ASTHMA INHALER PRESCRIBING GUIDELINE
(adult -18 years and over)

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

- This guideline states the BSW Formulary recommended, first choice inhalers.
- The intention is to support the choice of treatment for new patients, or patients needing stepping up or down.
- The intention is that, for most 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.
- Patients currently using alternative inhalers should only be switched if clinically appropriate and the patient has an asthma review.

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** on page 2.

Inhaler selection

Can the patient inhale quickly and deeply? (NICE Patient decision aid)

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

Asthma is caused by inflammation of the airways so initial treatment is with 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) – see page 2. When patients are exacerbating, they will use more bronchodilator therapy and more ICS (anti-inflammatory medication), resulting in reduction in active inflammation and severity/longevity of an exacerbation.[1, 2, 4]

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

DPI option:
- ICS: Easyhaler® Budesonide 200mcg – ONE dose TWICE daily
+
- SABA: Easyhaler® Salbutamol 200mcg – ONE dose 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: Salamol (Salbutamol)MDI 100mcg – TWO puffs when required (*prescribe a lower carbon footprint brand e.g. Salamol®*)

Initial Add-on / Alternative Therapy

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

DPI option:
- Fobumix Easyhaler® 160/4.5 - ONE dose TWICE daily (Budesonide/Formoterol)

MDI option:
- Luforbec®100/6 - ONE puff TWICE daily (Beclometasone/Formoterol)

If no benefit from LABA, switch back to ICS and titrate -see p2

Or: ADD Leukotriene receptor antagonist (LTRA)

Montelukast 10mg ONCE daily (at night)
If no benefit from LTRA after 6 weeks – stop

Maintenance and Reliever Therapy (MART) Options:
- DPI: Fobumix Easyhaler® 160/4.5 ONE to TWO doses TWICE daily & PRN (max. 12 doses/day)
- MDI: Luforbec® 100/6 ONE to TWO puffs TWICE daily & PRN (max. 8 puffs/day)

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NHS
Bath and North East Somerset, Swindon and Wiltshire
Integrated Care Board

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

DPI options:	MDI option:
Fobumix Easyhaler® 320/9 – ONE dose TWICE daily (Budesonide/Formoterol) Relvar Ellipta® 92/22 – ONE dose ONCE daily (Fluticasone furoate/Vilanterol)	Luforbec® 100/6 – TWO puffs TWICE daily (Beclometasone/Formoterol)

Continued poor asthma control despite good compliance and inhaler technique: Refer to Specialist*

DPI options:	MDI option:
Fobumix Easyhaler® 320/9 – TWO doses TWICE daily (Budesonide/Formoterol) Relvar Ellipta® 184/22 – ONE dose ONCE daily (Fluticasone furoate/Vilanterol)	Luforbec® 200/6 – TWO puffs TWICE daily (Beclometasone/Formoterol)

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

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

If adding LABA to ICS is ineffective:

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

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.

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Spacer Devices

- Prescribe a compatible spacer for use with MDI devices in ALL patients, but especially important in those with sub-optimal inhaler technique.
- Spacers should be replaced at least annually. Please follow manufacturer's cleaning instructions with each device.

EasyChamber® Anti-static spacer with detachable latex-free mask	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®

When to refer to secondary care?

Once **adherence and inhaler technique have been checked and optimised** and other conditions causing their symptoms have been treated or excluded, the following should trigger a referral to secondary care:

- Over the previous 12 months (any of):
  - ≥2 courses of oral corticosteroids for asthma
  - ≥1 hospital admission/ED attendance for asthma
  - ≥6 SABA used despite compliance with preventer
  - Poor symptom control (as assessed by validated questionnaire)
- On maintenance oral corticosteroids for asthma
- Diagnostic uncertainty

There are other medications licenced for use in asthma that are not covered in this guideline, including oral theophylline and LAMA inhaler therapy, in a separate inhaler or in combination with ICS/LABA as a triple inhaler. Although these are green on BSW formulary, please seek advice from or refer to secondary care before initiating these medications.[6]

References:

1. BTS/SIGN Guideline for the management of asthma 2019. (Available from: https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/) [accessed January 2023]
2. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2020. (Available from: https://ginasthma.org/gina-reports/) [accessed January 2023]
3. NICE Guideline NG80, 2020. Asthma: diagnosis, monitoring and chronic asthma management. (Available from: https://www.nice.org.uk/guidance/ng80) [accessed January 2023]
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 January 2023]
5. RightBreathe Inhaler Prescribing Information. (Available from: https://www.rightbreathe.com/ [accessed January 2023]
6. Oxford Academic Health Science Network. Consensus pathway for management of uncontrolled asthma in adults (Available from: https://www.oxfordahsn.org/our-work/asthma-biologics-toolkit/aac-consensus-pathway-for-management-of-uncontrolled-asthma-in-adults/ [accessed January 2023]
7. NHS England National Patient Safety Alert – Steroid Emergency Card to support early recognition and treatment of adrenal crisis in adults https://www.england.nhs.uk/2020/08/steroid-emergency-card-to-support-early-recognition-and-treatment-of-adrenal-crisis-in-adults/ [accessed January 2023]