

ASTHMA TREATMENT GUIDE (ADULTS)

The BTS/SIGN guideline provides a wide range of information and guidance on the treatment of patients with asthma. <https://www.brit-thoracic.org.uk/document-library/clinical-information/asthma/btssign-asthma-guideline-2016/>

The cost per patient (CPP) for respiratory medicines in NHS Lanarkshire (NHSL) has reduced over the last 5 years however we currently have the second highest CPP in Scotland. This is independent of the higher prevalence of both conditions within NHSL. Safe and cost-effective use of inhaled corticosteroids is of paramount importance.

With these objectives in mind NHSL has reviewed its respiratory formulary options and a step-wise summary can be found in Appendix 1. Further information can be found by accessing the NHSL Formulary. http://www.medednhsl.com/meded/nhsl_formulary/

STEPPING DOWN THERAPY IN ADULTS>18YEARS

It is important that patients being treated for asthma using inhaled corticosteroids (ICS) are titrated down to the lowest dose that controls their symptoms. 85% of all patients with asthma should be able to achieve control on low to medium dose of inhaled corticosteroids.¹

PRACTICE POINTS

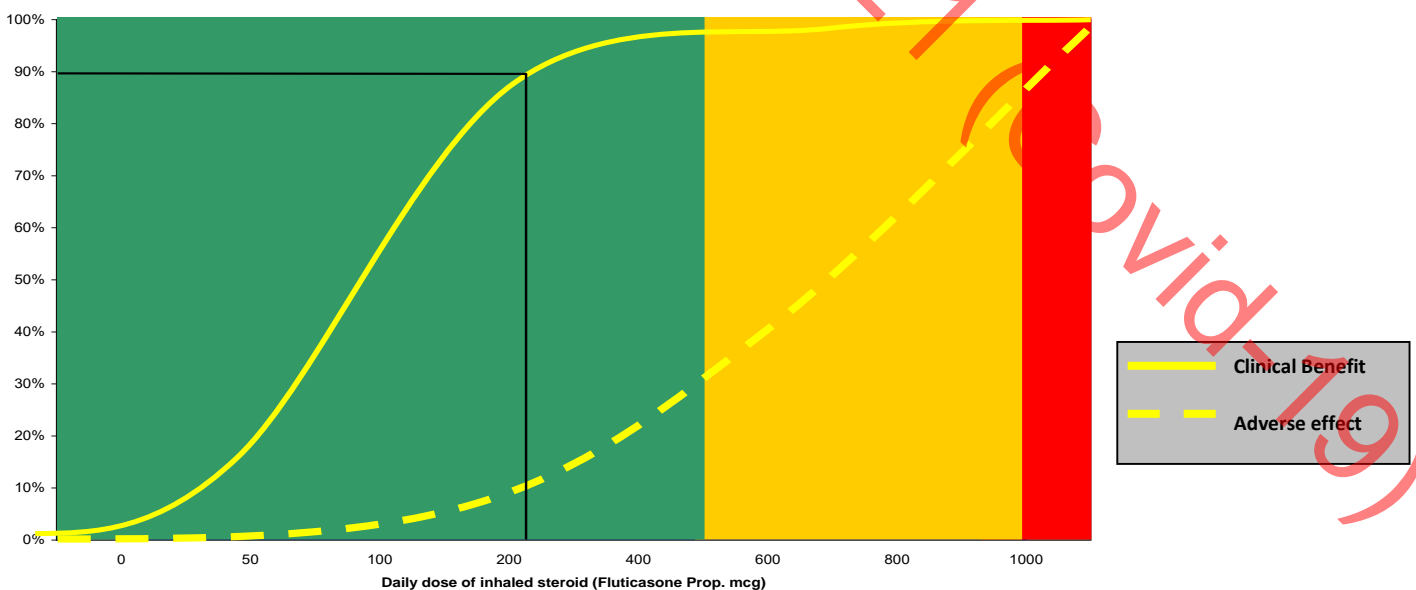
Patients should have their asthma control assessed using a validated symptom control questionnaire (e.g. ACT, RCP or ACQ). Step-down of treatment should be considered for patients whose asthma symptoms are well controlled (see Table 1, Page 2) for at least 12 weeks. Stepping down before this can lead to exacerbations and hospital admissions.¹

When stepping patients down or changing therapy, prescribers should ensure patients can effectively use the prescribed inhaler device.

What is the evidence for stepping-down?

Evidence indicates that optimal asthma control can be achieved with lower doses of ICS than were used previously. Meta analyses have evaluated the efficacy and safety of ICS in asthma, one of which highlighted that over 90% of the clinical benefit was achieved at a total daily dose of 200mcg of fluticasone propionate.² The second found that the dose-response curve for efficacy was relatively flat and the difference between fluticasone propionate 100mcg and 1,000mcg daily is relatively small.³

Dose-response curve for inhaled corticosteroids



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As demonstrated in the graph above, the majority of clinical benefit is seen at lower doses and then tails off. In contrast the dose response curve for side-effects (e.g. bruising and thinning of the skin, glaucoma, cataracts, and decrease in bone mineral density) increases sharply with higher doses of ICS (>500mcg/day fluticasone propionate).

What do the guidelines say about stepping-down?

BTS/SIGN guidelines recommend that the dose of ICS should be titrated to the lowest dose at which effective control of asthma is maintained.¹ The decision to step-down therapy should be jointly made between the clinician and the patient. Reductions should be considered every three months, but only if the patient's symptoms are well controlled. When reducing inhaled corticosteroids (ICS) clinicians should remember that patients deteriorate at different rates. If asthma is controlled with a combination ICS/long acting beta agonist (LABA) inhaler, the preferred approach is to reduce the ICS by approximately 50% whilst continuing the LABA at the same dose.⁴

NICE guidance advises that combination inhalers may increase adherence to therapy.⁵ As LABA monotherapy can increase the risk of asthma related deaths, prescribers should consider each patient on an individual basis taking into account patient preference, therapeutic need and the likelihood of adherence with all asthma therapy. Any decision should be taken after having a full discussion with the patient covering the potential consequences; such as reappearance of symptoms and what to do if they occur.²

If control is maintained after stepping-down, further reductions in the ICS should be attempted until a low dose is reached after which the LABA may be stopped.⁴

TABLE 1: LEVEL OF ASTHMA CONTROL⁴

Assessment of current clinical control (preferably over 4 weeks)

Characteristic	Well controlled	Partly controlled	Uncontrolled
Daytime symptoms	None (twice or less/week)	>Twice/week	Three or more features of partly controlled asthma
Limitation on activities	None	Any	
Nocturnal symptoms/awakening	None	None	
Need for reliever/rescue treatment	None (twice or less/week)	>Twice/week	
Lung function (PEF or FEV1)	Normal	<80% predicted or personal best (if known)	

Inhaled corticosteroids are now classified as very low (usually paediatric doses), low, medium and high doses. This varies according to drug, particle size and inhaler device. Further information on the categorisation of ICS and ICS/LABA inhalers can be found in the [BTS Guidelines \(Sept 2016\)](#) and Appendix 1 and 3 of this document.

References:

1. British Thoracic Society / Scottish Intercollegiate Guidelines Network. British guideline on the management of asthma. 2016 update. <https://www.brit-thoracic.org.uk/document-library/clinical-information/asthma/btssign-asthma-guideline-2016/>
2. Holt S, Suder A, Weatherall M et al. Dose response relation of inhaled fluticasone propionate in adolescents and adults with asthma: meta-analysis. *BMJ* 2001; 323: 1-8
3. Powell H, Gibson PG. Inhaled corticosteroid doses in asthma: an evidence-based approach. *Med J Aust* 2003; 178: 223-25
4. Global Initiative for Asthma. Global strategy for asthma management and prevention. 2017 update.
5. National Institute for Health and Clinical Excellence. Inhaled corticosteroids for the treatment of chronic asthma in adults and children aged 12 years and over. NICE technology appraisal guidance 138. 2008 Mar.

This document is adapted from guidelines produced by Bristol PCT with kind permission from the author (J Gibbs).

APPENDIX 1:

FORMULARY (ADULTS >18YRS)

REFER TO RESPIRATORY SPECIALIST TEAM

Frequent/daily use of oral steroids or uncontrolled at previous step

PREFERRED LIST

TOTAL FORMULARY

Alternative combination inhaler options for patients where preferred list options are not suitable

HIGH DOSE ICS

HIGH DOSE ICS PLUS LABA

Fostair 200mcg/6mcg	2 doses twice daily	£29.32*
Relvar 184mcg/22mcg	1 dose daily	£29.50*
OR add a second ADJUNCT		

If still not controlled: refer to Respiratory Specialist Team

DuoResp 320mcg/9mcg	2 doses twice daily	£55.94*
Symbicort 400mcg/12mcg	2 doses twice daily	£56.00*

MEDIUM DOSE ICS

MEDIUM DOSE ICS PLUS LABA

Fostair 100mcg/6mcg	2 doses twice daily	£29.32*
Relvar 92mcg/22mcg	1 dose daily	£22.00*

If not controlled add in an *ADJUNCT

DuoResp 160mcg/4.5mcg	2 doses twice daily	£27.97*
Symbicort 200mcg/6mcg	2 doses twice daily	£28.00*

*** ADJUNCT**

- LTRA: Montelukast
- Theophylline: Phyllocontin or Uniphyllin
- Tiotropium: Spiriva Respimat

LOW DOSE ICS

LOW DOSE ICS PLUS LABA

Fostair 100mcg/6mcg	1 dose twice daily	£14.66*
Relvar 92mcg/22mcg	1 dose daily	£22.00*

DuoResp 160mcg/4.5mcg	1 dose twice daily	£13.99*
Symbicort 200mcg/6mcg	1 dose twice daily	£14.00*

LOW DOSE ICS

Clenil Modulite 100mcg	2 doses twice daily	£4.45*
Qvar 50mcg	2 doses twice daily	£4.72*
Easvhaler Budesonide 100mcg	2 doses twice daily	£5.32*

Salbutamol 100mcg	1-2 doses when required (Standard pMDI)	£1.50 (200 doses)
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Terbutaline 500mcg	1 dose when required	£8.30 (100 doses)
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Short-acting beta agonists should be prescribed for all patients with symptomatic asthma. Consider moving up if using 3 or more doses per week.

In adults over the age of 18, combined maintenance and reliever therapy can be considered for patients who have a history of asthma attacks on medium dose ICS or ICS/LABA

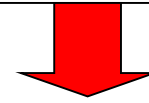
*Cost for 30 days treatment – Scottish Drug Tariff / MIMS May 2018

Has the patient's asthma been well controlled for at least 3 months?
See Table 1, Page 2

YES



NO



Step the patient down

1. Check inhaler technique (add spacer to MDI if required)
2. Check exposure to trigger factors
3. Check adherence to therapy and consider any issues which may affect compliance
4. What would be the potential consequences of an exacerbation and does the patient know what to do if this occurs? e.g. does the patient have a self management plan?

Patients using a combination inhaler

1. Identify which combination inhaler the patient is using and select the relevant flow-chart (page 4 & 5)
2. Identify the patient's current dose and locate where this is positioned in the flow-chart
3. Follow the arrow and prescribe the next recommended inhaler(s)

Patients using a single ICS inhaler

1. Identify which ICS inhaler the patient is using
 2. Reduce the ICS dose by 50%
- Note: if the patient is prescribed add-on therapies (e.g. montelukast, tiotropium) consider reducing/stopping these one by one after the ICS dose has been reduced to medium/low strength.

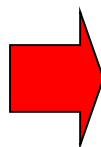


Review the patient in 3 months*

Has the patient's asthma been well controlled over the last 3 months (see Table 1, Page 2)?

(*If you previously stepped the patient up to cover the hay fever season and wish to step them down again, review the patient in 1 month rather than 3 months)

NO



YES



Step the patient down again and repeat cycle

Do not step the patient down

1. Check inhaler technique (add spacer to MDI if required)
 2. Check exposure to trigger factors
 3. Check adherence to therapy and consider any issues which may affect compliance
- If these have been excluded, step-up therapy**

Clinicians should consider:

Patients achieve asthma control at different rates. Clinicians should have a discussion with the patient to decide whether to trial the current therapy for longer or to step-up again.

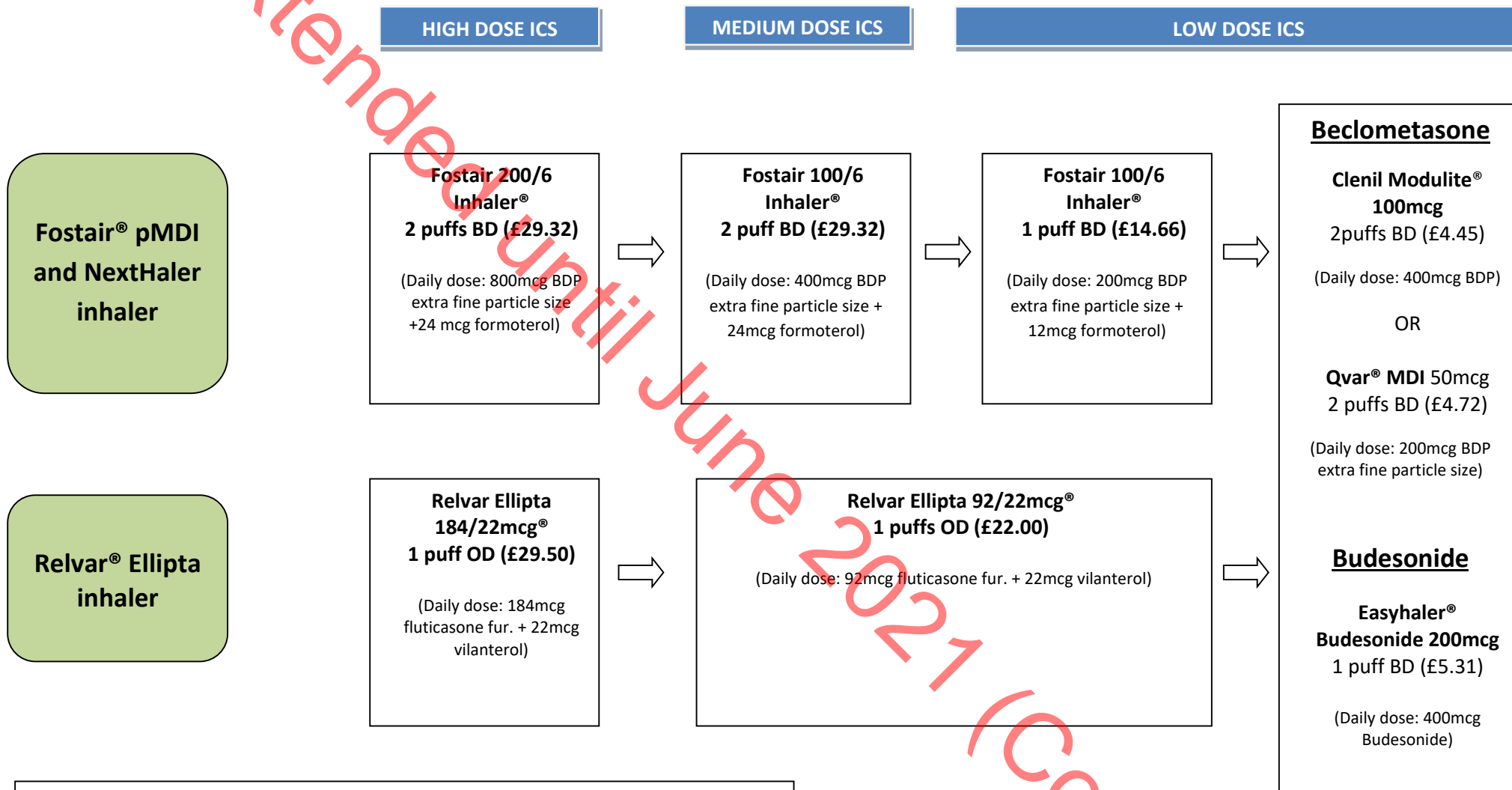
Suggested discussion points with the patient:

1. Are there any factors affecting adherence to therapy e.g. polypharmacy, social reasons or beliefs?
2. Are there any issues affecting compliance e.g. dexterity?
3. Is the patient exposed to trigger factors e.g. smoking, pets, pollen or stress?
4. Are there any lifestyle points to consider where asthma stability is crucial e.g. impending exam
5. How long did it take the patient to achieve complete asthma control last time?
6. What would be the potential consequences of an exacerbation and does the patient know what to do if this occurs? e.g. does the patient have a self management plan?
7. What would the patient prefer to do?

Action:

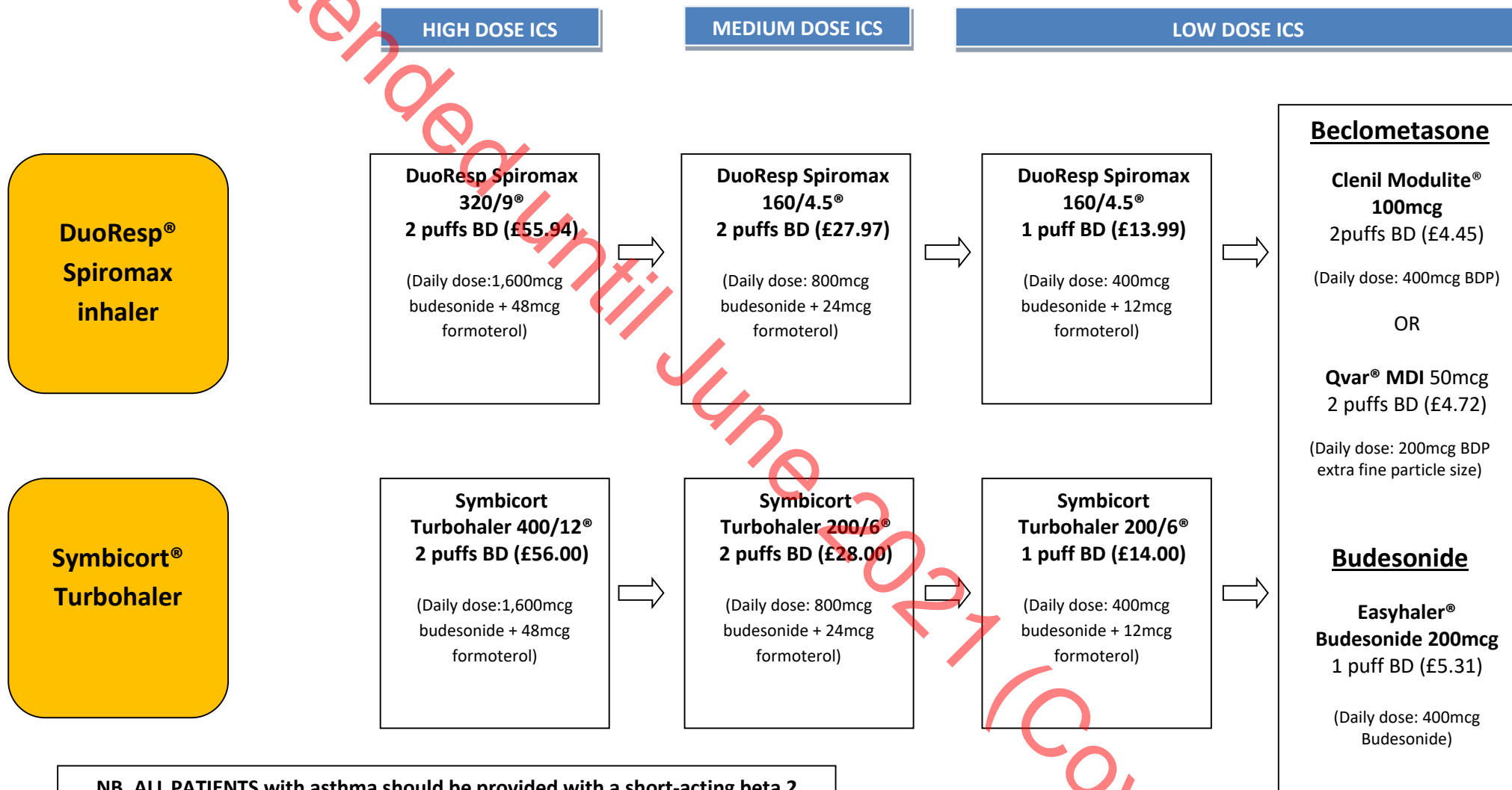
Clinicians should use their professional judgement to decide whether to continue trialling the current therapy, or to step-up again. If continuing on the current therapy for longer, the clinician should advise the patient to monitor their symptoms and SABA use, and review the patient again in 1 month. Patients should be advised to return to clinic if their symptoms become problematic within this time.

Refer to a specialist if necessary.



NB. ALL PATIENTS with asthma should be provided with a short-acting beta 2 agonist (salbutamol or terbutaline) to aid in the event of an acute exacerbation.

**KEY: Costs – 30 days without spacer (MIMS May 2018).
GREEN – Preferred list AMBER – Total formulary**



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