

# Asthma management update

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Children's Hospital  
Dental Hospital  
Main Entrance  
Medical School  
Outpatients Building  
Renal Centre  
Youth Tower  
Emergency Department



# Aims & Objectives

- Stepping up or down treatment
- Non-pharmacological management
- BTS vs NICE guidelines
- Lessons from National Review of Asthma Deaths
- Identifying high-risk patients
- When to refer



# Approach to management

Aim to control the disease i.e. no symptoms and no impairment on functioning

***The best predictor for future asthma exacerbations is current control.***

1. **Start treatment** at the most appropriate level
2. Achieve **early control**
3. **Maintain control** by;
  - increasing treatment as necessary
  - decreasing treatment when control is good



# Pharmacological management

A minority of patients with very infrequent, short lived wheeze may only require **reliever** therapy.

**Inhaled corticosteroids are the recommended first-line preventer drug (very low to low dose)**

Should be considered for patients with any of the following asthma-related features:

- asthma exacerbation in the last 2 years
- using inhaled  $\beta$ -agonists 3 times a week or more
- symptomatic 3 times a week or more
- waking 1 night a week



# Stepping up treatment (>5 years old)

Before initiating a new drug therapy;

1. recheck the diagnosis
2. check adherence with existing therapies
3. check inhaler technique (consider changing medication delivery)
4. eliminate trigger factors
5. consider contributing psychosocial issues

**1st choice as add-on therapy = an inhaled long-acting  $\beta_2$  agonist**

If asthma control remains suboptimal then increase dose of ICS

LABA not licensed for children under the age of 4 years old

Always use **combination inhalers**



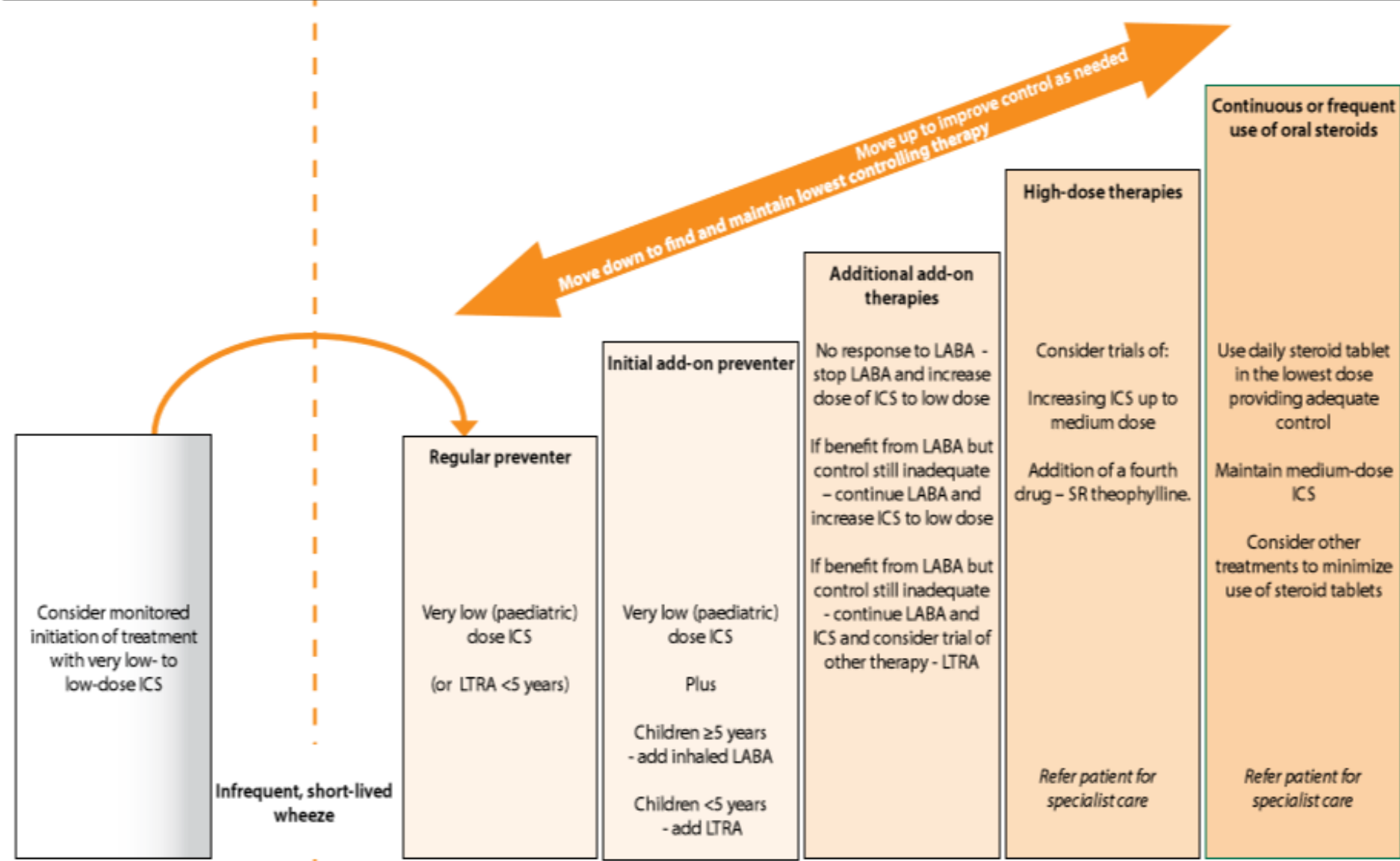
# Stepping up treatment (<5 years old)

**Leukotriene receptor antagonists (LTRA)** have some beneficial clinical effect

In children under five years who are unable to take ICS, leukotriene receptor antagonists may be used as an alternative preventer



<b>Asthma - suspected</b>	<b>Asthma - diagnosed</b>
<b>Diagnosis and assessment</b>	<b>Evaluation:</b> •assess symptoms, measure lung function, check inhaler technique and adherence •adjust dose •update self-management plan •move up and down as appropriate



Short acting  $\beta_2$  agonists as required – consider moving up if using three doses a week or more

# Further treatments offered in secondary care

Theophylline

Regular prednisolone

Sodium cromoglicate

Omalizumab

Ipratropium





# Steroid side-effects



**Barts Health**  
NHS Trust

Medium/high dose ICS may be associated with systemic side effects; including **growth failure and adrenal suppression.**

Isolated growth failure is not a reliable indicator of adrenal suppression

**Monitoring growth cannot be used as a screening test of adrenal function.**

The dose or duration of ICS treatment required to place a child at risk of clinical adrenal insufficiency is unknown but more is likely to occur at  $\geq 800$  micrograms BDP per day or equivalent.

This risk is likely to be outweighed by their ability to reduce the need for multiple courses of oral corticosteroids.



# NICE guideline update

## Management

Children over the age of 5 years old;  
1<sup>st</sup> line add-on therapy changed to LTRA rather than LABA  
(using cost-effectiveness model)

- We recommend continuing with LABA as 1<sup>st</sup> line add on therapy in children over the age of 5 yrs old



# Stepping down treatment

Stepping down should be considered **every 3 months**, decreasing the dose by approximately 25–50% each time.

Patients deteriorate at different rates.

Consider reducing dose of ICS first

**Patients should be maintained at the lowest possible dose of ICS.**



# Non-pharmacological management

Smoking cessation

Weight-loss interventions

Breathing exercise programmes

Eliminate/manage triggers

Support self-management – regular education and up-to-date PAAP



# Allergic rhinitis

Patients with asthma often have comorbid rhinitis

Consider;

Nasal steroid sprays

Antihistamines (as required/regular)



# Reflux disease

Large cohort of patients in tertiary asthma clinic has comorbid reflux

Suggest:

Trial of omeprazole +/- prokinetic azithromycin

Consider referral to specialist service



Year	Age 0-14	Age 15+	Total
2001	27	1241	1268
2002	23	1241	1264
2003	22	1262	1284
2004	38	1205	1243
2005	24	1162	1186
2006	33	1049	1082
2007	19	1014	1033
2008	23	1048	1071
2009	12	1006	1018
2010	15	1007	1022
2011	15	1026	1041
2012	17	1109	1126
2013	27	1086	1113
2014	24	1090	1114
2015	18	1284	1302
2016	13	1224	1237

## Asthma deaths in England and Wales since 2001

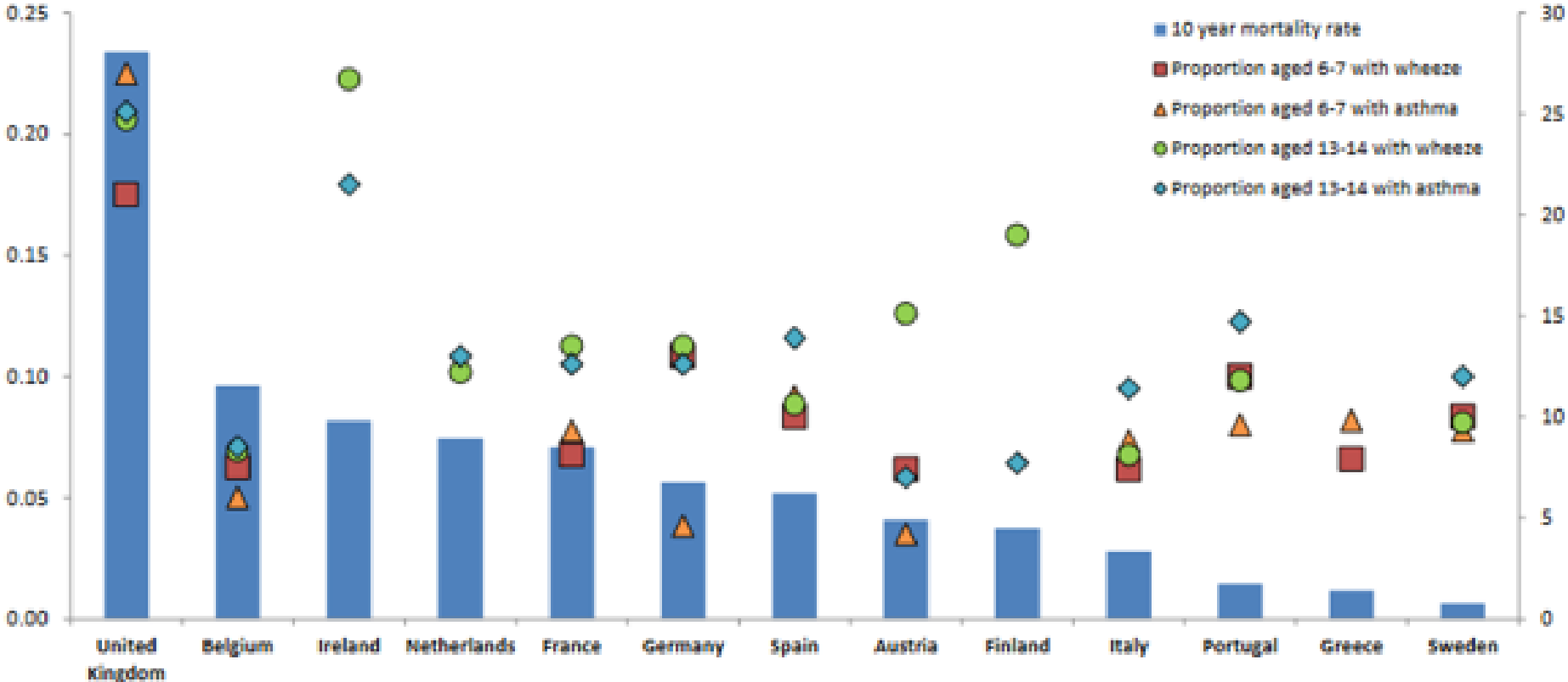


# Mortality rates



**Barts Health**  
NHS Trust  
Proportion (%)

10 year mortality rate per 100,000 population





# Identifying high-risk patients



**Barts Health**  
NHS Trust

*National Review of Asthma Deaths.*

**57%** not recorded as being under specialist supervision during 12 months prior to their death.

**Most patients who died of asthma had chronically severe asthma.**

**45%** died without seeking medical assistance or before emergency care could be provided

-lack of understanding of symptoms and how to access medical help

**47%** had a history of previous hospital admission for asthma

**21%** had attended a hospital emergency department with asthma at least once in the previous year

-significant risk-factors for death



# Identifying high-risk patients



**Barts Health**  
NHS Trust

*National Review of Asthma Deaths.*

**39%** had been prescribed more than 12 reliever inhalers in the last year

-Should have prompted a review of management

-"Inappropriate prescribing"

**23%** had a personal asthma action plans

– Widespread underuse of PAAP

**43%** had their GP asthma review in the last year



# Referrals (Royal London)



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## **Community nursing team**

Parental or professional concerns regarding medication compliance  
Requiring extra education and support

## **Professor Grigg's asthma clinic**

Any hospital admission for viral induced wheeze NOT requiring IV medication or transfer to PICU/PCCU

## **Dr Nwokoro's asthma clinic**

Any hospital admission for asthma exacerbation  
Any hospital admission for viral induced wheeze requiring IV medication or transfer to PICU/PCCU  
2 or more wheeze/asthma ED attendances in the last 12 months  
2 or more courses of Prednisolone in the last 12 months  
Salbutamol overuse (using more than 1 inhaler each month)  
Poorly controlled symptoms on high-dose medication (over 400mcg daily of inhaled steroids)  
Uncertain diagnosis

# Summary



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Only a minority of patients will just require salbutamol therapy

Revisit diagnosis, check compliance and inhaler technique before stepping up treatment

Consider contributing co-morbidities

Low threshold for specialist referral if no improvement or diagnostic uncertainty



# Thanks for listening

Any questions?

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