Inhaler Update 2020

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Objectives

- Be familiar with different inhaler types
- Refresh your inhaler technique
- Be familiar with Barnsley Formulary choices
- What's new for 20/21 PDA
- Carbon friendly awareness

Name the inhaler .....


TEVA


60


60

How do inhalers work ?

- Delivers the drug particulate to the site of action
- Metered Dose Inhalers – the device produces the mist of drug particulate for the patient to inhale
- Soft Mist inhalers – Similar to above
- Dry Powder inhalers – inspiratory effort from the patient causes the dose to break into the particulate matter for inhalation

Inhaler Choice

- Choice depends not only on the **molecule** but the **device**
- Choice of device depends on the patient:
- ✓ Age
- ✓ dexterity
- ✓ understanding
- ✓ inspiratory effort
- ✓ Patient's lifestyle
- ✓ Patient preference

- Many patients have poor technique ~15% get it right. Check at each review
- Many healthcare professionals also have a poor technique
- Inhale too fast or too slow then most of drug is wasted
- Swallowing drug → systemic side effects

Which device ?

- Assess the patients inspiratory ability:
- Can they take a SLOW STEADY breath in over 4-5 seconds?
- Can they take a DEEP breath in over 2-3 seconds?

Metered dose inhaler:

- Better for those that inhale SLOW and STEADY
- Breathe in too fast → most hits back of throat and swallowed, or exhaled (only get around 5% of dose)
- At best get around 15% of dose
- If inspiratory rate > 60L/min then too fast
- Need to wait 30 sec – 1min between actuations

Soft Mist Inhaler

- Similar to an MDI but mist comes out slower than MDI so get higher lung deposition
- Produces a mist of drug particles, without use of propellants
- Needs inhalation to be SLOW and STEADY

Dry Powder Inhaler

- Better for those that inhale DEEP and FAST
- DPIs rely in the inspiratory effort of the patient to ‘break up’ the dose into particles to be inhaled
- Not all devices are the same!
- Some require more effort than others to ‘get the dose out’
- This is where the In-Check device is your best friend !

Breath Actuated inhalers

- Cross between an MDI and a DPI
- Requires moderate inspiratory effort to release the dose (30L/min)
- Uses propellants to produce the mist of drug particles for inhalation
- For those patients that prefer an MDI but lack co-ordination

Inhaler Resistance Range

In-check DIAL G16

- High
- Med High
- Medium
- Med Low
- Low
- pMDI

International

- Handihaler®
- Easyhaler®
- NEXThaler®
- Twisthaler®
- Turbuhaler®
- Turbuhaler®, Flexhaler®
- Clickhaler™
- RespiClick®, Spiromax®
- Novolizer®, Genuair®, Pressair®
- Forspiro®
- Ellipta®
- TurboSpin®
- Diskhaler®
- Diskus®
- Breezhaler®, Aerolizer®, Neohaler®
- k-haler®
- Respimat®

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Test your own technique

- What inhaler would suit you?
- Consider the patient and their condition
- Inspiratory effort can reduce during an exacerbation or other co-morbidities
- Have a go with the In-Check Device

Barnsley Formulary choices – asthma

SABA *Reliever*	LOW DOSE ICS *400mcg BDP equiv./day*	LOW DOSE ICS + LABA *ICS/LABA combination 500mcg BDP equiv./day unless stated*	MEDIUM DOSE ICS + LABA (and ICS only) *ICS/LABA combination 1000mcg BDP equiv./day unless stated*	HIGH DOSE ICS + LABA (and ICS only) *ICS/LABA combination 2000mcg BDP equiv./day unless stated*
Select the most cost effective inhaler which meets the patient's needs				
1st Line Salbutamol **MDI** 100mcg 2 puffs prn **£0.23**  **Dry Powder** Easyhaler **DPI** Salbutamol 100mcg 2 puffs prn **£0.50**  **Breath-actuated MDI** Salbutamol Easibreathe 100mcg **Br/Act MDI** 2 puffs prn **£0.95**  **Other Dry Powder option** Terbutaline Turbohaler 500mcg **DPI** 1 puff prn **£2.49**  *(For SABA, cost based on one dose per day for 30 days treatment)*	**1st Line** Clenil 100mcg **MDI** 2 puffs bd **£4.45**  **Dry Powder** Budesonide Easyhaler 100mcg 2 puff bd **£5.32**  **Extra-fine Particle** Qvar 50mcg MDI Inhaler or Easibreathe 2 puffs bd **£4.72 & £4.64**  **Other non-Extra-fine option in MDI/DPI** Fluticasone 50mcg Evohaler or Accuhaler 2 puffs bd **£5.44 & £8.00** 	**1st Line** Primary care: Combisal 50 **MDI** (fluticasone 50mcg / salmeterol 25mcg) 2 puffs bd **£13.50** $$ BHNFT: Seretide 50 Evohaler (fluticasone 50mcg / salmeterol 25mcg) 2 puffs bd  **Dry Powder with MART dosing** DuoResp Spiromax (budesonide 160mcg / formoterol 4.5mcg)* 1 puff bd **£13.98**  ***400mcg BDP equiv./day*** **Extra-fine Particle with MART dosing** Fostair 100/6 **MDI** or NEXThaler (beclometasone / formoterol) 1 puff bd **£14.66**  **Further Add-on Therapy options:** Leukotriene Receptor Antagonist: Montelukast 10mg tablets 1 daily **£1.18** **Specialist:** Theophylline: please prescribe by brand LAMA: Spiriva Respimat 2.5mcg 2 puffs once daily **£23.00**	**1st Line** Airflusal 125 **MDI** (fluticasone 125mcg / salmeterol 25mcg) 2 puffs bd **£18.50** ***  **Dry Powder with MART dosing** DuoResp Spiromax (budesonide 160mcg / formoterol 4.5mcg)* 2 puffs bd **£27.97**  ***800mcg BDP equiv./day*** **Extra-fine Particle with MART dosing** Fostair 100/6 **MDI** or NEXThaler (beclometasone / formoterol) 2 puffs bd **£29.32**  **If Medium or High dose ICS required WITHOUT LABA:** **1st Choice:** Clenil 200mcg MDI 2puffs bd £9.70 Alternatives: Qvar 100mcg MDI or Easibreathe 2p bd Budesonide Easyhaler 200mcg 2p bd Beclometasone 250mcg MDI 2p bd **For HIGH dose ICS double the above dosages**	**1st Line** Airflusal 250 **MDI** (fluticasone 250mcg / salmeterol 25mcg) 2 puffs bd **£24.95****  **Dry Powder** Airflusal Forspiro (fluticasone 500mcg / salmeterol 50mcg) 1 puff bd **£29.97$**  **Extra-fine Particle with MART dosing** Fostair 200/6 **MDI** or NEXThaler (beclomethasone /formoterol) 2 puffs bd **£29.32**  **Other Dry Powder w. MART dosing option (not extra-fine particle)** DuoResp Spiromax (budesonide 320mcg / formoterol 9mcg)** 2 puff bd ***1600mcg BDP equiv./day***  **£55.94**
Costs based on 30 days treatment (Drug Tariff & eBNF both accessed June 2019) Produced by CCG MMT in consultation with BHNFT respiratory team May 2018. Approved by APC 11th July 2018. Minor update July 2019 to include Combisal 50 MDI (approved by APC 10th July 2019).			*Equivalent to Symbicort 200/6 **Equivalent to Symbicort 400/12 MART=Maintenance & Reliever Therapy	***Equivalent to Seretide 125 Evohaler ****Equivalent to Seretide 250 Evohaler $Equivalent to Seretide 500 Accuhaler $$Equivalent to Seretide 50 Evohaler
To be used in conjunction with the Asthma Treatment Algorithm 2018. BDP equiv./day represents the equivalent dose in terms of Beclometasone dipropionate.				

Barnsley Formulary Choices- COPD

SABA	DPI / Aerosol	Drugs	Photo	LAMA	DPI / Aerosol	Drugs	Photo
Salbutamol inhaler 100mcg	Aerosol	Salbutamol		Spiriva® Respimat®	Aerosol (soft mist)	Tiotropium	
Salbutamol Easyhaler 100mcg	DPI	Salbutamol		Braltus® Zonda®	DPI	Tiotropium	
Salbutamol Accuhaler 200mcg	DPI	Salbutamol		Seebri® Breezhaler®	DPI	Glycopyrronium	
Salbutamol Easibreathe 100mcg	Aerosol	Salbutamol		Eklira® Genuair®	DPI	Aclidinium	
Terbutaline inhaler	DPI	Terbutaline					
LABA	**DPI / Aerosol**	**Drugs**	**Photo**	**LABA/LAMA**	**DPI / Aerosol**	**Drugs**	**Photo**
Formoterol Easyhaler®	DPI	Formoterol		Duaklir® Genuair®	DPI	Aclidinium 340mcg/ Formoterol 12mcg	
Oxis® 12mcg Turbohaler® Formoterol	DPI	Formoterol		Spiolto® Respimat®	Aerosol (soft mist)	Tiotropium 2.5mcg/ Olodaterol 2.5mcg	
Foradil® Formoterol dry powder inh	DPI	Formoterol		Ultibro® Breezhaler®	DPI	Indacaterol 85mcg/ Glycopyrronium 43mcg	
* Soltel® 25mcg inhaler	Aerosol	salmeterol		**LABA/ICS**	**DPI / Aerosol**	**Drugs**	**Photo**
Serevent Evohaler®	Aerosol	Salmeterol		DuoResp® Spiromax ® 320/9	DPI	Budesonide 160mcg /Formoterol 4.5mcg	
Atimos® mdi inhaler	Aerosol	Formoterol		Symbicort® 400/12 Turbohaler®	DPI	Budesonide/Formoterol	
Onbrez® Breezhaler®	DPI	Indacaterol		Fostair® MDI	Aerosol	Beclometasone 100mcg /Formoterol 6mcg	
Serevent® Accuhaler®	DPI	Salmeterol		AirFluSal® Forspiro®	DPI	Fluticasone propionate 500mcg/ salmeterol 50mcg	

Medicines Optimisation Scheme (PDA) 2020/21

- Fluticasone 50microgram/Salmeterol 25microgram MDI (Seretide® 50) to Combisal® 50 MDI

- High dose ICS in Asthma: The practice will continue to offer step down of inhaled corticosteroids in patients with asthma who have good control
- (achieved by 85% practices this year)

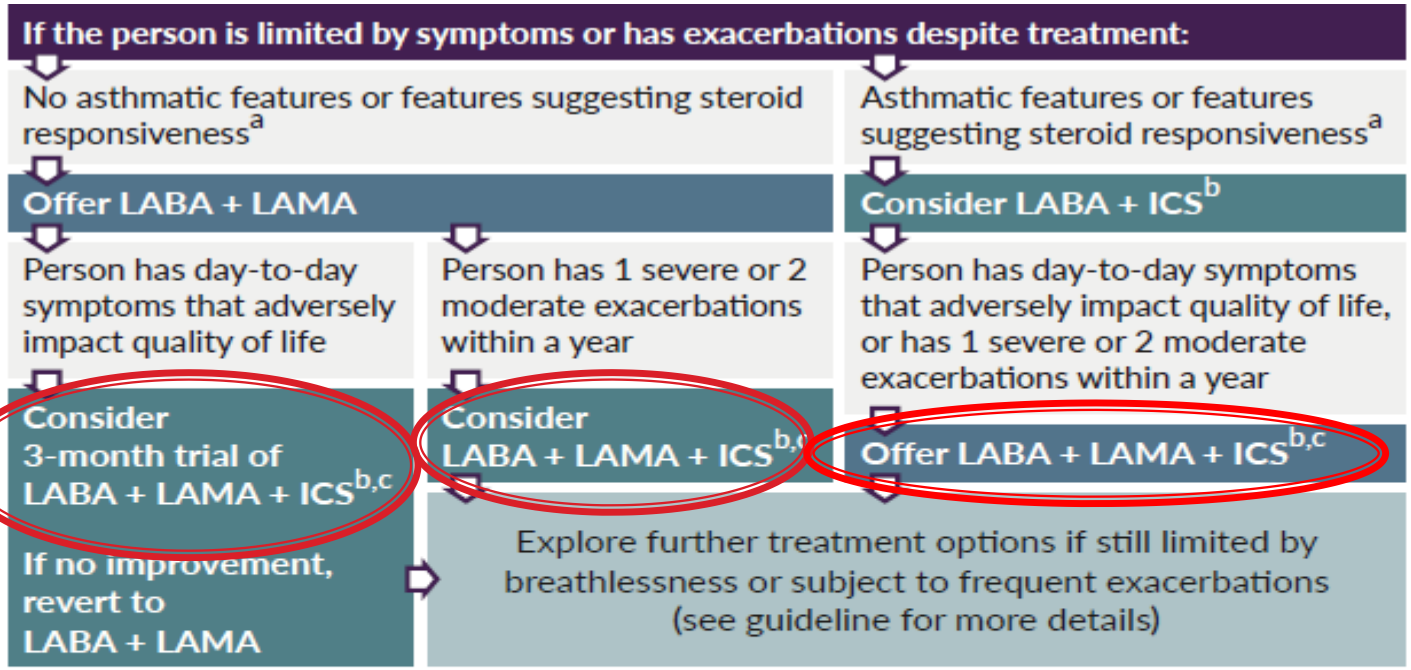
- **The practice will review patients in line with the COPD algorithm and offer suitable patients a change to a triple therapy inhaler at their annual review**

- **Practices will need to demonstrate that a change to a triple therapy inhaler has been considered and discussed for at least 75% of patients who meet the criteria**

- The practice will review patients in line with the **COPD algorithm** **(update in progress)** and offer **suitable patients a change to a triple therapy** inhaler at their annual review

- Practices will need to demonstrate that a change to a triple therapy inhaler has been considered and discussed for at least 75% of patients who meet the criteria

NICE guidance update



[a] Asthmatic features/features suggesting steroid responsiveness in this context include any previous secure diagnosis of asthma or atopy, a higher blood eosinophil count, substantial variation in FEV1 over time (at least 400 ml) or substantial diurnal variation in peak expiratory flow (at least 20%).

[b] Be aware of an increased risk of side effects (including pneumonia) in people who take ICS.

[c] Document in clinical records the reason for continuing ICS treatment.

This is a summary of the recommendations on non-pharmacological management of chronic obstructive pulmonary disease and use of inhaled therapies in people over 16. The guideline also covers diagnosis and other areas of management. See www.nice.org.uk/guidance/NG115

See the NICE website for information on how we use offer and consider to show strength of recommendations.

NICE National Institute for Health and Care Excellence

Options:

- Trelegy Ellipta®: Dry Powder inhaler
- 92 micrograms fluticasone furoate/ 65 micrograms umeclidinium bromide equivalent to 55 micrograms umeclidinium / 22 micrograms vilanterol
- Dose : 1 inhalation DAILY
- Shelf life of 6 weeks once opened

- Trimbow®: Metered dose inhaler – extra fine particles
- Each delivered dose (the dose leaving the mouthpiece) contains 87 micrograms of beclometasone dipropionate, 5 micrograms of formoterol fumarate dihydrate and 9 micrograms of glycopyrronium (as 11 micrograms glycopyrronium bromide)
- Dose : 2 puffs TWICE a day
- Can use a spacer – Aerochamber Plus®
- Shelf life of 4 months room temperature

Considerations:

- ICS is medium strength
- Fixed dose – cannot titrate ICS
- Increased patient compliance ?
- More cost effective than 2 separate inhalers
- Risk that need for continued ICS will not be reviewed.
- Different device to one they are used to

Use of SABA in Asthma & COPD patients:

- The practice will continue to review the use of salbutamol and terbutaline in all asthma & COPD patients during their annual reviews
- Continuation of work already done this year
- To document that this has been discussed in the notes (achieved by almost all practices in Barnsley)

In asthma ….

- National Review of Asthma Deaths 2014 found excessive use of salbutamol in the preceding 12 months
- Indicated almost 100,000 people with asthma have been prescribed too many short-acting reliever inhalers (more than 12 in a year) without national clinical guidelines being followed, leaving them at risk of life threatening asthma attacks
- Anyone with asthma who has been prescribed more than 12 short-acting reliever inhalers in a year, should have an asthma review in the very near future
- Well controlled asthmatic should only need 6 doses a week → 2 inhalers a year

- Also look at ICS usage

- Ideally should be having **3 preventers to 1 reliever**

- How can we manage this ?

→ group exercise

Carbon Footprint

- The NHS Long Term plan aims for a shift to low carbon inhalers to deliver a 4% reduction in carbon footprint.

- MDIs/BAI have a high carbon footprint and DPIs/Soft mist inhalers have a low carbon footprint.

- 100 doses of a pressurised Metered Dose Inhaler (pMDI) have a carbon footprint roughly equal to a 180-mile drive!

- Draft service specification for the Primary Care Networks asks for clinicians to prescribe inhalers with a low carbon footprint.
- Proposal states that PCNs will be measured on this
- BCCG maintenance inhaler Rx : 60% DPI/40%MDI
- MDIs however may still be the appropriate option for some patients and play an important role where there is clinical need and a DPI is not appropriate

Thank you

Any Questions ?