ASTHMA INHALER PRESCRIBING GUIDELINE (adult)

Gloucestershire NHS
Health Community

- This guideline states the Gloucestershire Joint Formulary recommended, first choice inhalers.
- The intention is to support the choice of treatment for new patients, or patients needing stepping up or down.
- Patients stabilised on alternative inhalers should not be switched unless this is deemed to be clinically appropriate and the patient has an asthma review.
- The intention is that, for the majority of patients requiring a new or changed inhaler, one of the below inhaler choices will be prescribed, using the brand names stated below to minimise the risk of dispensing errors.

Inhaler selection

Can the patient inhale quickly and deeply? (further guidance)

Yes → Follow DPI pathway (preferred)

No → Can patient inhale slow and steady over four to five seconds?

Yes → Follow MDI pathway (provide and encourage spacer use with MDIs)

Start at the lowest appropriate step and move fluidly between stages

Abbreviations

DPI: Dry Powder Inhaler
ICS: Inhaled corticosteroid
LABA: Long acting beta agonist
LAMA: Long acting muscarinic antagonist
MDI: Metered dose inhaler
SABA: Short acting beta agonist
SAMA: Short acting muscarinic antagonist

For patients with **MILD** asthma (defined as needing only occasional doses of bronchodilation defined as less than 3 a week, and not every week) Salbutamol alone can be used or Symbicort can be prescribed PRN providing bronchodilation and anti-inflammatory medication. If either of these is needed more than 3 times a week step up to regular maintainence treatment as detailed below. [1,2]

Initial Therapy: Regular low-dose ICS (plus SABA as required - continue SABA throughout treatment stages)

DPI option:

ICS: Easyhaler® beclometasone 200mcg – ONE dose TWICE daily

+

SABA*: Easyhaler® salbutamol 100mcg – TWO doses when required

MDI option:

ICS: Kelhale® (beclometasone) 100mcg – ONE puff TWICE daily
(note: Kelhale® contains ultrafine particles so is 2-2.5 times more potent than standard beclometasone containing inhalers at the same dose)

+

SABA*: Salbutamol MDI 100mcg – TWO puffs when required
(*prescribe a lower carbon footprint brand e.g. Salamol®*)

*If 4 SABA inhalers are required in less than 12 months this is a marker of symptomatic asthma and the patient requires review

Initial Add-on / Alternative Therapy

Either: Switch ICS to ICS+LABA (combination inhaler)

DPI option:

Fobumix Easyhaler® 160/4.5 - ONE dose TWICE daily

OR maintenance and reliever therapy (MART)

Fobumix Easyhaler® 160/4.5 ONE to TWO doses TWICE daily & PRN (max. 12 doses/day)

MDI option:

Luforbec® 100/6 – ONE puff TWICE daily
(note: Luforbec® contains ultrafine particles so is 2-2.5 times more potent than standard beclometasone containing inhalers at the same dose)

OR maintenance and reliever therapy (MART)

Luforbec® 100/6 ONE puff TWICE daily & PRN (max. 8 puffs/day)
(note: Luforbec® contains ultrafine particles so is 2-2.5 times more potent than standard beclometasone containing inhalers at the same dose)

If no benefit from LABA, switch back to ICS and titrate

Or: ADD Leukotriene receptor antagonist (LTRA)

Montelukast 10mg ONCE daily (at night)
If no benefit from LTRA after 6 weeks – trial without it.

Benefit from LABA but inadequate response, increase ICS dose in combination inhaler

DPI options:

- Fobumix Easyhaler® 320/9 – ONE dose TWICE daily
- Relvar Ellipta® 92/22 – ONE dose ONCE daily

MDI option:

- Luforbec® 100/6 TWO puffs TWICE daily

(note: Luforbec® contains ultrafine particles so is 2-2.5 times more potent than standard beclometasone containing inhalers at the same dose)

Continued poor asthma control despite good compliance and inhaler technique: Seek Specialist advice, as per Respiratory Pathway
Once specialist advice has been sought, the following might be advised / prescribed:

DPI options:

- Fobumix Easyhaler® 320/9 – TWO doses TWICE daily
- Relvar Ellipta® 184/22 – ONE dose ONCE daily
- Enerzair Breezhaler® – ONE dose ONCE daily

Note: Biologic treatment may be prescribed by the Specialist for severe asthma in line with NICE Guidance.

MDI option:

- Luforbec® 200/6 TWO puffs TWICE daily

(note: Luforbec® contains ultrafine particles so is 2-2.5 times more potent than standard beclometasone containing inhalers at the same dose)

- Trimbow® 87/5/9 TWO puffs TWICE daily
- Trimbow® 172/5/9 TWO puffs TWICE daily

Inhaler Prescribing Principles

- Match the device type to the patient's inspiratory flow rate.
- Use DPIs first-line if suitable.
- Use MDIs with spacer in patients unsuitable for DPI.
- Check inhaler technique at every review and before treatment escalation.
- Use combination inhaler where appropriate.
- See information on **greener inhaler prescribing** below.
- Where possible when changing device use the same dose and prescribing regime (unless stepping up dose). Prescribe all inhalers as pMDI or DPI, avoid mixing.
- Any new device must be demonstrated and suitability assessed.

Asthma is caused by inflammation of the airways so initial treatment = low-dose ICS to treat the underlying inflammation.[1-3] SABA can be used to treat occasional breakthrough symptoms. The use of bronchodilators without ICS has been associated with increased mortality regardless of asthma severity.[4] Most ICS/LABA combinations containing formoterol (a fast acting LABA) can be used as both maintenance and reliever therapy (MART). When patients are exacerbating they will use more bronchodilator therapy and, with delivery of more ICS (anti-inflammatory medication), this will reduce active inflammation and reduce severity/longevity of an exacerbation. For patients with **MILD** asthma (defined as needing only occasional doses of bronchodilation defined as less than 3 a week, and not every week) Salbutamol alone can be used or Symbicort can be prescribed PRN providing bronchodilation and anti-inflammatory medication. If either of these is needed more than 3 times a week step up to regular maintainence treatment as detailed above.

Greener Inhaler Prescribing

- The NHS long term plan has committed the NHS to reducing greenhouse gas emissions from inhalers, with a target to reduce the carbon impacts of inhalers by 50% by 2030, and a drive to reduce MDI prescribing.
- Metered dose inhalers (MDIs) contain hydrofluorocarbon propellants which are powerful greenhouse gases.
- As such, MDIs have a carbon footprint many times greater than DPIs and make up the largest proportion of the NHS carbon footprint of any group of medicines.
- Therefore, if a patient is able to use both MDI and DPI they should be given a DPI.
- Ventolin® Evohalers should **not** be prescribed as they have a carbon footprint more than double that of the smaller volume Salamol®.
- All inhalers should be returned to a pharmacy to be disposed of in an environmentally safe way.
- In this guideline each inhaler is allocated a footprint symbol:
  - indicates a 'greener' choice
  - indicates a 'less-green' choice

If adding LABA to ICS is ineffective:

ICS+LABA combination inhalers are expensive. If the addition of a LABA to regular ICS does not result in a significant additional benefit - consider switching back to regular ICS and titrating accordingly:

BDP 400mcg/day:	**Easyhaler® beclometasone** 200mcg (DPI) – ONE dose TWICE daily **Kelhale® 50mcg** beclometasone (MDI) – TWO puffs TWICE daily
BDP 800mcg/day:	**Easyhaler® beclometasone** 200mcg (DPI) – TWO doses TWICE daily **Kelhale® 100mcg** beclometasone (MDI) – TWO puffs TWICE daily
BDP 1,600mcg/day:	**Easyhaler® beclometasone** 200mcg (DPI) – FOUR doses TWICE daily **Kelhale® 100mcg** beclometasone (MDI) – FOUR puffs TWICE daily

Inhaler Technique

- For **MDI** devices (with or without spacers), patients should be educated to inhale gently.
- For **DPI** devices, patients should inhale forcefully (requiring a higher inspiratory flow rate than MDIs).
- Further information can be found via https://www.rightbreathe.com

Beclometasone Potency

- Luforbec®, Fostair®, Kelhale® and Qvar® inhalers contain ultrafine particles and are therefore 2 - 2.5 times more potent than alternative beclometasone containing MDIs (e.g. Clenil®) and DPI inhalers per inhaled dose.
- Corticosteroid safety cards are required for patients on ICS doses of > 1000mcg BDP equivalent/day.
- Montelukast can be particularly beneficial in patients with allergic asthma, rhinitis or exercise-induced asthma and should be considered before further increasing the inhaled steroid dose.

Spacer Devices

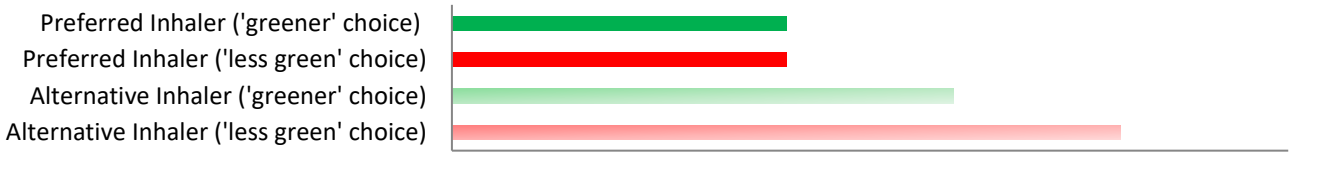
- Always prescribe and demonstrate a compatible spacer for use with MDI devices.
- Spacers should be replaced at least annually. Instruction on cleaning should be given.

Space Chamber Plus Compact® One piece small volume (160ml) spacer	Compatible with most MDI devices
Aero Chamber Plus® One piece medium volume spacer	Compatible with most MDI devices
Volumatic® Two piece larger volume (750ml) spacer	Only compatible with Clenil®, Flixotide®, Salamol®, Seretide®, Serevent®, Ventolin®

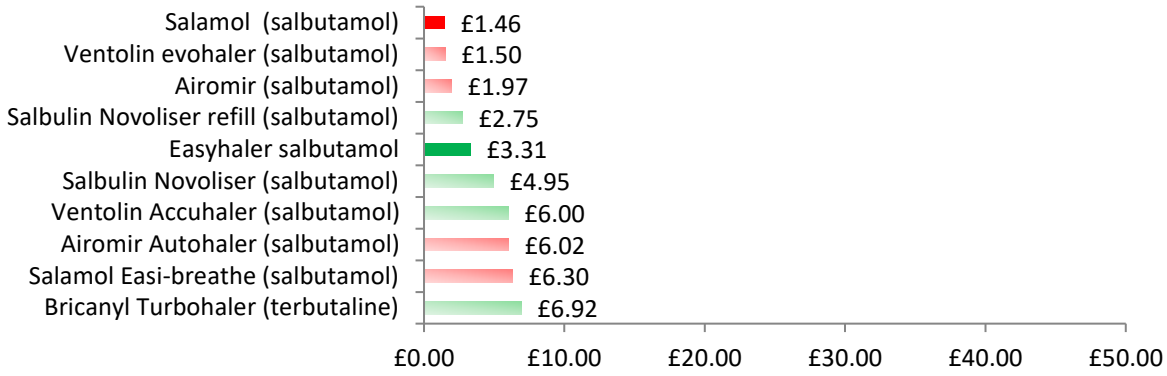
Appendix:

- The following charts provide a cost comparison to aid decision making when the formulary recommended first-choice inhalers (page 1) are not suitable
- Prices correspond to 30 days' treatment (SABA prices correspond to 200 doses of salbutamol 100mcg or 100 doses of terbutaline 500mcg)

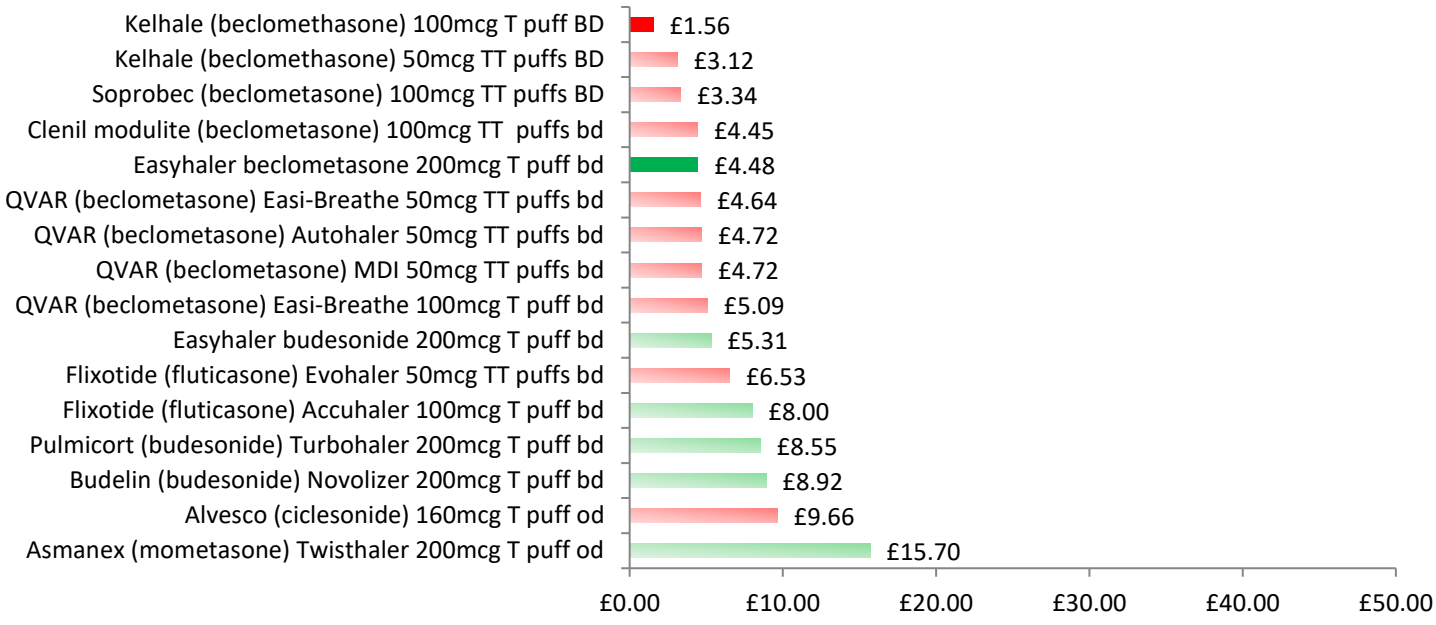
Example:



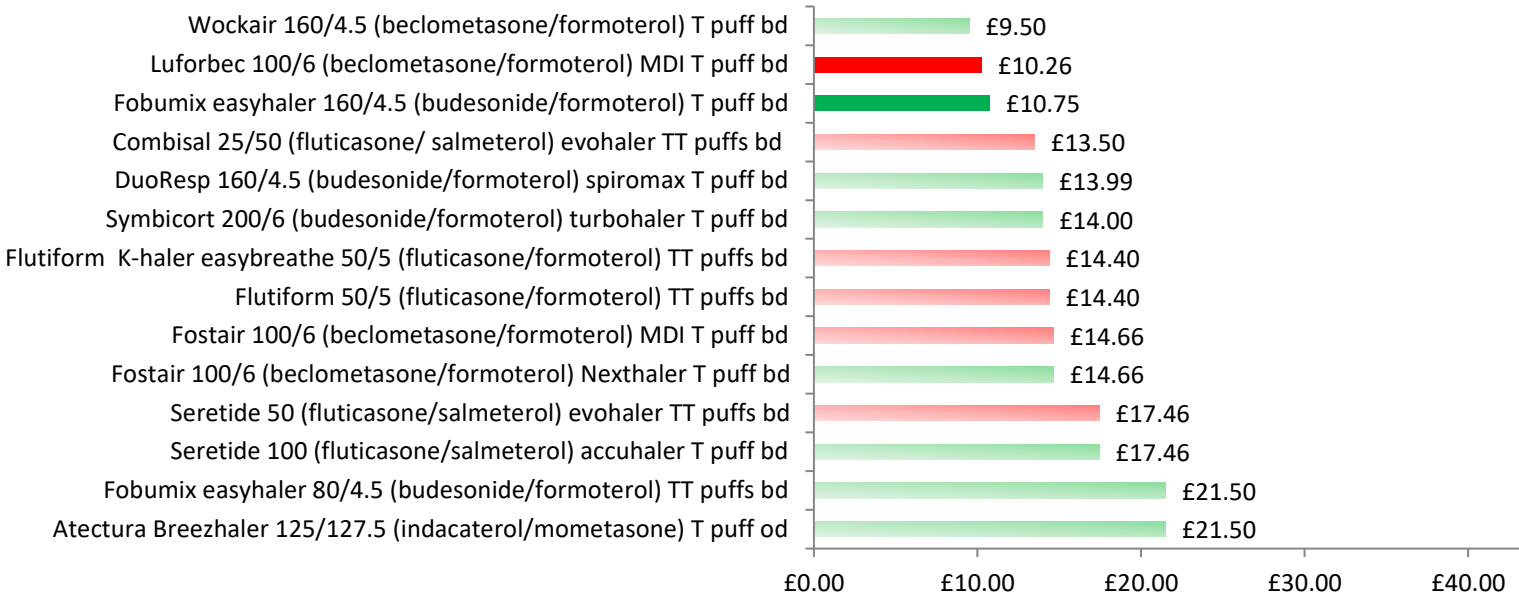
Short acting β_2 agonist as required



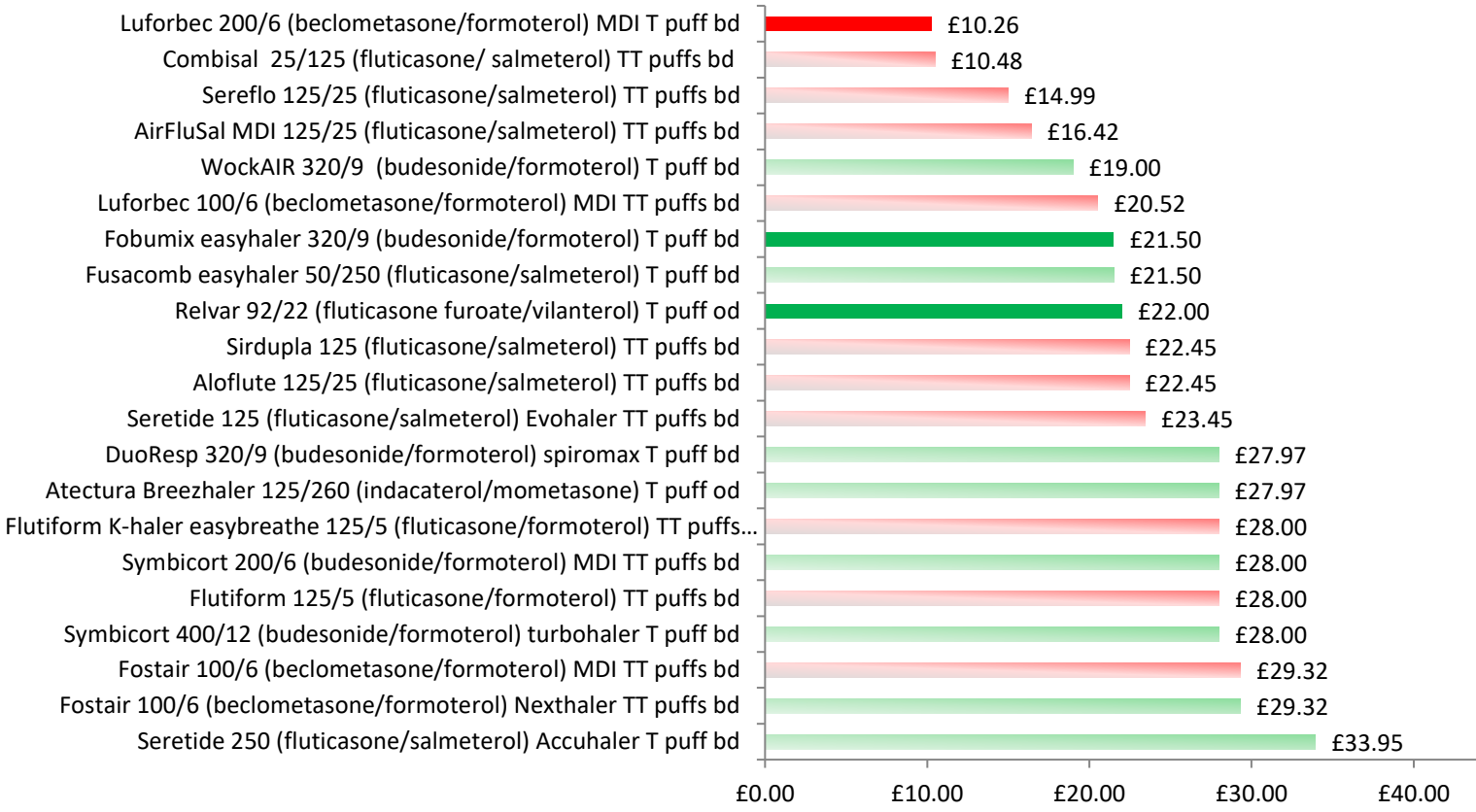
Initial Therapy: Regular low-dose ICS (BDP equiv. 400mcg/day)



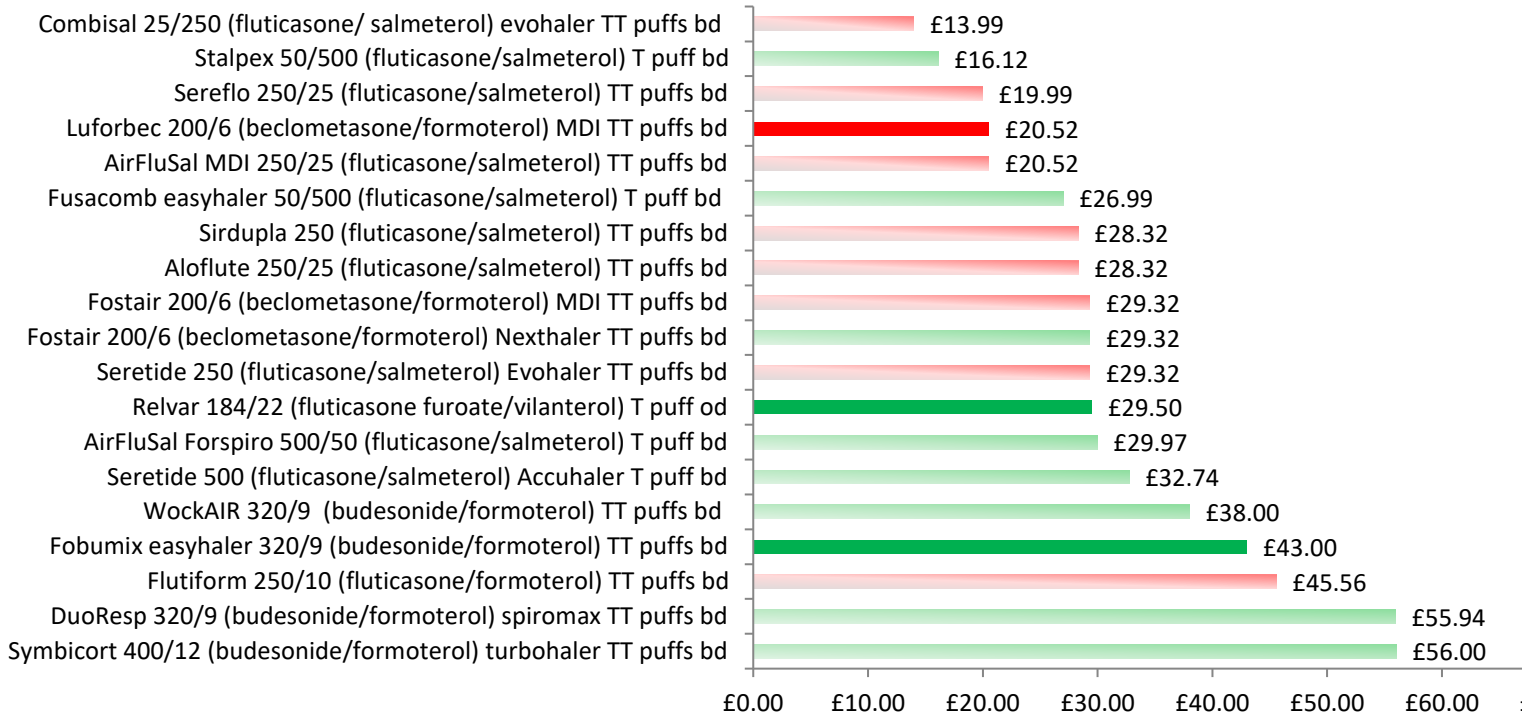
Initial add-on therapy: LABA + ICS (BDP equiv. 400mcg/day)



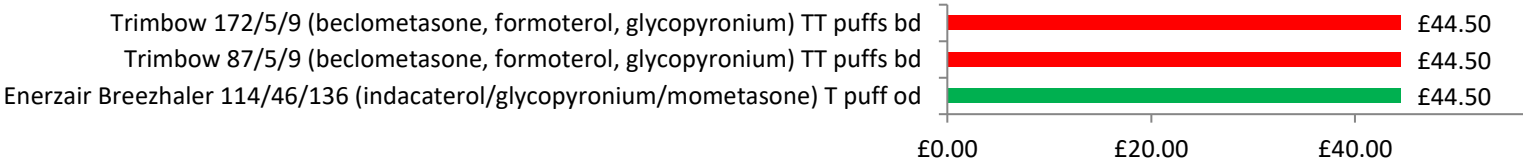
Additional add-on therapy: LABA + ICS (800mcg BDP/day)



High-dose therapies after seeking Specialist advice: LABA + ICS (> 800mcg BDP/day)



LAMA + LABA + ICS



References:

1. BTS/SIGN Guideline for the management of asthma 2019. (Available from: https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/) [accessed February 2021]
2. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2022. (Available from: https://ginasthma.org/gina-reports/) [accessed April 2023]
3. NICE Guideline NG80, 2020. Asthma: diagnosis, monitoring and chronic asthma management. (Available from: https://www.nice.org.uk/guidance/ng80) [accessed February 2021]
4. Royal College of Physicians. Why asthma still kills: the National Review of Asthma Deaths (NRAD) Confidential Enquiry report. London: RCP, 2014. (Available from: https://www.asthma.org.uk/globalassets/campaigns/nrad-full-report.pdf) [accessed February 2021]
5. RightBreathe Inhaler Prescribing Information. (Available from: https://www.rightbreathe.com/ [accessed February 2021]