoracic Society/ Scottish Intercollegiate Guidelines Network. British Guideline on the Management of Asthma 2008 (SIGN publication number 101). [www.thorax.bmj.com](http://www.thorax.bmj.com)
5. Pharmacological management of asthma. Evidence table 4.9: Exacerbation. Edinburgh SIGN: 2002 available <http://www.sign.ac.uk/guidelines/support/guideline63/index.html>
6. Heard AR, Richard IJ, Alpers JH *et al.* Randomised controlled trial of general practice based asthma clinics *Med J Aust* 1999;**171(2)**:68-71
7. Thoonen BP, Schemer TR, Vanden Boom, *et al.* Self-management of asthma in general practice, asthma control and quality of life: a randomised controlled trial. *Thorax* 2003;**58(1)**: 30-6.

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