

NHS Staffordshire and Stoke-on-Trent

Asthma Prescribing Guidelines – Adults and Children over 12 years

Inhaler choices in this guideline are different from previous versions produced by the APG & APC.

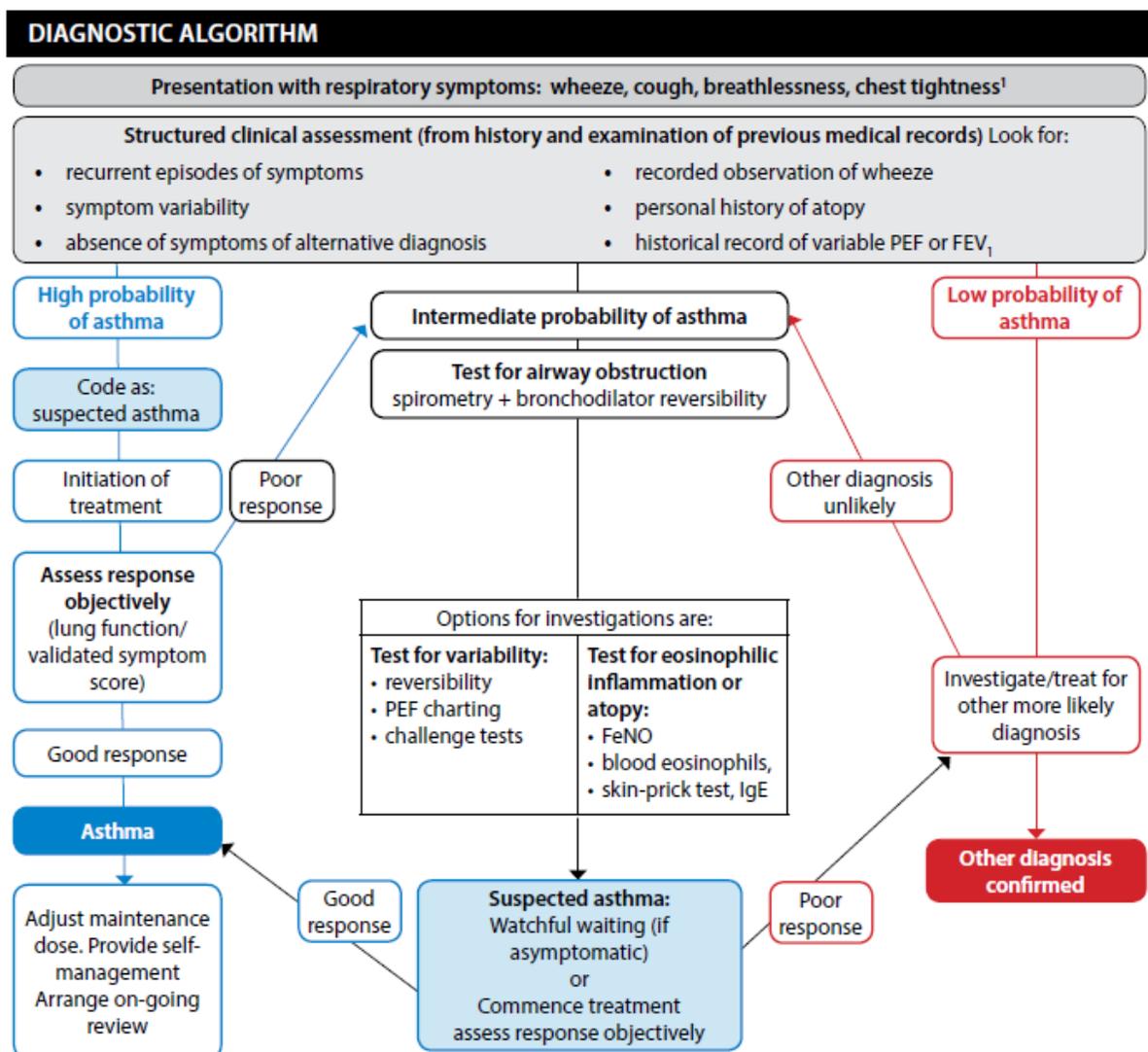
It is not expected patients controlled on established therapy will be changed without clinical assessment.

All NEW patients should be initiated on inhaler therapy as per these guidelines.

<http://www.northstaffordshirejointformulary.nhs.uk/docs/gcp/>

<http://www.southstaffordshirejointformulary.nhs.uk/>

1. Diagnosis of asthma in primary care



¹ In children under 5 years and others unable to undertake spirometry in whom there is a high or intermediate probability of asthma, the options are monitored initiation of treatment or watchful waiting according to the assessed probability of asthma.

The diagnostic algorithm is taken from the BTS

Asthma/SIGN 2019 Guidelines; note:

- Probability of asthma is usually determined in primary care on the basis of structured clinical assessment
- Diagnostic tests are more useful when initial diagnosis is uncertain (intermediate probability).
- In patients with intermediate probability of asthma spirometry can help identify any airways obstruction. If positive, then reversibility test or assessing treatment over 6 weeks can help confirm diagnosis.
- In absence of obstruction (i.e. negative spirometry finding) patients should be referred to secondary care for challenge tests and/or fractional exhaled nitric oxide (FeNO)

'Red Flags' and indicators of other diagnoses

- Prominent systemic features (myalgia, fever, weight loss)
- Unexpected clinical findings (e.g. crackles, clubbing, cyanosis, cardiac disease, monophonic wheeze or stridor)
- Persistent non-variable breathlessness
- Chronic sputum production
- Unexplained restrictive spirometry
- Chest X-ray shadowing
- Marked blood eosinophilia

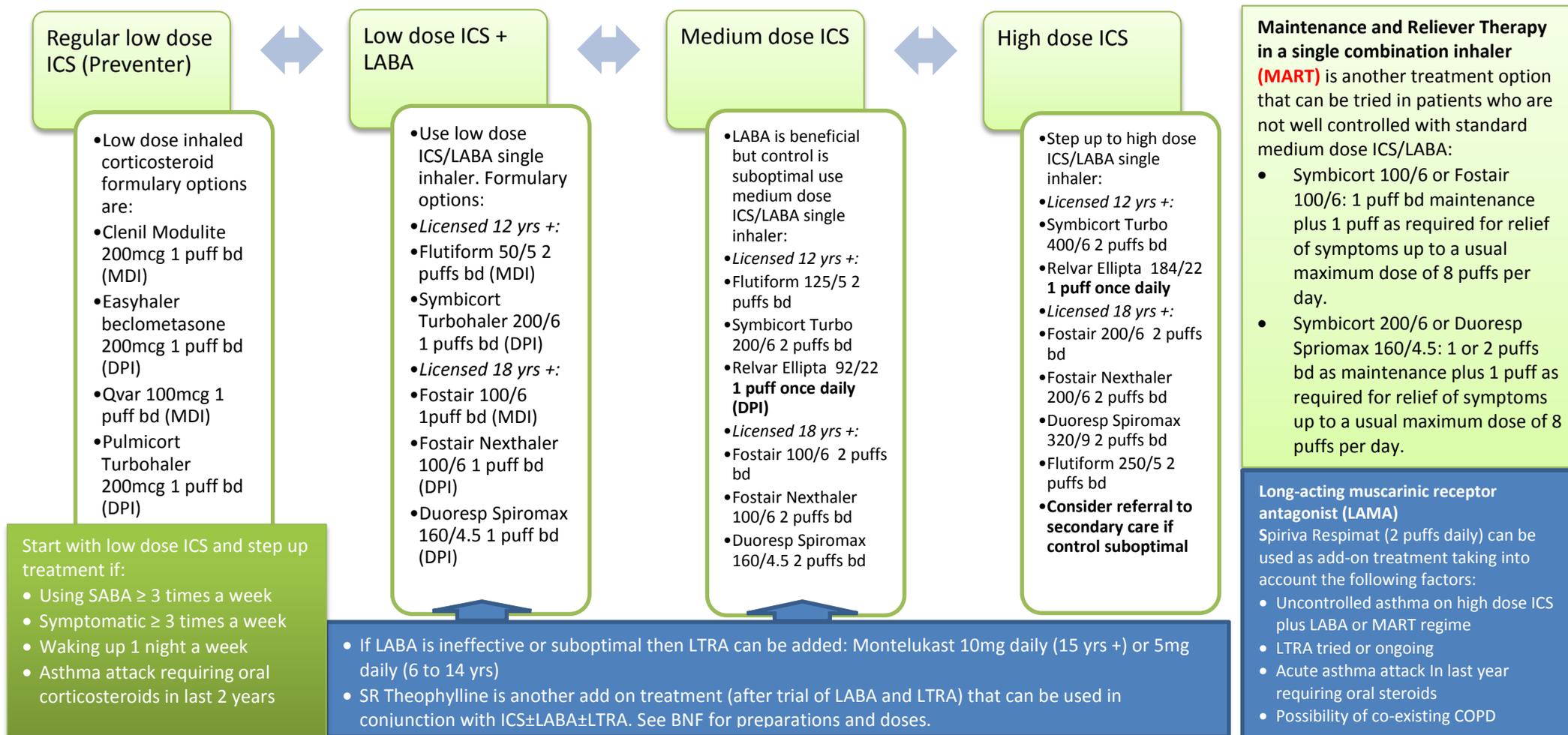
Diagnosis of asthma is an ongoing process of reviewing symptoms. "Suspected asthma" should be used until diagnosis is confirmed.

2. Overall management of asthma based on British Thoracic Society/SIGN Guidelines

On diagnosis patients should generally commence on low dose ICS. Early clinical re-assessment is essential as poor response is an indicator for further investigations. Sub-optimal response as explained in green box below necessitates stepping up treatment. Treatment may be started higher up the algorithm based on symptom severity. All patients should be prescribed short acting β_2 agonists (SABA) for relief of asthma symptoms unless they are using MART regimen. See section 3 for further information on treatment review and stepping down.

Consult [local formulary](#) for choice of SABA and ICS/LABA inhalers. Algorithm below suggests some common formulary options but does not cover all inhalers.

MDI: Metered Dose Inhaler/DPI: Dry Powder Inhaler/ICS: Inhaled Corticosteroid/LABA: Long-acting β_2 Agonists/LTRA: Leukotriene Receptor Antagonists



3. Asthma Management and Review

Smoking	<ul style="list-style-type: none"> • Check smoking status every time (do not assume). Also enquire about passive smoking. • Encourage to stop smoking and advise on avoiding passive smoking
Inhaler technique	<ul style="list-style-type: none"> • Check and demonstrate inhaler technique – not only for routine review but when considering stepping up treatment • When using combination of inhalers minimise variation in device • When stepping up treatment minimise change in device • Use spacer with pressurised metered dose inhaler if difficulty in using inhaler and when prescribing high dose inhaled corticosteroid • Inhaler video techniques can be found on https://www.rightbreathe.com/
Monitoring	<p>Use RCP questions:</p> <ul style="list-style-type: none"> • Have you had difficulty sleeping because of your asthma symptoms (including cough)? • Have you had your usual asthma symptoms during the day (cough, wheeze, chest tightness or breathlessness)? • Has your asthma interfered with your usual activities (e.g. housework, work/school etc.)? <p>Additionally check:</p> <ul style="list-style-type: none"> • Use of rescue medication • History of asthma attacks (exacerbations) • FEV₁ and/or PEF • Side-effects <p>Complete control of asthma is defined as</p> <ul style="list-style-type: none"> ✓ No daytime symptoms ✓ No night time awakening due to asthma ✓ No limitations on activity including exercise ✓ No need for rescue medication ✓ FEV₁/PEF >80% of predicted or best ✓ Minimal side effects from medication
Pharmacotherapy	<p>Based on learnings from National Review of Asthma Deaths (NRAD), 2014 ensure the following</p> <ul style="list-style-type: none"> • Patient is not over-relying on short acting bronchodilators. Look for those who have requested 12 or more short-acting beta-agonists (SABA) in the previous year and prioritise these patients for review. Consider ways in which to limit access to SABA until the patient has had an adequate review including working with local pharmacists and removal from repeat prescription systems. Patients should not require more than 2-3 SABA in a year if their asthma is treated appropriately. • Patient is not using long acting bronchodilator (LABA) without inhaled corticosteroid (IC). To minimise the risk of using LABA without IC they should be prescribed with an inhaled corticosteroid in a single combination inhaler. • Patient is adhering to preventer inhaled corticosteroid treatment. Reinforce this message at every opportunity. Check ordering frequency. <p>Stepping up treatment</p>

	<p>Step-up treatment according to management algorithm on page 3 if control is sub-optimal. After stepping up patients will require review within 8 weeks.</p> <p>Stepping down treatment Stepping down treatment is only suitable if patient has been stable for <u>12 weeks</u> otherwise there is risk of exacerbation. The decision to choose which drug to withdraw will depend on factors such as effectiveness, adverse effects and patient preference. Note that ICS should not be withdrawn but dosage can be reduced as advised below. After stepping down step back up again if patient is symptomatic during this period.</p> <p>Reduce dose of inhaled corticosteroid in stable patients every three months, decreasing dose by approximately 25-50% each time. Stable patient would be defined by criteria as explained above for complete control of asthma. Before deciding to reduce dose of steroid also check:</p> <ul style="list-style-type: none"> • Any asthma triggers (e.g. risk of worsening asthma according to season) • Concordance with treatment: as well discussion with patient it is important to look at ordering pattern • Inhaler/spacer technique • Patient's understanding and view about treatment
Lifestyle	<p>Advise on trigger avoidance</p> <p>Assess and treat associated disease (e.g. GORD, rhinitis)</p> <p>Offer dietary advice for overweight patients</p> <p>Offer annual flu vaccine</p> <p>Offer one off pneumococcal vaccine</p>
Education	<p>Patients should know</p> <ul style="list-style-type: none"> • Trigger factors • How to measure peak flow • What is good control • What is the regular dose of their inhalers and how much it can be increased • How to recognise when the condition begins to deteriorate and what action to take <p>All of the above can be incorporated into a Personalised Asthma Action Plan. A good example of a template for this is available from Asthma UK: https://www.asthma.org.uk/globalassets/health-advice/resources/adults/adult-asthma-action-plan.pdf</p>
Support	<p>Do not forget parents and carers</p>

4. Acute Asthma

Personalised Asthma Action Plan (PAAP)

PAAP as a self-management strategy is a key component of patient education and is an effective means of reducing the risk of admission, emergency department visits and increased GP consultation due to acute asthma. Asthma UK provides a good template for PAAP: <https://www.asthma.org.uk/globalassets/health-advice/resources/adults/adult-asthma-action-plan.pdf>

Patients should be taught to recognise signs and symptoms of worsening asthma:

- Frequent symptoms i.e. wheeze, breathlessness, cough etc.
- Waking up at night due to asthma
- Interference with usual day-to-day activities
- Using short acting bronchodilator 3 times or more per week
- Drop in peak expiratory flow (PEF) below 80% of best

Treatment changes that patients can institute themselves when asthma seems to be deteriorating:

- Resuming ICS if they have stopped
- Quadrupling ICS dose if they are currently using maintenance dose – a separate ICS inhaler may be required if patient is using ICS/LABA inhaler
- Patients who are on MART can use maximum doses: Fostair 100/6 maximum of 8 puffs per day; Duoresp 160/4.5 or Symbicort 100/6 or Symbicort 200/6 – maximum of 8 puffs per day.
- Alternative to using increased inhaled corticosteroid is taking oral steroid (e.g. prednisolone 40mg daily for 5 days). Oral steroid may also be required if symptoms are worsening and/or PEF drops below 60% of best
- Use SABA as frequently as required

Management of acute asthma attack when presented in general practice

Moderate asthma features

- PEF > 50% to 75% of best or predicted
- SpO₂ ≥ 92%
- Speech normal
- Respiration < 25 breaths/min
- Pulse < 100 beats/min

Management

- SABA via spacer one puff every 60 seconds up to a maximum of 10 puffs. As an alternative or if no improvement use nebulised SABA e.g. salbutamol 5mg (preferably oxygen driven)
- Start prednisolone 40mg daily
- Routine prescription for antibiotic is not necessary but should be issued if clinically indicated
- Admit to hospital if risk factors for life threatening asthma or based on patient's social circumstances.

Severe asthma features

- PEF 33% to 50% of best or predicted
- SpO₂ ≥ 92%
- Cant complete sentences
- Respiration ≥ 25 breaths/min
- Pulse ≥ 110 beats/min

Management

- Nebulised SABA e.g. salbutamol 5mg (preferably oxygen driven)
- Start prednisolone 40mg daily or start with hydrocortisone i.v. 100mg
- Admit to hospital if the response to treatment is poor or if there are risk factors for life threatening asthma or based on patient's social circumstances

Life-threatening asthma features

- PEF <33% of best or predicted
- SpO₂ < 92%
- Silent chest, cyanosis or poor respiratory effort
- Arrhythmia or hypotension
- Exhaustion, altered consciousness

Management

- Oxygen to maintain SpO₂ 94-98%
- Nebulised SABA and antimuscarinic agent e.g. salbutamol 5mg plus ipratropium 0.5mg (preferably oxygen driven)
- Start prednisolone 40mg daily or start with hydrocortisone i.v. 100mg
- Admit to hospital

References:

1. BTS/SIGN British Guideline on the Management of Asthma, June 2019 <https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/>
2. Nice evidence summary for Tiotropium Respimat in Asthma <https://www.nice.org.uk/advice/esnm55>
3. www.medicines.org.uk – all drug files accessed
4. British National Formulary BMA 2019. <https://www.medicinescomplete.com/#/browse/bnf>
5. Why asthma still kills. National Review of Asthma Deaths Royal College of Physicians, August 2015
<https://www.rcplondon.ac.uk/projects/outputs/why-asthma-still-kills>

Useful websites:

Inhaler technique videos: <https://www.rightbreathe.com/>

Personalised asthma action plan: <https://www.asthma.org.uk/globalassets/health-advice/resources/adults/adult-asthma-action-plan.pdf>

Miscellaneous resources at Primary Care Respiratory Society: <https://www.pcrs-uk.org/>

North Staffordshire Joint Formulary: <http://www.northstaffordshirejointformulary.nhs.uk/default.asp>

South Staffordshire Joint Formulary: <http://www.southstaffordshirejointformulary.nhs.uk/>

Profile of inhalers listed in local formularies: *Link will be added once both the guidelines and inhaler list has been approved by the APG/APC*

Further information

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Document ratification

Committee/Group	Date approved
North Staffordshire Area Prescribing Committee	28 August 2019
South Staffordshire Area Prescribing Group	20 September 2019
Cannock Chase Membership Board	8 October 2019
East Staffordshire Steering Group	15 October 2019
Seisdon Peninsula Locality Board	13 November 2019
Stafford and Surrounds Membership Board	1 October 2019
Tamworth, Lichfield and Burntwood Joint Locality Board	8 October 2019

Appendix 1 – Inhaler Profile

Prescribe all inhalers by Brand Name

	Drug	Strength	Brand	Formulary status (August 2019)		Picture	Device Type	Separate Spacer	Dose & Frequency	Cost (£)
				North	South					
SABA (Short Acting Beta2 Agonist)	Salbutamol	100 mcg	Salamol	✓	✓		MDI	Aerochamber Plus/ Volumatic Spacer	2 puffs when required	1.50 (200 doses)
			Ventolin	✓	✓		MDI	Aerochamber Plus/ Volumatic Spacer		1.50 (200 doses)
			Salamol Easi-Breathe	Not listed	✓		MDI	-		6.30 (200 doses)
			EasyHaler Salbutamol	✓	✓		DPI	-		3.31 (200 doses)
	Terbutaline	500mcg	Bricanyl Turbohaler	✓	✓		DPI	-	1 puff, up to four times a day	8.30 (120 doses)

	Drug	Strength	Brand	Formulary status (August 2019)		Picture	Device Type	Separate Spacer	Dose & Frequency	Cost (£)
				North	South					
ICS (Inhaled Corticosteroid)	Beclometasone	100mcg	Qvar Inhaler	✓	✓		MDI	Aerochamber Plus	1 puff Twice daily	17.21 Device will last Three months (200 doses)
		100mcg	Qvar Easi-breathe	✓	✓		MDI	Aerochamber Plus		16.95 Device will last Three months (200 doses)
		200mcg	Clenil Modulite	✓	✓		MDI	Volumatic Spacer	1 puff Twice daily	16.17 Device will last Three months (200 doses)
		200mcg	Easyhaler Beclometasone	Not listed	✓		DPI	-	1 puff Twice daily	14.93 Device will last Three months (200 doses)
	Budesonide	200mcg	Easyhaler Budesonide	Not listed	✓		DPI	-	1 puff Once or Twice daily	17.71 Device will last Three months (200 doses)
		200mcg	Pulmicort Turbohaler	Not listed	✓		DPI	-	1 puff Twice daily	14.25 Device will last One and Half months (100 doses)
Antimuscarinic bronchodilator	Tiotropium	2.5mcg	Spiriva Respimat	✓	✓		Multi-dose solution for Inhalation	-	2 puffs Once a Day	23.00 Device will last One month (60 doses)

	Drug	Strength	Brand	Formulary status (August 2019)		Picture	Device Type	Separate Spacer	Dose & Frequency	Cost (£)
				North	South					
LABA/ICS combination (Long acting Beta2 Agonist & Inhaled Corticosteroid)	Formoterol/ Beclometasone	6mcg/100mcg	Fostair	✓	✓		MDI	Aerochamber Plus	1-2 puffs Twice daily	29.32 At 1 puff daily will last <u>Two</u> months (120 doses)
		6mcg/200mcg	Fostair	✓	✓		MDI	Aerochamber Plus	1-2 puffs Twice daily	29.32 At 1 puff daily will last <u>Two</u> months (120 doses)
		6mcg/100mcg	Fostair NEXThaler	Not listed	✓		DPI	-	1-2 puffs Twice daily	29.32 At 1 puff daily will last <u>Two</u> months (120 doses)
		6mcg/200mcg	Fostair NEXThaler	Not listed	✓		DPI	-	1-2 puffs Twice daily	29.32 At 1 puff daily will last <u>Two</u> months (120 doses)
	Formoterol/ Beclometasone	6mcg/200mcg	Symbicort Turbohaler	✓	✓		DPI	-	1 puff Twice daily	28.00 At 1 puff daily will last <u>Two</u> months (120 doses)
		12mcg/400mcg		✓	✓			-	1 puff Twice daily	28.00 (60 doses)
	Formoterol/ Budesonide	4.5mcg/160mcg	DuoResp Spiromax	✓	✓		DPI	-	1 puff Twice Daily	28.00 At 1 puff daily will last <u>Two</u> months (120 doses)
		9mcg/320mcg		✓	✓			-	28.00 (60 doses)	
	Vilanterol/ Fluticasone	22mcg/92mcg	Relvar Ellipta	✓	✓		DPI	-	1 puff Once daily	22.00 (30 doses)
		22mcg/184mcg		✓	✓			29.50 (30 doses)		
	Salmeterol/ Fluticasone	25mcg/ 125mcg	Seretide Evohaler	✓	Not listed		MDI	Volumatic Spacer	1-2 puffs Twice daily	23.45 (120 doses)
		25mcg/250mcg		29.32 (120 doses)						
	Formoterol/ Fluticasone	5mcg/125mcg	Flutiform	✓	✓		MDI	Aerochamber Plus	1-2 puffs Twice daily	28.00 (120 doses)
		10mcg/250mcg		45.56 (120 doses)						

Note: Prices taken from BNF Online, accessed September 2019

- DPI = Dry-powder Inhaler
- MDI = Metered Dose Inhaler

Spacers - wash weekly, do NOT wipe dry. Replace every 6 to 12 months.