Improving lives together
Norfolk and Waveney Integrated Care System

Norfolk and Waveney
Asthma Primary Care Guideline

Based on: **PCRS – UK Consensus Jan 2020**, **BTS / SIGN July 2019** & **NICE NG80 update Mar 2021**

This guideline does NOT cover the management of asthma in pregnancy, occupational or difficult asthma all of which would require specialist input.

(Partial update May 2024 pending publication of BTS / SIGN / NICE Joint Guideline due late 2024)

Ctrl click here for the Asthma Management Summaries OR ctrl click on age range below.

Age 18yrs & over **Age 12 – 17yrs** **Age 5 – 11yrs (May 24 update)** **Age < 5yrs (May 24 update)**

Around 160,000 people a year receive an asthma diagnosis. **Around 1,200 people a year are recorded as dying from asthma.** Although low compared with most other lung diseases, this figure is still too high. Given the manageability of asthma, mortality should be closer to zero. The Royal College of Physicians' report, Why asthma still kills (2015), details how managing the disease more effectively could dramatically reduce mortality. British Lung Foundation (BLF)

BTS/SIGN 2019 complete control of Asthma:

No daytime symptoms	**No** night-time awakening due to asthma
No need for rescue medication	**No** asthma attacks
No limitations on activity including exercise	**Minimal side effects** from medication
Normal lung function (FEV_1 and / or PEF >80% predicted or best)	

Primary Care Respiratory Society (PCRS) UK[1] *(with additional local specialist's comments)*

Individuals with asthma suffer from wheeze, shortness of breath, cough, and chest tightness, limiting everyday activities and fulfilment of roles at home and work. Evidence-based management can maintain good day-to-day control for most people with asthma and substantially reduce the risk of asthma attacks.[2]

Diagnosis

- There is no definitive gold standard test which can categorically confirm or refute the diagnosis of asthma.
- Therefore, the diagnosis of asthma is made clinically following a structured clinical assessment; a careful integration of evidence from a wide variety of sources.[2, 3]
- Key components of a structured clinical assessment include a detailed history *(incl. family and occupational)*, examination, review of the patient's clinical records and previously completed investigation results (e.g. peak expiratory flow, spirometry, blood eosinophils from a full blood count).

Asthma Management & Monitoring

Management of asthma should be patient centred, encouraging and supporting self-management and making treatment decisions in partnership with the individual. This should include promoting:

- Addressing tobacco dependency, *and secondary exposure*
- Encouraging physical activity
- Non-pharmacological advice *e.g. weight control, allergens / triggers, air pollution, housing conditions*
- Supported self-management, which includes the provision of an asthma action plan, improves individual asthma control whilst reducing visits to unscheduled care.
- Assess current symptom control and future risk of an asthma attack *at least annually** in stable patients with a definite diagnosis. **More frequently if previous hospital admission. See tables 3 & 4.*
- *Checking inhaler concordance and technique at every contact*

Asthma: Diagnosis PCRS – UK Consensus Jan 2020

Symptoms

- Wheeze, shortness of breath, cough, and chest tightness *(most suggestive of asthma)*
- Usually occur in episodes with no (or minimal) symptoms between episodes.[2]
- Combinations of symptoms (particularly wheeze, cough, and shortness of breath) occurring in episodes are more useful for identifying asthma than individual symptoms, particularly in children.[4]
- Ask about variability in symptoms through the day and between seasons.
- Clarify any triggers that provoke or worsen symptoms[3] and in adults, check specifically for work-related factors. *Remember to advise on minimising indoor air pollution and reducing exposure to outdoor air pollution* NICE NG80 March 2021

Clinical record

- Remember to enquire about personal or family history of other atopic conditions such as allergic rhinitis or eczema.[3]
- Information from the patient clinical record, including previous respiratory illnesses, treatments and responses and previous examination findings (particularly wheeze heard on chest auscultation by a health professional) can further build the clinical picture.

Examination

- On auscultation of the chest, asthmatic wheeze tends to be end expiratory, scattered, and polyphonic.
- Consider ***alternative diagnoses*** if wheeze is never heard during symptomatic episodes (see table 1).
- Remember that respiratory examination may well be normal in an asymptomatic individual, so it is important not to exclude asthma solely on examination findings.[3]
- In addition to a respiratory examination, check the throat for enlarged tonsils and look out for other signs of atopic disease such as eczema or rhinitis.

Objective tests *(Peak Expiratory Flow Rate (PEFR) variability & serial monitoring, spirometry reversibility)*

- Objective tests should be conducted in all patients old enough to perform them.
- Each diagnostic test available for asthma has strengths and limitations *(and may be normal)*

Variability in airflow obstruction - spirometry:

- More than half of patients who have a negative result (non- obstructive spirometry) will have asthma[5.]
- Relying on objective tests of airflow obstruction completed only at a single point of time risks missing asthma.
- Therefore, testing for variable airflow obstruction should be repeated over time.
- In primary care, PEFR monitoring and spirometry with bronchodilator reversibility testing are recommended measures to demonstrate variable airflow obstruction.
- BTS/SIGN recommend the use of lower limit of normal for FEV1/FVC ratio (instead of the fixed ratio of 70%) to avoid the substantial under diagnosis in children and over diagnosis of obstruction in older people.[2, 6.]

Tests for demonstrating eosinophilic inflammation:

- Fractional Exhaled Nitric Oxide (FeNO) – a positive test indicates the presence of eosinophilic inflammation providing supporting (rather than conclusive) evidence for an asthma diagnosis.
    - Accurate interpretation of a FeNO result requires an understanding of the potential confounding factors that may produce false positive and false negative results.
    - FeNO is not widely available in UK primary care *(not currently commissioned in Norfolk & Waveney)*.
    - The PCRS position (June 2019) aligns with the guidance issued by BTS/SIGN, namely the use of FeNO testing as an optional investigation to test for eosinophilic inflammation where there is diagnostic uncertainty.
    - In adults and children with an intermediate probability of asthma and normal spirometry results, undertake challenge tests and/or measurement of FeNO to identify eosinophilic inflammation *(referral required in Norfolk)*
- *There is an association between blood eosinophils and eosinophilic inflammation, but its precise role is still the subject of investigation and research.*

NB: In Norfolk & Waveney if the diagnosis of asthma cannot be made without requiring an assessment of eosinophilic inflammation –refer to a respiratory specialist.

Diagnosis in children – *for age < 5yrs see Asthma Management Summary click here.*

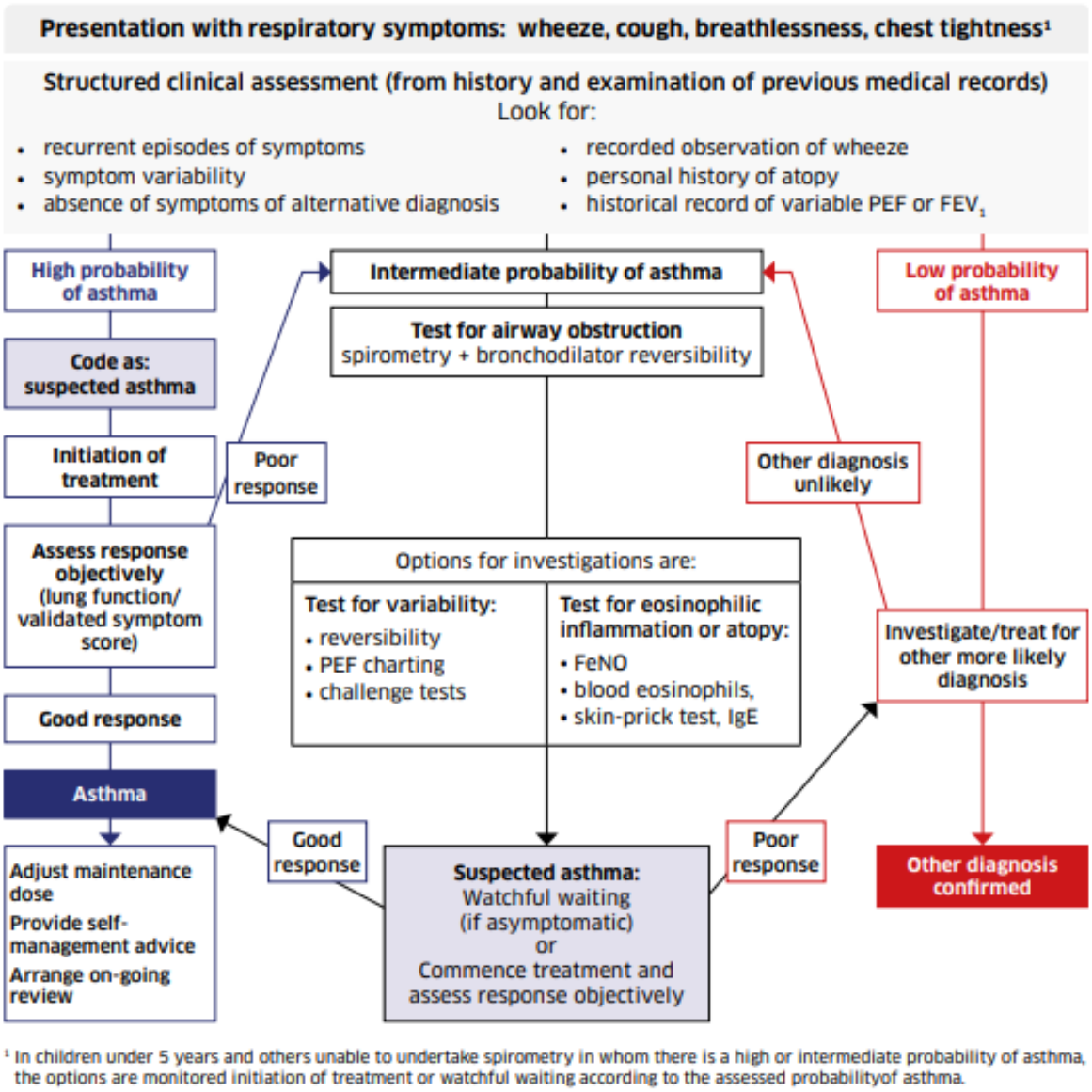
- Use of spirometry is not well established in children in primary care and additional training may be needed to ensure accurate results *(diagnosis usually based on history including family and perinatal. Use 'suspected asthma' read code whilst under investigation)*
- In children under 5 years of age, a diagnosis of asthma is based on establishing the probability of asthma after an initial structured clinical assessment.[2] *If less than 2 years old refer if repeated viral wheeze or parent / carer concerns as asthma unlikely.*
- If the probability is high a trial of Inhaled corticosteroid (ICS) may be considered and stopped at the end of the trial.
- If the child has had no response to treatment, and the medication has been taken, the diagnosis of asthma is unlikely.
- If symptoms improve with ICS but recur when stopped, then settle again with reintroduction of treatment, a diagnosis of asthma can be made.
- Where diagnostic doubt persists *(after a trial of therapy & removal of therapy)* **referral for specialist assessment** should be considered *(before instigating more treatment)*.
- Also see Fit to care: key knowledge skills and training for clinicians providing respiratory care

Summary

- The diagnosis of asthma can be challenging, particularly due to the variable nature of symptoms and lung function over time and the heterogeneity of presentation.
- A diagnostic strategy based on repeated clinical assessments, supported by objective clinical tests (including peak expiratory flow monitoring) and sensitively using trials of initiating and discontinuing therapy is recommended as a practical way forward.
- **Whilst investigating asthma, and until a diagnosis is confirmed, use the code 'suspected asthma'.**[2, 3.]
- **Once a diagnosis of asthma has been made, record the basis for the decision** in a single entry in the person's medical records, alongside the coded diagnostic entry.
- **The diagnosis of asthma should ideally be revisited and checked regularly** – especially when you first take over the care of a patient thought to have asthma.
- **Good documentation is strongly recommended.**

Asthma: Diagnosis algorithm BTS / SIGN July 2019

Figure 1: Diagnostic algorithm for individuals presenting with symptoms suggestive of asthma. (From BTS/SIGN; 2019) [1, 2]



[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 probabilityof asthma.

BTS/SIGN high probability of asthma (adult or child) [1, 2]

- Recurrent episodes of symptoms ('attacks')
- Wheeze *(which may be confused by upper airway sounds)* confirmed by a healthcare professional.
- A personal or family history of atopy
- A past record of variable airflow obstruction
- No features to suggest an alternative diagnosis (see box 1)
- *Cough is a frequent symptom of asthma in children.*

If there is any doubt, the diagnosis should be considered as **intermediate probability. Adults and children who have none of the typical features of asthma or whose symptoms are suggestive of an alternative diagnosis** *(see overleaf)* **have a low probability of asthma.**

Asthma: Alternative diagnosis and reasons for specialist referral BTS / SIGN July 2019

Table 1: BTS/SIGN 2019 Clinical clues to suggest an alternative diagnosis to asthma in adults

Clinical Clue	Possible Diagnosis
Without airflow obstruction	
Predominant cough without lung function abnormalities	Chronic cough syndromes; pertussis
Prominent dizziness, light-headedness, peripheral tingling	Dysfunctional breathing
Recurrent severe 'asthma attacks' without objective confirmatory evidence	Vocal cord dysfunction
Predominant nasal symptoms without lung function abnormalities	Rhinitis
Postural and food-related symptoms, predominant cough	Gastro-oesophageal reflux
Orthopnoea, paroxysmal nocturnal dyspnoea, peripheral oedema, preexisting cardiac disease	Cardiac failure
Crackles on auscultation	Pulmonary fibrosis
With airflow obstruction	
Significant smoking history (i.e., >30 pack-years), age of onset >35 years	COPD
Chronic productive cough in the absence of wheeze or breathlessness	Bronchiectasis*; inhaled foreign body*; obliterative bronchiolitis, large airway stenosis
New onset in smoker, systemic symptoms, weight loss, haemoptysis	Lung cancer*; sarcoidosis*

***** May also be associated with non-obstructive spirometry

Table 2: **BTS/SIGN 2019 Diagnostic indications for specialist referral**

Adults	Children
Referral for tests not available in primary care	
Diagnosis unclear	Diagnosis unclear
Suspected occupational asthma (symptoms that improve when patient is not at work, adult-onset asthma and workers in high-risk occupations)	
Poor response to asthma treatment	Poor response to monitored initiation of asthma treatment
Severe/life-threatening asthma attack	Severe/life-threatening asthma attack
'Red flags' and indicators of other diagnoses	
Prominent systemic features (myalgia, fever, weight loss)	Failure to thrive
Unexpected clinical findings (e.g. crackles, clubbing, cyanosis, cardiac disease, monophonic wheeze**,** or stridor)	Unexplained clinical findings (e.g. focal signs, abnormal voice or cry, dysphagia, inspiratory stridor)
Persistent non-variable breathlessness	Symptoms present from birth or perinatal lung problem
Chronic sputum production	Excessive vomiting or posseting
Unexplained restrictive spirometry	Severe upper respiratory tract infection
Chest X-ray shadowing	Persistent wet or productive cough
Marked blood eosinophilia	Family history of unusual chest disease
	Nasal polyps
Patient or parental anxiety or need for reassurance	

Asthma: Risk factors for future asthma attacks and common causes of poor asthma control

BTS / SIGN July 2019 , PCRS – UK Consensus Jan 2020

Table 3: **BTS/SIGN 2019 Factors associated with increased risk of future asthma attacks in SCHOOL AGED CHILDREN**

Level of increased risk	Factor
Greatly increased risk	A history of previous asthma attacks Persistent asthma symptoms
Moderately increased risk	Suboptimal drug regimen (the ratio of the number of prescriptions for controller medication to total number of prescriptions for asthma medication <0.5) Comorbid atopic/allergic disease Low-income family Vitamin D deficiency
Slightly increased risk	Younger age Exposure to environmental tobacco smoke Obesity Low parental education
No increased risk	Gender Urban residence
Unclear (evidence equivocal)	Reduced lung function Raised FeNO at routine reviews Positive skin-prick tests History of allergen exposure

Table 4: BTS/SIGN 2019 Factors associated with increased risk of future asthma attacks in ADULTS.

Level of increased risk	Factor
Greatly increased risk	History of previous asthma attacks
Moderately increased risk	Poor control128, (assess at every routine review using objective patient-reported control questionnaires, eg ACT or ACQ) Inappropriate or excessive SABA use
Slightly increased risk	Older age Female Reduced lung function Obesity Smoking Depression
Unclear (evidence equivocal)	A history of anaphylaxis Comorbid gastro-oesophageal reflux COPD Raised FeNO at routine reviews Blood eosinophilia Poor adherence

Table 5: PCRS – UK Consensus Jan 2020 Common causes of poor asthma control

Incorrect diagnosis, or co-morbidity that has been missed	Lack of medication adherence
Current treatment is unsuitable	Under-use of ICS or overuse of SABAs
Inappropriate inhaler technique	Exposure to occupational triggers
Failure to use a spacer with ICS delivered by a metered dose inhaler	Seasonal or environmental factors
Smoking (active or passive) – ideally use a carbon monoxide meter to monitor smoking	Psychosocial reasons, including ideas and concerns about asthma/treatment

Asthma: Good Housekeeping Tips. *(Local advice)*

Have a designated GP & Nurse Lead for respiratory diseases (DRL)

Reviews for QOF should be of sufficient length for a full review by a clinician with suitable training and experience*. *Ideally 30min using a clinical system template.*

- The patient should have a clear understanding of their condition, triggers, modifiable risk / environmental factors, how to use their medication and their self-management plan.
- See: PCRS: Good Building Blocks of an Asthma Review [Dr Katherine Hickman]
- Video consultations – see Video consultations: information for GPs [BJGP]. Priority for face to face reviews should be given to those with poor control.

***The clinician assigning the diagnosis and performing your QOF reviews should be competent.**

- E.g. ideally have (or be working towards) the relevant 'Education for Health Diploma', or at least have completed other relevant training, for your **asthma** review to be adequate and safe (PCRS Fit to Care)

DRL to review *any* respiratory exacerbations or admissions (including OOH / A&E / paramedic contacts and admissions / community nurses) within 3 weeks.

- ***Ideally* within 2 working days of being seen in A&E, by 999 or OOH** services, discharge **following life threatening admission**. *May be telephone initially.*
- ***Ideally* within 2 weeks following a discharge from a respiratory unit / virtual ward.**
- **Check:** Symptom control, **personalised asthma action plan (PAAP)**, inhaler technique, and respiratory specialist clinic follow-up plan. Is a referral needed?
- Set up scanning protocol looking for following words: COPD, bronchitis, asthma, pneumonia, LRTI in hospital discharges /OOH report /A&E reports / paramedic/community nurse documentation.

Ensure that reception staff are aware that when patients with an **asthma** diagnosis and symptoms present for an urgent appointment, *they should have an assessment the same day (which could be via telephone), by a clinician with suitable experience.*

For patients prescribed a 'blue reliever' (short-acting beta agonist SABA) **inhaler, limit repeat prescriptions to 4 x 200 dose (or equivalent) inhalers per year.** Designate one of your dispensary staff or your prescription clerk to monitor this and inform your DRL if:

- a patient is ordering > 4 x SABA inhalers per year – **a review is needed.**
- a patient is ordering > 12 x SABA inhalers per year – **this requires urgent review.**
- a patient is ordering their SABA regularly but NOT their regular preventer / combination inhaler, containing an inhaled corticosteroid (ICS), **a review is needed.**
- If a patient is using a **maintenance and reliever therapy regimen (MART)** they should **not** be prescribed a SABA in addition to the combination MART inhaler.

Review personalised asthma action plans (PAAPs)

- If a patient requests prednisolone for an exacerbation of asthma, as per their PAAP, ensure are seen by the DRL at least within 3 weeks of the onset of the exacerbation.

Check inhaler technique.

- At every opportunity – e.g. practice appointments, in community pharmacies etc
- Dispensing surgeries, consider including inhaler technique as part of the Dispensary Review of the Use of Medicines (DRUM)
- Ensure prescription clerks and dispensary staff are aware of the reasons for limiting the number of reliever inhalers.
- **NO patient with asthma should be using / prescribed a long acting beta agonist (LABA) *without* an inhaled corticosteroid inhaler (ICS).**

Norfolk & Waveney
Asthma Management Summary

Based on BTS / SIGN July 2019 & NICE NG80 update March 2021

Ensure correct diagnosis via BTS/SIGN diagnostic algorithm.
STOP SMOKING *(if relevant)* Remember - *'Asthma still kills'* (NRAD 2015)

- Patient is ordering **>12 short-acting** reliever inhalers in the past 12 months - **Urgent review.**
- Patient is ordering **> 4 short-acting** reliever inhalers in the past 12 months - **Review needed.**
- Non-adherence with preventer inhaled corticosteroid - **Review needed.**

Ensure the patient has a personalised asthma action plan (PAAP)

- Check patient's understanding of their PAAP at every contact. *Include advice on minimising indoor air pollution and reducing exposure to outdoor air pollution.*
- Asthma UK **child** here Beat Asthma **child/young person** here Asthma UK **adult** here
- *Also consider discussing the use of an 'asthma app' if appropriate*

High dose steroids (adults)[7,8] e.g. greater than 4 weeks use of **oral:** prednisolone ≥ 5mg/day.
ICS: fluticasone > 500mcg/day, beclometasone > 1000mcg/day. **Nasal steroid** > 1000mcg/day.

- Consider total amount incl. oral, topical, inhaled, intranasal, intra-articular.
- **Ensure relevant patients are given appropriate steroid card(s)** see: Society for Endocrinology - adrenal crisis advice, steroid card info etc

Inhalers (useful website https://www.rightbreathe.com/).

***The '4 Cs'** [Gina 2022]

- **Choose*:** the most appropriate device for the patient. Ideally use the In-Check® DIAL G16 or similar / device specific training aids. See PCRS link
- **Check*:** inhaler technique at every opportunity, *ask the patient to demonstrate*
- **Correct*:** using physical demonstration **Confirm*:** use a checklist for each device
- Where clinically appropriate, choose a device with the lowest global warming potential (GWP) *i.e. Dry Powder Inhalers (DPI) or Metered Dose Inhaler (MDI) with lower GWP.* Norfolk & Waveney suggested options to reduce the carbon footprint of inhalers Phase ONE
- Before changing treatment **always check concordance** and device consistency
- **Community pharmacists can assess inhaler technique and concordance** for patients newly initiated via the New Medicines Service scheme
- **Prescribe by brand** to reduce the risk of the patient receiving an unfamiliar device.
- The inhalers included in the management summaries are *suggested initial options*. For all other formulary/licensed inhaler options for asthma see Norfolk and Waveney NetFormulary: Respiratory Chapter

Spacers

- **Ideally spacers should be considered for ALL patients on an ICS via p MDI** but especially **if HIGH DOSE ICS** to improve drug delivery and reduce adverse effects.
- Ensure the **spacer is compatible** with the inhaler *(a change in spacer may alter effective dose delivered)*
- Ensure the patient is given advice on **how to use** and **clean** their spacer (*once a month).*
- The spacer should be **replaced every 6 – 12 months** (via acute prescription at review)
- See KM Bulletin 18 Spacers for further information

SABA: Short Acting Beta 2 Agonist **ICS:** Inhaled Corticosteroid **LABA:** Long-Acting Beta 2 Agonist
LTRA: Leukotriene Receptor Agonist **MART:** Maintenance and Reliever Therapy

ADULTS ≥ 18 years Norfolk & Waveney Asthma Management Algorithm

Post - diagnosis *based on* **Based on BTS / SIGN July 2019 & NICE NG80 update March 2021** ***see next page for 1st line inhaler options***

SABA alone ONLY for infrequent short-lived wheeze & *normal lung function*. *Anyone with symptoms which indicate the need for maintenance therapy should move directly to treatment with ICS. Please remember NRAD 2015 Why asthma still kills*

Moving DOWN to find the *lowest controlling therapy*.

Consider 3 monthly reviews

Reduce dose *slowly* by 25 – 50% each time - *taking asthma severity into consideration*.

At REVIEW for decrease consider:

Which drug to reduce first?

- *How beneficial has it been?*
- *What are the side effects?*

Time on current dose?

- *Long-term, slower reduction?*

Patient preference?

Check patient's understanding of their SELF-MANAGEMENT ACTION PLAN

Action plan resources at
Asthma + Lung UK

Regular preventer
LOW dose ICS
Prescribe by brand
Review at 4-8 weeks

Initial add on
Add LTRA* *montelukast 10mg *one in the evening*
Review at 4 – 8 weeks.
If no response STOP

Additional *add on* therapy
1. ***Offer LABA as *combo inhaler* with LOW dose ICS**
PLUS review the need for ongoing LTRA taking response into consideration
Review at 4 – 8 weeks
2. ***If STILL uncontrolled consider offering low ICS dose/LABA combo MART regimen and STOP additional SABA***
Review at 4 – 8 weeks
3. ***If STILL uncontrolled consider increasing to moderate ICS dose as MART OR fixed dose combo***

Seek Specialist advice**
To consider
1. **Change to fixed combo HIGH dose ICS / LABA plus SABA** Give steroid safety card
OR
2. **Continue mod. ICS /LABA regimen with a trial of additional drug e.g. LAMA or SR theophylline**

Specialist care
Continuous or frequent use of oral steroids
Maintain **high dose** ICS

(Other specialist drugs may be prescribed by consultants)

Moving UP to improve control

REVIEW at 4 – 8 weeks. If asthma is *not controlled*:
Review diagnosis-
Refer if any doubts, abnormal chest x-ray, eosinophil count > 0.6 x 10^9/l or HIGH dose ICS

***Check for trigger factors:** **LTRA more likely to be beneficial if** allergic rhinitis, allergic asthma, triad of NSAID sensitivity/nasal polyps and asthma, low adherence to inhalers**. Adding a LABA first** *may be more appropriate for those with wheeze as predominant symptom / exercise induced symptoms*

Check adherence: *look at ordering history / number of issues*
Check inhaler technique: patients should have training. In-check® Dial to ensure device is appropriate.
Check patient's understanding of their SELF-MANAGEMENT ACTION PLAN

Short Acting Beta 2 Agonist *as required* *(unless on MART regimen)* – review all patients using three doses a week or more

ADULTS ≥ 18 years Inhaler Device Options

Suggested FIRST choice [>] based on local formulary, appropriately licensed products, device consistency & global warming potential (GWP)

For all other formulary / licensed inhaler options for asthma see: Local asthma formulary & Inhaler types & devices ASTHMA

Device Type	Short Acting Beta$_2$ Agonist	Regular Preventer	Initial Add On	Additional Add On			Refer to / seek specialist advice **
	As required use – *ongoing*	LOW dose ICS[$] *Dose can be decreased if asthma controlled*	Oral Leukotriene Receptor Antagonist LTRA	LOW dose ICS[$] + LABA Plus review benefit / ongoing need for LTRA	LOW dose ICS[$] + LABA MART regimen + STOP SABA	MODERATE dose ICS[$] + LABA MART *OR Fixed dose + ADD SABA back in*	
1. Dry Powder Inhaler 2. *Lower GWP than pMDI*	**Easyhaler salbutamol 100mcg** 1-2 doses PRN **Bricanyl Turbohaler 500mcg** (terbutaline) 1 dose PRN up to QDS	**Easyhaler budesonide 100mcg** 2 doses BD **Pulmicort Turbohaler 100mcg** (budesonide) 2 doses BD	**Montelukast 10mg tablets one in the evening**	**Fobumix Easyhaler OR WockAIR 160/4.5mcg** (budesonide/formoterol) 1 dose BD **Symbicort Turbohaler 200/6mcg** (budesonide/formoterol) 1 dose BD	**Fobumix Easyhaler OR WockAIR 160/4.5mcg** 1 dose bd *with 1 -2 additional doses as needed total max 8 doses daily* **Symbicort Turbohaler 200/6mcg** *Dose – as per Fobumix*	**Fobumix Easyhaler OR WockAIR 160/4.5mcg 2 doses BD** with 1 -2 additional doses as needed total max 8 doses daily ***OR fixed 2 doses BD and ADD separate SABA prn*** **Symbicort Turbohaler 200/6mcg** *Dose – as per Fobumix*	**Appropriately qualified respiratory specialist to decide most appropriate therapeutic option: Either to change to fixed combo HIGH dose combination ICS/LABA plus SABA or Continue mod. ICS /LABA regimen with a trial of additional drug e.g. LAMA or SR Theophylline ** this may be a primary or secondary care specialist nurse or doctor**
pressurised Metered Dose Inhaler [$]	**Salamol 100mcg** 1-2 doses PRN	**Clenil Modulite 100mcg *Ideally, plus spacer*** (beclometasone) 2 doses BD		**Luforbec or Bibecfo 100/6 *Ideally, plus spacer*** (*extra fine* beclometasone / formoterol) 1 dose BD	**Luforbec or Bibecfo 100/6 *Ideally, plus spacer*** 1 dose BD *with 1 -2 additional doses as needed total max 8 doses daily*	**Luforbec or Bibecfo 100/6 *Ideally, plus spacer* 2 doses BD** *with 1 -2 additional doses as needed total max 8 doses daily* ***OR fixed 2 doses BD and ADD separate SABA prn***	

Device notes

[>]The above first line choices are based on:

- Device is available across the range of drug content- *device consistency*
- Drug content- *safety / evidence of effectiveness*
- Product Licence *e.g. age, MART*
- Global warming potential see local guidance
- Device features *e.g. dose counter*
- Cost to the local health economy

Other devices and devices with alternative drug content are available and may be more appropriate for some patients.

Things to consider when choosing a device / regimen:

- Airways severity e.g. *consider inspiratory flow, risk of frequent exacerbations etc*
- Ability to use the device / device consistency e.g. *inspiratory flow and manual dexterity*
- Personal preference / patient factors *e.g. doses per day, ability to understand the regimen*
- Efficacy and adverse effects of the drug content
- Which other type of device(s) does the patient use? – *aim for device consistency*

[$]Ideally SPACERS should be considered for ALL patients on an ICS via pMDI but *especially if HIGH DOSE ICS* See *KM Bulletin 18-spacer devices*

NICE NG 80 ICS doses Feb 2023 for adults aged 17 years and over: beclometasone dipropionate low dose ICS 200 – 500mcg / day **moderate dose** 600 – 800mcg / day **high dose** 1000 – 2000mcg / day. ***Extra fine* beclometasone dipropionate low dose ICS** 100 – 200mcg / day **moderate dose** 300 – 400mcg / day **high dose** 500 – 800mcg / day. **Budesonide DPI: low dose ICS** 200 – 400mcg / day **moderate dose** 600 – 800mcg / day **high dose** 1000 – 1600mcg / day. **Fluticasone *propionate*: low dose ICS** 100 – 250mcg / day **moderate dose** 300 – 500mcg / day **high dose** 600 – 1000mcg / day

Adolescents 12 - 17 years Norfolk & Waveney Asthma Management Algorithm

Post - diagnosis* based on Based on BTS / SIGN July 2019 & NICE NG80 update March 2021 *see next page for 1st line inhaler options

SABA alone ONLY for infrequent short-lived wheeze & *normal lung function*. *Anyone with symptoms which indicate the need for maintenance therapy should move directly to treatment with ICS. Please remember NRAD 2015 Why asthma still kills*

Moving DOWN to find the *lowest controlling therapy*.

Consider 3 monthly reviews

Reduce dose *slowly* by 25 – 50% each time - *taking asthma severity into consideration*.

At REVIEW for decrease consider:

Which drug to reduce first?

- *How beneficial has it been?*
- *What are the side effects?*

Time on current dose?

- *Long-term, slower reduction?*

Patient preference?

Check patient's understanding of their SELF-MANAGEMENT ACTION PLAN

Action plan resources at Asthma + Lung UK

Regular preventer
LOW dose ICS
Prescribe by brand
Review at 4-8 weeks

Initial add on
Add LTRA* *montelukast in the evening 12-14yrs 5mg ≥15yrs 10mg
Review at 4 – 8 weeks. If no response STOP

Additional *add-on* therapy

1. ***Offer LABA as *combo inhaler* with LOW dose ICS**
PLUS review the need for ongoing LTRA taking response into consideration
Review at 4 – 8 weeks
2. ***If STILL uncontrolled consider offering low ICS dose MART regimen and STOP additional SABA***
Review at 4 – 8 weeks
3. ***If STILL uncontrolled* Consider Referral */ increasing to moderate ICS dose as MART OR fixed dose combo and RE-ADD SABA***

Refer to Specialist**
To consider

1. **Change to fixed combo HIGH dose ICS / LABA plus SABA**
Give steroid safety card
OR
3. **Continue mod. ICS /LABA regimen with a trial of additional drug**

Specialist care
Continuous or frequent use of oral steroids
Maintain **high dose** ICS

(Other specialist drugs may be prescribed by consultants)

Moving UP to improve control

REVIEW at 4 – 8 weeks. If asthma is *not controlled*:
Review diagnosis-
Refer if any doubts, abnormal chest x-ray, eosinophil count > 0.6 x 10^9/l or HIGH dose ICS

***Check for trigger factors: LTRA more likely to be beneficial if** allergic rhinitis, allergic asthma, triad of NSAID sensitivity/nasal polyps and asthma, low adherence to inhalers**. Adding a LABA first** *may be more appropriate for those with wheeze as predominant symptom/exercise induced symptoms*

Check adherence: *look at ordering history / number of issues*
Check inhaler technique: patients should have training. In-check® Dial to ensure device is appropriate.
Consider MDI + spacer. Check patient's understanding of their SELF-MANAGEMENT ACTION PLAN

Adolescents: See them on their own for part of the consultation, discuss confidentiality and its limitations. Encourage avoidance of exposure to tobacco smoke, inform them about the risks and urge them not to start smoking. Offer advice on how to stop smoking if relevant. Discuss career choices / highlight occupations that may worsen asthma. Consider inhaler device preference to improve adherence to treatment.

Short Acting Beta $_2$ Agonist *as required* *(unless on MART regimen)* – review all patients using three doses a week or more

Adolescents 12 – 17 years Inhaler Device Options

Suggested FIRST choice > based on local formulary, appropriately licensed products, device consistency & global warming potential (GWP)

For all other formulary / licensed inhaler options for asthma see: Local asthma formulary & Inhaler types & devices ASTHMA

Device Type	Short Acting $Beta_2$ Agonist	Regular Preventer	Initial Add On	Additional Add On			Refer to / seek specialist advice **
	As required use – *ongoing*	LOW dose ICS$ *Dose can be decreased if asthma controlled*	Oral Leukotriene Receptor Antagonist LTRA	LOW dose ICS$ + LABA Plus review benefit / ongoing need for LTRA	LOW dose ICS$ + LABA MART regimen + STOP SABA	MODERATE dose ICS$ + LABA MART *OR Fixed dose + ADD SABA back in*	
Dry Powder Inhaler *Lower GWP than pMDI*	**Easyhaler salbutamol 100mcg** 1-2 doses PRN **Bricanyl Turbohaler 500mcg** (terbutaline) 1 dose PRN up to QDS	**Easyhaler budesonide 100mcg** 2 doses BD **Pulmicort Turbohaler 100mcg** (budesonide) 2 doses BD	**Montelukast in the evening** **12 – 14yrs: 5mg** **≥ 15yrs: 10mg**	**WockAIR 160/4.5mcg OR Symbicort Turbohaler 200/6mcg** (budesonide/formoterol) 1 dose BD^	**WockAIR 160/4.5mcg OR Symbicort Turbohaler 200/6mcg** 1 dose BD *with 1 -2 additional doses as needed total max 8 doses daily*	**WockAIR 160/4.5mcg OR Symbicort Turbohaler 200/6mcg 2 doses BD** *with 1 -2 additional doses as needed total max 8 doses daily* ***OR fixed 2 doses BD and ADD separate SABA prn***	**Appropriately qualified respiratory specialist to decide most appropriate therapeutic option: Either to change to fixed combo HIGH dose combination ICS/LABA plus SABA or Continue mod. ICS /LABA regimen with a trial of additional drug ** this may be a primary or secondary care specialist nurse or doctor
pressurised Metered Dose Inhaler $	**Salamol 100mcg** 1-2 doses PRN	**Clenil Modulite 100mcg *Ideally, plus spacer*** (beclometasone) 2 doses BD		**Combisal 50/25mcg *Ideally, plus spacer*** (fluticasone propionate / salmeterol) 2 doses BD^ ^ dose BTS 2019 / SPC	***OFF LICENCE< 18yrs*** **Luforbec or Bibecfo 100/6** (*extra fine* beclometasone / formoterol) ***Ideally, plus spacer*** 1 dose BD *with 1 -2 additional doses as needed total max 8 doses daily*	***OFF LICENCE < 18yrs*** **Luforbec or Bibecfo 100/6 *Ideally, plus spacer* 2 doses BD** *with 1 -2 additional doses as needed total max 8 doses daily* ***OR LICENSED*** ***Fixed dose + separate SABA prn*** **Combisal 125/25mcg *plus spacer*** 2 doses BD	
Device notes	**> The above first line choices are based on:** • Device is available across the range of drug content- *device consistency* • Drug content- *safety / evidence of effectiveness* • Product Licence *e.g. age, MART* • Global warming potential see local guidance • Device features *e.g. dose counter* • Cost to the local health economy	**Other devices and devices with alternative drug content are available and may be more appropriate for some patients.** **Things to consider when choosing a device / regimen:** • Airways severity e.g. *consider inspiratory flow, risk of frequent exacerbations etc* • Ability to use the device / device consistency e.g. *inspiratory flow and manual dexterity* • Personal preference / patient factors *e.g. doses per day, ability to understand the regimen* • Efficacy and adverse effects of the drug content • Which other type of device(s) does the patient use? – *aim for device consistency*					

$SPACERS should be considered for ALL patients on an ICS via pMDI but *especially if HIGH DOSE ICS* See *KM Bulletin 18-spacer devices*

BTS/SIGN 2019 include ≥ 12 years as adults for ICS dose. NICE NG 80 say clinical judgment should be used for 12- 16 years.
For consistency with other age groups we quote NICE NG 80 adult doses but only include products licensed for ≥ 12 years (unless otherwise stated)
NICE NG 80 ICS doses Feb 2023 for adults aged 17 years and over: beclometasone dipropionate low dose ICS 200 – 500mcg / day **moderate dose** 600 – 800mcg / day **high dose** 1000 – 2000mcg / day.
***Extra fine* beclometasone dipropionate low dose ICS** 100 – 200mcg / day **moderate dose** 300 – 400mcg / day **high dose** 500 – 800mcg / day. **Budesonide DPI: low dose ICS** 200 – 400mcg / day
moderate dose 600 – 800mcg / day **high dose** 1000 – 1600mcg / day. **Fluticasone *propionate*: low dose ICS** 100 – 250mcg / day **moderate dose** 300 – 500mcg / day **high dose** 600 – 1000mcg / day

Children 5 – 11 years Norfolk & Waveney Asthma Management Summary (May 2024 update)

Based on BTS / SIGN July 2019, NICE NG80 update March 2021 , PCRS – UK Consensus & Local Respiratory Specialist Advice

Post diagnosis: *suggested 1st choice* treatment.

See page 3 for alternative options. **Inhaled corticosteroid (ICS) doses as per NICE NG80***

Choose: most appropriate device. Ideally use α **In-check® Dial G16 (or similar)** to ensure the patient will be able to use the device.

Check: inhaler technique at every opportunity, *ask the patient to demonstrate.* [Gina 2022] **Correct:** using physical demonstration **Confirm:** use checklist for each device

Check for modifiable risk factors and add to personalised asthma action plan.

Move DOWN to lowest controlling therapy Review 4 – 8 weeks after any change in treatment & ensure patient has up to date ACTION PLAN Move UP to improve control.

Regular preventer plus, SABA prn

**Use clinical judgement to decide ICS dose based on severity of condition / age / size of child.*

Clenil Modulite® OR Beclu® 100mcg pMDI**

Beclometasone dipropionate 200mcg / day

£2.23 / £1.56 per 30 days

e.g. ***ONE puff BD via *spacer***

(Paed. low dose)

1 x 200 doses lasts 100 days.

Carbon *neutral* pMDI devices with dose counters

Initial add on

Leukotriene Receptor Antagonist (LTRA)

Montelukast

2 -5yrs 4mg chewable

6 -14yrs 5mg chewable

One in the evening

More likely to be beneficial if allergic rhinitis, allergic asthma, triad of NSAID sensitivity / nasal polyps and asthma, low adherence to inhalers.

Additional *add on* therapy

Change to Combo ICS / LABA

Combisal® 50 / 25mcg pMDI**

Fluticasone propionate / salmeterol

No dose counter.

(See Beat asthma link below)

CONSIDER REFERAL

ICS / LABA with Fixed *paediatric* LOW dose ICS

fluticasone propionate 100mcg / day

Review LTRA, *if prescribed*

TWO puffs per DAY (see SPC) **via *spacer*** plus, **SABA** prn

£6.60 per 30 days

***ICS / LABA* with Fixed *paediatric* MODERATE dose ICS**

fluticasone propionate 200mcg/ day

TWO puffs BD via *spacer* plus, **SABA** prn

£13.20 per 30 days

Seek Specialist** advice / refer if:

Combisal 50 / 25mcg TWO puffs BD, technique and adherence are good, **but** *symptoms not controlled / excess use of reliever i.e.***> *6 x 200 dose SABA /year used.***

Specialist care required:

- Continuous / frequent use of oral steroids
- Paed. high dose ICS i.e. > Combisal 50 / 25mcg 2p BD
- Specialist / off-licence drugs e.g. Maintenance & Reliever Therapy MART

SABA Short Acting Beta 2 Agonist *as required – review all patients using three doses a week or more.*

Salamol® 100mcg *salbutamol £1.46 / 200 dose* **One or two puffs prn via *spacer***. *No dose counter.* ***'How can I tell if my inhaler is empty' Beat Asthma***

SPACERS: see *KM Bulletin 18 Inhaler Spacer Devices for other spacers / comparisons (click here for link)*

Use the same spacer for dose titration. A change in spacer may affect the dose delivered and may require dose adjustment.

Ensure device / mask is age appropriate & give spacer care advice. Resources and videos: see links below.

****pMDI via spacer is preferred 1st choice for younger children.** **Resources and videos:** Asthma UK: help your child 'Beat Asthma' child focused resources

Local advice: Dry Powder Inhalers may be considered BUT *only on the advice of a specialist following a face-to-face review – see alternative inhalers.***

An In-check® G16 Dial, or similar should be used, where possible, to check correct inspiratory flow / technique.

Off-licence use of MART inhalers (NICE NG 80) via specialist** advice only and the child /carer must be able to understand and comply with instructions – *see alternative inhalers.*

Children 5 -11 years Asthma Management – *important reminders*

SABA alone ONLY for infrequent short-lived wheeze & *normal lung function. Anyone with symptoms which indicate the need for maintenance therapy should move directly to treatment with ICS. Please remember NRAD 2015 Why asthma still kills*

Check understanding of Personalised Asthma Action Plan PAAP. See links: **Asthma + Lung UK. Asthma Control Test ACT**

Children: A pressurised Metered Dose Inhaler (p MDI) with a spacer is the preferred method of delivery of beta$_2$ agonists or inhaled corticosteroids (ICS) for younger children. A face mask should be used until the child can breathe reproducibly using the spacer mouthpiece (usually age 3 - 5 years). **SMOKING: offer cessation advice for parents / carers if relevant.**

Initial / additional add on Check for trigger / modifiable risk factors / minimise exposure to indoor and outdoor air pollution. Asthma UK - asthma triggers:
LTRA more likely to be beneficial if allergic rhinitis, allergic asthma, triad of NSAID sensitivity/nasal polyps and asthma, low adherence to inhalers**.**
Adding a LABA first *may be more appropriate for those with wheeze as the predominant symptom / exercise induced symptoms.*

Moving UP to improve control?
Review diagnosis. **Refer if any doubts**, abnormal chest x-ray, eosinophil count > 0.6 x 10^9/l,
> 6 x 200 dose *or equivalent* SABA inhalers per annum used.
Check adherence: *look at ordering history / number of issues (check actual use / over-ordering)*
Check inhaler technique: patient / carer should have training ideally with In-check® Dial or similar, to ensure device is appropriate. **Check patient / carer's understanding of their PAAP.**

Moving DOWN to find the *lowest controlling therapy?*
*Consider 3 monthly reviews***.**
Reduce dose *slowly* by 25-50% each time – *consider asthma severity.*
Which drug to reduce first? *How beneficial has it been? Side effects?*
Time on current dose? *Long-term - slower reduction?*
Patient preference?

Inhaler Device *pMDI with spacer is preferred for younger children.* The least cost-effective device is the one the patient does not or cannot use. Things to consider:
Device available across the range of drug content: *device consistency* **Drug content***: licence, safety / evidence of effectiveness* **Product Licence:** *e.g., age*
Global warming potential: *advise parent/carer to return used inhalers to their pharmacy / dispensary for disposal* **Device features:** *e.g., dose counter.*
Cost: to the local health economy **Airways severity:** e.g., *consider inspiratory flow use In-check ®G16$^{\alpha}$, risk of frequent exacerbations etc.*
Ability to use the device: e.g., *inspiratory flow and manual dexterity* **Personal preference / patient factors:** *e.g., doses/day, ability to understand the regimen.*
Other type of device(s) used: *aim for device consistency***.**

MART: Maintenance and Reliever Therapy on specialist** advice only for age 5 - 11 years
Fill in a **personalised MART action plan**. Explain how and when to increase the dose and **what to do if symptoms do not improve.**
Read code: Single inhaler maintenance and reliever therapy started. Ensure the patient is reviewed after 4 to 8 weeks to check response.
Repeat quantity should be appropriate for fixed regular dose and prn symptoms . Set a maximum number of issues with review booked *if request exceeded.*
Patients on a MART regimen should not be given a separate SABA inhaler. The formoterol content replaces their 'blue' inhaler and works just as fast.
If 6 doses on a single occasion do not work, the patient should access emergency care.

****Seek Specialist advice.** *Appropriately qualified respiratory specialist (primary if PCRS: Fit to care or secondary care) should decide next step **IF:***
Patient is on **paed moderate dose ICS**, technique /adherence are good, **BUT excess use of reliever** *i.e., > 6 x 200 dose SABA inhalers per year **used**, or paed moderate dose MART regimen and frequent additional doses are needed. **If there is any diagnostic doubt.***

Patient should be under specialist care if: Continuous / frequent use of oral steroids**.** Paediatric high dose ICS (*ensure the patient / carer has a steroid safety card - Society for Endocrinology - adrenal crisis advice.) Additional treatment / change in drug content /off licence drug treatment e.g., MART, alternative ICS / LABA*
NB Some specialist drugs for severe asthma will be supplied via the hospital i.e. biologics.

Children 5 - 11 years suggested *alternatives* to 1st choice Inhaler device.

Suggested inhalers > based on local formulary, appropriately licensed products, device consistency & global warming potential (GWP)

For *all other formulary / licensed inhaler options* for asthma see: Norfolk and Waveney NetFormulary & Inhaler types & devices ASTHMA

Device Type / content	SABA Short Acting Beta$_2$ Agonist	ICS Inhaled Corticosteroid ***Paediatric* low dose**	ICS / LABA Combination Inhaled Corticosteroid + Long Acting Beta$_2$ Agonist	
			MART regimen ***Paediatric* low & moderate ICS dose** ***MART OFF LICENCE < 12yrs*** **On specialist** advice only**	**Fixed dose** ***Paediatric* low & moderate ICS *with separate SABA***
Dry Powder Inhalers DPIs *All DPIs have dose counters.* *Only use DPIs in children on specialist** advice*	***Salbutamol*** Easyhaler ® Salbutamol 100mcg *£3.31* / 200dose One or two doses prn. Max 8 per 24hrs Carbon neutral  ***Terbutaline*** Bricanyl Turbohaler® 500mcg £8.30 /120dose **One** dose prn. Max 4 doses / 24hrs  ***Salbutamol*** Ventolin Accuhaler® 200mcg £1.99 / 60dose **One** dose prn. Max 4 doses / 24hrs 	***Budesonide*** Easyhaler® budesonide 100mcg £2.66 per 30 days age ≥ 6 years **One** dose BD Carbon neutral  **Budesonide** Pulmicort Turbohaler® 100mcg £4.28 per 30 days age ≥ 5 years **One** dose BD  ***Fluticasone propionate*** Flixotide 50mcg Accuhaler® £4.00 per 30 days age ≥ 4years **One** dose BD 	***Budesonide / formoterol*** Symbicort Turbohaler® 100 / 6mcg £28.00 / 120 dose MART licence age ≥12 years **On specialist** advice only** 	***Budesonide / formoterol*** Symbicort Turbohaler® 100/6mcg Age ≥ 6 years **ONE** dose BD paed. low dose £14.00 per 30 days **TWO** doses BD paed. mod dose £28.00 per 30 days NB 200 / 6mcg not licensed < 12yrs. ***Fluticasone propionate / salmeterol*** Seretide 100mcg Accuhaler® *Contains 50mcg salmeterol / dose* age ≥ 4years **ONE** dose **ONCE** daily [BNFc] £8.73 per 30 days paed. low dose **ONE dose BD** £17.46 per 30 days paed. mod. ICS 
pressurised Metered Dose Inhaler		***Fluticasone propionate*** Flixotide 50mcg Evohaler® £3.27 per 30 days age ≥ 4years **One** dose BD **via spacer** No dose counter 	**NB Other ICS / LABA inhalers may occasionally be used 'off-licence' on hospital specialist advice where side effects and / or concordance are problematic.** *e.g. Relvar Ellipta® (DPI) fixed dose only*	

Only use DPIs in children on specialist advice:** a face-to-face assessment must be conducted to ensure adequate inspiratory flow (> 30L / min) and technique (quick and deep 2-3 sec)

MART – regimens must only be used on specialist advice, *off-licence for age < 12 yrs*. The child /carer must be able to fully understand and adhere to instructions.**

*NICE NG 80 ICS doses Feb 2023 ***Clinical judgement should be used for dosages for children and young people* : children aged 5 to 11 years: beclometasone dipropionate paed. low dose ICS** 100 - 200mcg / day **paed. moderate dose** 300 – 400mcg / day **paed. high dose** 500 – 800mcg / day. **Budesonide DPI: paed. low dose ICS** 100 – 200mcg / day **paed**. **moderate dose** 300 – 400mcg / day **paed. high dose** 500 – 800mcg / day. **Fluticasone propionate: paed. low dose ICS** 100mcg / day **paed**. **moderate dose** 150 – 200mcg / day **paed. high dose** 250 – 400mcg / day

Children < 5 years Norfolk & Waveney Asthma Management Summary (May 2024 update)

Based on BTS / SIGN July 2019, NICE NG80 update March 2021 , PCRS – UK Consensus and Local Respiratory Specialist Advice

Asthma diagnosis in children: *Norfolk and Waveney Paediatric Respiratory Consultant Advice (NNUH, JPUH, QEH)*

High probability of asthma	Low probability of asthma	Diagnostic indications for specialist referral
More than one of cough, wheeze, chest tightness or difficulty in breathing which are frequent and recurrent, worse at night or early in the morning, occur in response to exercise *(also laughing or crying[2])* or trigger exposure *(e.g. tobacco smoke / air pollution[2])* and occur **apart from colds.**	Symptoms only with colds and none between colds *(note that young children experience frequent viral infections and to parents it may feel like their child always has symptoms).* Careful questioning is very important.	Diagnosis unclear *If less than 2 years old refer if repeated viral wheeze or parent / carer concerns. Asthma unlikely (local specialist advice)*
History of atopy (e.g. eczema, hay fever or other allergy).	History of moist cough.	Poor response to monitored initiation of asthma treatment
Family history of asthma and/or atopy.	Dizziness, light-headedness, or peripheral tingling.	Severe / life-threatening asthma attack
History of widespread wheeze heard on auscultation.	Repeatedly normal physical examination when symptomatic.	Failure to thrive
History of improvement in symptoms or lung function in response to treatment.	Normal lung function when symptomatic.	Unexplained clinical findings *(e.g. focal signs, abnormal voice or cry, dysphagia, inspiratory stridor)*
Reduced activity- not running, playing**,** or laughing at the same intensity as other children / tires earlier during walks[2]	No response to a trial of asthma treatment.	Excessive vomiting or posseting
	Clinical features indicating an alternative diagnosis *– see BTS/SIGN 2019 p24 , GINA 2023 p173.*	Severe upper respiratory tract infection
		Persistent wet or productive cough
References: 1. BTS /SIGN 2019 2. GINA 2023		Family history of unusual chest disease
		Nasal polyps

Suspected asthma with *high probability*
Trial of paediatric **moderate** dose ICS[NG80]
(plus **SABA** prn)

ICS: Clenil Modulite® or Beclu®100mcg pMDI*

TWO puffs BD via spacer
for 8 weeks **then stop** & continue to monitor
Beclometasone dipropionate £2.23 / £1.56 per 30 days
Carbon neutral devices with dose counters

No response (& concordant): asthma unlikely, consider alternative diagnosis. **If any doubt REFER**

Symptoms resolve, but recur *within 4 weeks* after stopping ICS:
Restart ICS via spacer *using clinical judgement to select appropriate dose* (plus **SABA** prn) – if symptoms settle on reintroduction, a diagnosis of asthma can be made – *follow algorithm on page 2.*

If symptoms resolve but recur *beyond 4 weeks* after stopping ICS: repeat the 8 week paediatric **moderate** dose ICS and review.

Children with *intermediate probability* of asthma who cannot perform spirometry: **consider watchful waiting** if asymptomatic.
Offer carefully monitored trial of treatment if symptomatic. *For symptoms that do not indicate maintenance therapy offer SABA alone and review in 4 to 8 wks*

Children < 5 years Norfolk & Waveney Asthma Management Summary

Based on BTS / SIGN July 2019, NICE NG80 update March 2021 , PCRS – UK Consensus and Local Respiratory Specialists ** ICS doses as per NICE NG80*

Post diagnosis treatment

Choose: most appropriate device. **Check:** inhaler technique at every opportunity, *ask the patient/ carer to demonstrate*.
Correct: using physical demonstration **Confirm:** use a checklist [Gina 2022]
Check for modifiable risk factors and add to personalised asthma action plan.

Move DOWN to lowest controlling therapy Review 4 – 8 weeks after any change in treatment & ensure patient has up to date ACTION PLAN Move UP to improve control.

Regular preventer
plus, SABA prn

**Use clinical judgement to decide ICS dose based on severity of condition/age/size of child.*

Clenil Modulite® OR Beclu® 100mcg pMDI
Beclometasone dipropionate 200mcg / day
£2.23 / £1.56 per 30 days
*e.g. **ONE puff BD via *spacer* (paed. low dose)***
1 x 200 doses lasts 100 days.
Carbon neutral p MDI devices with dose counters.

Initial add on

Leukotriene Receptor Antagonist (LTRA)
Montelukast

2 - 5yrs 4mg **chewable** *£1.09 / 28*
6 months - 5yrs granules (4mg /sachet) £7.06 / 28
One in the evening

More likely to be beneficial if allergic rhinitis, allergic asthma, triad of NSAID sensitivity / nasal polyps and asthma, low adherence to inhalers.

REFER TO SPECIALIST

Refer to healthcare professional with expertise in asthma for further investigation and management IF:

Clenil Modulite® or Beclu® 400mcg /day *(paed mod dose)*, **technique and adherence are good,** *but symptoms are not controlled / excess use of reliever* i.e.**> 6 x SABA inhalers/year *used.***

Specialist care required for:
- Continuous / frequent use of oral steroids
- Paed. high dose ICS i.e. > Clenil Modulite® or Beclu® >400mcg /day
- Alternative or off-licence inhalers e.g. ICS /LABA or other drugs


SABA Short Acting Beta 2 Agonist *as required – review all patients using three doses a week or more.*
Salamol® 100mcg *salbutamol £1.46 / 200 dose* **One or two puffs prn via *spacer*.** *No dose counter.*
'How can I tell if my inhaler is empty' Beat Asthma

SPACERS: see *KM Bulletin 18 Inhaler Spacer Devices for other spacers / comparisons (click here for link)*
Use the same spacer for dose titration. A change in spacer may affect the dose delivered and may require dose adjustment.
Ensure device / mask is age appropriate & give spacer care advice. Resources and videos: **Asthma UK: help your child** **'Beat Asthma'**

Children < 5 years Asthma Management – *important reminders*

SABA alone, ONLY for infrequent short-lived wheeze & *normal lung function. Anyone with symptoms which indicate the need for maintenance therapy should move directly to treatment with ICS. Please remember NRAD 2015 Why asthma still kills*

Check understanding of Personalised Asthma Action Plan PAAP. **See links: Asthma + Lung UK. Asthma Control Test (ACT)**

Children: A pressurised Metered Dose Inhaler (p MDI) with a spacer is the preferred method of delivery of beta$_2$ agonists or inhaled corticosteroids (ICS) for younger children. A face mask should be used until the child can breathe reproducibly using the spacer mouthpiece *(usually age 3 - 5 years).*
SMOKING: offer cessation advice for parents / carers where relevant.

Initial / additional add on Check for trigger / modifiable risk factors / minimise exposure to indoor and outdoor air pollution. Asthma UK - asthma triggers:
LTRA more likely to be beneficial if allergic rhinitis, allergic asthma, triad of NSAID sensitivity/nasal polyps and asthma, low adherence to inhalers**.**
Adding a LABA first: *Refer to specialist: off-licence <4yrs,* *may be appropriate if wheeze as the predominant symptom / exercise induced symptoms.*

Moving UP to improve control?

Review diagnosis. **Refer if any doubts**: abnormal chest x-ray, eosinophil count > 0.6 x 10^9/l, **> 6 x 200 dose *or equivalent* SABA inhalers per annum *used.***
Check adherence: *look at ordering history / number of issues (check actual use/over-ordering)*
Check inhaler technique: patient / carer should have training.
Check patient/carer's understanding of their PAAP.

Moving DOWN to find the *lowest controlling therapy*?

*Consider 3 monthly reviews***.**
Reduce dose *slowly* by 25-50% each time – *consider asthma severity.*
Which drug to reduce first? *How beneficial has it been? Side effects?* **Time on current dose?** *Long-term, slower reduction?*
Patient / carer preference?

Inhaler Device *p MDI with spacer is preferred for younger children. Dry powder devices are not suitable for children under 5 years.*

The least cost-effective device is the one the patient does not or cannot use. Things to consider:
Drug content- *licence, safety / evidence of effectiveness* **Product Licence** *e.g., age*
Global warming potential – *advise parent/carer to return to used inhalers pharmacy/dispensary for disposal.* ***'How can I tell if my inhaler is empty' Beat Asthma***
Device features *e.g., dose counter* **Cost** to the local health economy **Ability to use the device** e.g., *inspiratory flow and manual dexterity*.
Personal preference / patient factors *e.g., doses / day, ability to understand the regimen*.

****Seek Specialist advice.** *Appropriately qualified respiratory specialist (primary if PCRS: Fit to care or secondary care) should decide next step **IF**:*
Clenil Modulite® or Beclu® 400mcg /day (paed mod dose), technique and adherence are good, **BUT excess use of reliever** i.e., > 6 x 200 dose SABA inhalers per year *are used.* **If there is any diagnostic doubt**.

Patient should be under specialist care if: Continuous / frequent use of oral steroids**.** Paediatric high dose ICS (*ensure the patient / carer has a steroid safety card - Society for Endocrinology - adrenal crisis advice.) Additional treatment / change in drug content /off licence drug treatment e.g. ICS / LABA*

***NICE NG 80 ICS doses Feb 2023** *does not state specific ICS doses for < 5 years* – it refers to the paediatric doses listed below, *and states use clinical judgement for* children under 5 years taking into account factors such as the severity of the condition being treated and the person's size in relation to the average size of people of the same age. Doses stated for children aged 5 to 11 years:
beclometasone dipropionate *paediatric low dose* ICS 100-200mcg / day *paediatric moderate dose* 300-400mcg / day *paediatric high dose* 500-800mcg / day.
Budesonide DPI: *paediatric low dose ICS* 100 – 200mcg / day *paediatric moderate dose* 300 – 400mcg / day *paediatric high dose* 500 – 800mcg / day
Fluticasone propionate: *paediatric low dose ICS* 100mcg / day *paediatric moderate dose* 150 – 200mcg / day *paediatric high dose* 250 – 400mcg / day

References:

1. Asthma Guidelines in Practice – A PCRS-UK Consensus January 2020. Click for link
2. British Thoracic Society/Scottish Intercollegiate Guideline Network. 2019. British Guideline on the Management of Asthma. Click for link
3. National Institute for Health and Care Excellence. NG 80 February 2020 update. Asthma: diagnosis, monitoring and chronic asthma management. Guideline. Click for link
4. Yu IT, Wong TW, Li W. Using child reported respiratory symptoms to diagnose asthma in the community. Arch Dis Child 2004;89(6):544-8. Click for link
5. Schneider A, et al. Diagnostic accuracy of spirometry in primary care. BMCPulmMed 2009; 9:31. Click for link
6. White J, Paton JY, Niven R, Pinnock H. Guidelines for the diagnosis and management of asthma: a look at the key differences between BTS/SIGN and NICE. Thorax 2018;0:1–5. doi:10.1136/thoraxjnl-2017-211189 Click for link
7. NPSA Steroid Emergency Card to support early recognition and treatment of adrenal crisis in adults: 13 August 2020, NatPSA/2020/005/NHSPS click for link
8. Royal College of Physicians: Clinical Medicine. Guidance for the prevention and emergency management of adult patients with adrenal insufficiency 2020 Vol 20, No 4: 371–8 click for link

Title	Asthma Primary Care Guideline For use across all Norfolk & Waveney CCGs
Description of policy	*Guidelines for the diagnosis and management of Asthma in primary care*
Scope	*To inform primary care healthcare professionals*
Prepared by	Prescribing & Medicines Management Team
Evidence base / Legislation	Level of Evidence: *A. based on national research-based evidence and is considered best evidence* ***B. mix of national and local consensus*** *C. based on local good practice and consensus in the absence of national research based information.*
Dissemination	Is there any reason why any part of this document should not be available on the public web site? ☐ Yes / No ☒
Approved by	*Norfolk & Waveney Prescribing Reference Group v1.0 04.10.18.* *Norfolk Respiratory Group V2.0 03.11.2020.* *Norfolk & Waveney Prescribing Reference Group V2.0 3.12.2020.* *Norfolk and Waveney Respiratory Programme Board- Medicines Optimisation Working Group V2.1 update 24.05.2024(via email)*
Authorised by	Norfolk & Waveney Therapeutic Advisory Group V2.0 07.01.2021 Norfolk and Waveney Medicines Optimisation Group Senior Team V2.0 update 18.01.2024.
Review date and by whom	Medicines Optimisation Team
Date of issue	

Version Control (To be completed by policy owner)

Version	Date	Author	Status	Comment
0.1	24.9.18	Medicines OptimisationTeam *(MC)*	Draft	New Asthma guideline incorporating PCRS guideline comparing NICE 2017 with BTS/SIGN 2016 & previous Key Message Bulletins for Asthma Management with additional one for age < 5 years
0.2	01.10.18	Medicines OptimisationTeam *(MC)*	Draft	Minor syntax to clarify spacer info. More specific Advice to use a spacer with MDI for all ages. DF/VG amendment to management algorithms to clarify when LTRA vs ICS/LABA may be beneficial. Slight wording change to FeNO section to clarify local stance. Approved by PRG 4.10.18. Authorised by RightCare Resp Group 10.10.18 with clarification of follow up details following acute attacks.

1.0	11.10.18	Medicines OptimisationTeam *(MC)*	FINAL	
1.1	04.08.20	Medicines OptimisationTeam *(MC*	DRAFT	CCG logo amended. Content checked against NICE NG 80 Feb 20 , BTS/SIGN 2019, PCRS UK consensus Jan 2020. Minor syntax changes. BTS/SIGN future risk tables added. Ref to Pharmacy MURs removed as being decommissioned. Reference to global warming potential of inhalers added. Algorithms amended in line with NICE NG80/ BTS/SIGN/PCRS/local advice. Additional advice on when to use SABA alone added. First line inhaler choice amended in line with promoting lower GWP. Additional information added to explain first line choices and points to consider when choosing device.
1.2	12.11.20	Medicines OptimisationTeam (MC)	DRAFT	Amended with comments from Respiratory Working Group discussion & DF 3.11.2020 .PCRS statement regarding FeNO ,links related to COVID 19, link to 'Fit to Care' in diagnosis for children section, advice on video consultations, high dose steroid info & link to new NHS steroid emergency card, clarified info on when to review patients based on SABA use.
2.0	08.12.20	Medicines OptimisationTeam (MC	FINAL	Approved by PRG 3.12.20, high steroid card ref to include all options available with further clarification and extra ref. added. Ratified by TAG 07.01.2021 & DT&C 21.01.2021
2.0 update	27.12.23	Medicines OptimisationTeam	update	Inhaler update in line with formulary amendments. Salbutamol pMDI generically written changed to brand Salamol. Fostair p MDI changed to Luforbec p MDI WockAIR added Logos updated
2.0 update	30.01.24	Medicines OptimisationTeam	update	Algorithm age 5 -11yrs: ICS/LABA Paed. low dose change - Combisal 50/25mcg from 1 dose BD to 2 doses daily (see SPC) – agreed with Dr Y Delgado QEH
2.1 update	02.05.24	Medicines OptimisationTeam	update	New logo added. Updated Prescribing algorithms for ages < 5yrs and 5 -11yrs. Link to asthma UK info on MART. Ref to Self-management action plans amended to personalised asthma action plan (PAAP). Additional action plan link to Beat Asthma .Link to endocrine society adrenal crisis advice added. Additional links to useful resources added / replaced document links. NG80 ref. updated to March 2021. NICE NG80 ICS dose info updated to Feb 2023. How to manage patients during COVID sentence removed The '4 Cs' added to inhaler info. Additions to inhalers section & asthma management monitoring on Dr Y Delgado request. Bibecfo brand added in addition to Luforbec in line with formulary 12-17yrs algorithm – link to BTS & SPCs for low dose ref. source