NHS England London

#AskAboutAsthma 2022

Babies, Children and Young People's Transformation – London Region

Chaired by Dr Stephen Goldring and Dr Viv Marsh

Exploring health inequalities in asthma care and how to address them

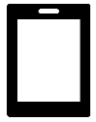
Joining instructions/Teams Live etiquette

NHS England London

Attendees are automatically muted for Teams Live

Please include your questions or comments in the moderated chat box. If there are any questions you would like to see answered, please like these. The chair will pose questions to the speaker either after their presentation or during the panel Q&A.

This conference is being recorded. Sharing options for the slides and conference will be circulated.



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#AskAboutAsthma Conference 2022

6th October 2022, 9:30 – 16:30

Session 1

Time	Topic	Speaker
9.30 – 9.40	**Welcome**	**Dr. Stephen Goldring** • Consultant Paediatrician Hillingdon Hospital • Clinical Lead NW London CYP Asthma Network
9.40 – 9.50	**Why health inequalities are the focus today**	**Dr. Oliver Anglin** • Clinical Director for CYP Transformation - NHSE (London) • Clinical Lead for Children and Young People - North Central London CCG • Clinical Lead for Children and Young People - Camden Directorate • GP (Hampstead Group Practice)
9.50 – 10.15	**National update: Impact of the National Bundle of Care on reducing health inequalities**	**Dr Jen Townshend** • National Clinical Lead CYP Asthma, NHS England • Consultant Paediatrician, Newcastle upon Tyne
10.15 – 10.35	**Patient voice**	**RCPCH and Us**
10.35 – 11.55	**Health inequalities and the patient voice:** • Clarifying what we mean by young people's health inequalities • Women's asthma, and other inequalities in asthma care • Social determinants of health and their impact on asthma care **Followed by panel Q&A chaired by Stephen Goldring**	**Emma Rigby & Rachael McKeown** • CEO, Association for Young People's Health • Policy fellow, Association for Young People's Health **Sarah Woolnough** • Chief Executive, Asthma + Lung UK **Dr. Ingrid Wolfe** • Reader in Paediatrics and Child Health • Consultant Paediatric Population Health • Director KHP Institute for Women and Children's Health **Nina Somerville** • Paediatric Asthma Nurse Specialist- Patch Children's Community Nursing Team
11.55 – 12.25	**Lunch** Slides showing priorities and achievements of ICSs and paediatric asthma networks to be displayed	

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6th October 2022, 9:30 – 16:30

Session 2

NHS England London

Time	Topic	Speaker
12.25 – 13.45	**Air pollution and asthma:**	
	• **Asthma and the green agenda in children and young people - more than just inhalers - thinking more holistically**	**Darush Attar-Zadeh** • Independent Prescriber • Respiratory Pharmacist • NWL Children & Young People Asthma Network • Co-chair London CYP pharmacy asthma group
	• Why we're adding the 4th 'ask'	**Rosamund Kissi-Debrah** • Founder, Ella Roberta Foundation
	• What do healthcare professionals need to know about air pollution to care for their young asthma patients? Why Ella Adoo-Kissi-Debrah's new inquest is so important	**Professor Sir Stephen Holgate** • UKRI Clean Air Champion • Special Advisor to the RCP on Air Quality • Faculty of Medicine, University of Southampton
	Followed by panel Q&A chaired by Viv Marsh	
13.45 – 15.05	**Focus on teens:**	
	• Transition clinics and health inequalities	**Louise Porter** • National Lead Nurse, Burdett National Transition Nursing Network
	• Ensuring high quality of care for Young People as they move into adult services: Encouraging health equity through transition	**Katie Puplett** • Children and Young People's Senior Policy Manager, NHSE
	• Transition and adherence	**Professor Rob Horne** • Professor of Behavioural Medicine • Director of the Centre for Behavioural Medicine, University College London School of Pharmacy
	Followed by panel Q&A chaired by Viv Marsh	

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6th October, 9:30 – 16:30

Session 3

NHS England London

Time	Topic	Speaker
15.05 – 15:15	**Break** Preventable film to be shown	
15.15 – 15:40	**How data can improve care and reduce health inequalities**	**Tiffany Watson-Koszel** • Policy Manager, CYP Transformation Programme Team
15.40 – 16:25	**Clinical update: National Asthma Bundle into action**	**Dr. Satish Rao** • Consultant Respiratory Paediatrician • Medical Director for Innovation and Transformation, Birmingham Women's Hospital **Dr. Prasad Nagakumar** • Paediatric Respiratory Consultant • Associate Professor • Deputy Director for Research & Innovation, University of Birmingham • Lead for Difficult Asthma/Respiratory Research, Birmingham Children's Hospital
16.25 – 16.30	**Next steps**	**Viv Marsh**
16.30	**Close**	

#AskAboutAsthma 2022: Why health inequalities are the focus today

Babies, Children and Young People's Transformation – London Region

Dr. Oliver Anglin
Clinical Director for CYP Transformation - NHSE (London); Clinical Lead for Children and Young People - North Central London CCG; Clinical Lead for Children and Young People - Camden Directorate; GP (Hampstead Group Practice)

What is #AskAboutAsthma?

- Sixth year of London's awareness raising campaign and second year involving colleagues from across the country
- Coincides with start of the new school year and the highest hospital admission rates for asthma (week 38)
- It highlights small steps to help improve the quality of life for children and young people living with asthma
- **This year we are focussing on health inequalities**

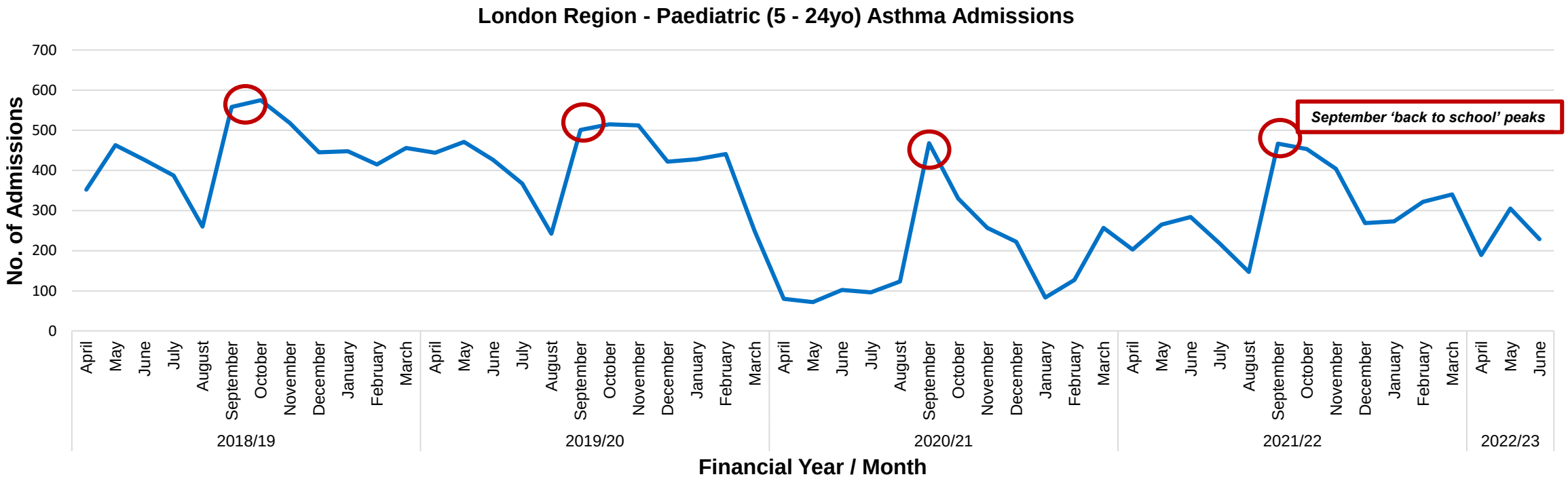
1. Each child or young person with asthma to have an asthma management plan

2. Each child or young person with asthma to be able to use their inhalers effectively

3. Each child or young person with asthma to have a review every year and after every attack

And for 2022 we have add a 4th ask:

4. Consider air pollution and its impact on lung health



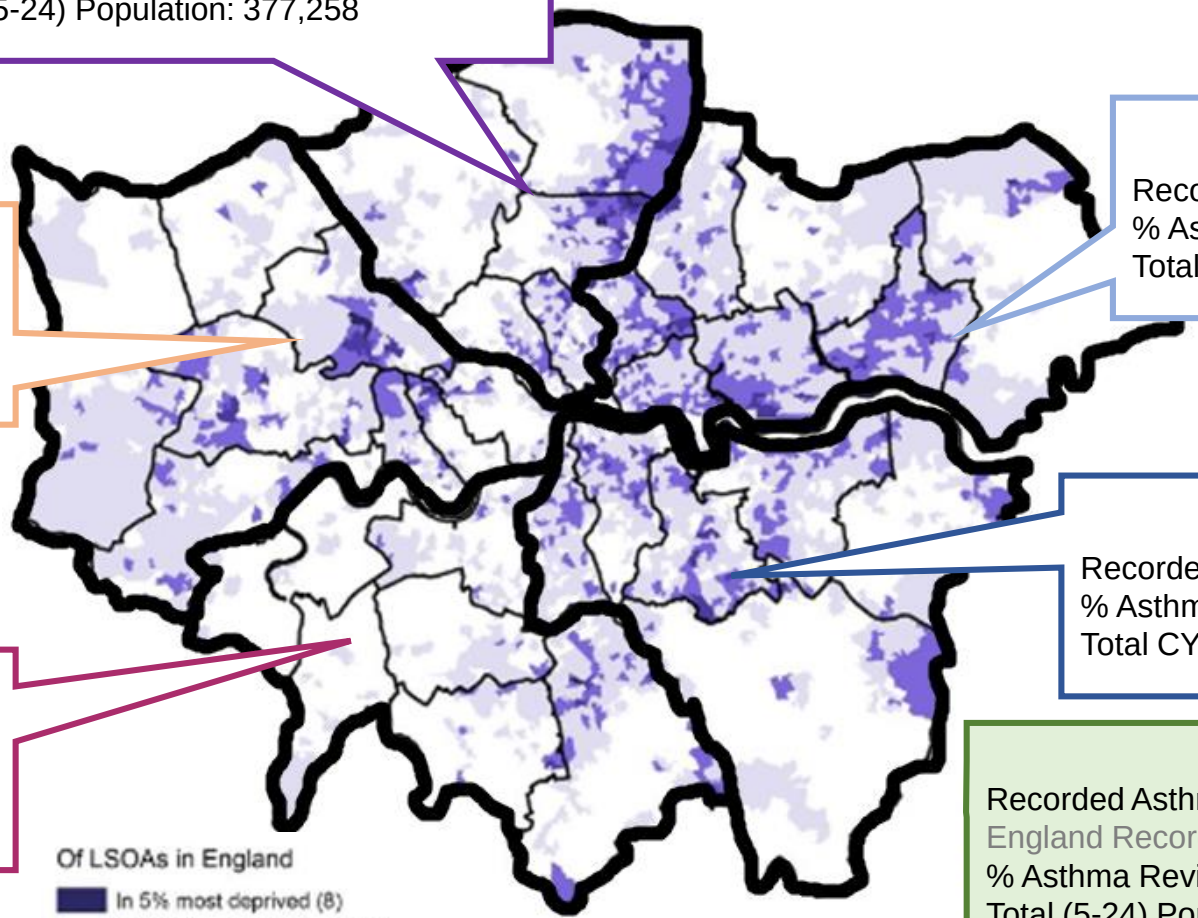
There is variation in outcomes across the London region

North Central London ICB
Recorded Asthma Prevalence (20/21): **4.6%**
% Asthma Reviews (19/20): **71.1%**
Total (5-24) Population: 377,258

Most Deprived ICB

North East London ICB
Recorded Asthma Prevalence (20/21): **4.8%**
% Asthma Reviews (19/20): **72.1%**
Total (5-24) Population: 515,309

North West London ICB
Recorded Asthma Prevalence (20/21): **4.5%**
% Asthma Reviews (19/20): **71.1%**
CYP Population (5-24): 507,926



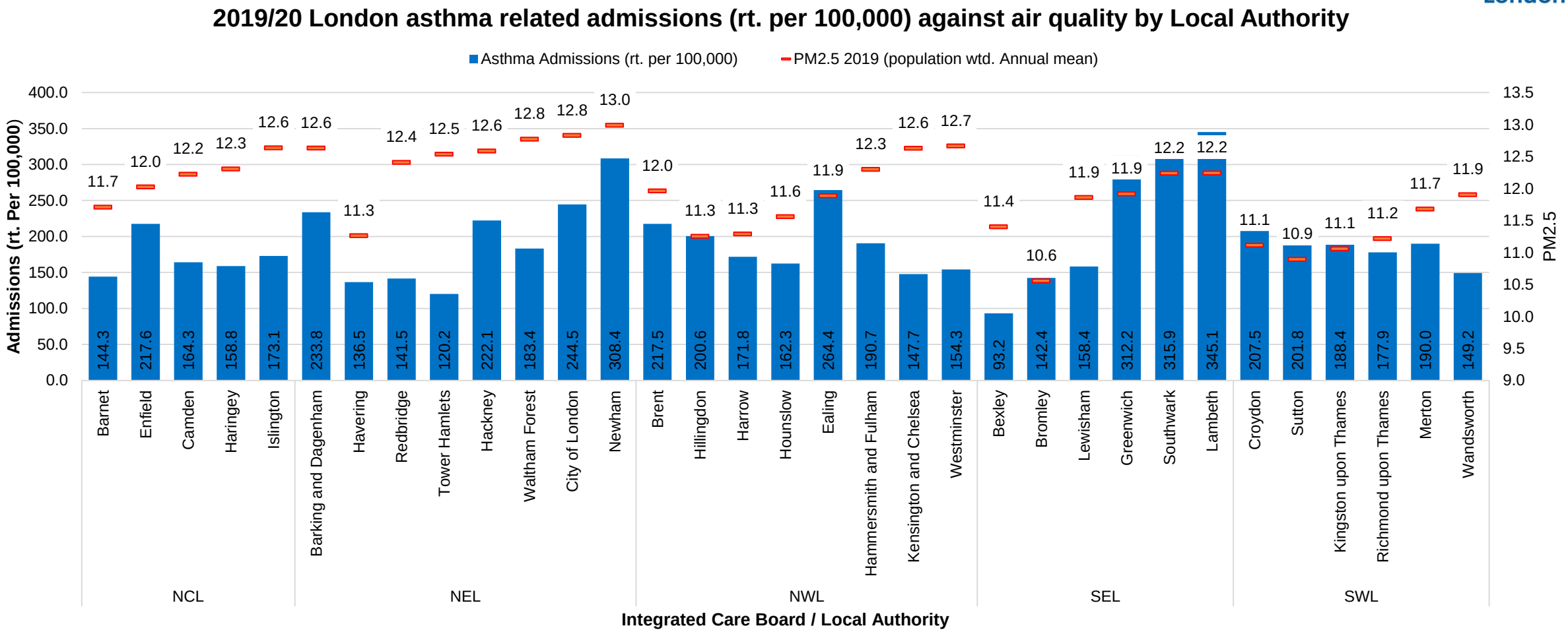
South East London ICB
Recorded Asthma Prevalence (20/21): **5.0%**
% Asthma Reviews (19/20): **66.9%**
Total CYP (5-24) Population: 424,298

Least deprived ICB

South West London ICB
Recorded Asthma Prevalence (20/21): **4.8%**
% Asthma Reviews (19/20): **68.6%**
Total CYP (5-24) Population: 348,835

London
Recorded Asthma Prevalence (20/21): ***4.7%***
England Recorded Asthma Prevalence: 6.4%
% Asthma Reviews (19/20): ***70.0%***
Total (5-24) Population: ***2,173,626***

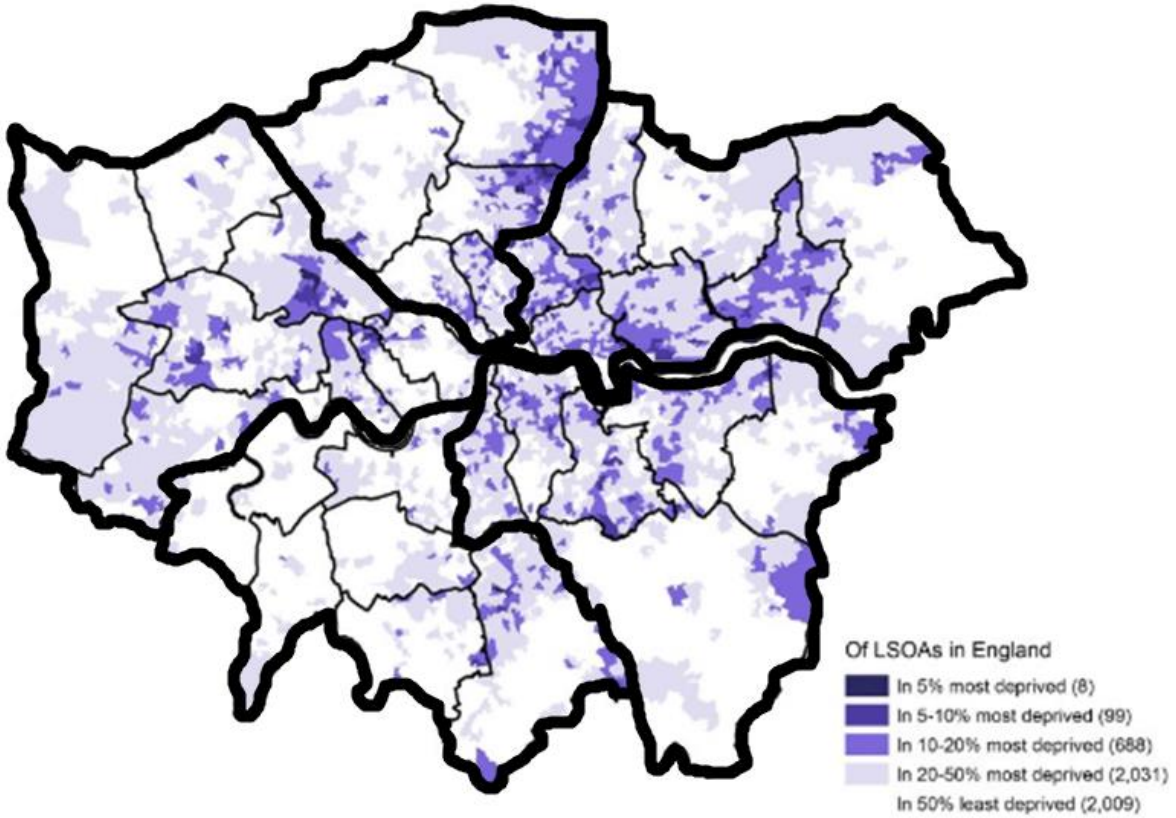
Why are we including the fourth ask?



London has higher rPM2.5 pollution than both England and the WHO 2021 Target

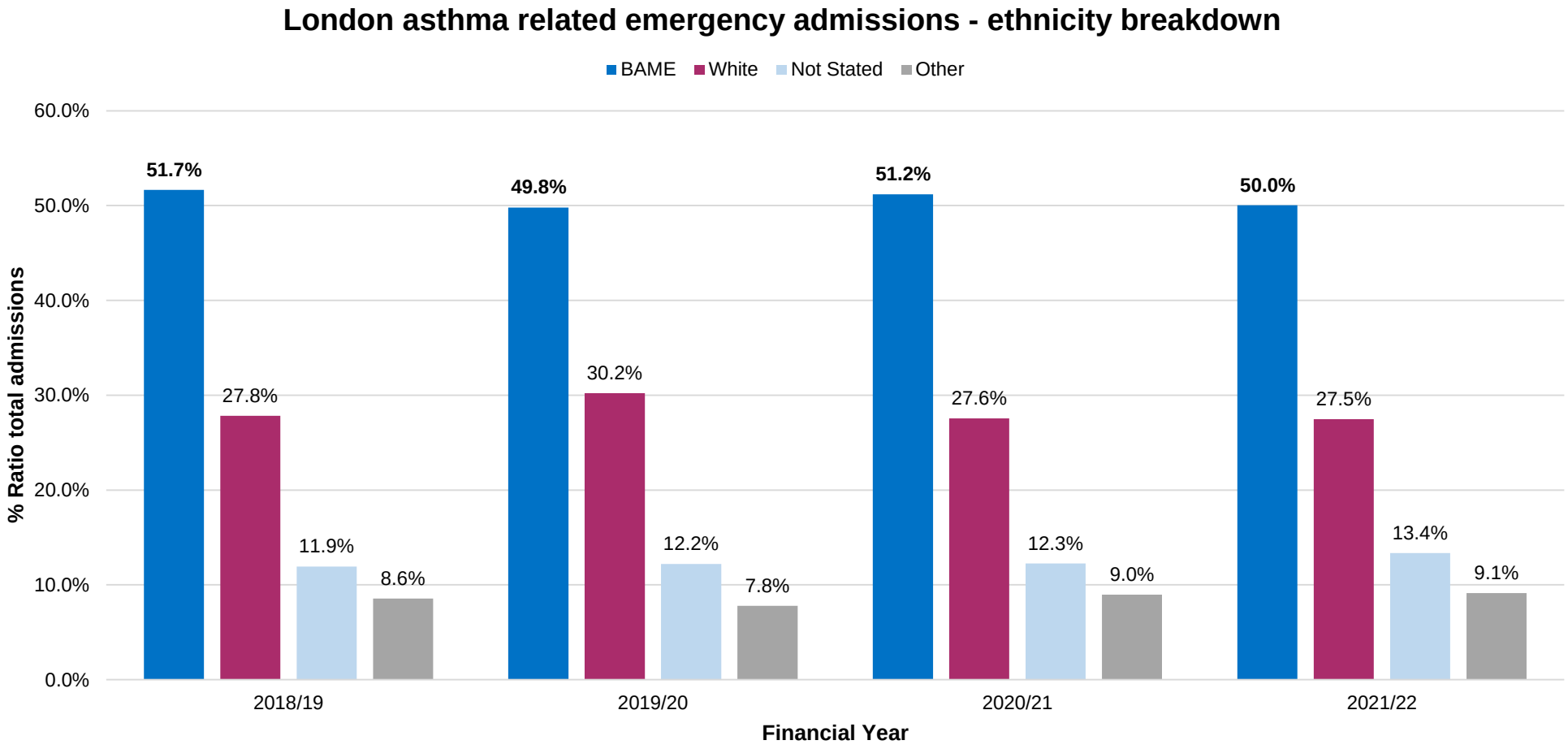
Asthma admissions: deprivation

- Children and young people living in areas where there are higher levels of deprivation are more likely to be exposed to causes and triggers of asthma. (1)
- Children and young people growing up in homes with mould and damp are between one and a half and three times more prone to coughing and wheezing (1,2)
- Asthma + Lung UK have identified an association between asthma admissions and deprivation: **children and young people growing up in more deprived areas are more likely to go to hospital due to their asthma.** (1)



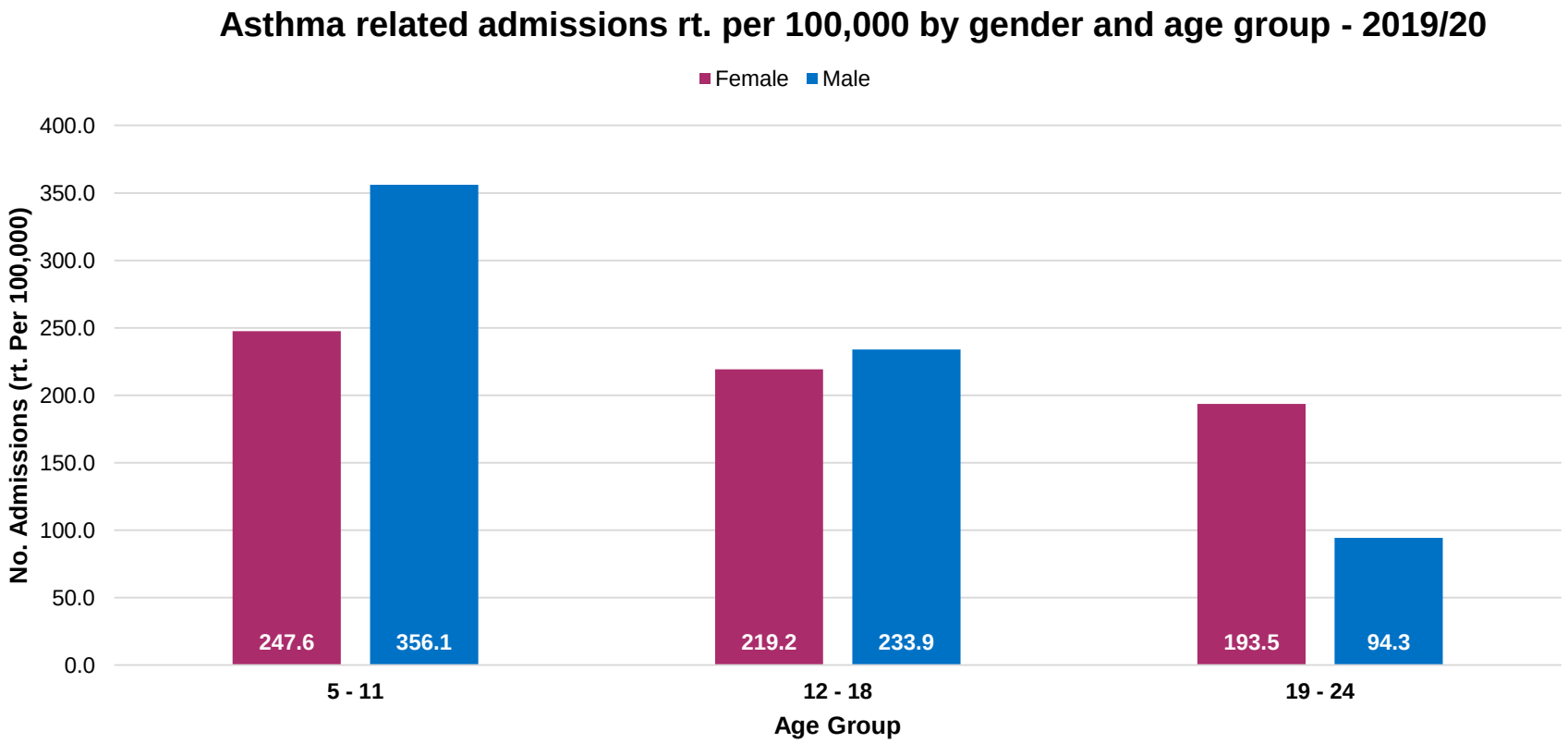
(1) Asthma + Lung UK, 2018. On the Edge: How inequality affects people with asthma
(2) Shelter, 2006. Chance of a lifetime: The impact of bad housing on children's lives

Asthma admissions: ethnicity



Children from BAME backgrounds have a higher rate of hospital admissions compared to white children and young people

Asthma admissions: gender



There are differences in asthma admissions between males and females and these change with age

How the NHS England's CYP Asthma Programme will improve health inequalities

Dr Jen Townshend

National Clinical Lead CYP Asthma, NHS England

Consultant Paediatrician, Newcastle upon Tyne

Aims of today

What do we mean by ‘health inequalities in asthma?

Understand the current national landscape

Role of the National CYP Asthma Programme

Child Health Inequalities

Education

Housing

Social Environment

Health Outcomes

State of child health report 2020 RCPCH

There is a widening gap between the health of children from wealthy and deprived backgrounds.

Do health inequalities exist in asthma?

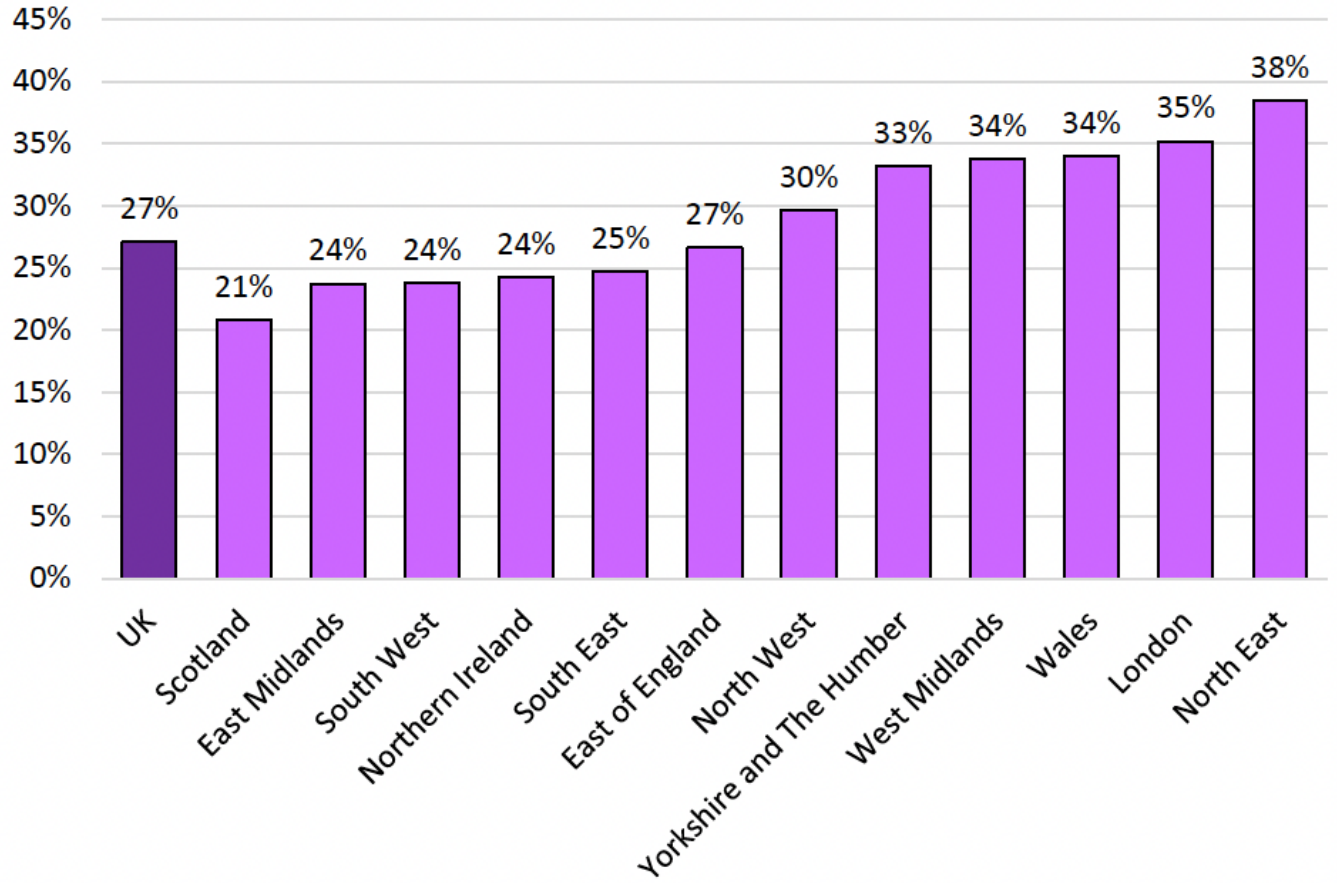
- Poverty
- Ethnicity
- Culture
- Geography

Do health inequalities exist in asthma?

- Poverty
- Ethnicity
- Culture
- Geography

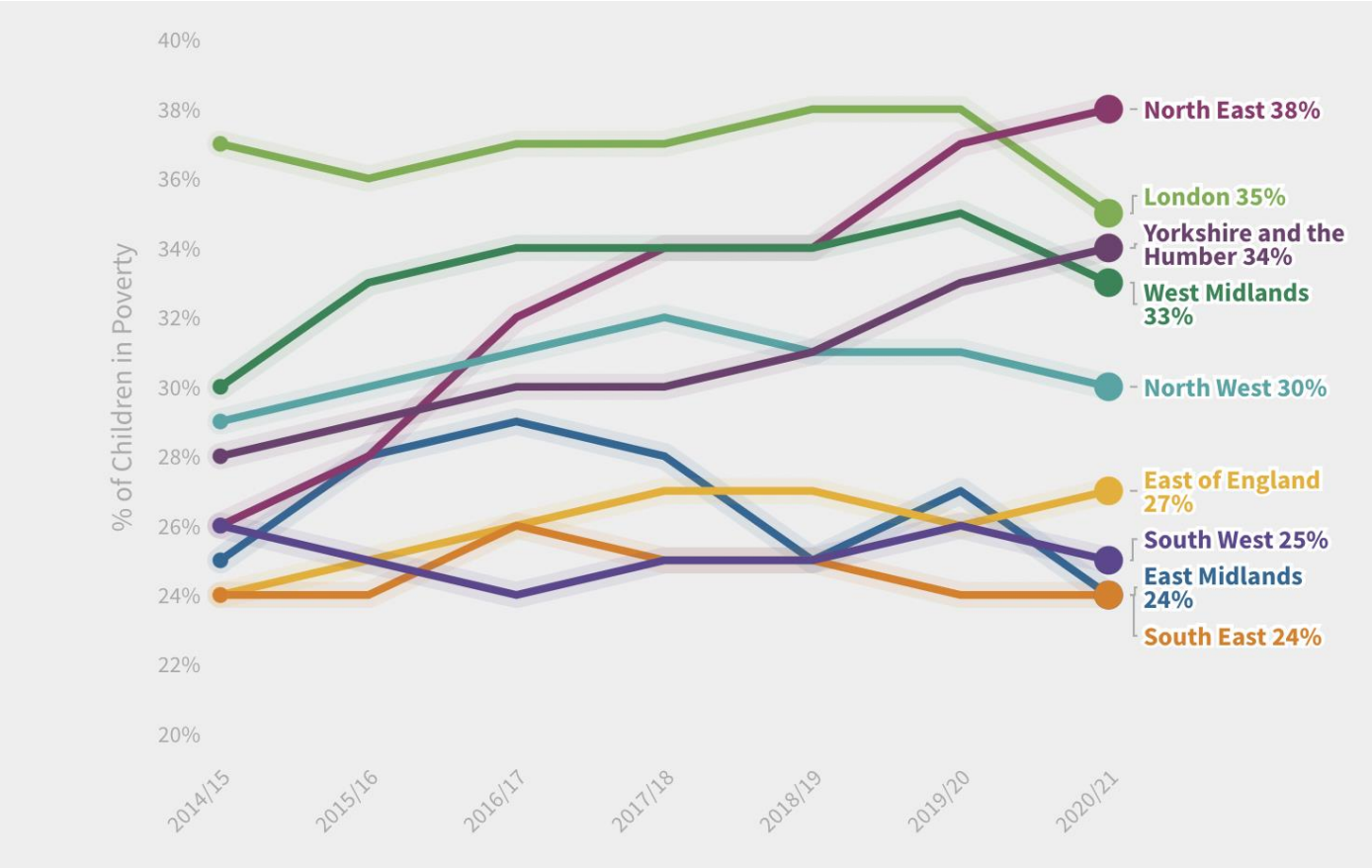
Context of child poverty in the UK

Figure 1 **Percentage of children in poverty, AHC 2019/20, by country and region**



Source: HBAI 2018/19 to 2020/21 (DWP).
UK statistic is for 2020/21, regional statistics are 3-year averages

Child poverty across English regions



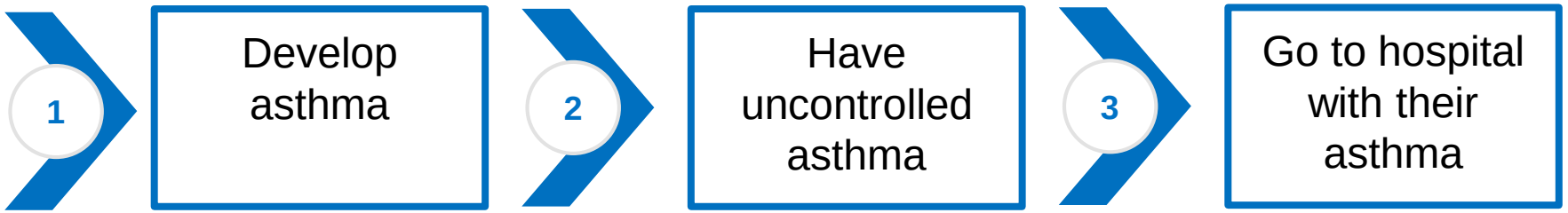
Major inequalities in child poverty between and within regions of the UK

Local indicators of child poverty after housing costs, 2020/21. Juliet Stone ,Centre for Research in Social Policy Loughborough University. July 2022

Deprivation as a driver for inequality in asthma

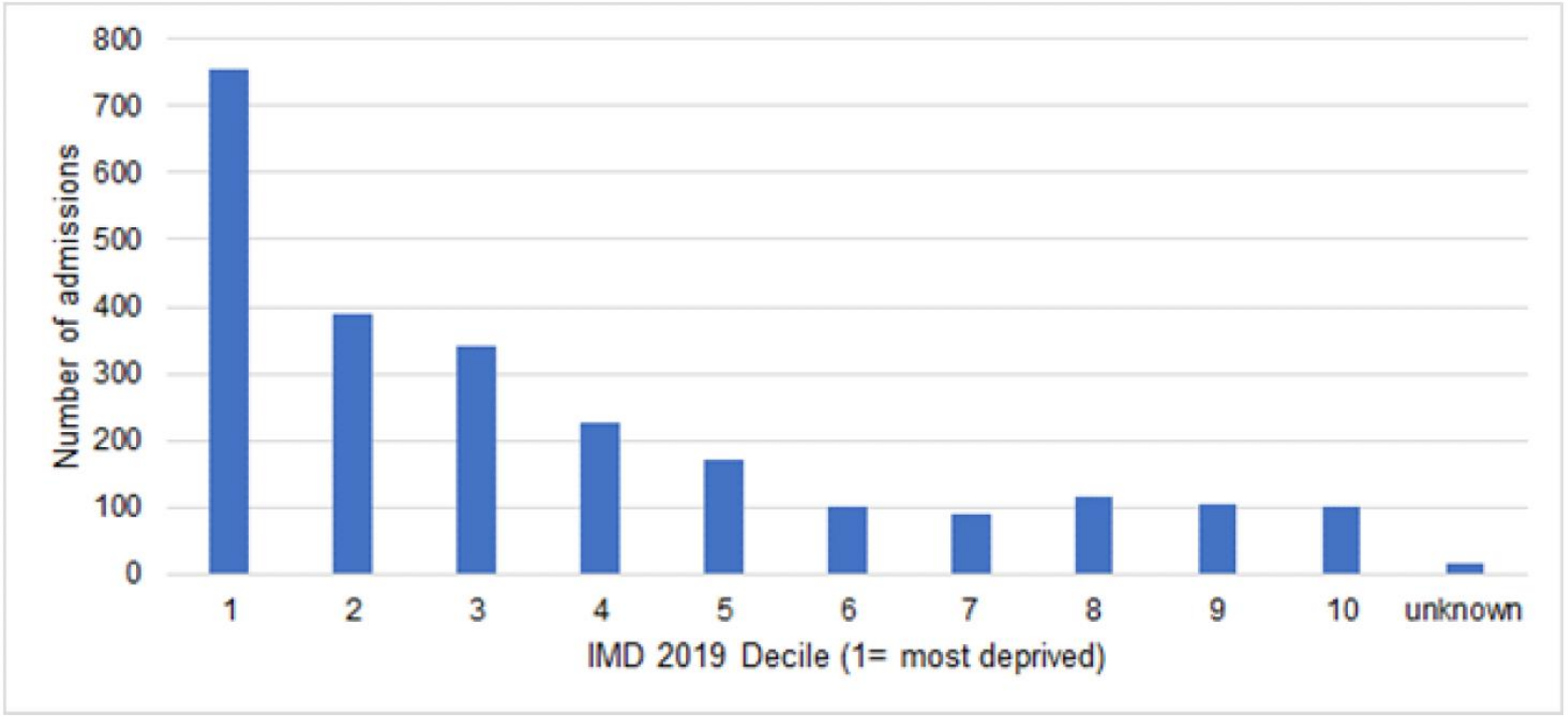
Children from deprived communities have worse asthma outcomes than those from wealthier communities.

They are more likely to:

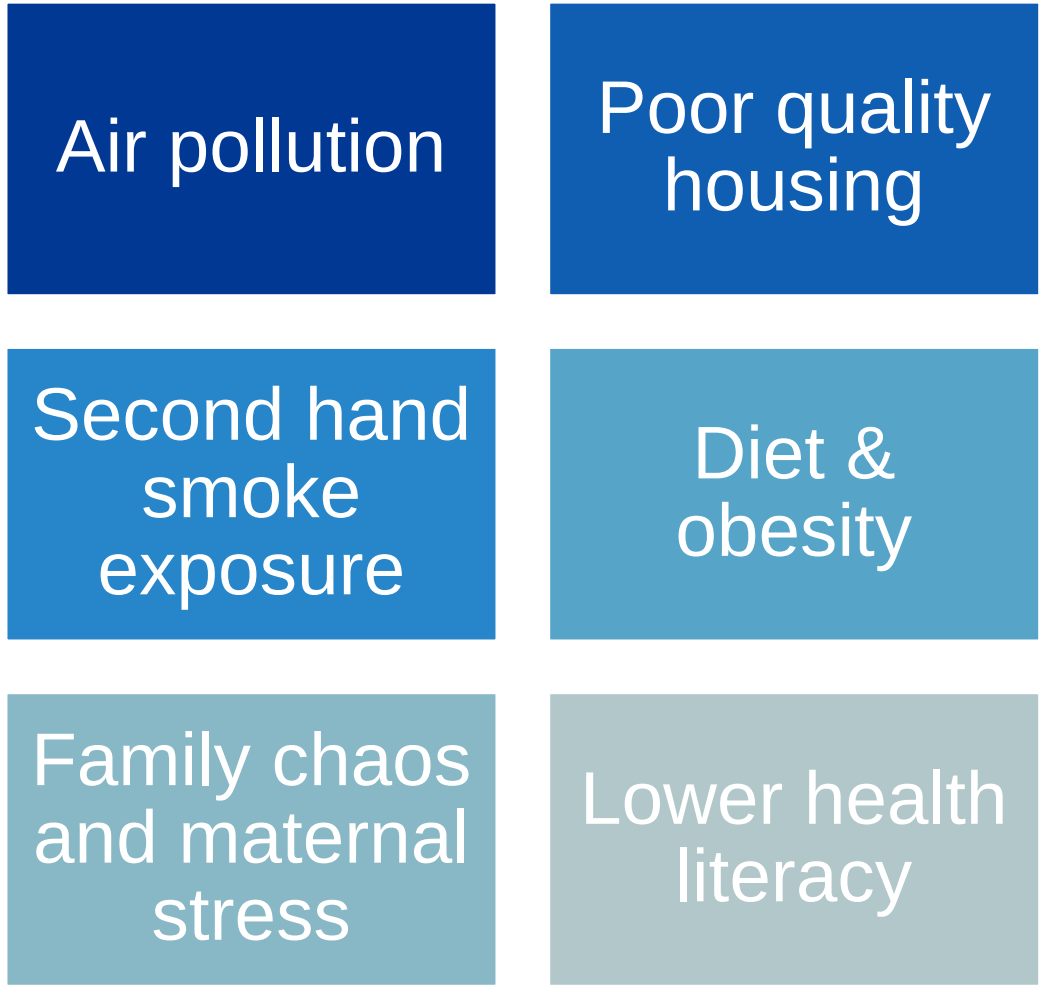


Emergency admissions in North East and North Cumbria (NENC)

Figure 6: Emergency admissions for asthma by deprivation profile in patients aged 25 years and under, in NENC (Apr '19 – Mar ' 21)



Factors that contribute to deprivation as a risk factor for asthma and poor asthma outcomes



Do health inequalities exist in asthma?

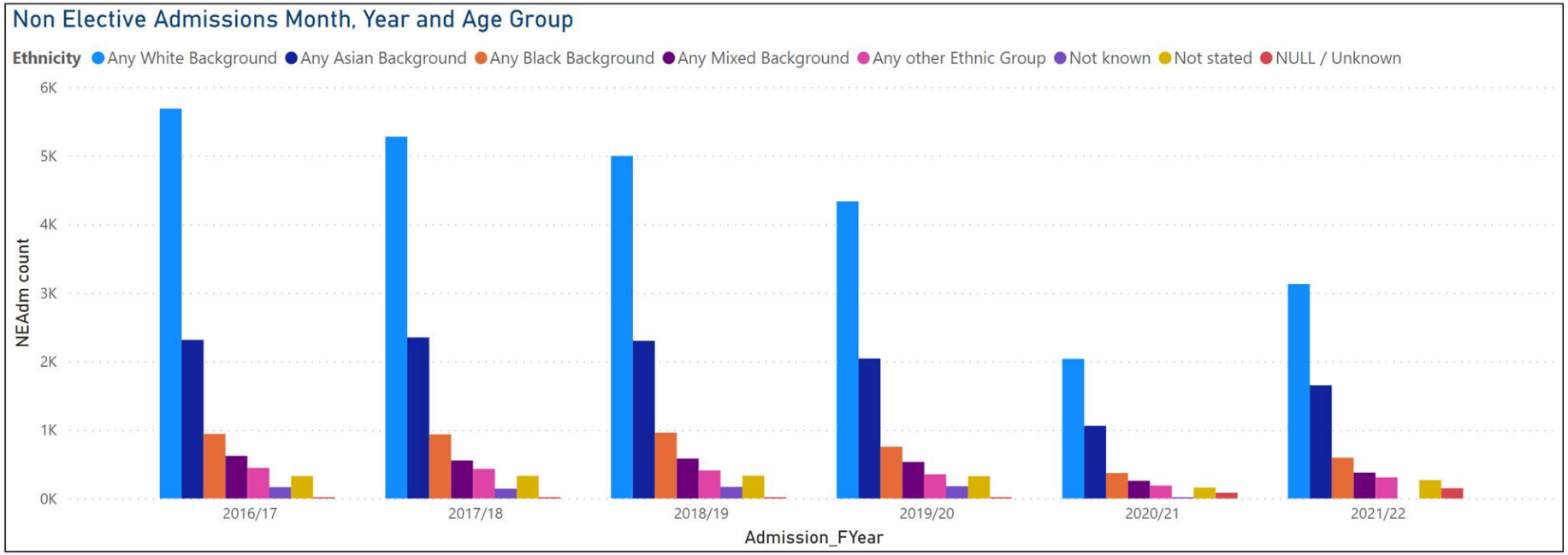
- Poverty
- Ethnicity
- Culture
- Geography

Ethnicity

- **Higher incidence of asthma**
- **Higher levels of poverty**

Emergency hospital admissions for CYP from a white background have reduced significantly - CYP from other backgrounds have seen little or no improvement

Discounting the pandemic, non elective hospital admissions for CYP from a white background have reduced significantly but those from other backgrounds have seen little or no improvement in the number of admissions.



Admission_FYear	Any White Background	Any Asian Background	Any Black Background	Any Mixed Background	Any other Ethnic Group	Not known	Not stated	NULL / Unknown
2016/17	54.11%	22.01%	8.95%	5.92%	4.25%	1.57%	3.12%	0.08%
2017/18	52.64%	23.44%	9.32%	5.53%	4.31%	1.43%	3.29%	0.05%
2018/19	51.23%	23.58%	9.84%	5.97%	4.19%	1.73%	3.40%	0.06%
2019/20	50.78%	23.91%	8.83%	6.24%	4.13%	2.10%	3.82%	0.19%
2020/21	48.81%	25.41%	8.92%	6.19%	4.53%	0.31%	3.81%	2.01%
2021/22	48.32%	25.49%	9.19%	5.82%	4.74%		4.14%	2.30%

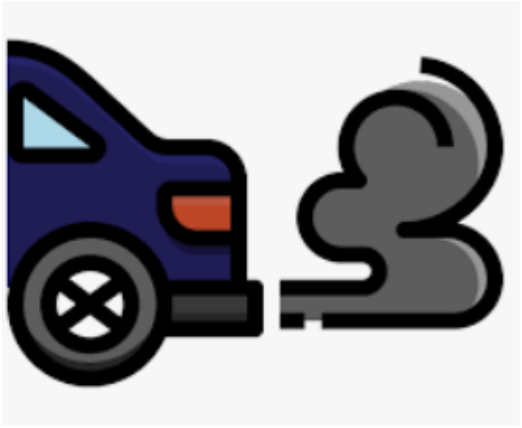
Culture

- **Language**
- **Health beliefs**
- **Isolation**

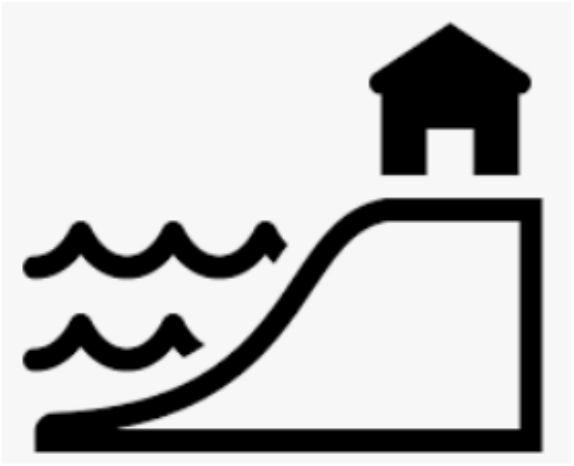
Geography

Travelling Community

Pollution



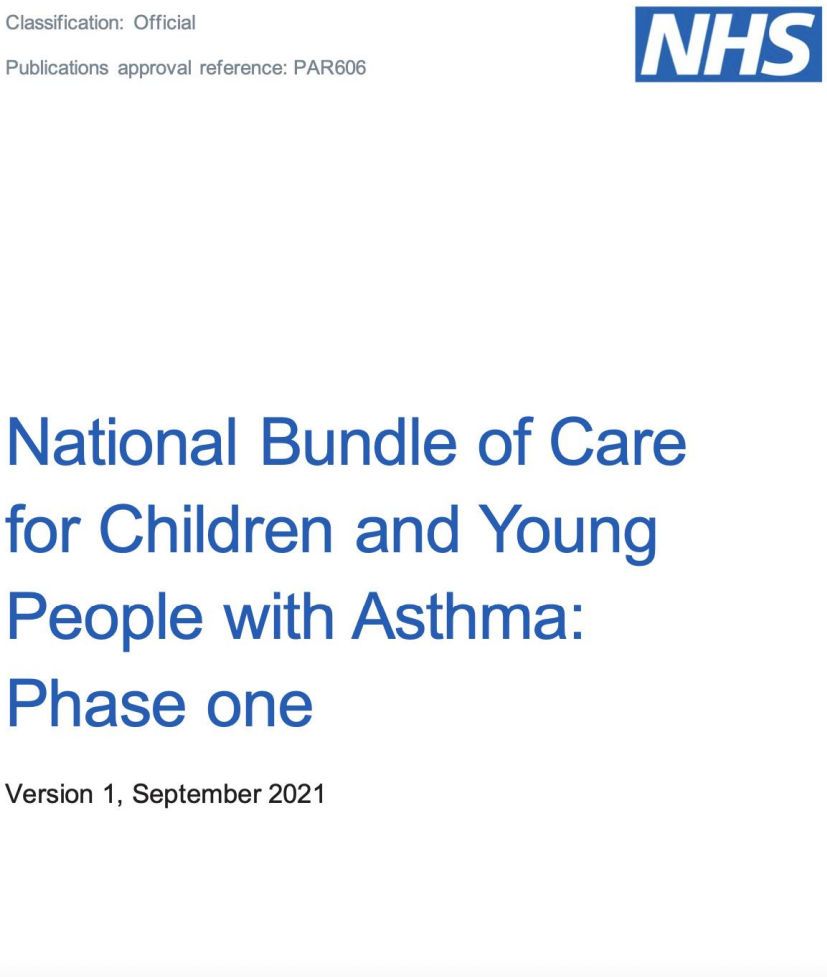
Access to health – coastal communities



There is an urgent need to reduce children's exposure to air pollution which increases the likelihood of developing or aggravating asthma

National CYP Asthma Bundle

- **Standardising Care**
- **Expected levels of care**
- **Resources to support delivery**
- **Integrated Care Systems**



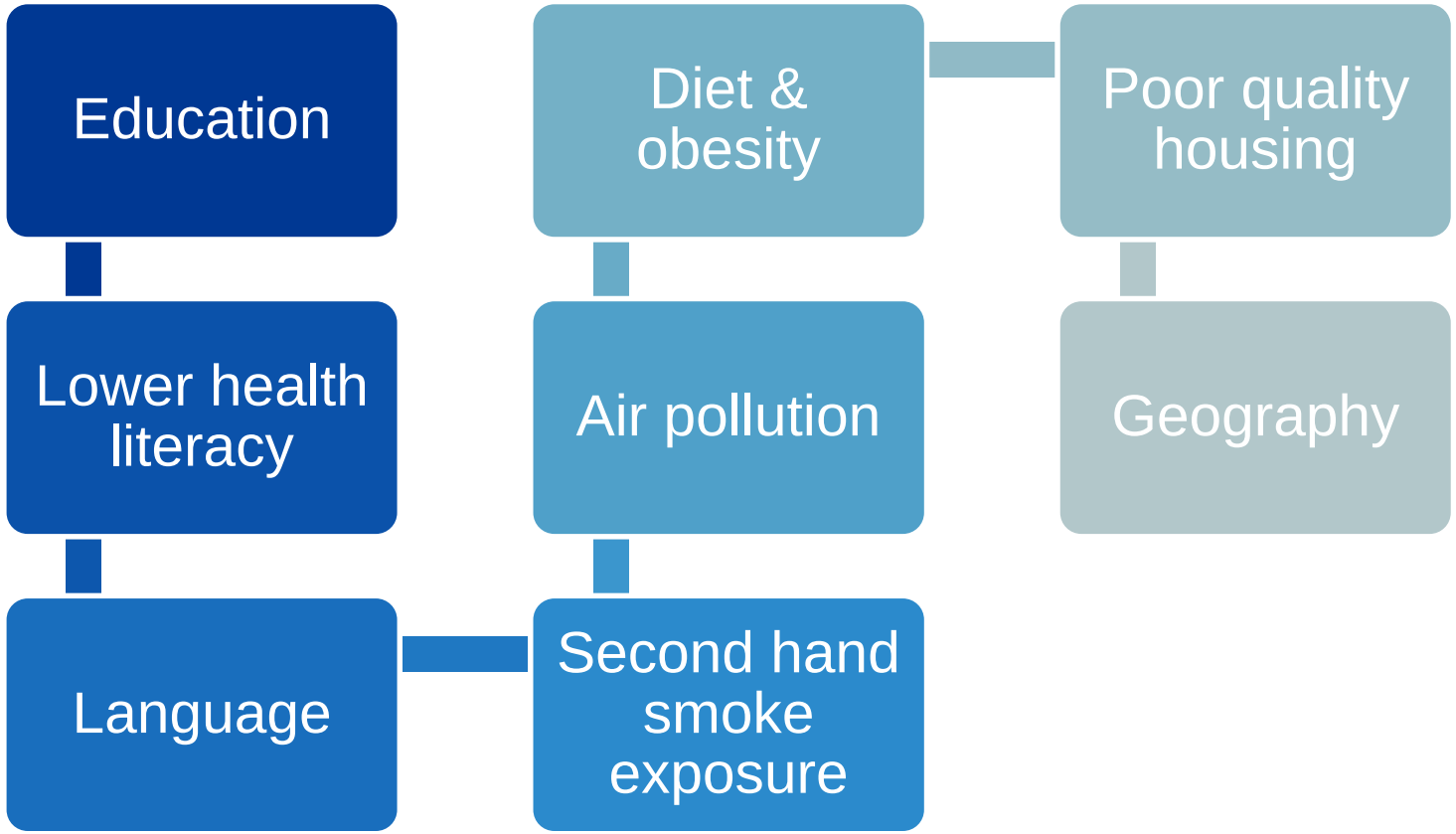
Classification: Official

Publications approval reference: PAR606

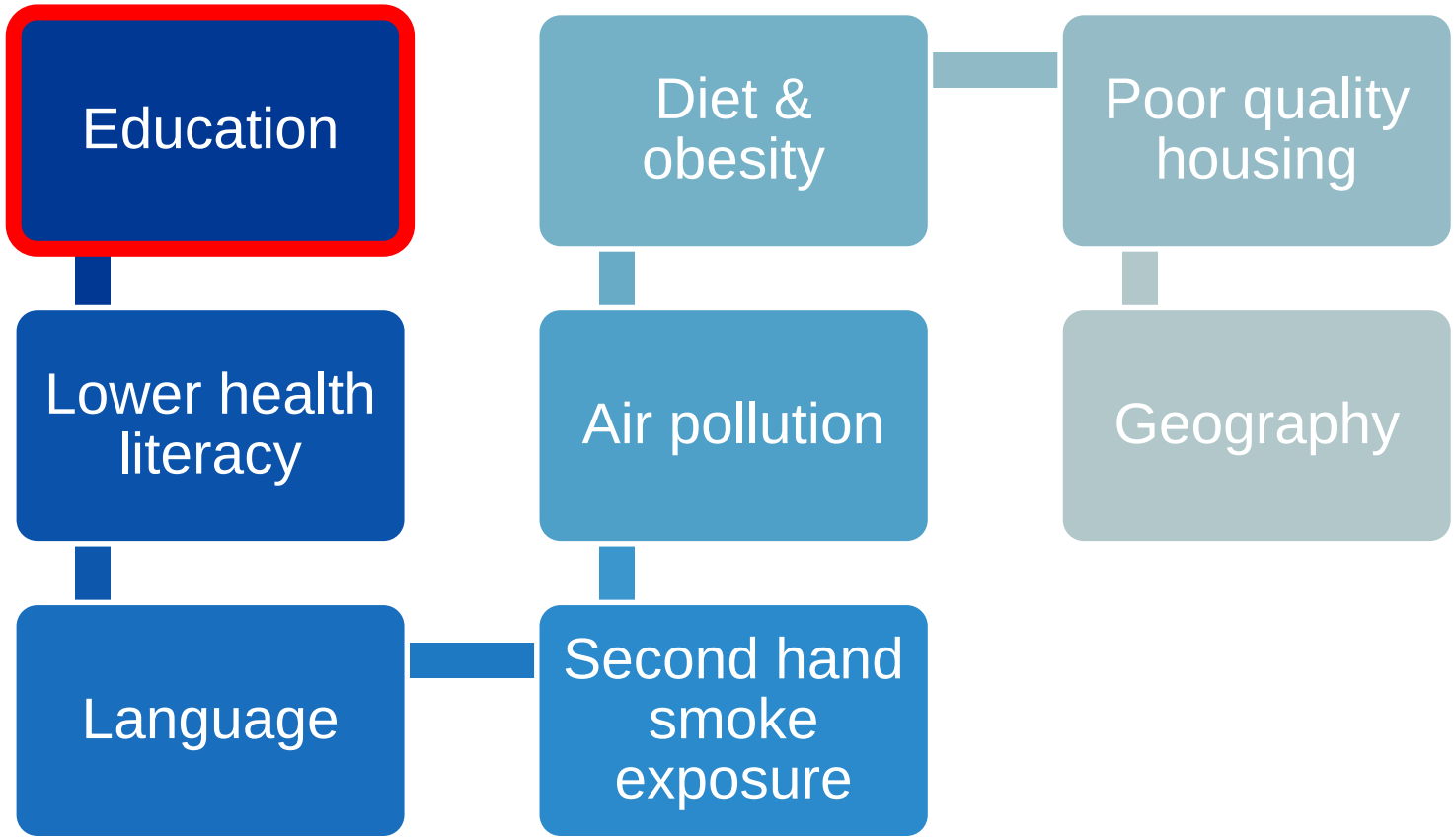
National Bundle of Care for Children and Young People with Asthma: Phase one

Version 1, September 2021

Targets for Change

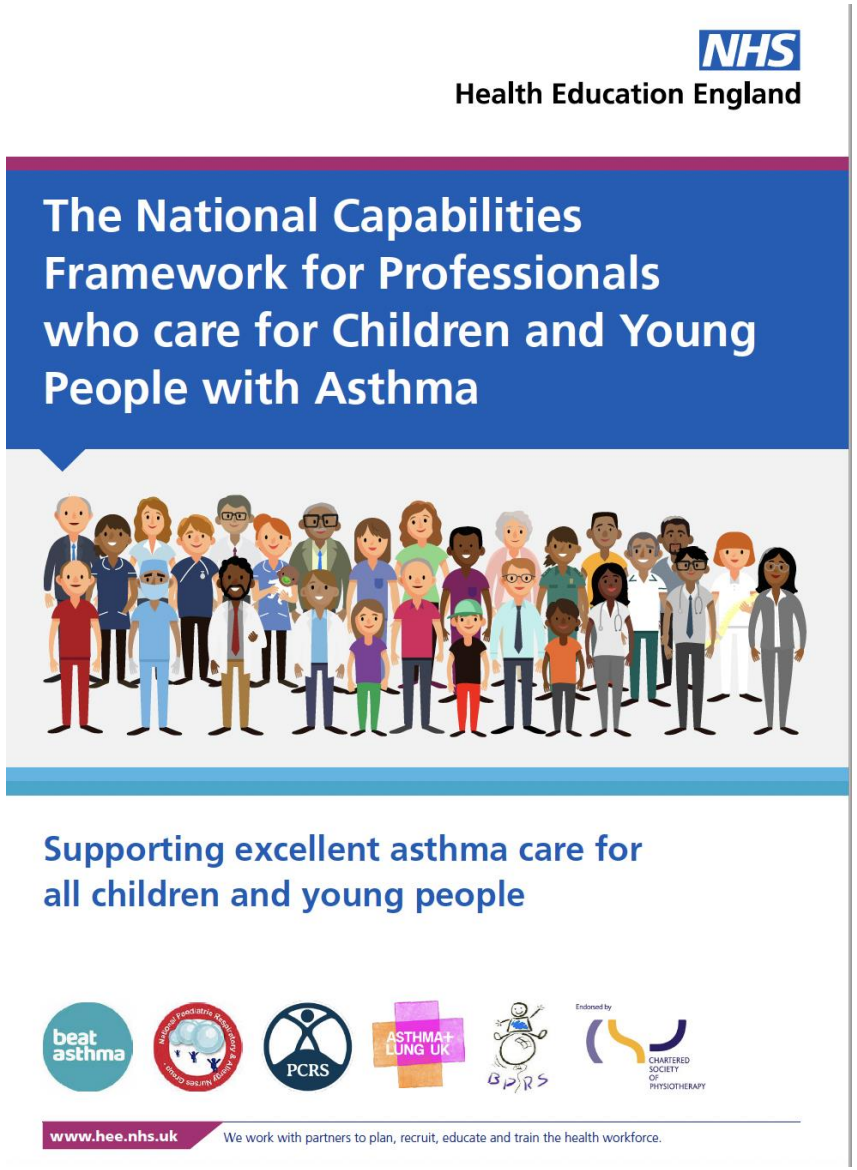


Targets for Change



Health Care Professionals education

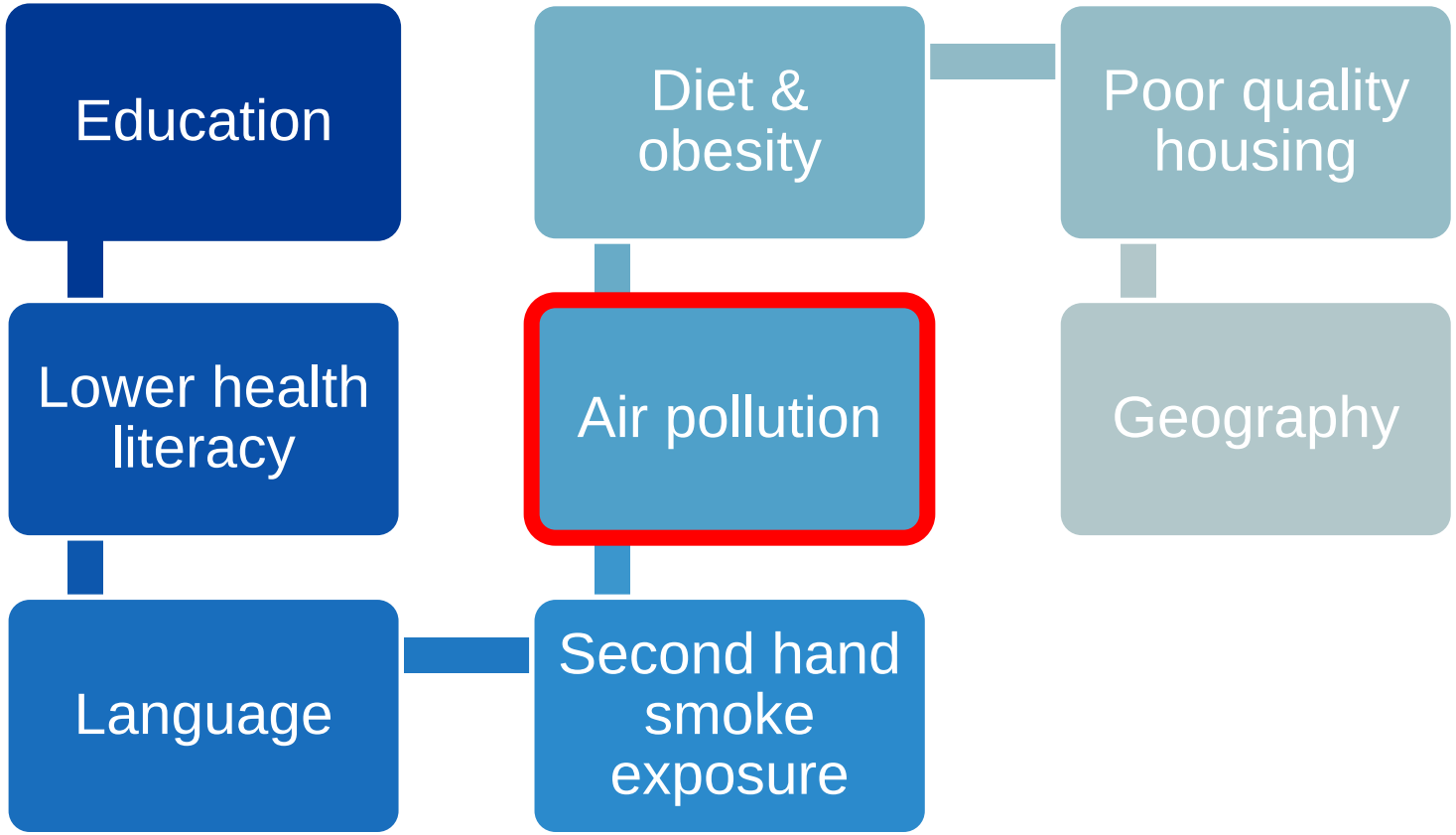
- Raise awareness
- Advocate
- Targeted intervention
- Schedule of interventions



Families and CYP Education

- **6 most common languages**
- **Easy read**
- **Age specific**
  - 5-11 years
  - Young people

Targets for Change



Air Pollution

Part of the conversation

Resources

- Asthma Friendly Schools

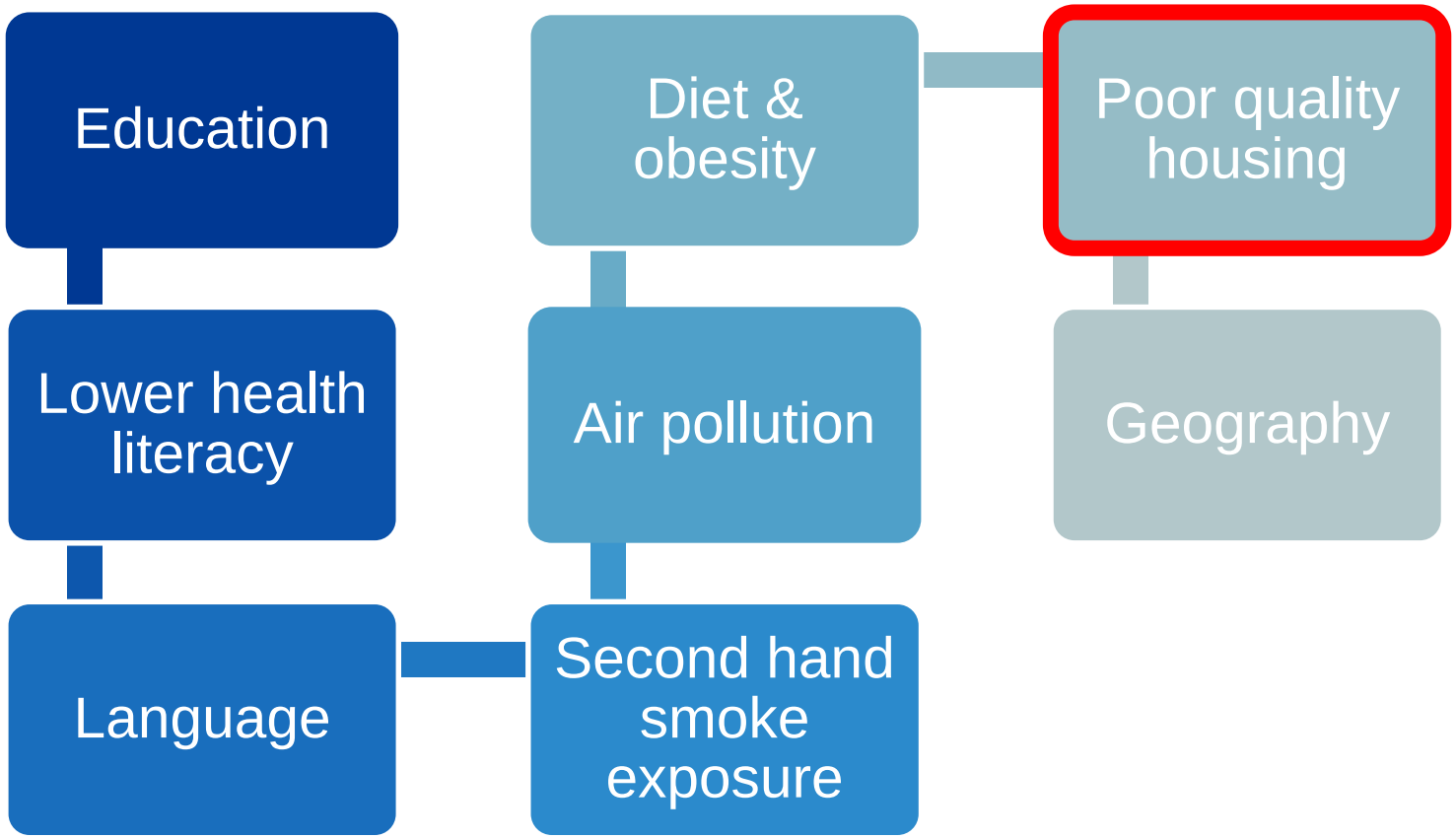
- School Streets

Signposting

- Air pollution alerts

- Greener streets

Targets for Change



Data & benchmarking

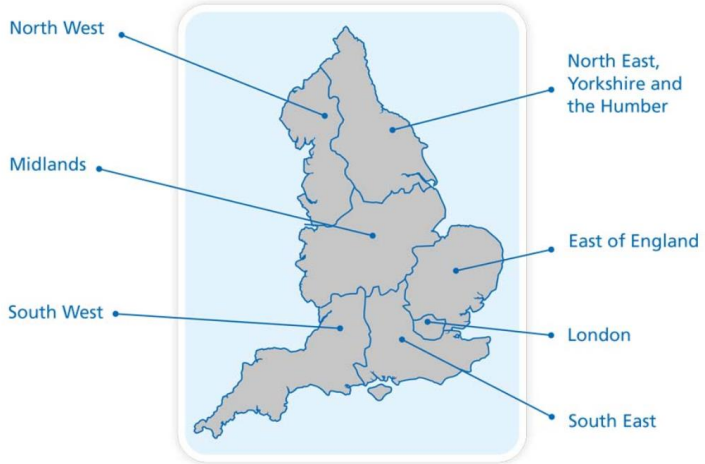
Understand the needs of your area

Target interventions to where they are needed most

Benchmark against other areas of the country

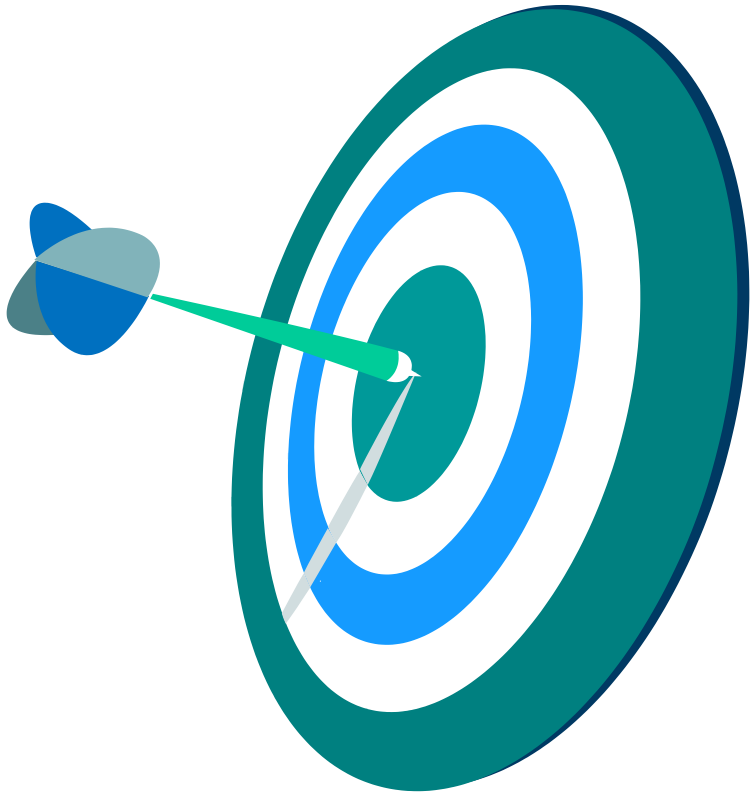
Risk stratification and targeted interventions

- Paediatric asthma practitioners
- Targeted interventions to patients in Primary Care Networks (PCN)
- Highest Children and Young People's asthma admissions
- Two paediatric asthma practitioners in an Integrated Care System

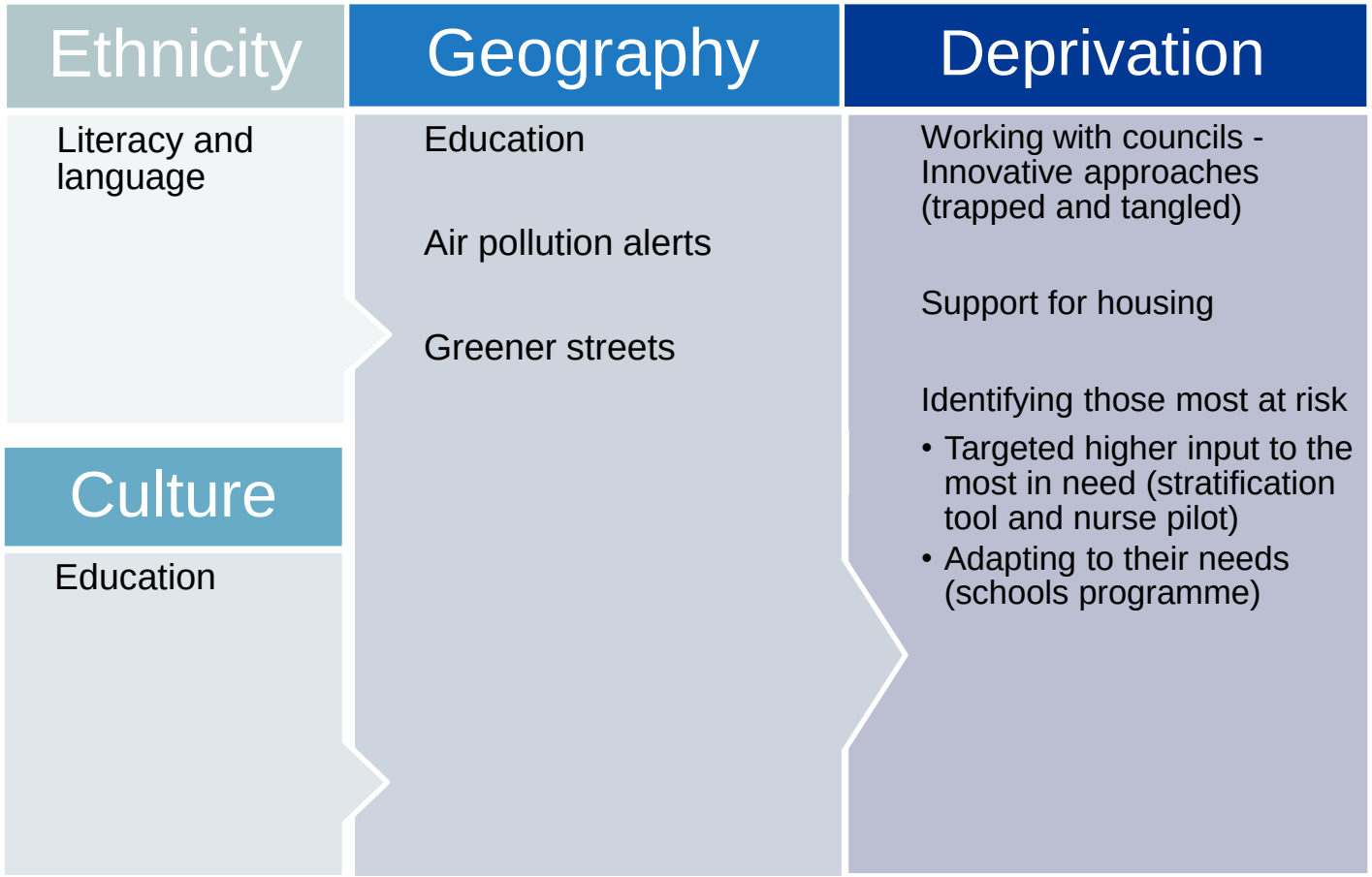


Aims and Objectives

1. **Establish**
2. **Identify**
3. **Develop**
4. **Lead**



Our role as health professionals



Summary

There are huge health inequalities in CYP asthma

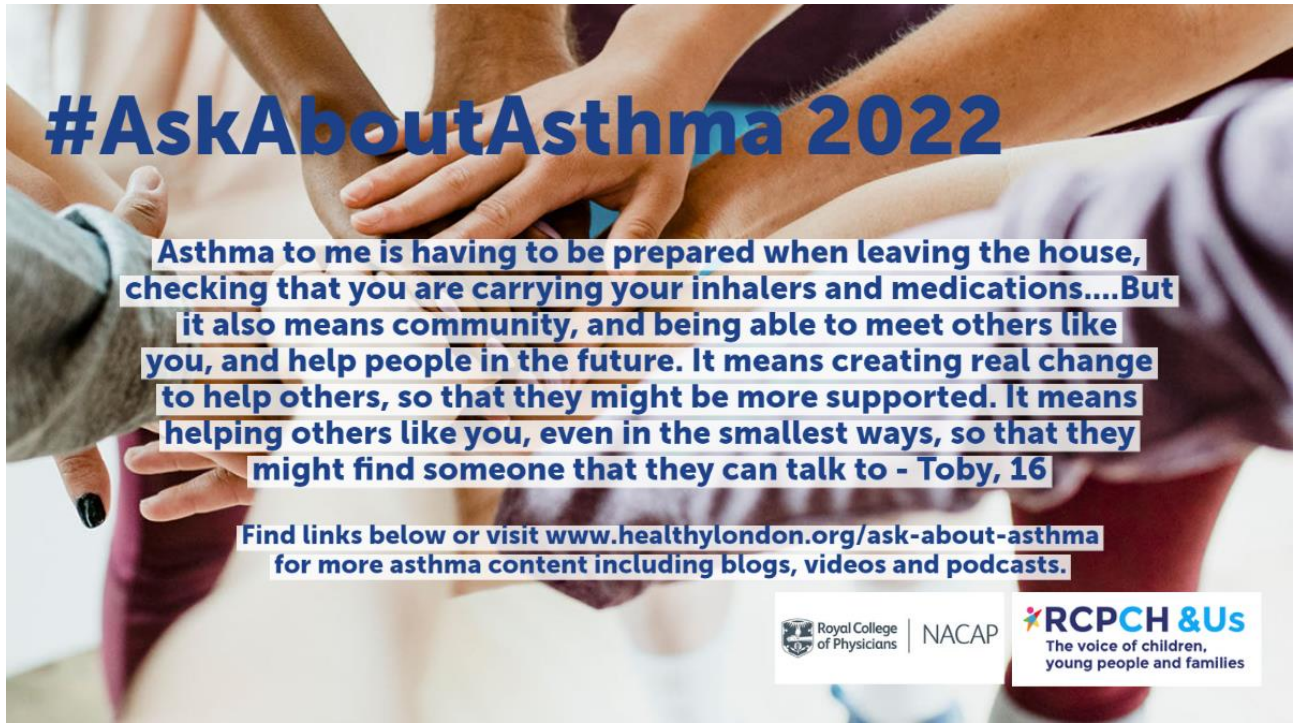
Specific interventions to tackle health inequalities in asthma

- Asthma bundle

- Risk stratification and nurse practitioner pilot

Patient Voice

By Emma Sparrow
RCPH and US



Learn more at: www.rcpch.ac.uk/resources/asthma-me-ambassadors

Clarifying what we mean by young people's health inequalities

Rachael McKeown
& Emma Rigby
Association for Young People's Health

What are health inequalities and why are they important?

Rachael,
AYPH

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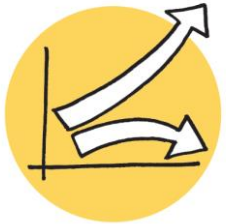

11.8 million young people in the UK

Adolescence is a key period of development – transitioning through different life events

Generally considered to be “healthy”

Onset of long term conditions (physical and mental health)

Foundations for the future

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More information:
AYPH briefing paper on young people's health inequalities
https://ayph.org.uk/what-are-health-inequalities-and-why-do-they-matter-for-young-people/

More information:
AYPH youth health data hub – section on young people's health inequalities:
https://ayph-youthhealthdata.org.uk/

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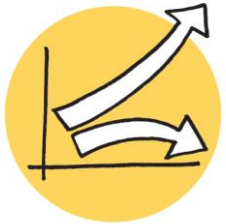

Our suggested definition for health inequalities in young people is:

*"The **avoidable and unfair differences** in physical and mental **health outcomes** between individuals or groups aged 10-25."*

Additional explanation:

*"Health inequalities are caused by economic and social differences that influence the **conditions in which young people live, learn, work and socialise**. These factors influence current and future health outcomes. Young people's developmental and life stages makes them **particularly sensitive to changes in their environment**, providing an opportunity to improve or worsen inequalities in health."*

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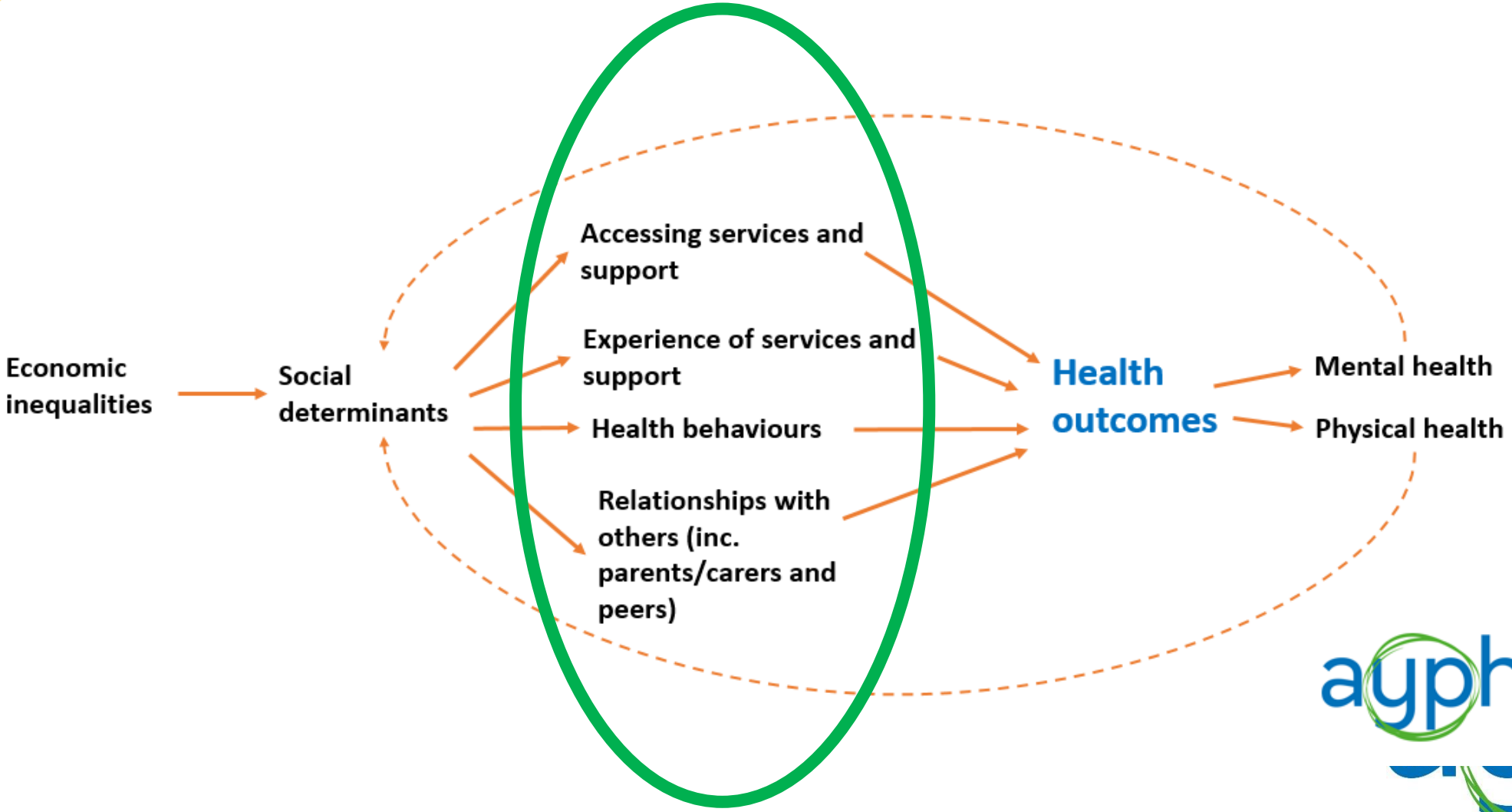

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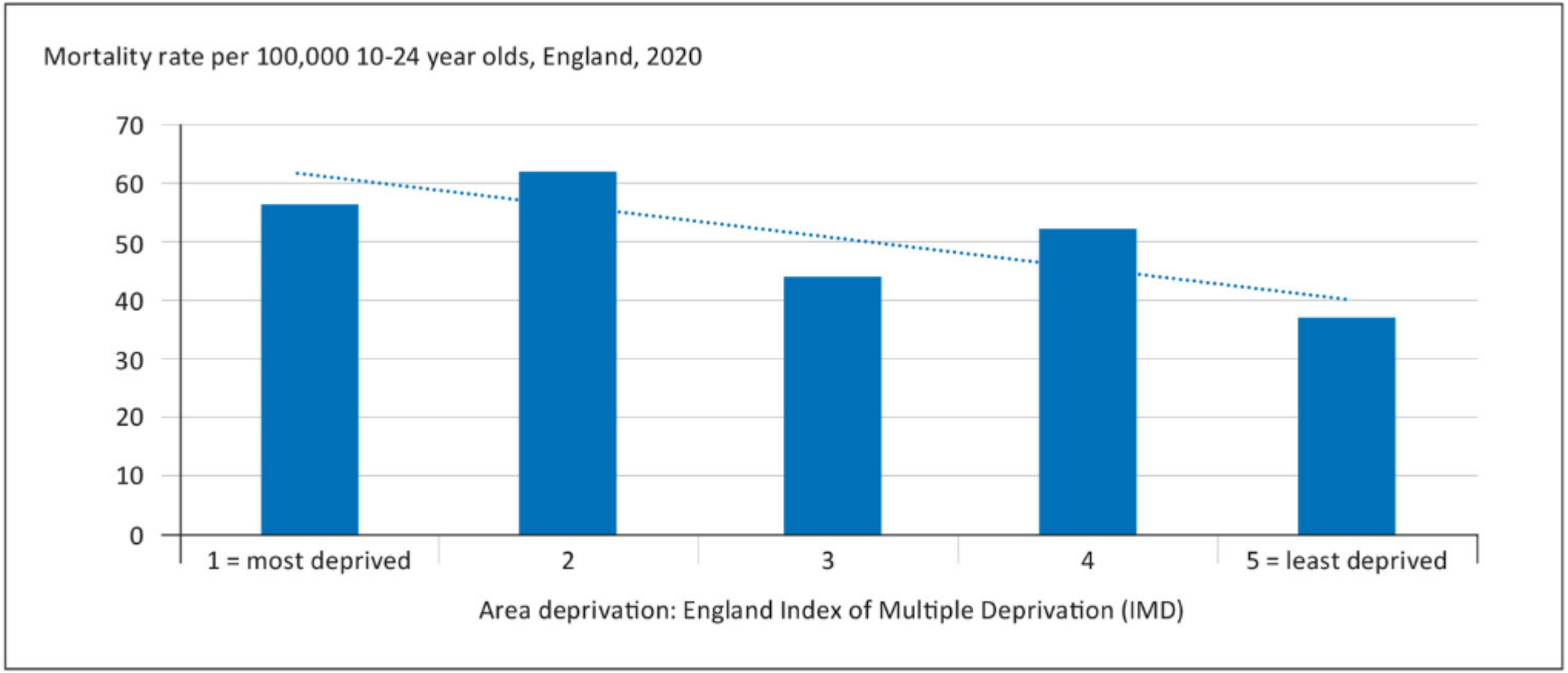

Source: AYPH analysis of ONS – Mortality statistics: underlying cause, sex and age

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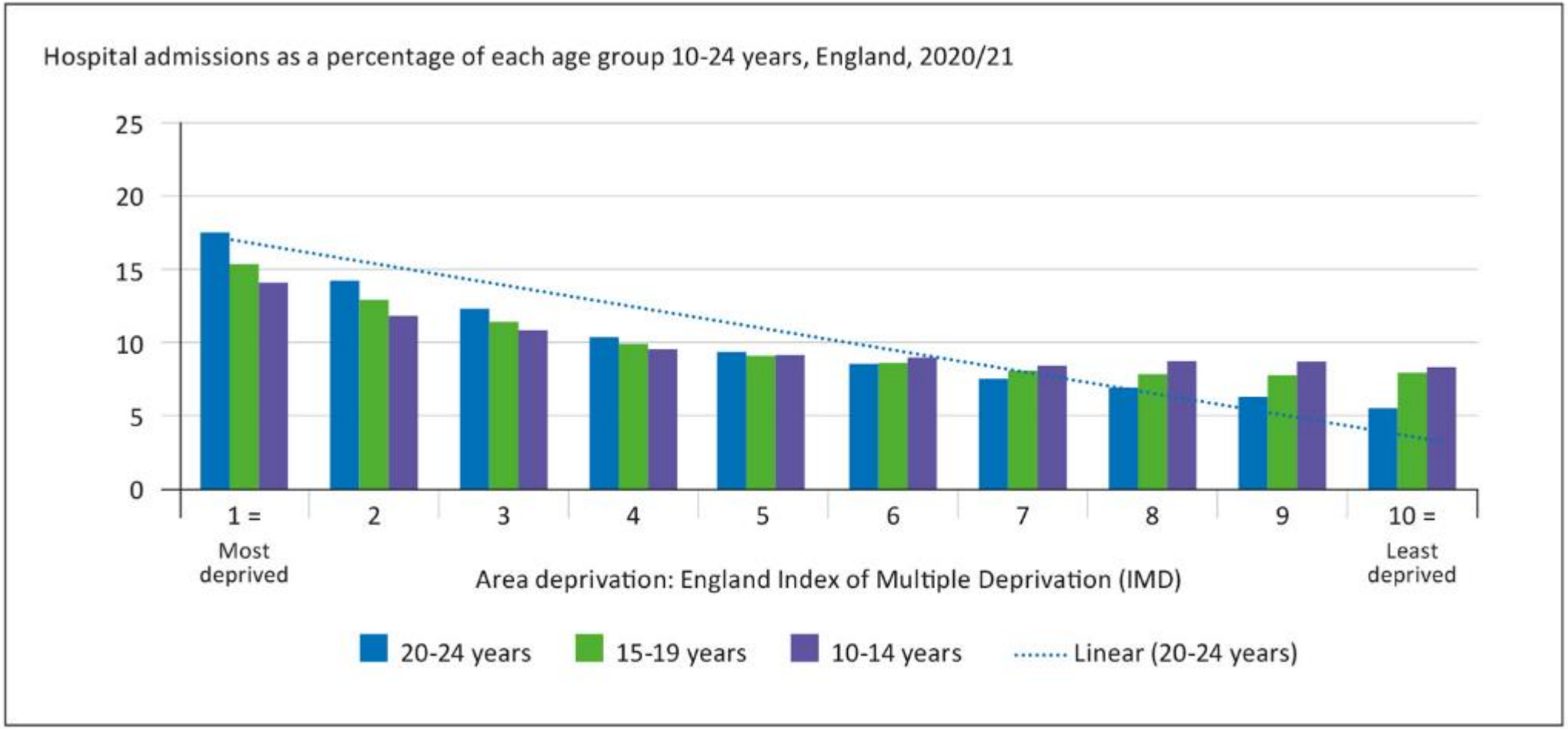

Source: NHS Digital – Hospital Admitted Patient Care Activity

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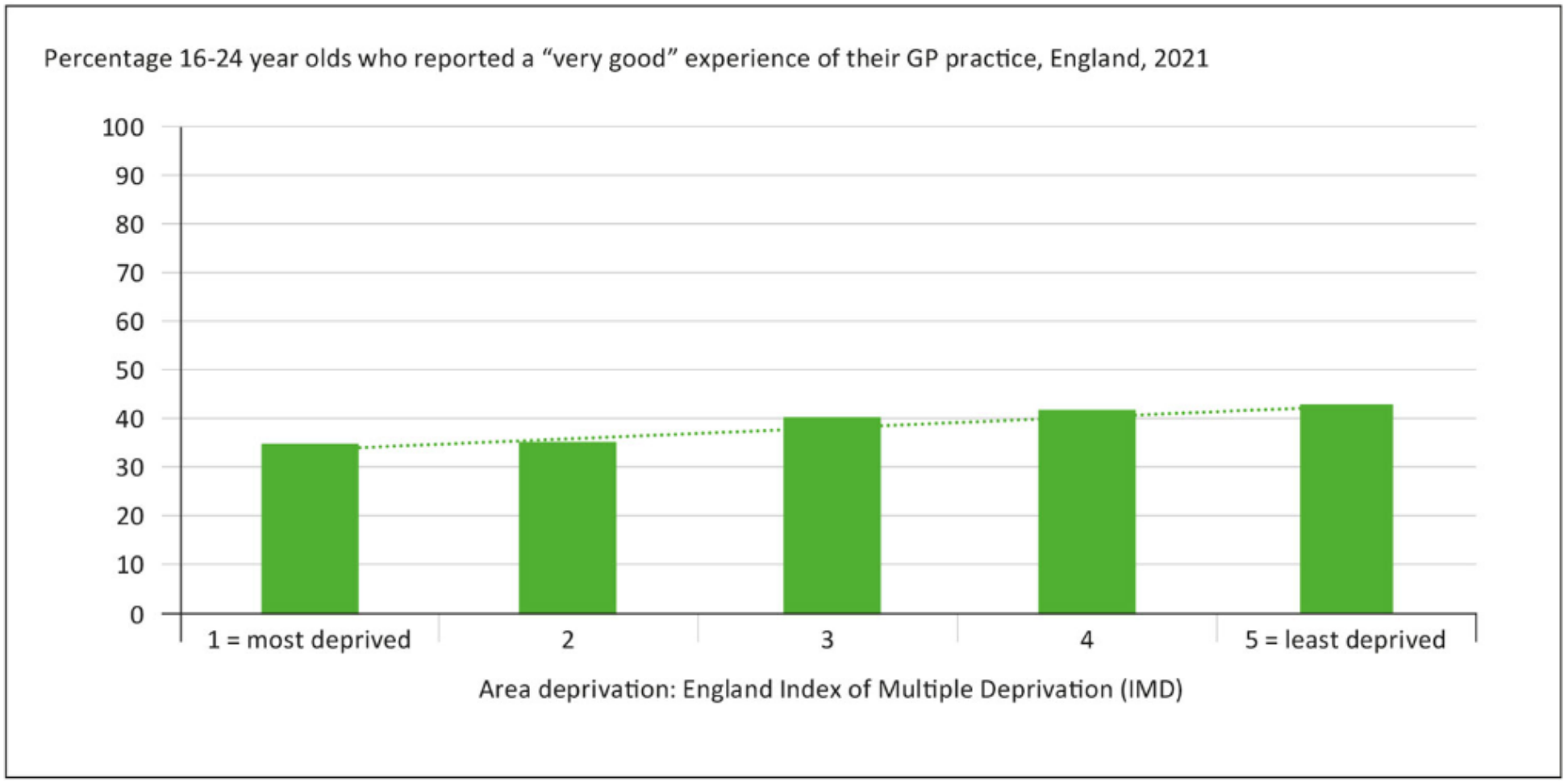

Source: NHS England – GP Patient Survey – shared with AYPH

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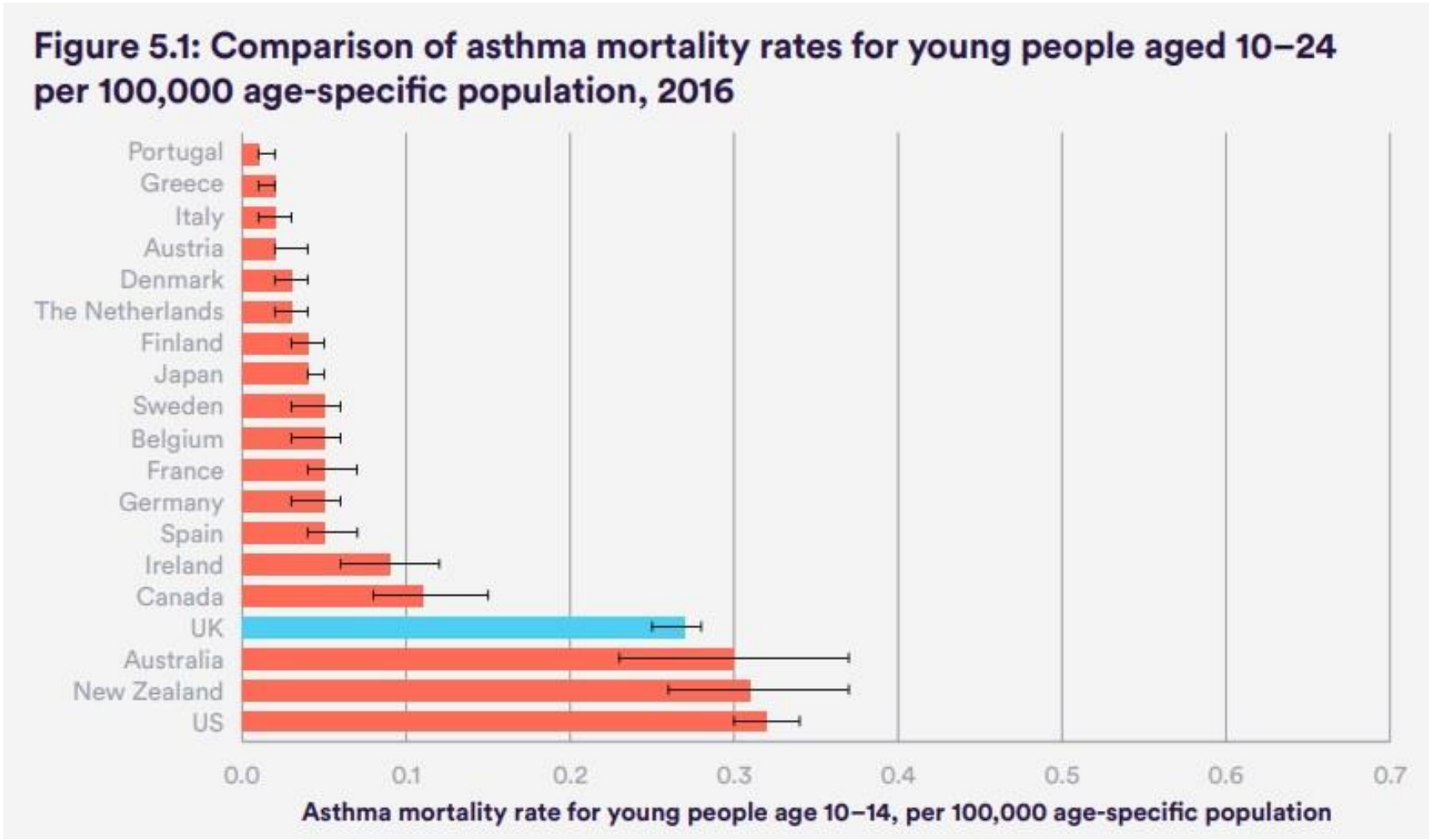

More information:

AYPH & Nuffield Trust International Comparisons report: https://www.nuffieldtrust.org.uk/files/2019-02/1550657729_nt-ayph-adolescent-health-report-web.pdf

#AskAboutAsthma

@AYPHcharity

What can I do?

Accessing services	Experiences of services
A quick win I can implement is… E.g. Youth friendly opening hours	*A quick win I can implement is…* E.g. Collecting young people's experiences

Link to resources:

Health behaviours	Relationships with others
A quick win I can implement is… E.g. Asking about health behaviours routinely in all appointments	*A quick win I can implement is…* E.g. Asking about family members or relationships with peers

#AskAboutAsthma

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Young people's experiences of health inequalities & asthma care

Emma, AYPH

#AskAboutAsthma

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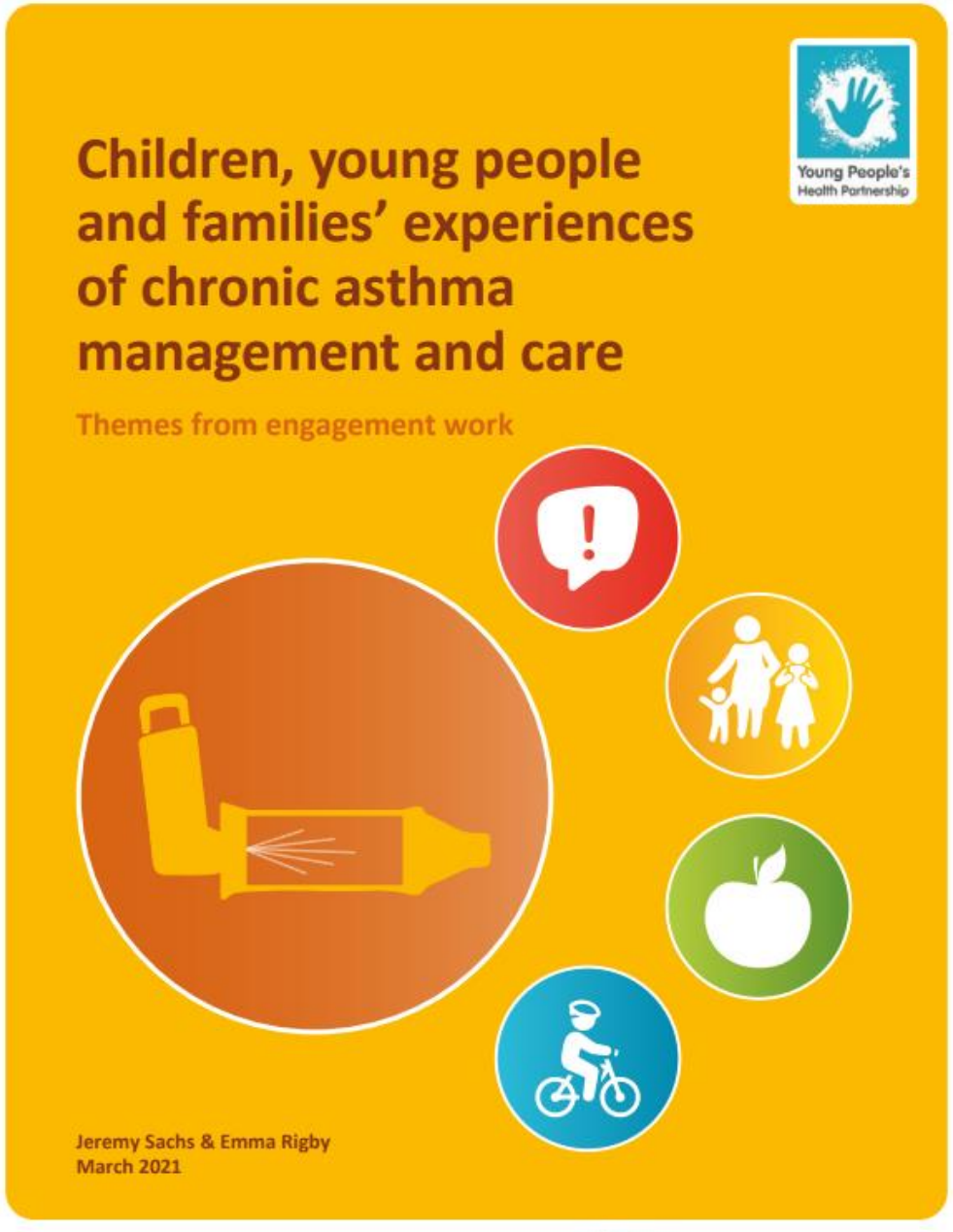

More information:
AYPH asthma engagement report: https://ayph.org.uk/wp-content/uploads/2022/01/CYP-Families-Experiences-of-Asthma-Management-Engagement-Report.pdf

#AskAboutAsthma

@AYPHcharity

> *Some sites are really bad. When I was living on a site in London when I was younger, that's what made my asthma so bad as a kid. There were always cars driving past you, and petrol, non-stop. That definitely makes it worse.*
>
> Young person

> *She's just ashamed that she's getting out of breath, you know and all her other friends aren't getting out of breath, you know. And I don't know sometimes if she equates it to a weight thing, like 'I'm overweight, is that why I need to use a pump' so I think she might have been like that sometimes.*
>
> Parent

> *I'm not using it as an excuse to get out of doing PE.*
>
> Young person

> *I do use the internet a lot for information on anything I'm intrigued about. Who else are you supposed to use? Can't get hold of your doctor.*
>
> Parent

> *She's amazing (asthma nurse). She's really really good. She knows me on a personal level, but I've always reviewed with her.*
>
> Young person

#AskAboutAsthma

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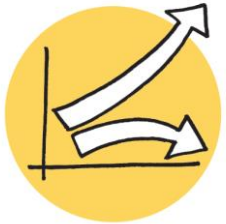

Young people recommend the following:

- **Access to trusted information** in formats that work for young people and using non-clinical language
- **Youth friendly services** and care in non-clinical settings that young people can access easily with the opportunity to build relationships with key staff
- **Anti-prejudice training** for healthcare staff as the general prejudice that some groups face impacts their asthma care
- **Myth busting** in communities to help support the sharing of accurate information and avoid delayed diagnosis
- **Broader education in the community** so that teachers, youth workers, sports coaches and wider society better understand the impact of asthma and stigma is reduced as a result.

> *“If you’re a Traveller you wouldn’t get no support because they didn’t like you. That was both school and the doctors.”*
>
> Young person

#AskAboutAsthma

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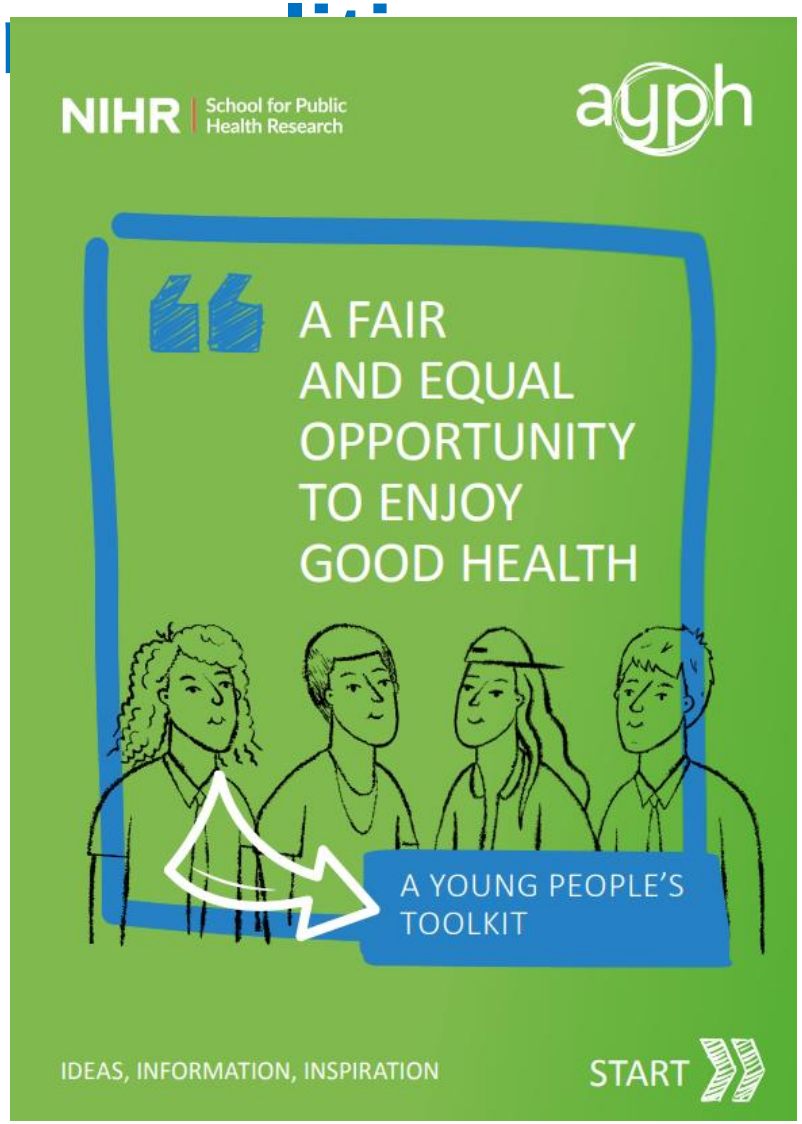
Young people's experiences of health i



Ash's animation
https://youtu.be/w3onqCy08zU

More information:
Young people's health inequalities toolkit:
https://ayph.org.uk/a-fair-and-equal-opportunity-to-enjoy-good-health/

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How to keep in touch

ayph.org.uk

Email

info@ayph.org.uk

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ASTHMA+
LUNG UK
FIGHTING
FOR BREATH

Health inequalities and asthma – impact on children, young people and women

The impact of health inequalities in asthma outcomes

The problem with asthma…

- There are approximately 5.4 million people receiving treatment for asthma – 1.1million (1 in 11) are children.
- Asthma is the most common long-term condition for children in the UK.
- Yet, 1 in 5 children wait 3 or more years to receive an asthma diagnosis.
- Lung conditions are also a leading cause of death in UK children.

“Inequalities in health arise because of inequalities in society – in the conditions in which people are born, grow, live, work, and age.”

Sir Michael Marmot

Fairer Society, Healthy Lives Report

Socio-economic status, symptom management and mortality

- Lung conditions impact the poorest neighbourhoods and further entrench health inequalities. For example, people are seven times more likely to die from lung conditions in the most deprived communities.
- Our ‘Fighting Back' report (2022) found that:
- 54% of people earning below £20,000 a year reported having uncontrolled asthma symptoms compared to 40% of those earning above £70,000

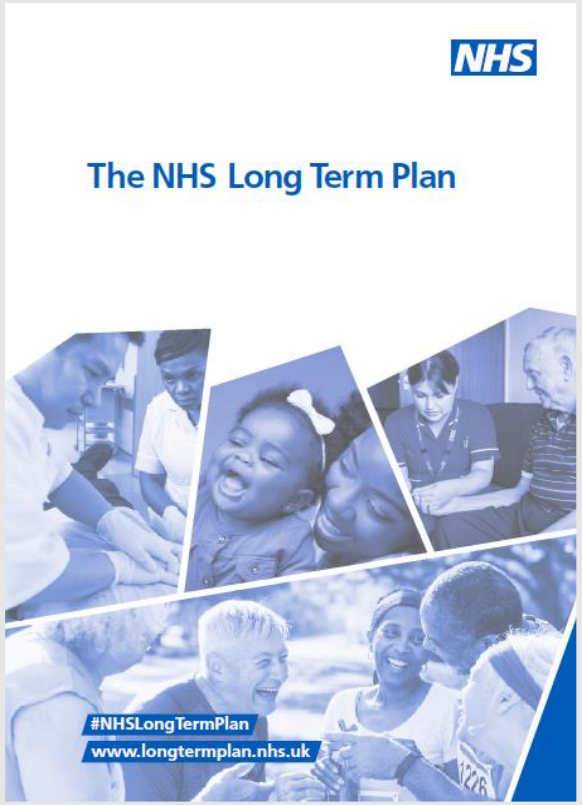
Key drivers in the development of asthma

Causes of asthma

- There is still more to understand about what causes asthma...
- Genetic and environmental factors can make developing asthma more likely for children or an adult in later life.
- Research is shining a light on potential causes, some of which include:
- Family history of asthma
- Prematurity or low birth weight
- Female hormones
- Exposure to tobacco smoke

Smoke Exposure

Smoke exposure



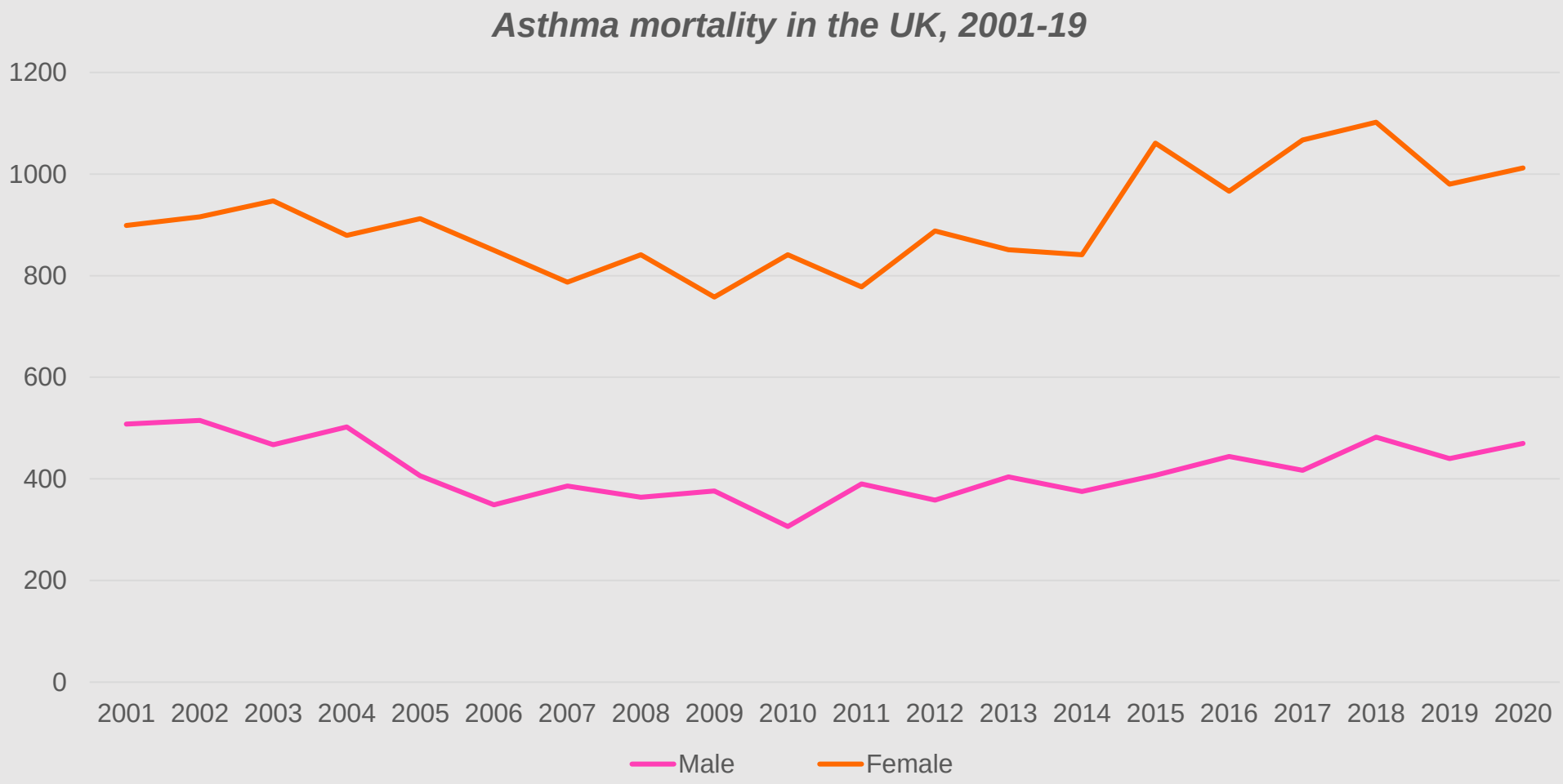
Sex hormones - women & asthma

Asthma is worse for women

- Women are more likely to have asthma and have more severe symptoms
- Increased likelihood of hospitalisation:
  - Rates of admissions to hospital for asthma are similar by sex in the early teenage years but are **three times higher in women than in men aged 20-50 years**.
- Many women experience a **significant worsening of symptoms around menstruation** and are at risk of potentially fatal asthma attacks every month.
  - 20-25% of women with asthma have premenstrual asthma
- We sought to understand why asthma is worse for women, convening experts across the world.

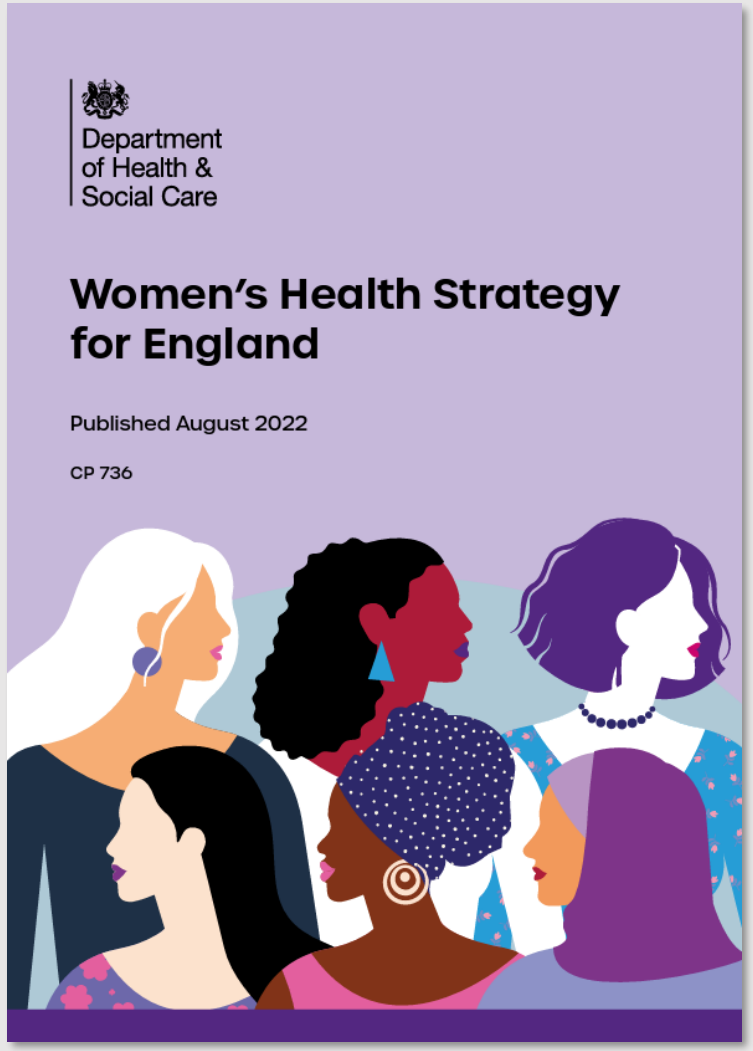
Women are more likely to die from asthma

Significant inequality



What can be done

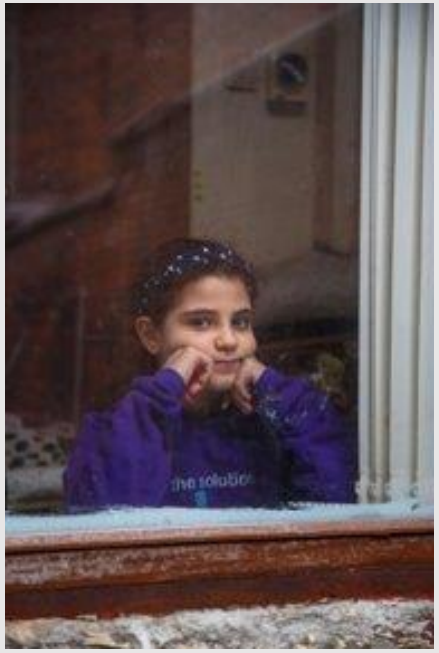
- Despite a considerable disparity in outcomes, there has been very limited research into why asthma is worse for women.
- Our report outlines clear recommendations for significant research investment.
- A+LUK are currently working closely with NIHR in their response to the DHSC Women's Health Strategy.
- Important for clinicians to support the NHS to be a leader in research into women's health inequalities.



Asthma triggers

What triggers asthma?

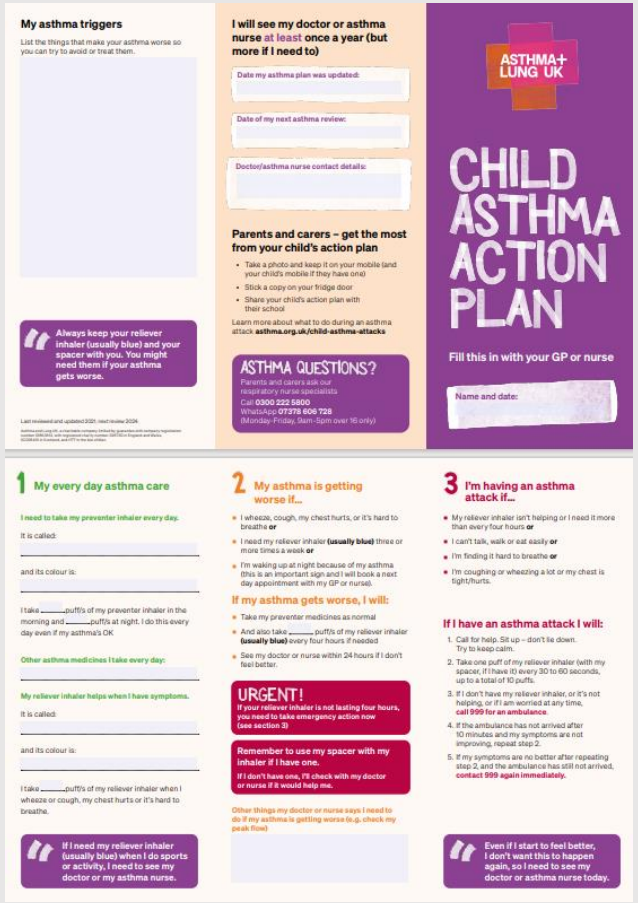
- Triggers are factors that exacerbate asthma symptoms.
- Common triggers include pollen, dust, cold weather, smoke and fumes, and respiratory viruses.
- People from disadvantaged groups are more likely to be exposed to asthma triggers such as mould or poor indoor air quality; and outdoor air pollution.



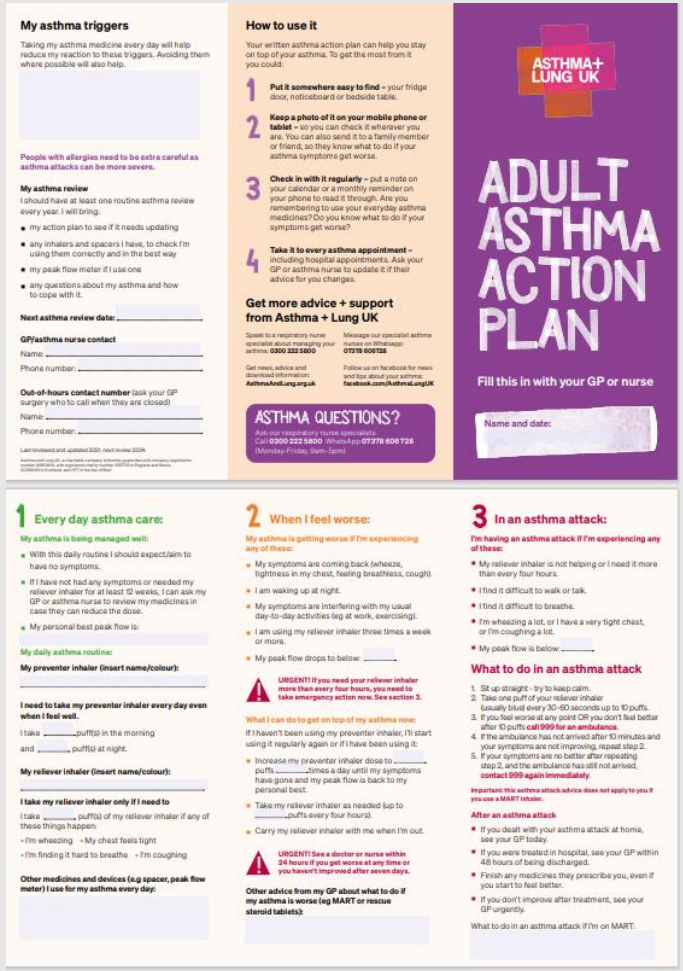
Air Pollution

- Asthma symptoms can be triggered by air pollution.
- In the short term, high air pollution can also cause flare-ups that can leave people with lung conditions hospitalised.
- In the long term, air pollution can, among other things:
  - increase the risk of developing other lung conditions later in life
  - stunt lung growth in children
  - Reduce life expectancy

The importance of good self-management



- People can live well with asthma, but this requires good self management to prevent the flare-up of symptoms.
- People with low health literacy – associated with social determinants, like education, poverty and employment are less likely to manage their condition well.



Resources available at: [Asthma resources | Asthma + Lung UK]

Cost of Living

- Self management will likely become that much harder if people are struggling financially.
- Through the Prescription Charges Coalition, we're calling for free prescriptions for people with asthma in England.
- We'll also be examining the impact of the current cost of living crisis on people with lung conditions.

So, what can be done?

Calls for better basic asthma care

This includes:

- A written asthma action plan
- Inhaler technique checks
- Annual asthma reviews.

Choosing the best medication

- Supporting ambitions in the NHS the Long Term Plan so that people can access the right medications.

Campaigning for cleaner air

- We want to see reductions in hospitalisations and early deaths linked to air pollution

THANK YOU

Sarah Woolnough

CEO, Asthma + Lung UK

NHS England London

#AskAboutAsthma 2022

Babies, Children and Young People's Transformation – London Region

Lunch break: 11.55-12.25pm

#AskAboutAsthma Conference 2022

6th October 2022, 9:30 – 16:30

Session 2, chaired by Viv Marsh

NHS England London

Time	Topic	Speaker
12.25 – 13.45	**Air pollution and asthma:**	
	• **Asthma and the green agenda in children and young people - more than just inhalers - thinking more holistically**	**Darush Attar-Zadeh** • Independent Prescriber • Respiratory Pharmacist • NWL Children & Young People Asthma Network • Co-chair London CYP pharmacy asthma group
	• Why we're adding the 4th 'ask'	**Rosamund Kissi-Debrah** • Founder, Ella Roberta Foundation
	• What do healthcare professionals need to know about air pollution to care for their young asthma patients? Why Ella Adoo-Kissi-Debrah's new inquest is so important	**Professor Sir Stephen Holgate** • UKRI Clean Air Champion • Special Advisor to the RCP on Air Quality • Faculty of Medicine, University of Southampton
	Followed by panel Q&A chaired by Viv Marsh	
13.45 – 15.05	**Focus on teens:**	
	• Transition clinics and health inequalities	**Louise Porter** • National Lead Nurse, Burdett National Transition Nursing Network
	• Ensuring high quality of care for Young People as they move into adult services: Encouraging health equity through transition	**Katie Puplett** • Children and Young People's Senior Policy Manager, NHSE
	• Transition and adherence	**Professor Rob Horne** • Professor of Behavioural Medicine • Director of the Centre for Behavioural Medicine, University College London School of Pharmacy
	Followed by panel Q&A chaired by Viv Marsh	

#AskAboutAsthma Conference 2022

6th October, 9:30 – 16:30

Session 3

Time	Topic	Speaker
15.05 – 15:15	**Break** Preventable film to be shown	
15.15 – 15:40	**How data can improve care and reduce health inequalities**	**Tiffany Watson-Koszel** • Policy Manager, CYP Transformation Programme Team
15.40 – 16:25	**Clinical update: National Asthma Bundle into action**	**Dr. Satish Rao** • Consultant Respiratory Paediatrician • Medical Director for Innovation and Transformation, Birmingham Women's Hospital **Dr. Prasad Nagakumar** • Paediatric Respiratory Consultant • Associate Professor • Deputy Director for Research & Innovation, University of Birmingham • Lead for Difficult Asthma/Respiratory Research, Birmingham Children's Hospital
16.25 – 16.30	**Next steps**	**Viv Marsh**
16.30	**Close**	

Asthma and the green agenda in children & young people –
more than just inhalers - thinking more holistically

Darush Attar-Zadeh Independent Prescriber
Respiratory Pharmacist NWL Children & Young People Asthma Network
www.RightBreathe.com

Choosing the right inhaler isn’t always easy

How do you become an inhaler coach to improve **efficacy** of treatments?

Patient & Planet

Patient or Planet

The NHS is responsible for around 4% of the countries global warming potential– and inhalers contribute 3.1% of this 4%

https://www.england.nhs.uk/2020/10/nhs-becomes-the-worlds-national-health-system-to-commit-to-become-carbon-net-zero-backed-by-clear-deliverables-and-milestones/

Improving inhaler technique

Potential implications of sub-optimal technique:

- Lowers drug deposition to the lungs
- Wastes medication
- Poor disease control
- Reduced quality of life
- Increased hospital admission
- Increased cost

https://www.ukinhalergroup.co.uk/uploads/GZrJVGeR/InhalerStandardsMASTER.docx2019final.pdf
Lavorini F, Magnan A, Dubus JC et al. Effect of incorrect use of dry powder inhalers on management of patients with asthma and COPD. Respir Med 2008;102:593–604. Giraud V & Roche N. Misuse of corticosteroid metered-dose inhaler is associated with decreased asthma stability. Eur Respir J 2002;19:246–251. Last accessed April 2022

If considering any device change – THINK SAFETY FIRST

Where a new device is prescribed, inhaler technique should always be checked and corrected by a competent healthcare professional.

On-going inhaler coaching should take place at every opportunity –

Community pharmacy teams can support

Patient perspectives of inhaler technique checks in England

Darush Attar, Andy Ellis, Dr Steve Holmes, Dr Anna Murphy, Michael Osen

Taskforce for Lung Health

Context

Inhaler technique checks (ITCs) are key in enabling patients with lung conditions to benefit from their medication, reducing the risk of exacerbations and improving symptoms.

We wanted to understand how many people with a lung condition were receiving inhaler technique checks and the impact these checks have from a patient perspective.

Method

We conducted a survey from April to June 2021, promoted via Asthma and Lung UK and healthcare professionals.

1,042 people from England with a lung condition who used an inhaler responded.

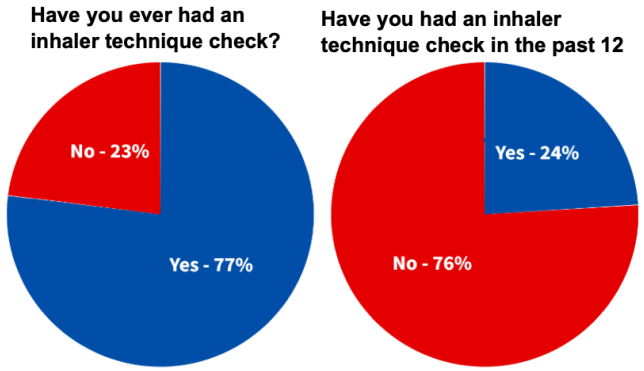
Respondents could report multiple conditions.

69% (n=723) had asthma, 33% (n=339) had COPD, 9% (n=93) reported diagnoses of both asthma and COPD and 229 reported other conditions such as bronchiectasis and lung cancer.

Results

23% (n=233) reported they had never had, or do not remember ever having an ITC. Those from the most deprived third of areas were 1.5 times more likely to state this compared to the least third deprived of areas.

Of those that knew when their latest ITC was (n=988), 76% stated they had not had an ITC in the previous 12 months.



Of those who remembered what happened at their last ITC, either remotely or face to face (n=664), 81% received verbal advice and 56% had technique demonstrated.

Of those responding on the helpfulness of the check (n=642), almost 9 out of 10 (88%) said it was at least somewhat helpful.

67% (n=454) reported a positive impact such as confidence, understanding or reduced exacerbations, and 41% (n=295) used their inhaler differently due to the check, and had not gone back to the way they were using it before.

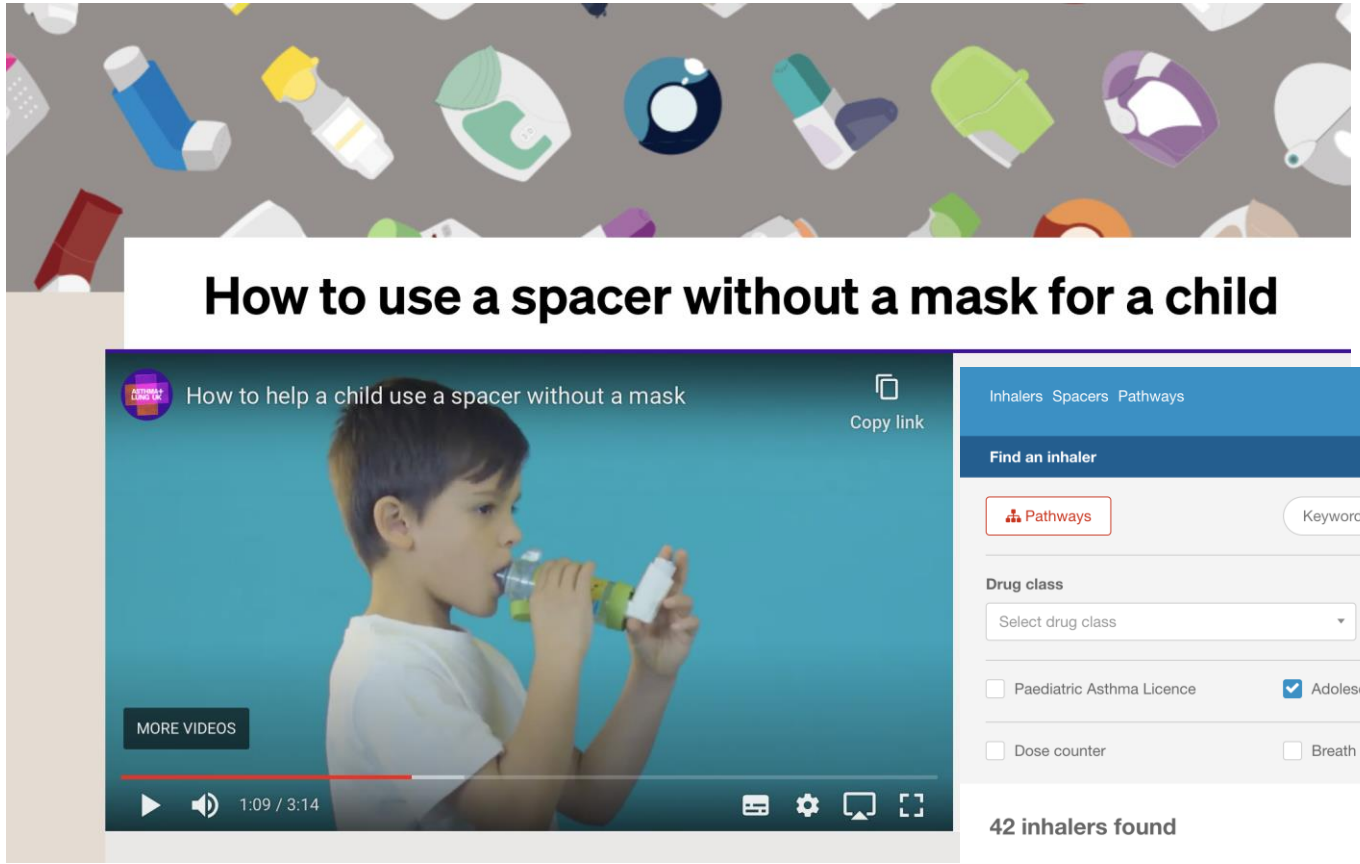
20% (n=134) reported not liking the checks due to embarrassment, feeling tested or being told how to use their inhaler.

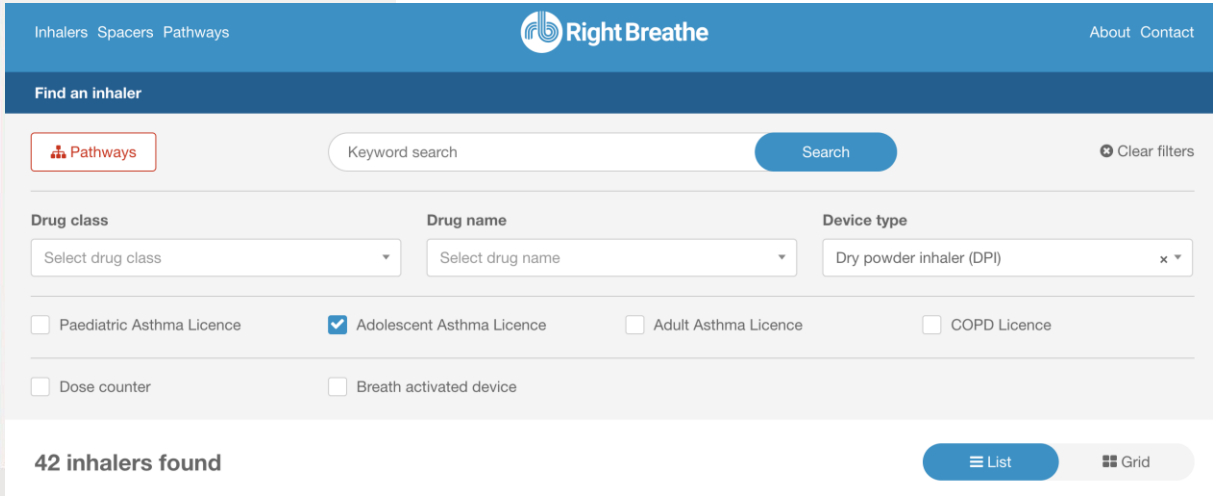
Conclusions

- The majority of respondents had not had a check within the last year, and almost a quarter could not remember ever having one.
- For those that did have an inhaler technique check, most reported that they were helpful.
- As these checks benefit patients, steps must be taken to ensure that more patients have regular inhaler technique checks, and that these are approached in a non-judgemental fashion.
- Community pharmacies could be commissioned and supported to provide inhaler technique checks with a funded community pharmacy inhaler technique check and coaching service.

The Taskforce for Lung Health is a collaboration of 44 members made up of patients, healthcare professionals, charities and professional organisations working to improve lung health across the country. In 2018 the Taskforce published a five-year plan setting out our recommendations for the changes that need to be made to improve lung health.

Videos that follow UKIG standards are helpful reinforcers





https://www.asthma.org.uk/advice/inhaler-videos/

https://www.rightbreathe.com

Introducing seven steps for a DPI
(very different to single breath & hold technique via pMDI + Spacer)

7 steps	7 steps for an DPI
1. Prepare inhaler device	Remove cover
2. Prepare or load the dose	Insert capsule or load dose
3. Breath out	Breath out (not into the inhaler)
4. Tilt the chin up slightly and seal lips around mouthpiece	Tilt the chin up slightly and seal lips around mouthpiece
5. Breath in	As you breath in (Quick and deep)
6. Remove inhaler from mouth and hold breath	Remove the inhaler and hold breath for 10 seconds , or as long as comfortable
7. Wait for a few seconds and repeat if necessary	Wait a few seconds and repeat if taking a second dose. Replace cover.

Optimise asthma care

Our first priority

- To identify and review those with poorly controlled disease and optimise their care
- Check adherence to regular preventer
- Inhaler technique
- The clinical and environmental harms of poor disease control will likely outweigh any benefits from use of different inhalers.
- Opportunities to identify poor control and optimise care include exacerbations, repeat prescription requests suggesting SABA over-use, annual reviews, and practice quality improvement activities.

https://www.greenerpractice.co.uk/high-quality-and-low-carbon-asthma-care/resources/

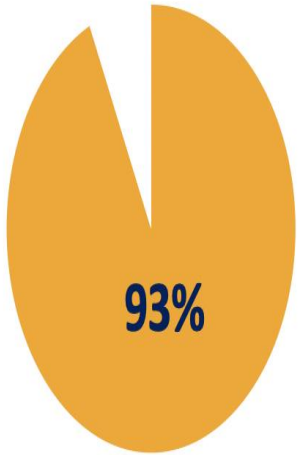
Potential risks of NHS Long Term Plan strategy of finding inhalers with lower Global Warming Potential

Patients

pMDI: **86.8%** DPI: **60.9%** pMDI + spacer: **52.0%**

Overall percentage of patients with at least one error, according to systematic review[1]

Healthcare professionals (HCPs)



HCPs who made at least one error in the seven steps of using a pMDI[2]

+

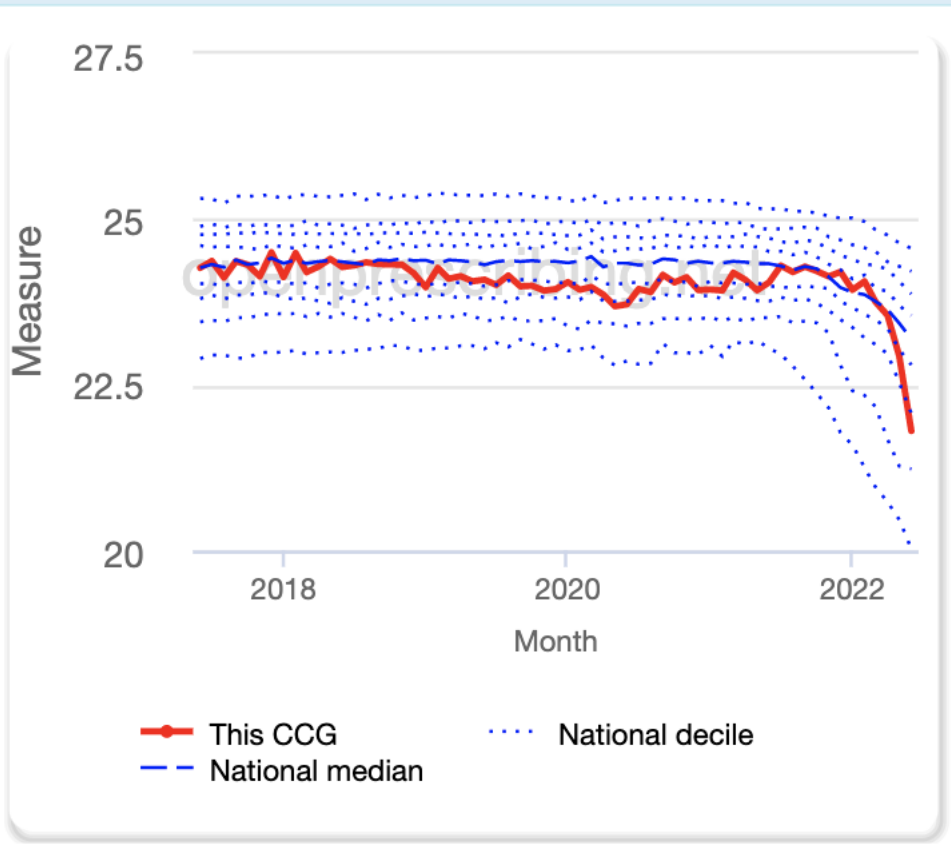
Objective 5: Help create a more sustainable NHS	
Indicator	Thresholds
ES-01: Metered Dose Inhaler (MDI) prescriptions as a percentage of all non-salbutamol inhaler prescriptions issued to patients aged 12 or over	44% (LT), 35% (UT) intended 23/24 trajectory: 35%/25%
ES-02: Mean carbon emissions per salbutamol inhaler prescribed (kg CO2e)	22.1kg (LT), 18.0kg (UT) intended 23/24 trajectory: 18.0kg/ 13.4kg

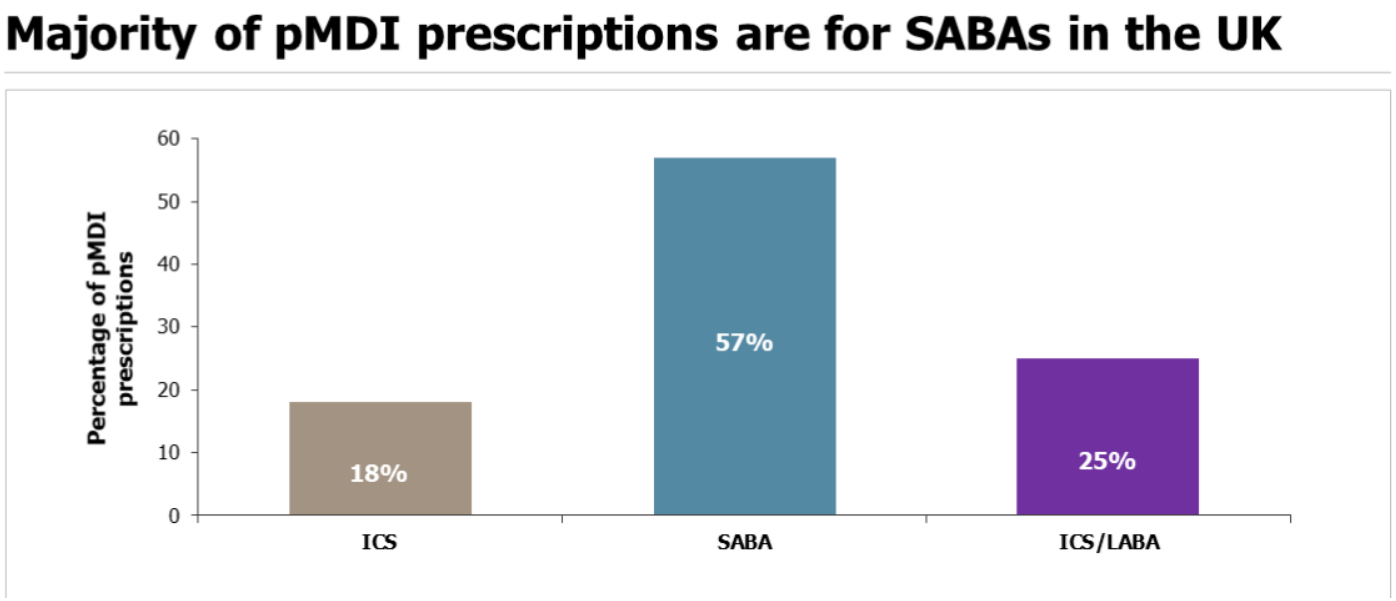
https://www.england.nhs.uk/wp-content/uploads/2021/12/B1219-investment-and-impact-fund-implementation-guidance-2021-22-dec-21.pdf

pMDI: pressurised metred-dose inhaler; DPI: dry powder inhaler.

1. Chrystyn H, et al.npj Prim Care Respir Med. 2017;27:22
2. Baverstock M, et al. Thorax 2010;65: 117-118

Blanket Switching vs Shared Decision Making + Safety + Efficacy





IQVIA data June 2021

https://openprescribing.net/measure/carbon_salbutamol/

Indicative carbon footprint - Salbutamol

Brand name	Device type	Doses per inhaler	NHS cost per inhaler	Age licensed from	Age ranges for doses	Indicative carbon footprint /inhaler ($g\ CO_2e$)
Airomir 100 micrograms	pMDI	200	£1.97	4+	<12, 12+	9720
Airomir Autohaler 100 micrograms	pMDI	200	£6.02	4+	<12, 12+	9720
Easyhaler Salbutamol 100 micrograms	DPI	200	£3.31	4+	4-11, 12+	620
Easyhaler Salbutamol 200 micrograms	DPI	200	£6.63	4+	4-11, 12+	620
Salamol CFC-Free Inhaler 100 micrograms	pMDI	200	£1.46	4+	4-11, 12+	11950
Salamol Easi-Breathe 100 micrograms	pMDI	200	£6.30	4+	4-11, 12+	12080
Salbulin Novolizer 100 micrograms	DPI	200	£4.95	6+	6-12, 12+	3750
Ventolin Accuhaler 200 micrograms	DPI	60	£3.60	4+	4-11, 12+	583
Ventolin Evohaler 100 micrograms	pMDI	200	£1.50	4+	<12, 12+	28262

https://www.prescqipp.info/our-resources/bulletins/bulletin-295-inhaler-carbon-footprint/

to the person? Shared dec
g & thinking

AeroChamber Plus (Trudell Medical UK Ltd) 1 device

Compatible and licensed

in Evohaler and pMDI preventer + spacer

l CFC free inhaler 'a noticeable cha
ly smaller, are there less doses?'

pectations

Volumatic (GlaxoSmithKline UK Ltd) 1 device

Compatible and licensed

Think of the device as part of the medicine
Are you an inhaler coach
This isn't the same as switching tablets

What matters to the person? Shared decisions

venter)

Easyhaler Salbutamol sulfate 100micrograms / dose dry powder inhaler (Orion Pharma (UK) Ltd) 200 dose

Type
Dry powder inhaler (DPI)

Medicine
Salbutamol 100micrograms/dose

Activation mechanism
Breath actuated

Dose counter
Has dose counter

Price
£0.50 / 30 days
(based on 1 puffs / day)

Licences
Adult Asthma Licence
Adolescent Asthma Licence (12 to adult)
Paediatric Asthma Licence (4 years and older)

Share information

Right Breathe

www.rightbreathe.com

Asthma inhalers and the environment in children and young people

How do inhalers affect the environment?

All inhalers can affect the environment however some have a lower global warming potential than others

Metered dose inhalers (MDIs, figure 1) and breath-actuated inhalers (BAI, figure 2) are safe for humans (figure 1) but contain a propellant that can contribute to global warming.

There will be lower carbon MDI options available by 2025. Consult your pharmacist.

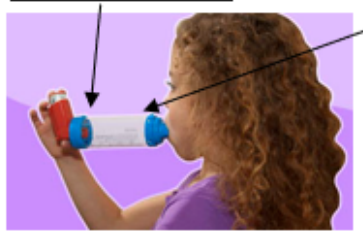


Figure 1 – MDI with a spacer

Figure 2 – Easi-breathe is a type of breath-actuated inhaler

Dry powder inhalers (DPIs, fig 3) don't contain a propellant. Most children aged 10 years and over may be able to use them. Please refer to the manufacturers leaflet and, check with your usual healthcare professional.

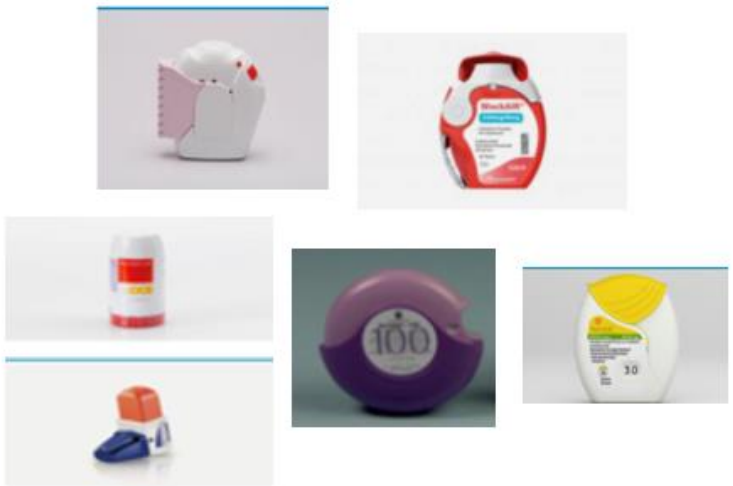


Figure 3 – some examples of DPIs

Patient Information Leaflet – September 2022

If considering a device change e.g. DPI change from a pMDI– THINK SAFETY FIRST

Safety First - Blanket switching of inhaler devices to more environmentally friendly devices is not good practice. Treatment with inhalers should only be initiated or changed where clinically warranted and with appropriate assessment of inhaler technique by a competent healthcare professional.

Inhaler swaps – practice website wishing people good health

How to use an Ellipta inhaler | Asthma UK

We also want to change the device you use for salbutamol. We realise that this is a difficult thing for many of you, so although the Easyhaler salbutamol would be the best for the environment, we will actually be changing you onto a **salamol** inhaler which has half the carbon content of Ventolin, but is still the same type of inhaler. If you would like to change to Easyhaler instead, please let us know and w would be happy to do this. Salbutamol inhalers are best used through a spacer device if you are having an acute asthma attack.

Worst for environment (26kg Carbon dioxide)

Better (11kg carbon dioxide)

Best (0.63kg carbon dioxide)

We hope you will find these swaps easy to use, but if you are having difficulties, please do get in touch with us.

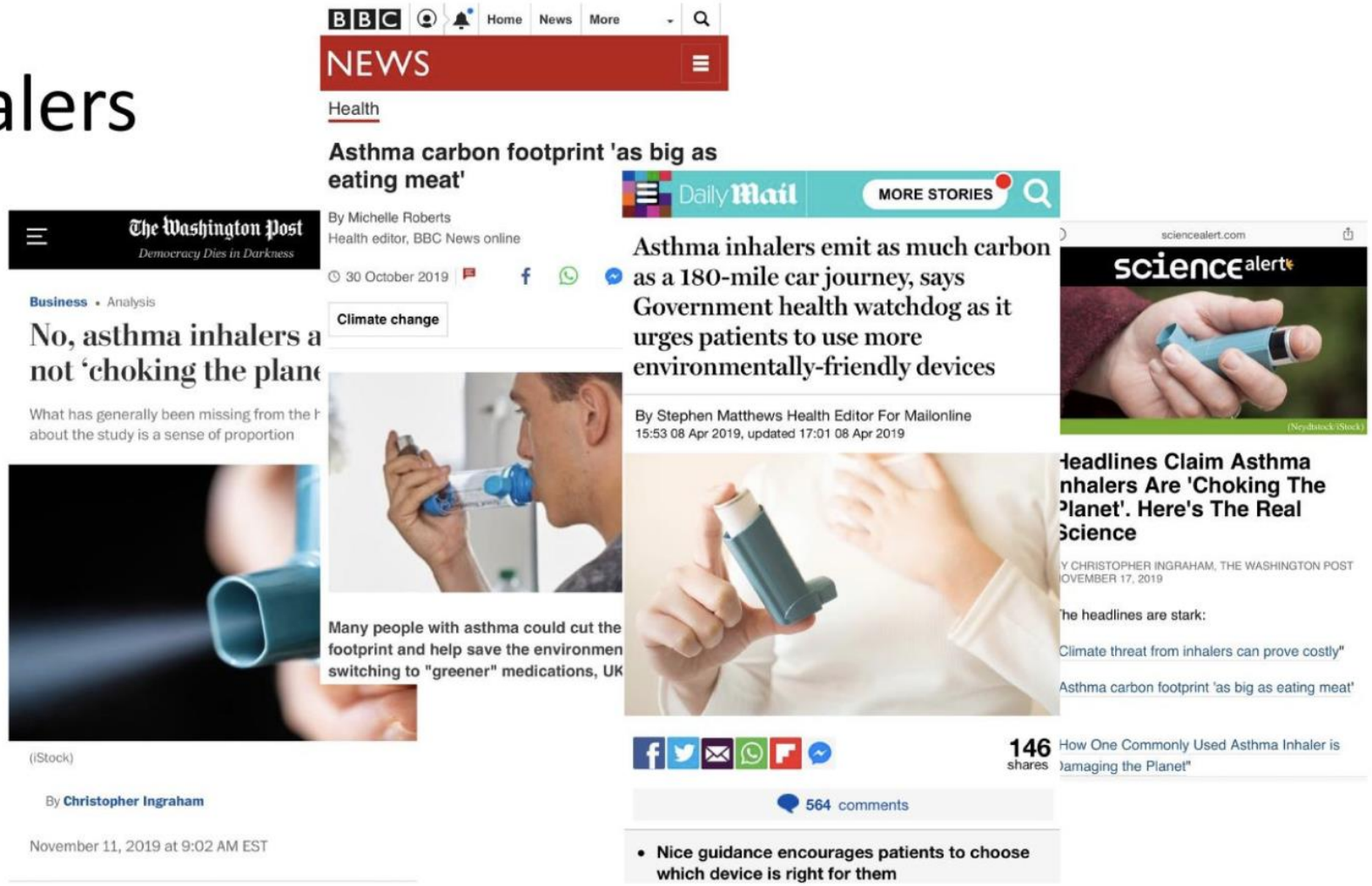
Wishing you Good Health,

Sophia – 18 years old

- ACT score of 25
- Excellent technique with pMDI and spacer (single breath and hold technique)
- Has come in to renew her emergency blue inhaler as last one expired - hardly ever uses it.
- Seretide 125mcg 2 puffs bd via Able spacer (repeat prescription 12/12 collected) salbutamol 100mcg pMDI 200 doses 1/12 months (usually gets Ventolin)
- Has read somewhere that the gases in the inhalers she's on are harming the planet.
- Bad as eating meat or driving from London to Sheffield.

Risks to the environment vs risks to patients

Inhalers



18 year old Sophia

- What advice would you give Sophia?
- What can she do to improve:

1) Inhaler technique
2) Environmental impact of inhalers
3) Wider greener respiratory healthcare

What can you do to help?

Good asthma control = good for you = good for the environment

1. **Using your preventer inhaler regularly, with good technique, helps control your asthma. This means you will need less of the blue reliever/ emergency inhaler.**

   - Using more preventer and less blue reliever means less inhalers are used overall which is better for the
   - a spacer.
   - For children aged 10 years and older it may be possible to use a DPI.
   - Speak to your trained asthma nurse, pharmacist or GP to see if a DPI might suit you better and to know more about good inhaler techniuque. You can always change back if you choose to.

What else can I do?

2. Reduce waste and know when your inhaler is empty

You or your parent/carer can:

- Ask your asthma clinician if they can find an inhaler with a dose counter so you know when it's almost empty and needs to be reordered. Set up a repeat prescription for your preventer inhaler and only order inhalers when you need them.
- Check the expiry date of all your medicines regularly.
- Can check with the pharmacist that you are using

pharmacy

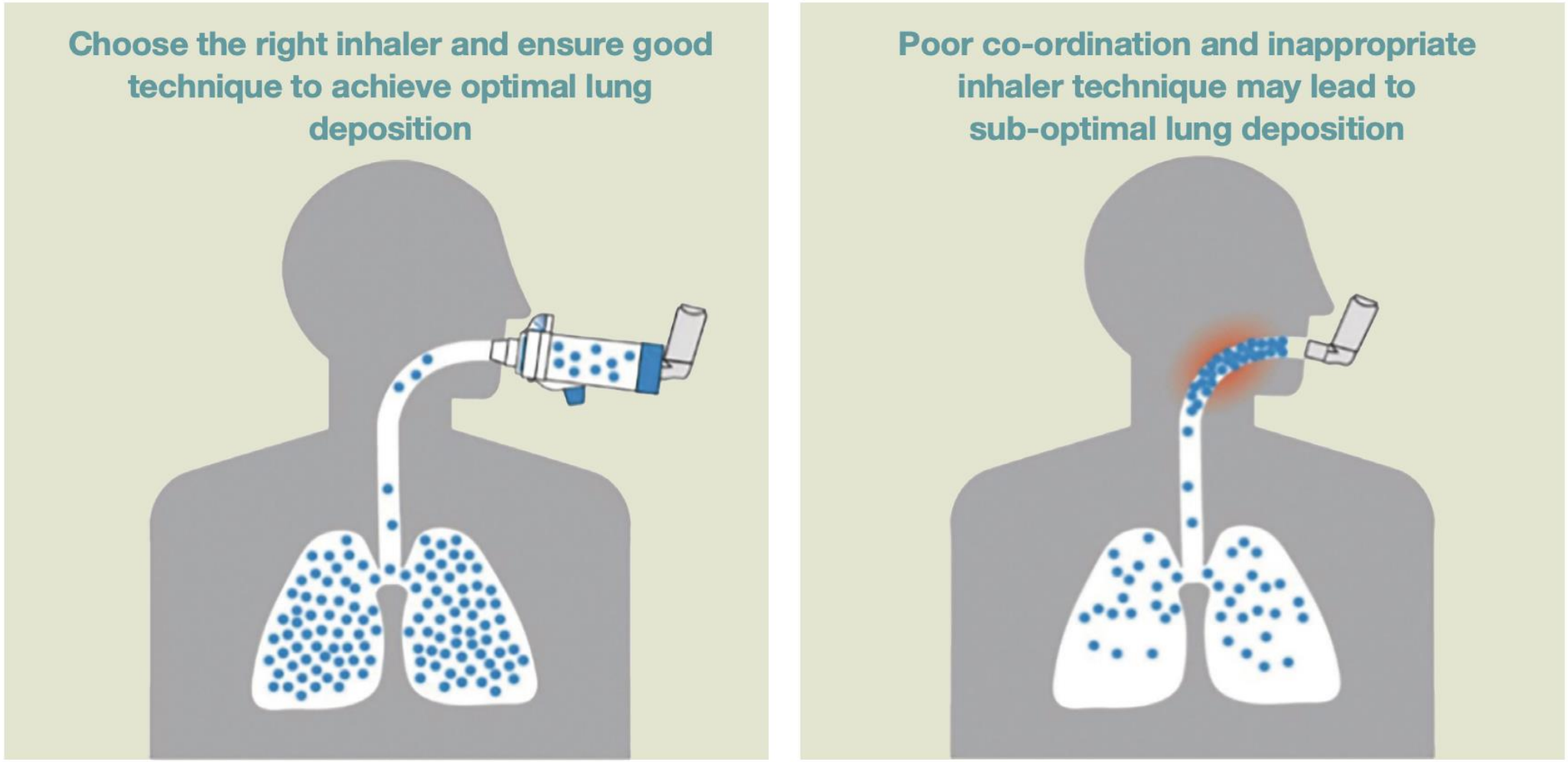
- ➢ Return all used and unused inhalers no longer in use to a pharmacy for safe disposal. It is important that inhalers are NOT put into domestic waste especially MDIs as propellants will be released into the environment (greenhouse gases).

Find more information by visiting:

https://www.recyclenow.com/what-to-do-with/inhalers-0

People shouldn't feel 'guilty' about being on an inhaler

Figure 2. The importance of appropriate inhaler technique [Image copyright Trudell Medical International].



https://www.pcrs-uk.org/sites/pcrs-uk.org/files/pcru/articles/2021-July-Issue-22-GHC_ChangingInhalersSharedDecisions.pdf

https://www.pharman.co.uk/uploads/mediacentre/JOMO_September_2020_V8.pdf
https://www.pcrs-uk.org/resource/asthma-guidelines-practice

Structured Medication Reviews

some holistic factors to think about

Asthma Medicines Management Safety Pyramid

By Darush Attar-Zadeh ©

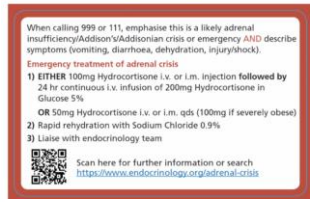
Safety endpoint in pyramid = GOLD

Blanket switching of inhalers not a good idea = safety issue

Priorities in medicines consultation

Communication Skills with Patient

Shared Decision Making with Patient



Cost Savings

Prescribing by Brand

Over prescribing of High Dose ICS = safety issue & £££

Over use of SABA (Underuse of ICS)

https://www.asthma.org.uk/advice/inhaler-videos/

Inhaler Technique (including spacer), Adherence, Device Suitability/Consistency (low carbon options)

https://www.rightbreathe.com

Guidlelines and Pathways,

Step Down Options, Environmental factors, Reducing Waste

Starting point in safety pyramid

Asthma Control = Improved Health & Savings

Consistency of Device for Safety

Maintaining patient at lowest possible ICS strength (monitor ICS Adherence & SABA usage)

Aim for at most **< 6** SABA a year (Good Asthma control = <3 SABA doses a week)

ICS/SABA Rate?

Assuming **diagnosis** is correct and a high probability of Asthma

ICS: Inhaled Corticosteroid
SABA: Short Acting β2 Agonist

Shared Decision Making – Active Thinking (put yourself in the persons shoes)

The greenest inhaler is one a patient can use and will use

No decision about me without me

Alex – keen athlete and footballer

Alex
(Fictional name)

Alex – 12 years noticed he’s not bringing spacer and mask into secondary school.

He isn't using a spacer with his pMDI even though he has a good tidal breathing technique.

ACT score <20

He has the ability to inhale quick and deep over 2-3 seconds after assessing him with a Turbohaler whistle (in-check dial wasn’t available in surgery you’re working in)

He is currently using Clenil modulate 100mcg pMDI 2 puffs bd, Ventolin 2 puffs qds prn, Aerochamber plus flo-vu & mask (last prescribed 2 years ago)

2 anti-inflammatory (preventer) inhalers picked up and 8 emergency inhalers picked up

1 course of oral steroids in the last 12 months

Co-morbidities – allergic rhinitis, dust mite allergy, eczema

Some discussion points – what matters to Alex?

Living well with asthma discussion

- What can Alex, with support of parents, do to get on top of his asthma?

Inhaler technique discussion (Possibly intranasal technique)

- What would you want to explore further? What crosses your mind?
- With regards to inhaler technique – talk me through 7 steps (what to watch out for)
- What can we do to best support Alex? (Note if DPI considered is it easy to do after years of tidal breathing technique?)

Wider greener respiratory health discussion

- What can be discussed? What do we mean by greener respiratory health?
- 2nd hand smoke exposure, SABA over-reliance, ICS underuse, housing, heating, nutrition, staying active
- MDT approach, who can support? National Capability Framework (maintaining standards)

Summary

- Device coaching over multiple sessions
- promoting self-care and opportunities to ask questions
- Information retention
- Appreciating that behaviour change is not easy
- Using the MDT including community pharmacy to reinforce messaging
- Not using RightBreathe or A+LUK videos to replace Face to Face/Video coaching

Opportunities:

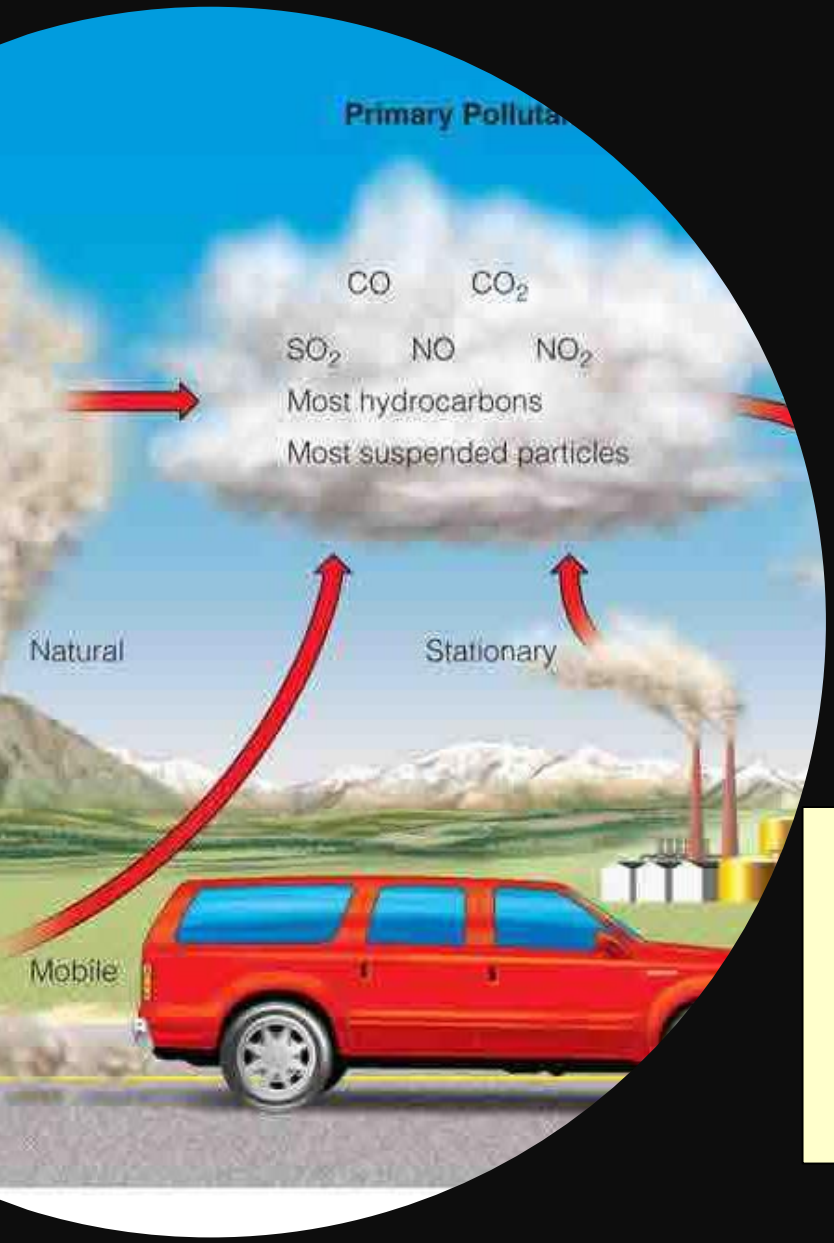
- Finding a better device that suits and is lower carbon alternative
- Standardising device type
- Reducing number of inhalers e.g. MART in asthma

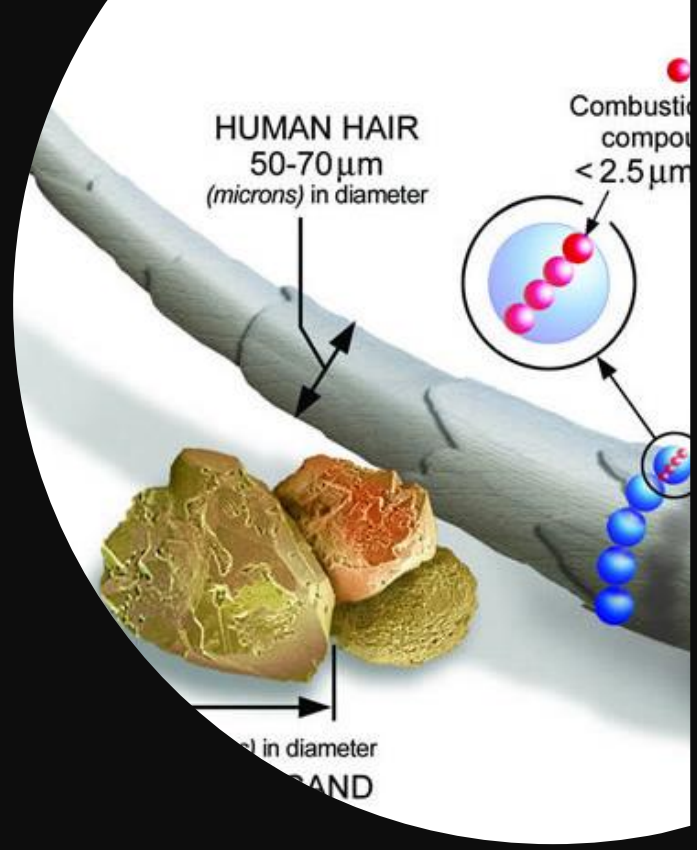
Asthma and the green agenda – More than just inhalers - thinking more holistically

Darush Attar-Zadeh Independent Prescriber
Respiratory Pharmacist NWL Children & Young People Asthma Network
www.RightBreathe.com

Contact details and charity fundraising link

EllaRoberta.org
@EllaRobertaFDN
linktr.ee/EllaRobertaFdn





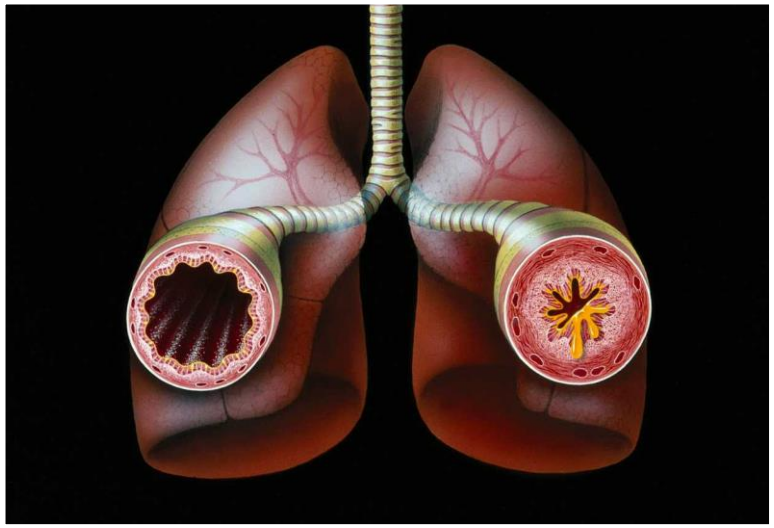
#AskAboutAsthma conference 2022

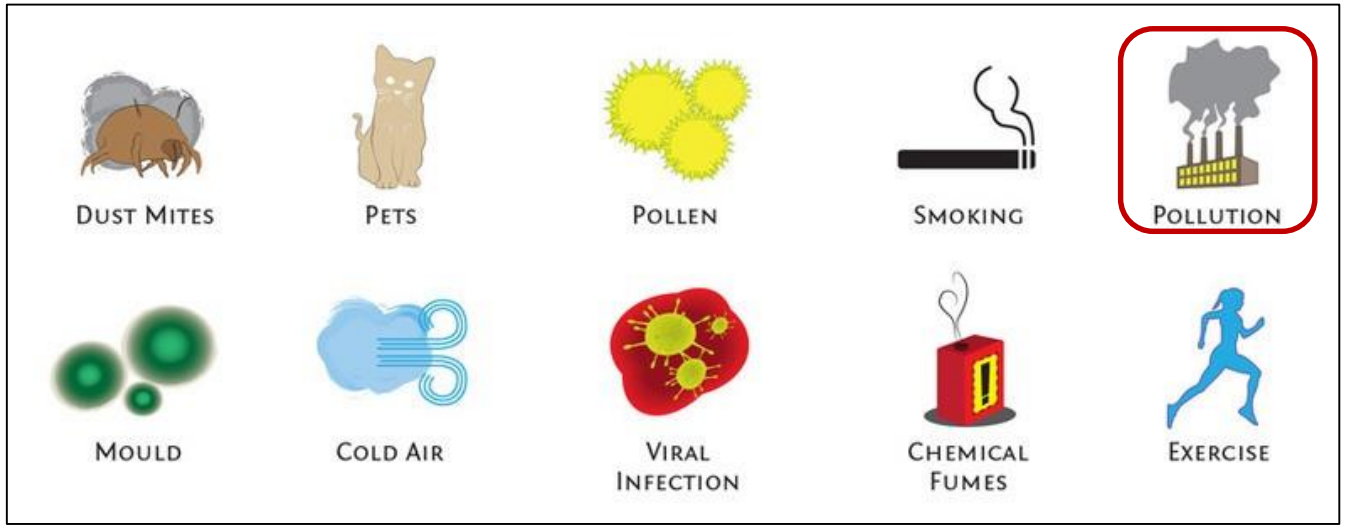
What do healthcare professionals need to know about air pollution to care for their young asthma patients?

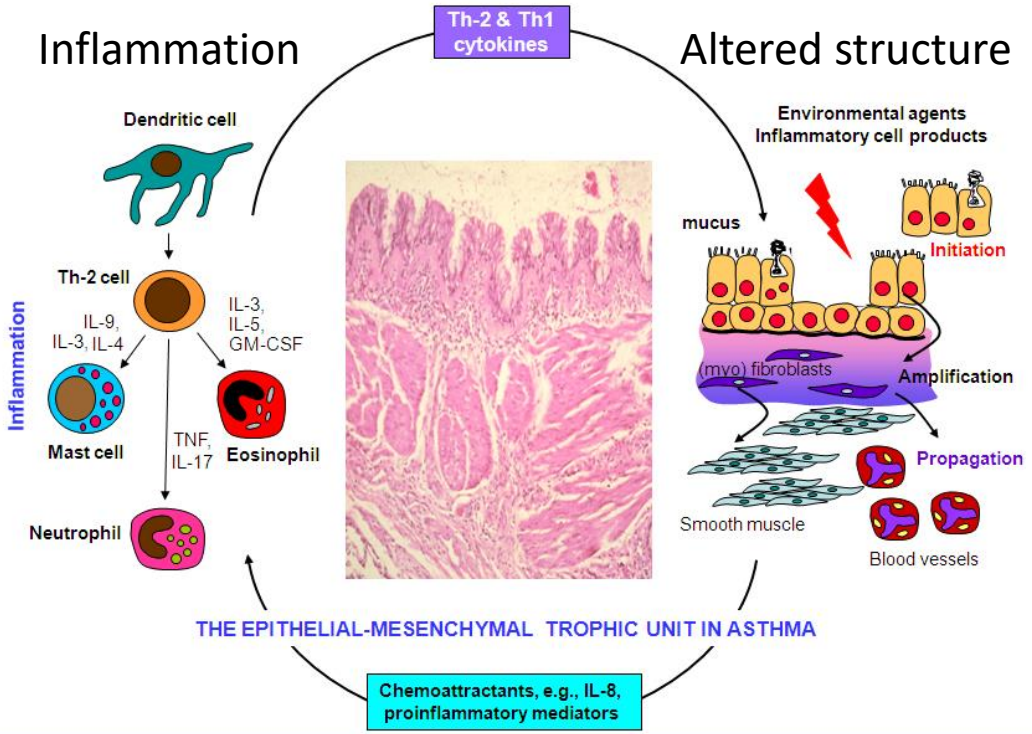
Why Ella Adoo Kissi-Debrah's new inquest was so important

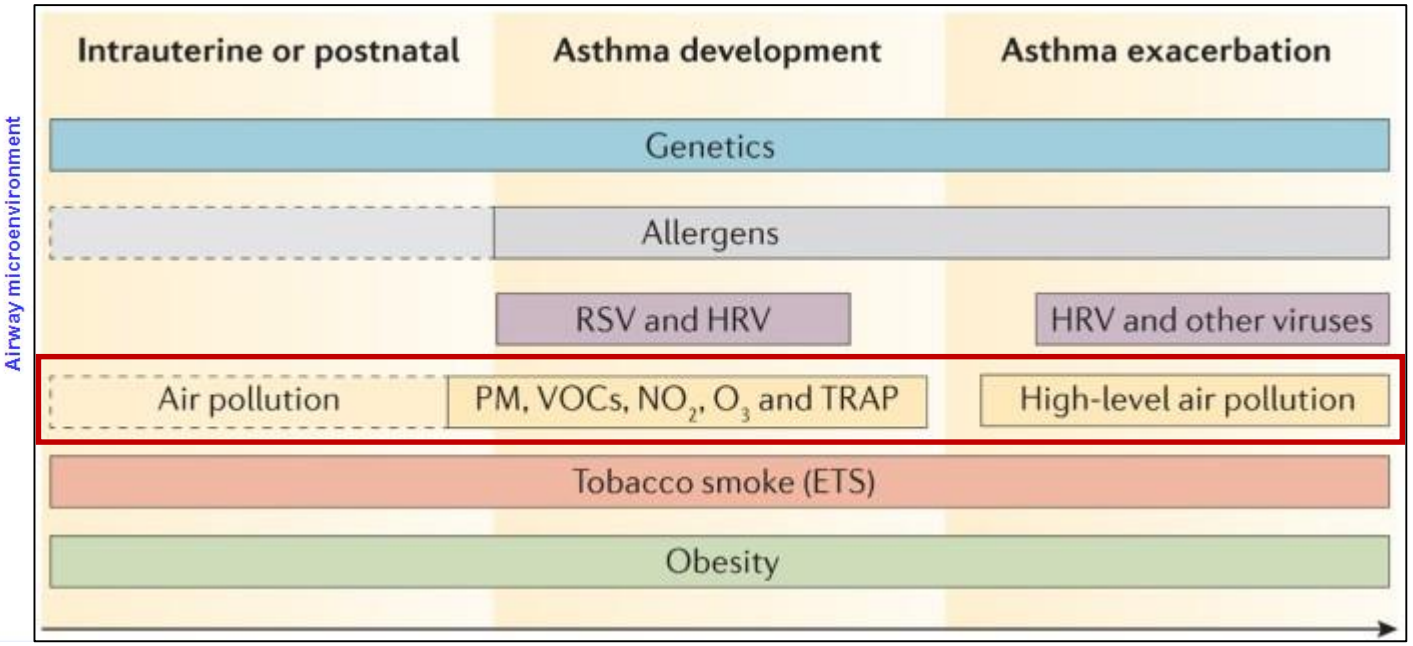
Prof Sir Stephen T Holgate, UKRI Clean Air Champion & Special Advisor to the RCP on Air Quality, Faculty of Medicine, University of Southampton

Asthma Mechanisms









Office for National Statistics

Deaths registered in England and Wales: 2018

8 million people in the UK – over 12% of the population – have been diagnosed with asthma

The UK has one of the worst asthma death rates in Europe, with the rate of people dying from an asthma attack increasing by more than 20% in five years

The data show that more than 1,400 people died from an asthma attack in 2018, an 8% increase compared with 2017

More than 12,700 people died from asthma in England and Wales in the past decade.

Some recent studies showing the importance of air pollution in the origins, progression and deaths from asthma

- Short-Term Exposure to Ambient Air Pollution and Asthma Mortality. Liu Y et al. Am J Respir Crit Care Med. 2019; 200: 24-32.

- Association of Changes in Air Quality With Incident Asthma in Children in California. 1993-2014. Garcia E et al. JAMA. 2019; 321: 1906-15.

- Global, national, and urban burdens of paediatric asthma incidence attributable to ambient NO_2 pollution: estimates from global datasets. Achakulwisut P et al. Lancet Planet Health. 2019; 3: e166-e178.

- Air pollution and family related determinants of asthma onset and persistent wheezing in children: nationwide case-control study. Holst G J et al. BMJ 2020; 370 : m2791.

- Interaction effect of prenatal and postnatal exposure to ambient air pollution and temperature on childhood asthma. Lu C, et al. Environ Int. 2022; 167: 107456.

Long-term exposure to low-level air pollution and incidence of asthma: the ELAPSE project

Shuo Liu S et al. Eur Respir J. 2021 57: 2003099

- Associations of long-term exposures to $PM_{2.5}$, NO_2 and BC with asthma incidence in adults. Pooled data from three cohorts in Denmark and Sweden with information on asthma hospital diagnoses. Air pollutants in 2010 modelled by hybrid land-use regression

Long-term exposure to air pollution, especially from fossil fuel combustion sources such as motorised traffic, was associated with adult-onset asthma, even at levels below the current limit values.

- **Hazard ratios were larger in cohort subsets with exposure levels below the European Union and US limit values and WHO guideline values for $PM_{2.5}$ and NO_2 with no evidence of a threshold.**

Recommended WHO 2021 AQG levels compared to 2005 air quality guidelines
September 22nd 2021

World Health Organization

Pollutant	Averaging time	2005 AQGs	2021 AQGs
$PM_{2.5}$, µg/m³	Annual	EU 25 10	5
	24-hour[a]	25	15
PM10, µg/m³	Annual	20	15
	24-hour[a]	50	45
O_3, µg/m³	Peak season[b]	-	60
	8-hour[a]	100	100
NO_2, µg/m³	Annual	EU 40 40	10
	24-hour[a]	-	25
SO_2, µg/m³	24-hour[a]	20	40
CO, mg/m³	24-hour[a]	-	4

First death linked to air pollution as government asthma advisor finds 'striking association' with girl's fatality
BBC: 3rd JULY 2018 9:12PM

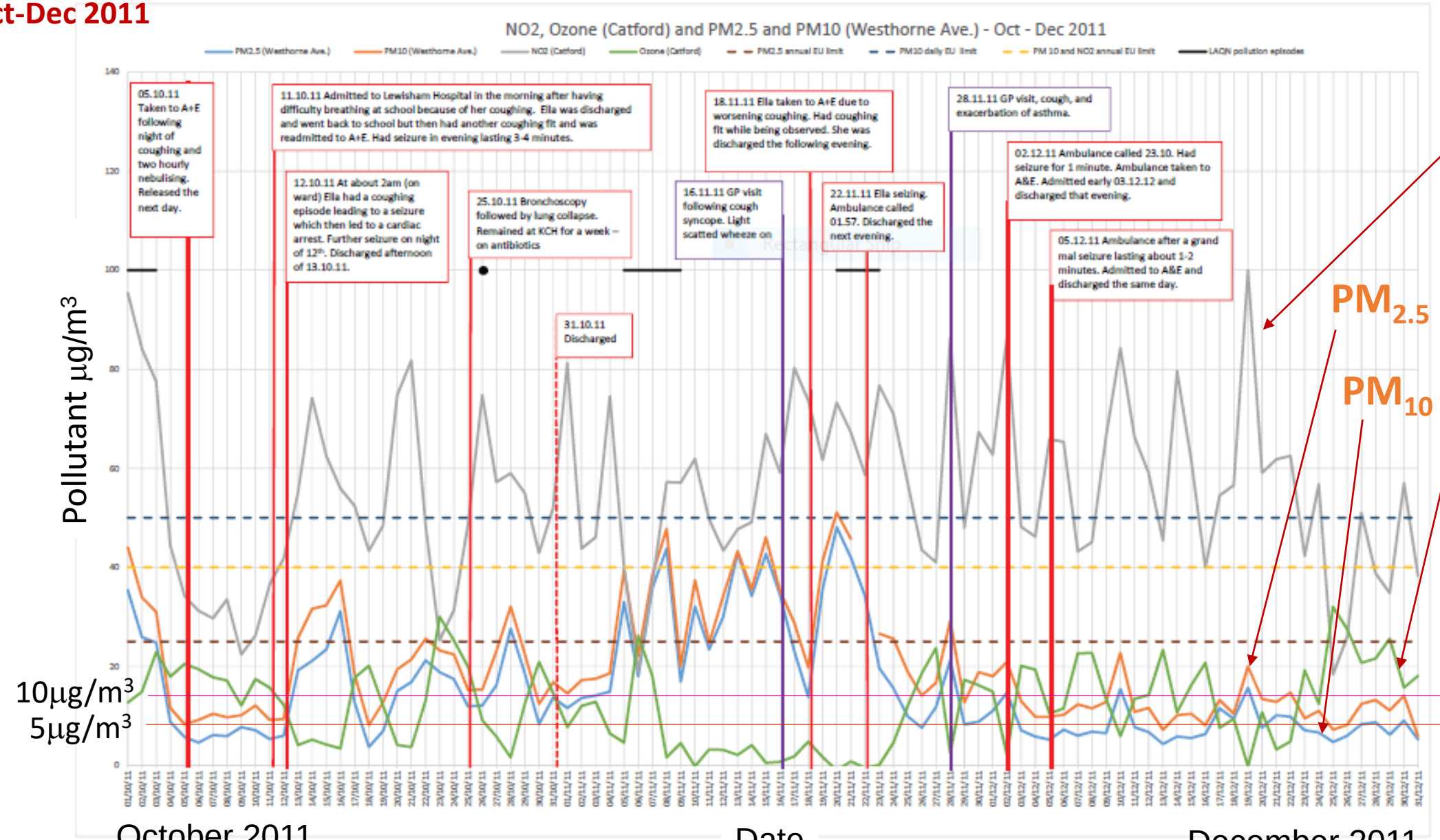
- A nine year-old girl's fatal asthma attack is the first death to be linked directly to air pollution. A government health advisor said there was a "striking association" between the times young Ella Adoo Kissi-Debrah was admitted to hospital in an emergency, and **spikes of nitrogen dioxide and PM_{10}**, the most noxious pollutants, near her home.

New Inquest presided over by Philip Barlow, Assistant Coroner for Inner South London, lasting almost 2 weeks, took place at Southwark Coroners Court on Dec 4th 2020. Ravi Mehta acted on behalf of the Family at the Inquest, led by Richard Hermer QC, instructed by Hodge Jones & Allen (Jocelyn Cockburn, a human rights lawyer)

overturned, citing a report by asthma and air pollution expert Prof Stephen Holgate. New Inquest accepted by Attorney General and High Court.

Ella's Hospital Episodes in Relation to Local Air Pollutant Levels Close to Her Home

Oct-Dec 2011



NO_2

Ozone

$PM_{2.5}$

PM_{10}

PM_{10} EU daily

NO_2 EU annual

PM_{10} EU annual

$PM_{2.5}$ EU annual

10µg/m³

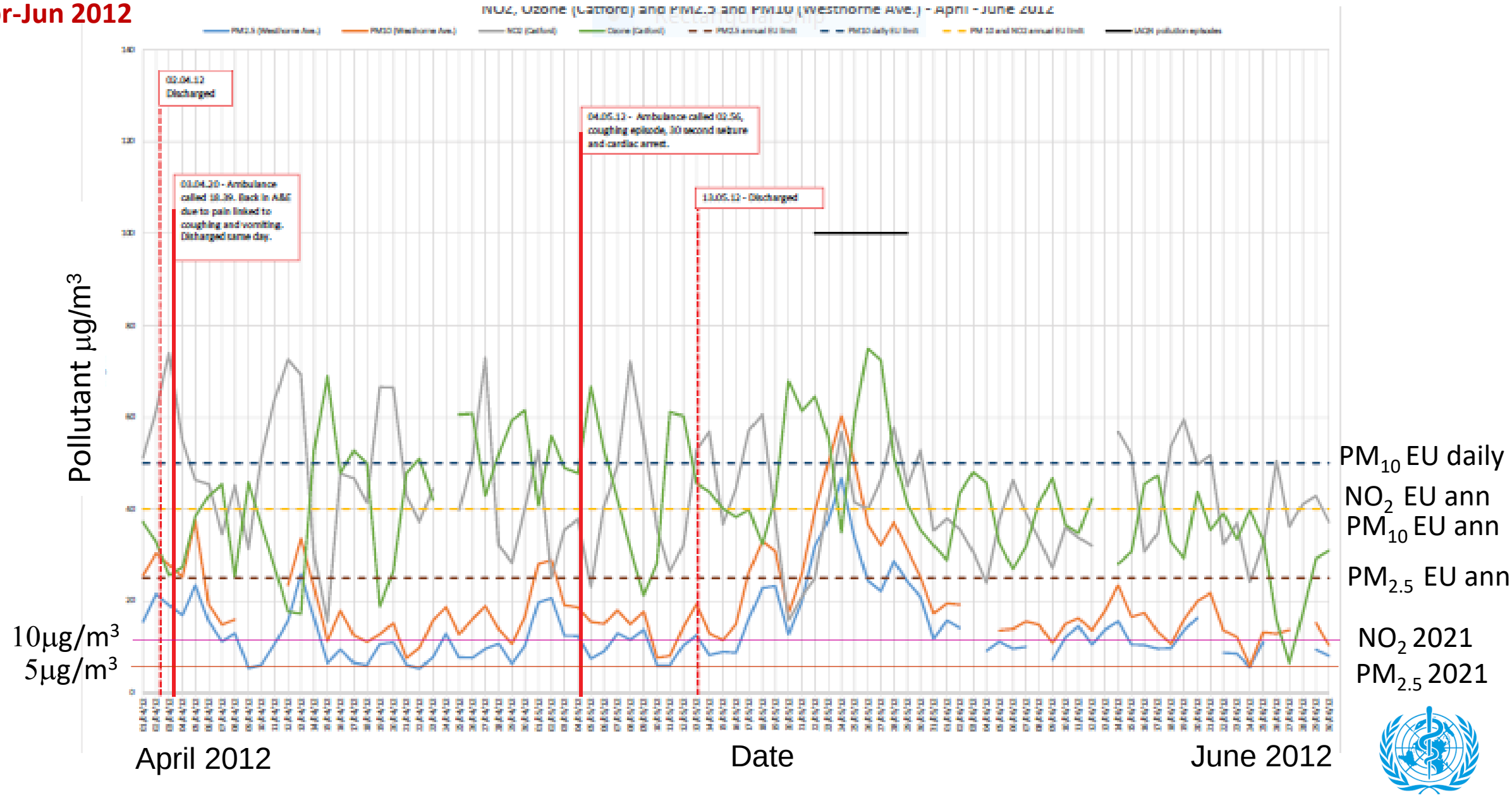
5µg/m³

NO_2 **2021**

$PM_{2.5}$ **2021**

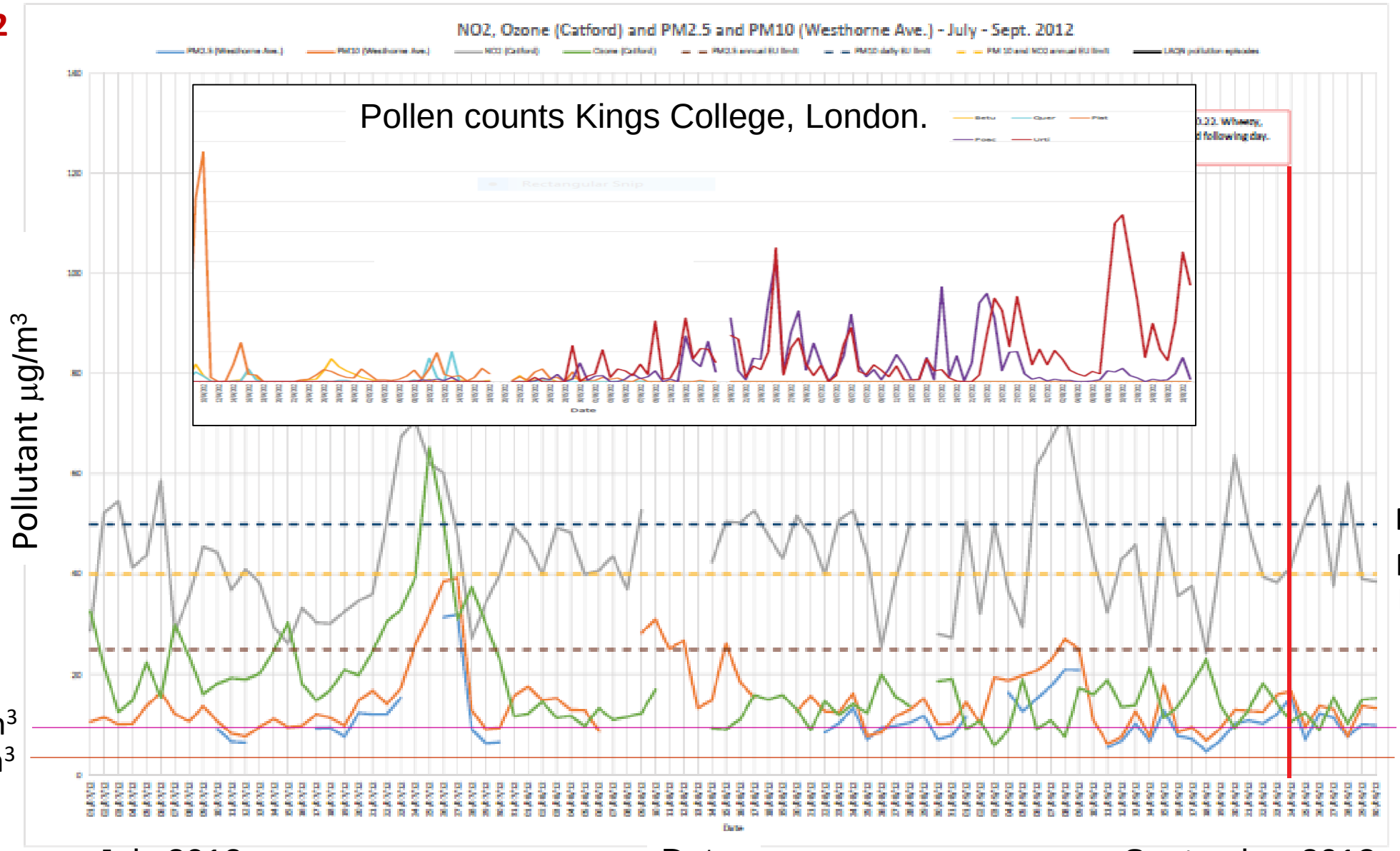
Ella's Hospital Episodes in Relation to Local Air Pollutant Levels Close to Her Home

Apr-Jun 2012



Ella's Hospital Episodes in Relation to Local Air Pollutant Levels Close to Her Home

Jul-Sept 2012

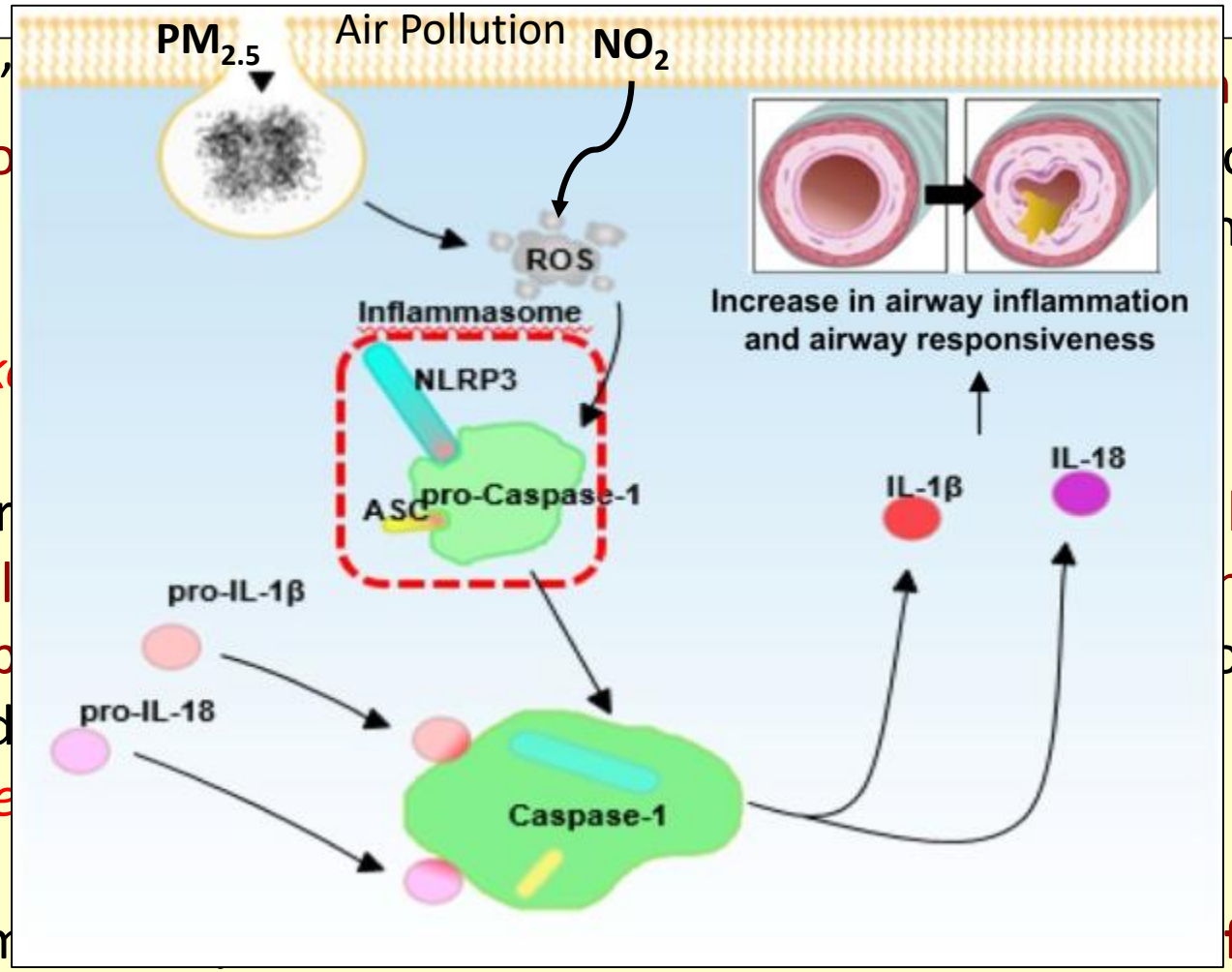


Excluding allergy and infection as causes of Ella's asthma exacerbations

1) The majority of Ella' …d winter months. This seasonality did no… …o which she was sensitised to i.e. grass … …nsitised to HDM, cat or fungal allergens.
Therefore, highly unlik…

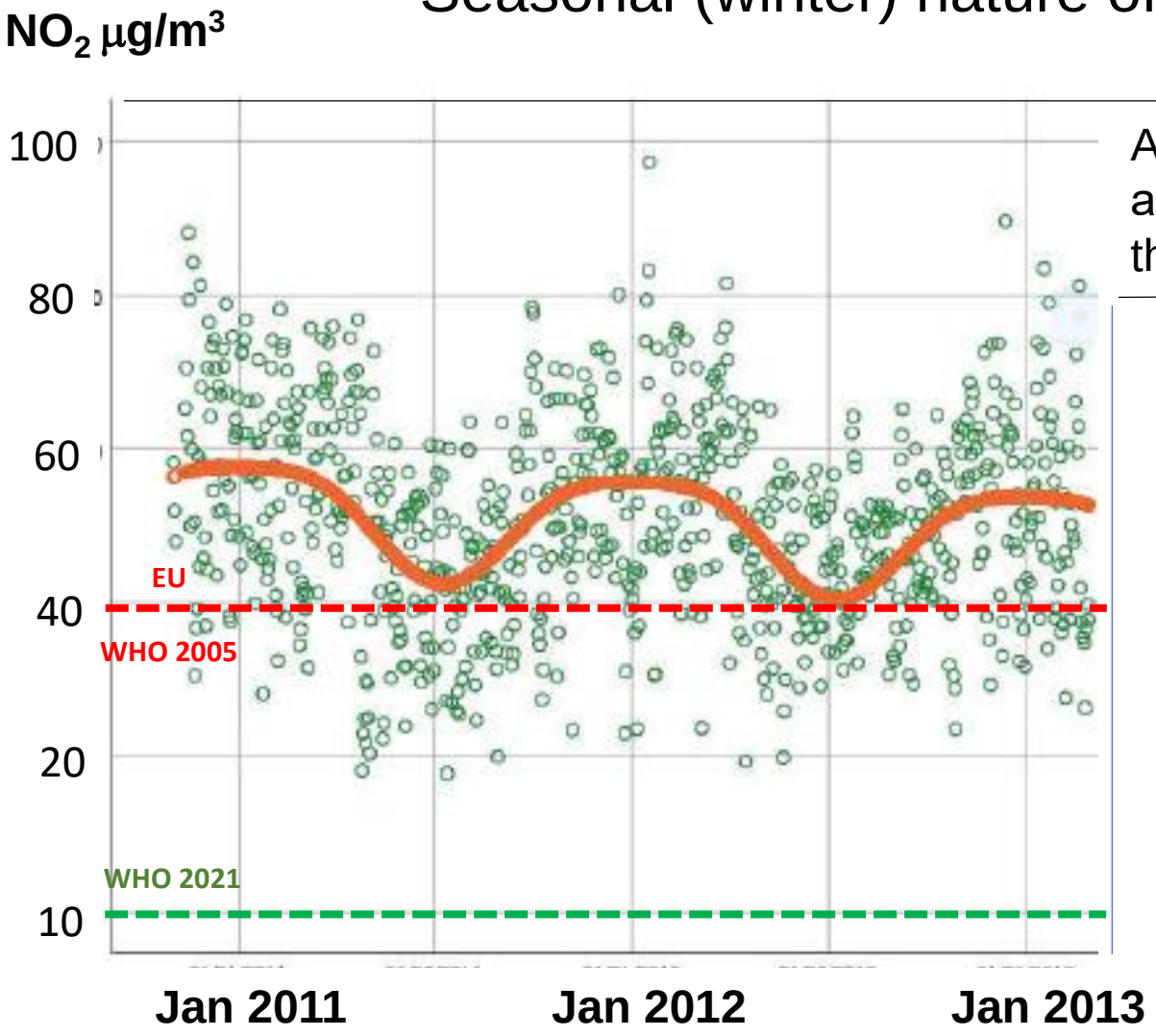
2) Ella's asthma exacer… …lating numbers of neutrophil… …ndicating extensive **lung inflammation**. Ab… …odies), pathogenic bacteria and **fungi** and…
Therefore highly unlike…

3) This inflammation m… …**flammasome pathway**, an **intracellular sensor that detects endogenous danger signals** as a consequence of severe irritation of her airways.



- Ren F, et al. PM2.5-induced lung injury through upregulating ROS-dependent NLRP3 Inflammasome-Mediated Pyroptosis. Immunobiology. 2022; 227: 152207.
- Martin RA, et al. Interleukin-1 receptor and caspase-1 are required for the Th17 response in nitrogen dioxide-promoted allergic airway disease. Am J Respir Cell Mol Biol. 2013; 48: 655-64.

NO_2 concentrations close to Ella's home over the 30 months of her illness and Seasonal (winter) nature of the clusters of acute episodes



Atmospheric ground level NO_2 measurements as recorded at Catford air monitoring site 1 mile from Ella's home over the 3 years of her illness.

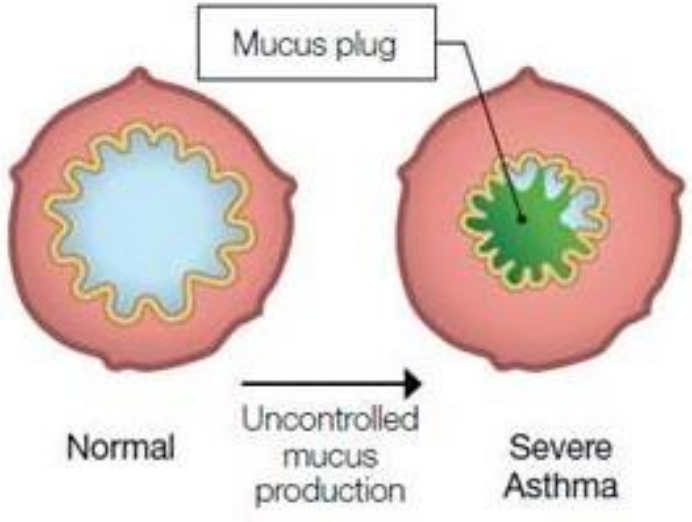
Hospital and GP Severe Events

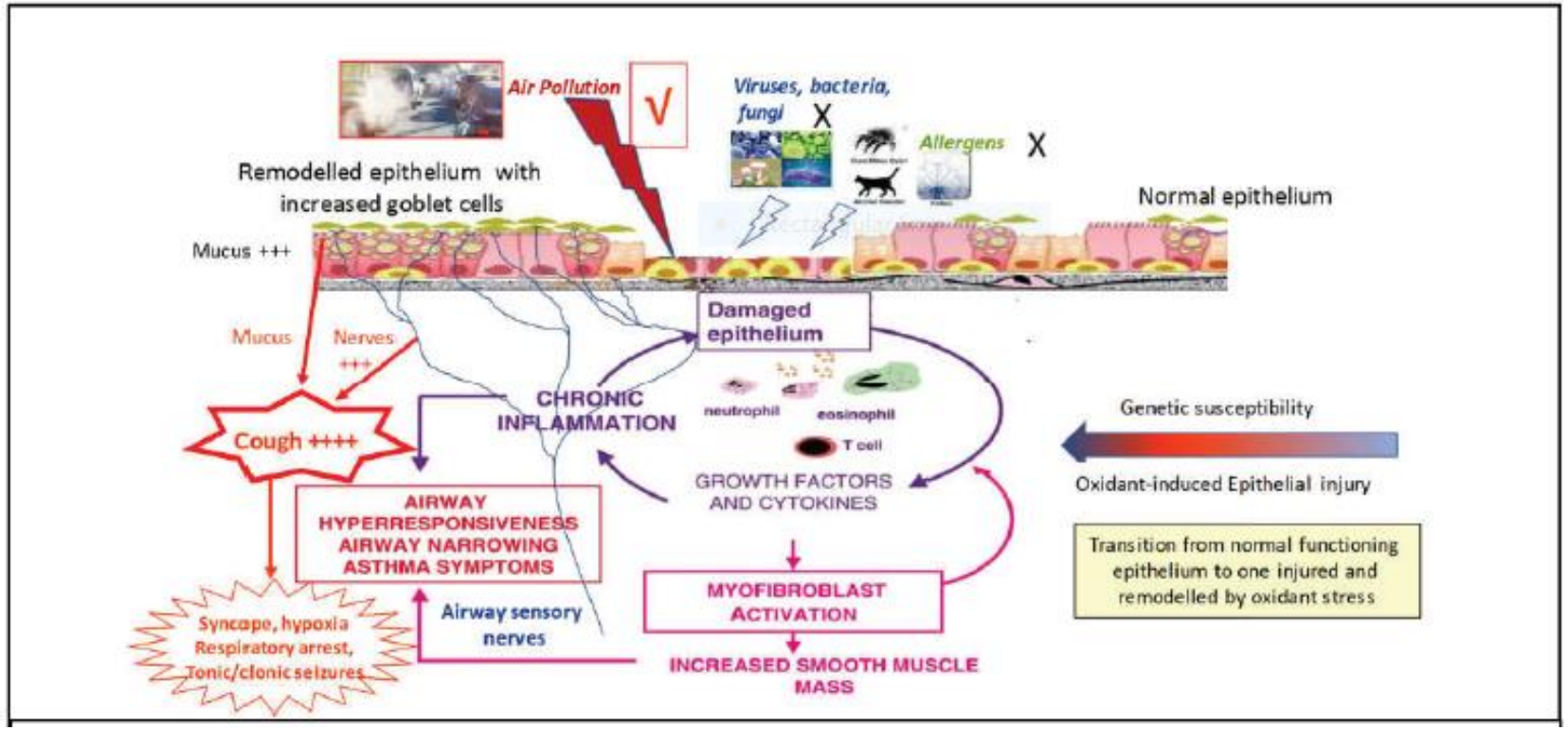
Season	GP Visits	Hospital visits to A&E, but not admitted	Hospital admissions	Total
Winter: 1 Dec-28 Feb	6	2	12	20
Autumn: 1 Sept-30 Nov	2	1	10	13
Spring: 1 March-31 May	2		6	8
Summer: 1 June-31 August	1		2	3
Total	11		23	44

Pathophysiology of Ella's Asthma

The pattern of Ella's disease and its clinical manifestations were dominated by excess mucus production and accompanying intractable cough rather than "bronchospasm".

Airway epithelial damage, sensory nerve exposure, mucus metaplasia and submucous gland hyperplasia dominated her disease and provides the underlying hypersecretory mechanisms for her intractable productive cough, cough syncope and hypoxic seizures.





First death linked to air pollution Ella Kissi-Debrah: how a mother's fight for justice may help prevent other air pollution deaths

- 2nd Inquest - South Thames Assistant Coroner Philip Barlow, Dec 16th 2020:
- The first matter that I think it important to include is that, **on the balance of probabilities, air pollution made a material contribution to Ella's death.**
- The second matter is that she was exposed to levels of NO_2 and PM in excess of WHO guidelines. **The level of air pollution she was exposed to was, therefore, excessive.**
- In my discretion, I think it important also to record that **there was a recognised failure to reduce the level of NO_2 which possibly, contributed to her death; and also the lack of information given to Ella's mother which, possibly, contributed to her death.**
- The reason for exercising my discretion to include those matters is as follows: **1) The overwhelming public interest in this case, 2) The complexities of the issues, 3) The implications for other people and other cases.**

Record of Inquest

Following an Inquest opened on the 17 December 2019, And an inquest hearing at Main on the 30 November 2020 heard before Philip Barlow in the coroner's area for London Inner South ,

The following is the record of the inquest (including the statutory determination and, where required, findings).

1. Name of Deceased (if known)

Ella Roberta ADOO KISSI-DEBRAH

2. Medical cause of death

1a Acute Respiratory Failure

1b Severe Asthma

1c Air Pollution exposure

This is the first time air pollution has appeared as a cause of death on the death certificate. After delivering his ruling the coroner turned to her mother sitting in the court and thanked her. Philip Barlow said: “We all have many reasons to thank you for the determination you have shown in getting us here.”

THE SUNDAY TIMES *magazine*
JUNE 13 2021

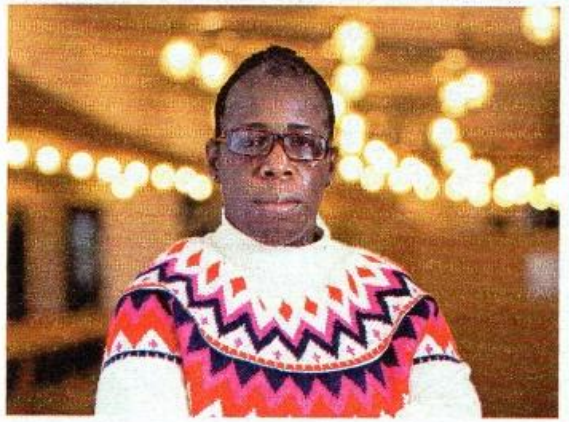
THE GREEN POWER LIST

The Sunday Times science editor *Ben Spencer* introduces the influential British minds engaging with the world's biggest problem: how to avert environmental catastrophe

"The aim is to make sure no child goes through what Ella went through"

Rosamund Adoo-Kissi-Debrah
Clean air campaigner

In December the coroner Phillip Barlow found that the death in 2013 of nine-year-old Ella Adoo-Kissi-Debrah was contributed to by her exposure to "excessive air pollution". The verdict — the first time air pollution had been listed as a cause of death in the UK — was the result of a long campaign by her mother, Rosamund. Ella (above right) lived 25 metres from South Circular Road in Lewisham, southeast London, where air pollution levels regularly exceeded the annual legal limit. Rosamund (below right), who set up the Ella Roberta Family Foundation after her daughter's death, says: "The first aim was to find out how Ella died. But it was also to make sure no child goes through what she went through." In April the coroner published a report calling for national pollution limits to be reduced in light of Ella's death.



Touching on the Death of Ella Kissi-Debrah - REGULATION 28: REPORT TO PREVENT FUTURE DEATHS April 21st 2021 The Assistant Coroner Philip Barlow

Air pollution: Coroner calls for law change after Ella Adoo-Kissi-Debrah's death: Prevention of Future Deaths Report

There was no dispute at the inquest that atmospheric air pollution is the cause of many thousand premature deaths every year in the UK. Delay in reducing the levels of atmospheric air pollution is the cause of avoidable deaths.

1. **Legally binding targets based on WHO guidelines** would reduce the number of deaths from air pollution in the UK (i.e. Reduce the limit value for $PM_{2.5}$ from 25 to 10 $\mu g/m^3$).
2. There is a low public awareness of the sources of information (such as UK-Air website) about national and local pollution levels. **Greater awareness would help individuals reduce their personal exposure to air pollution**. It was clear from the evidence at the inquest that publicising this information is an issue that needs to be addressed by national as well as local government.
3. The **adverse effects of air pollution on health are not being sufficiently communicated to patients and their carers by medical and nursing professionals**. The evidence at the inquest was that this needs to be addressed at three levels: Undergraduate. Postgraduate and Professional guidance.

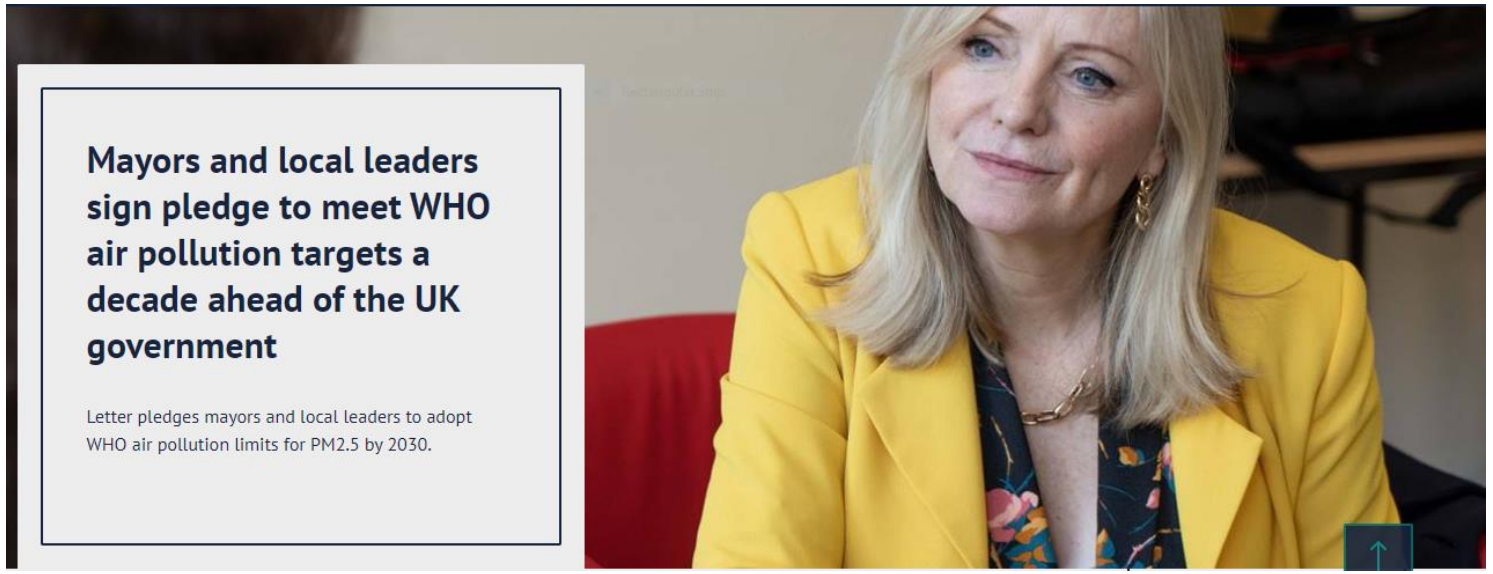
Mayor convenes Government & health leaders for Clean Air Summit RCP

17 February 2022

- Professor Sir Chris Whitty, Minister Jo Churchill and Rosamund Adoo Kissi-Debrah

1) **This problem is solvable**
2) **We can learn from the pandemic** - Air pollution is a social justice issue. Whereas poor air quality has devastating effects on everyone's health, it doesn't affect people equally. It's often those who contribute the least to the problem who are most affected by it.
3) **The health sector can't be solely responsible for improving air quality, but it can role model for others.**

and impact on residents' health.



Cross-party mayors and local leaders from across the UK have sent a joint letter to the Government pledging to meet World Health Organisation (WHO) targets on deadly air pollution by 2030, a decade ahead of the UK's current 2040 deadline.

The letter also urges ministers to:

- Bring forward the UK's $PM_{2.5}$ target to 2030 in line with the WHO's interim guideline and provide local leaders with the powers and funding to meet this target.
- Put in place a longer term target to meet the WHO's updated guideline for $PM_{2.5}$ — half of the interim limit.
- Establish a national public awareness campaign around the health impacts of air pollution and its causes, including domestic wood burning.

With strong evidence revealing that air pollution can damage every organ in the body including the lungs by stunting their growth, putting children at risk of developing asthma and causing existing lung conditions to worsen, **Asthma + Lung UK are exposing the 'national shame' of toxic air.**

- 2 in 5 babies are born every year in areas with toxic air: Nearly a third (29%) of hospitals in England are located in polluted areas (above the 2005 WHO guideline).

- Air pollution is higher in areas with high levels of deprivation.

- Those on the lowest incomes are burdened the most by the health impacts of air pollution.

People will change their behaviour only if they see the new behaviour as easy, rewarding, empowering and normal

Improving transition pathways & reducing health inequalities in transition clinics

Louise Porter, National Lead Nurse

Burdett National Transition Nursing Network

October 2022

NHS The Leeds Teaching Hospitals NHS Trust

NHS Alder Hey Children's NHS Foundation Trust

NHS University Hospitals Birmingham NHS Foundation Trust

NHS Imperial College Healthcare NHS Trust

NHS Somerset NHS Foundation Trust

Burdett Trust for Nursing

TAG

University of Surrey

Health inequalities

What are health inequalities?

‘Health inequalities are avoidable, unfair and systematic differences in health between different groups of people’.

(Kings Fund)

https://www.kingsfund.org.uk/publications/what-are-health-inequalities

Burdett Trust for Nursing

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Understanding transition pathways

More than an age range

- Covers children’s, young people's & adult services
- Three stages of transition
    1. Preparation
    2. Transfer
    3. Support
- Requires full MDT engagement and delivery

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UNIVERSITY OF SURREY

What are transition clinics?

- Set up to help prepare young people for adult services and to provide support in the adult service when transferred
- Transition programme delivered such as ‘ Ready Steady Go’
- Use a holistic assessment tool such as ‘Headsss’
- Children’s and adult services work together (joint clinic appointments)

Questions

- Joint clinics - one off or over time?
- Do you really need specific transition clinics to deliver good transition?

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Health inequalities and transition

- Social group matters
- Finance – access to clinic and services, paying for short breaks and added extras, better standard of living
- Peer group support – can parents drive, own a car to take them, pay for taxis or bus
- Explaining treatment, care or operations – higher social groups could question more
- LTC create vulnerabilities more likely to be bullied
- YP susceptible to being drawn into risk taking behaviours, poor life choices, lifestyle, violent crime

Barriers to getting it right

- Difference in care provision ‘childrens v’s adults’
- Difference between services ‘rich v’s poor’
- Difference in location ‘post code lottery’
- Difference in transition delivery primary, secondary, tertiary care
- Different understandings of transition (e.g. MH, acute, GP, and with professionals)
- Transition v’s Transfer – confusion over terms
- Transition clinic v’s Joint clinic

Key to reducing health inequalities in transition

- Deliver ‘Person Centred’ care – put the Young person at the centre

  Not one size fits all
- Really good communication with all involved
- Listen to young people and understand
  - What is important to them
  - Who influences them
  - Their circumstances including challenges and barriers (not just to healthcare)
  - Their aspirations, goals and hopes for the future
  - Education / career, housing, finances, social life
  - Understanding / knowledge of condition, treatment and medications
- Don’t forget Parents they need transition as well!

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Case Study

Developing transition pathways in Leeds

Aims

1. Understand joint clinics in the context of transition
2. Understand how a joint clinic may work in your setting
3. Share lived experience of developing joint clinics
4. Highlight the barriers and challenges of joint clinics
5. Identify solutions to challenges and barriers

Burdett Trust for Nursing

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What is a joint clinic

- Usually used to share professional opinions
- In transition they are used to meet the new team and handover care
- Many different models in practice
  - One appointment
  - Series of appointments
  - Held in childrens
  - Held in adults

There is no right or wrong it is about what works for your service and patient group

Burdett Trust for Nursing

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One appointment

Meet the new Consultant, Nurse or AHP

- See all professionals together full MDT from both teams
    - Remember if full MDT YP may feel intimidated and may not speak
    - Have you already got a good relationship with the young person
    - Consider mode of consultation Face to Face or virtual
    - Location - is it in children's or adult clinic
- See all professionals separately
    - Where is it held children's or adults
    - Someone familiar may need to go in with them to meet the new professionals
    - Increases total appointment time

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Series of appointments

- Phased over time
- Helps with complex patients (condition/services)
- Helps with patient who have LD or autism
- Can be beneficial for family
- Helps where engagement is essential to safety (high risk patients)
- Ensure YP is engaged and familiar with new service before handover
- Promotes collaborative working and continuity

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Transition events

Why have transition events?

<u>Patients and families</u>

- Peer support
- Provide education
- Gain feedback

<u>Organisation / services</u>

- Saves time (high volume teaching in groups)
- Assurance, equity & consistency
- Reduced cost (good engagement prevents DNAs)

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Different types of transition event

- Evening
- All day
- Weekend
- Your own service
- Multiple services
- Community events (conference style trade stalls) local offer

<u>Things to think about</u>

- Is it opt in or opt out?
- Have you asked your patients what they would want

ask FIRST

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What makes transition clinics work

- Think about your target audience
- What is the aim of the clinic?
- What is in it for them (patients) what will make them want to come?
- Has everyone one got a shared vision for transition and the clinic?
- Does everyone know their role and responsibility?
- The environment is not as important as you think (info & caring is)
- 3Rs **right** info by **right** person at **right** time
- Do you monitor patient & parent feedback / are you getting it right?

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The right environment

- Access to sit with peers
- Developmentally appropriate info available about holistic issues / care
- Sit in a way that encourages conversations (waiting area)
- Ensure consultation rooms are soundproof
- Ensure there is privacy for examination
- Space to see young person / parents alone
- Transition events should be easily accessible to all
- Space to give feedback in creative ways

Clinic examples

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Renal Team's Vision

- To build on the successful work carried out by other teams
- Provide an uninterrupted transition to adult services with on-going support
- Provide holistic support and sign posting
- Develop a gold standard service for transition also including those who are late diagnoses (Crash Landers)
- Provide training and education on the unique needs of young people (developmentally appropriate healthcare 11 to 25 years)
- Look to assess and start future work focusing on the care of young people with complex needs

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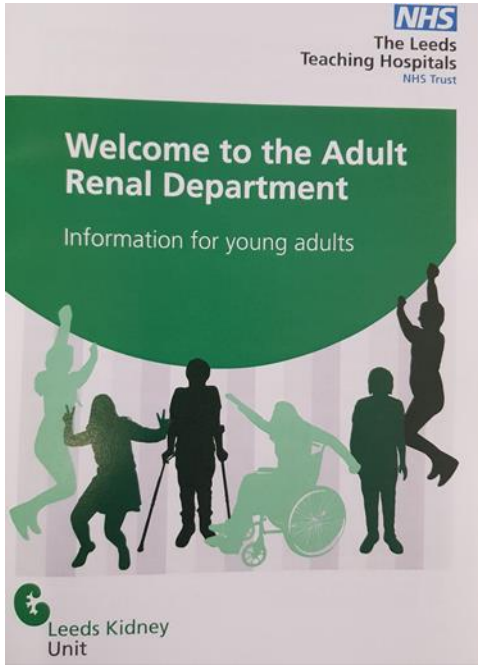

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St James's Renal Unit (Transition)

In this film we get an opportunity to look round the St Jame's Renal unit, in a Covid Era.

B for Nursing

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Joint transition clinics

Issues	Solutions
Lack of organisation and planning	MDT meeting prior and or post clinic Everyone has clear roles in clinic
Different clinical opinions voiced in the clinic room with the young person and parent	All professionals discuss and agree plan of care before seeing the young person
Appointment used for specialist opinion not transition (meeting needs of professional not patient)	Always use the appointment to meet the needs of the patient. Ask young people, involve them in clinic design
Thinking the children's clinic is better. Talking about adult clinics in a negative way	Not always true Be honest but emphasise the positives
Adult support is just as if not more important that children's preparation	Joint agreed pathways that are delivered in a collaborative way

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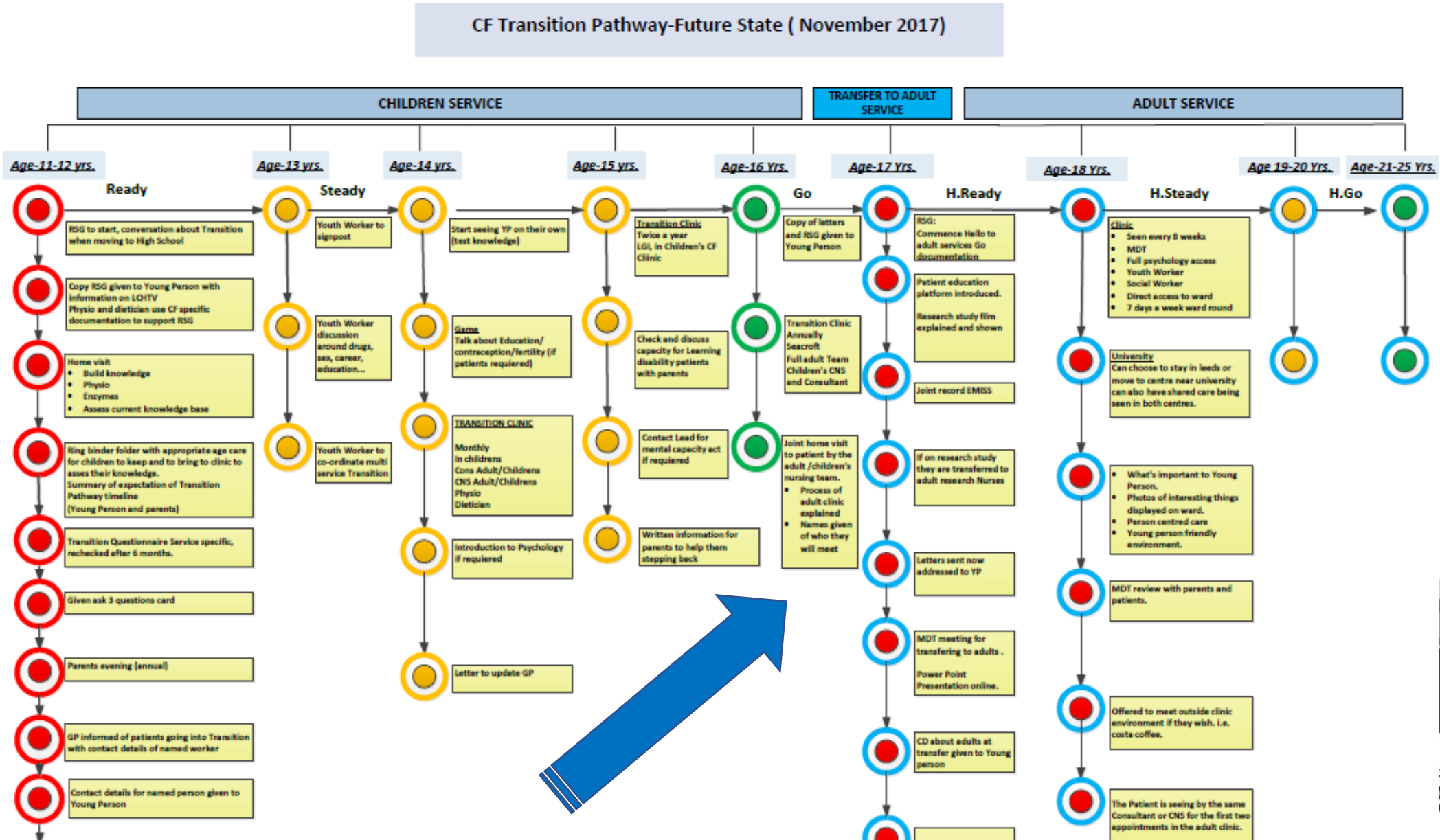
Build joint clinics into your transition pathways



Measuring success

- DNAs at clinic (you need to measure more than the first adult appointment)
- Patient experience are they getting the 3Rs
- Staff satisfaction
- Monitoring patients in transition (no one lost to follow up or in the gap)
- Documentation of transition
- Use of transition tools / processes
- Sharing information with others involved

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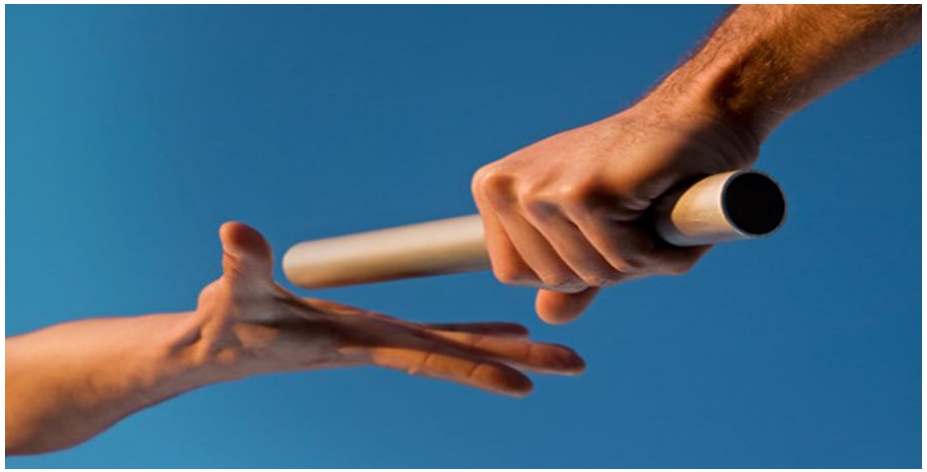
Young people are 1/5 of our population but 100% of our future

They are also 100% of our health burden to the NHS of the future



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Ensuring high quality of care for Young People as they move into adult services

Encouraging health equity through transition

AAA conference
CYP Transformation Team September 2022

The case for change

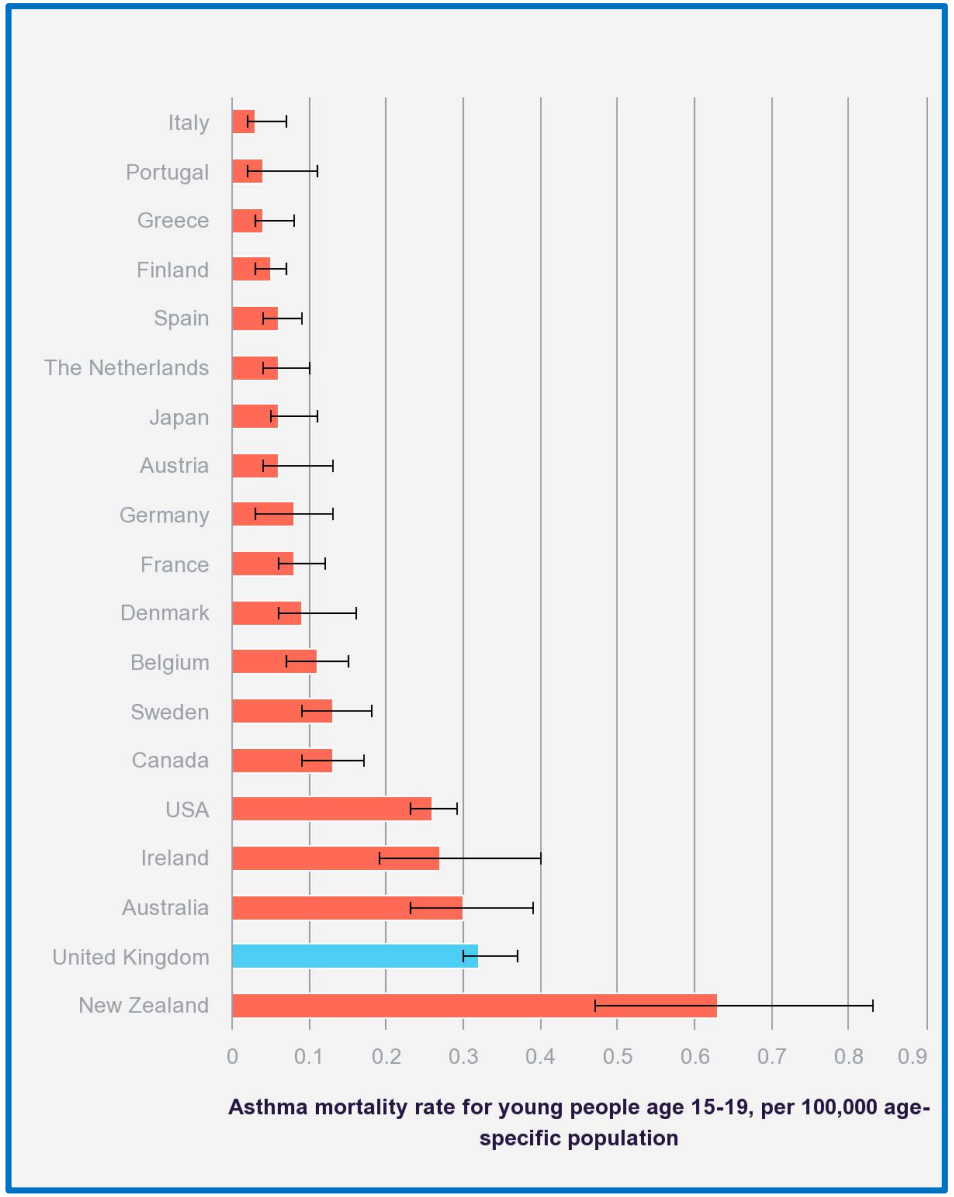
Transition as defined by NICE guidelines [NG43] describes *the purposeful and planned process of supporting young people to move from children's to adult's services.* The process should address the medical, psychosocial, educational and vocational needs of adolescents and young adults with chronic physical, neurodevelopmental and medical conditions as they move from child-centred to adult-oriented health-care systems.

- Young People (11-25 years) - Prevalence, morbidity and mortality are high among adolescents, with higher rates of exacerbation, hospitalisation and death than in younger children
- Young people with asthma are more likely to have special educational needs for mental health reasons, perform worse in exams and leave school earlier than those without an asthma diagnosis.
- Experience of transition is often poor and can lead young people to disengage and for their health to deteriorate
- Compared to their typically developing peers, adolescents, and emerging adults with special healthcare needs disproportionately experience healthcare transition disparities and poor access to adult care
- It is also challenging for healthcare professionals

- There is a vast gap between policy and real-life implementation due to:
    - Lack of skills and training
    - Capacity
    - Poor communication from staff and services
    - Confusion between who should be responsible for CYP during this process

Asthma in Young Adults

- Poor adherence to inhaled corticosteroids is a major factor in asthma outcomes for young adults
- Reported adherence to preventer inhalers ranges from 25% to 35%, and is associated with adverse outcomes, including death.
- Factors affecting adherence to preventer inhalers in adolescents include; questioning the asthma diagnosis, poor understanding of the nature of asthma, perceiving it as an intermittent rather than chronic condition, medications taken on an as-required basis rather than constantly and not prioritising asthma treatment in a busy schedule.



Working across NHSE/I to develop a 0-25 model of care

A commitment to improve transition

LTP

Moving to a ‘0-25 years’ service where appropriate to enhance CYP experience, continuity of care and their outcomes. A comprehensive offer for 0–25-year-olds that reaches across mental health and physical health services for children, young people and young adults.

Deliver an integrated approach across health, social care, education and the third sector.

Design and implement models of care that are person-centred, and holistic and are delivered closer to home, with transition to adult services based on need not age.

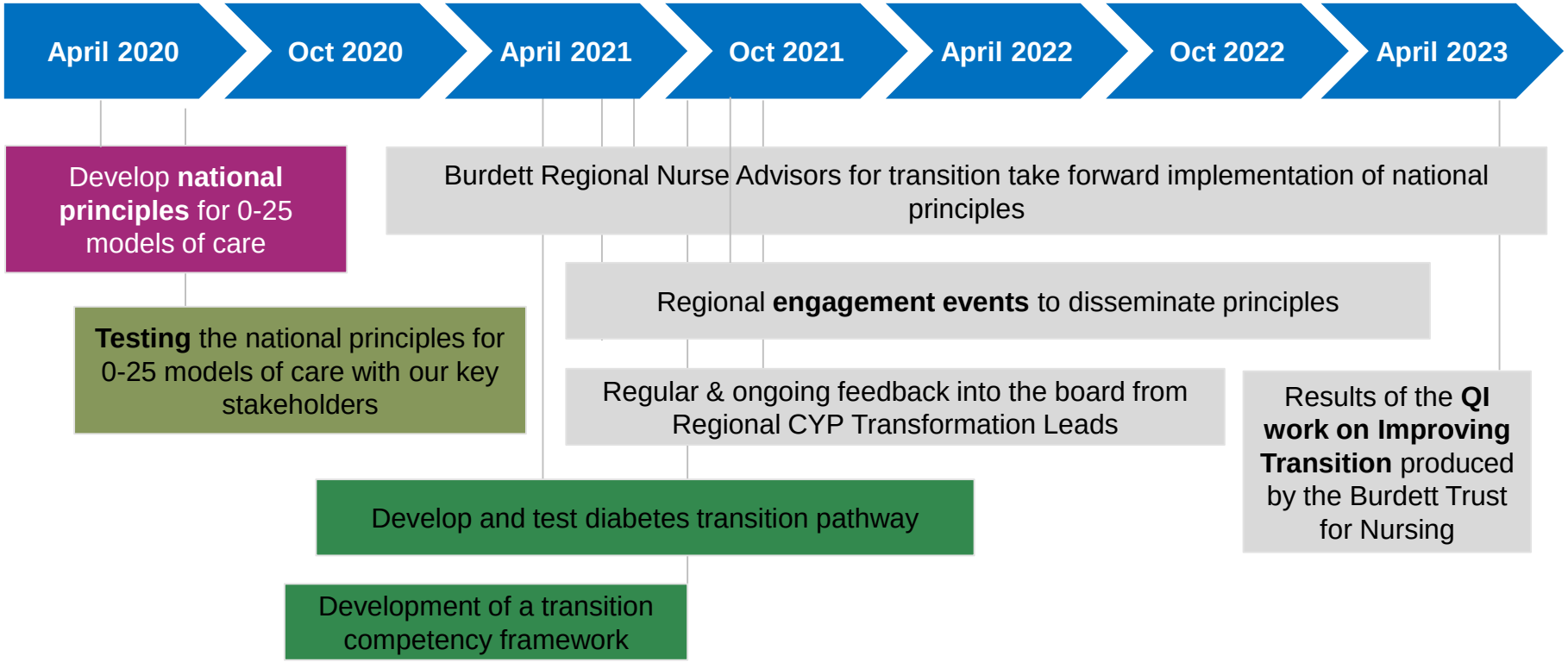
To develop and implement a new approach to young adult mental health services for people aged 18-25 to support the transition to adulthood. This may be an adolescent service.

VISION

By 2028, no child, young person or adolescent will be able to become lost in the gaps between children’s and adults services, and that their experience of moving between services is well planned and prepared for and they feel supported and empowered to make decisions about their health and social care needs.

We will work across NHS England and NHS Improvement to develop a framework for transition and move to a 0-25 model of care

Ambition	By 2028, no child or young person will be able to become lost in the gaps between children's and adults services, and that their experience of moving between services is safe, well planned and prepared for and they feel supported and empowered to make decisions about their health and social care needs.



Current transition workstreams

Digital Flag

Seamless Transition in Diabetes Pilot

Core Capabilities

Transition Currency

The National Framework for Transition

Burdett Network Quality Improvement

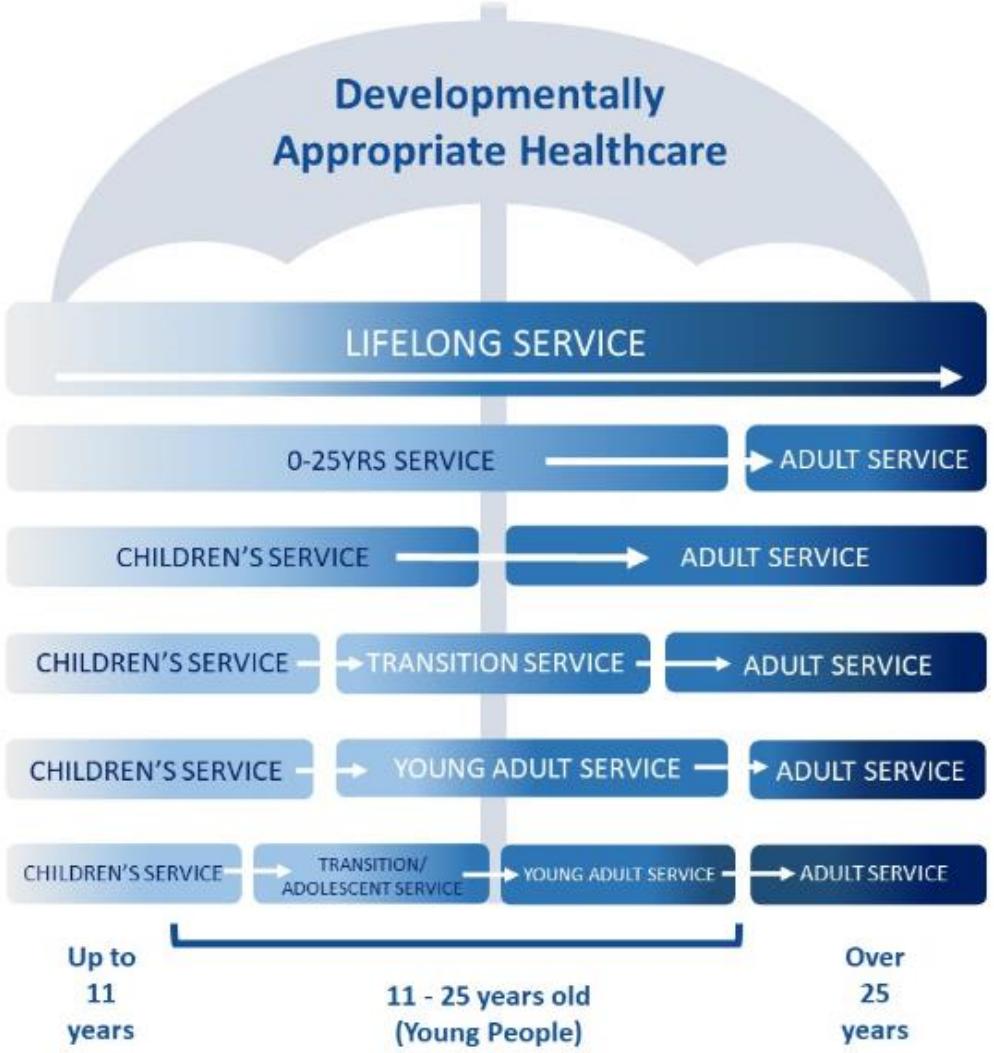
CQC Brief Guide to Transition for Adult Services

Diabetes Transition and YA Pilots

National Framework – supporting the design of transition pathways that reduce health inequalities and improve health outcomes for all young people

Key Recommendations

- Commissioners should be supporting the delivery of developmentally appropriate healthcare
- Pathways of transition should be jointly commissioned by both adult and children and young people's services
- Training in the care of young people as they move through services including transition pathways, should be accessible to all healthcare staff



Delivery models/pathways of care for a 0-25 service

The Role of Services

Regions

- Ensure there is clear accountability for Transition across the region
- Measure and report on Transition improvements to the CYP Transformation Board
- Encourage and support innovative models of care to improve the experience of CYP as they move from childhood to adulthood, using the models of care illustrated in this document
- Work collaboratively with regional safeguarding leads
- Adopt transition services that are jointly commissioned by adult and child programmes
- Share knowledge between regions and work collaboratively to achieve holistic transition for young people

Integrated Care Systems

- Support the commissioning of developmentally appropriate healthcare services
- Support CCGs to jointly commission adult and children's transition pathways
- Appoint Young Adult and Transition Leads
- Ensure that transition leads for organisations oversee the development and monitoring of transition pathways for young people
- Ensure that training in the care of young people and transition is accessible and completed
- **Consider the wider determinants of health and develop relationships for integration and transition across partnership organisations**
- Governance should be shared by all partners, including across children's and adult's services, young people and their families and carers
- Share best practice and learning of transition services across the ICS

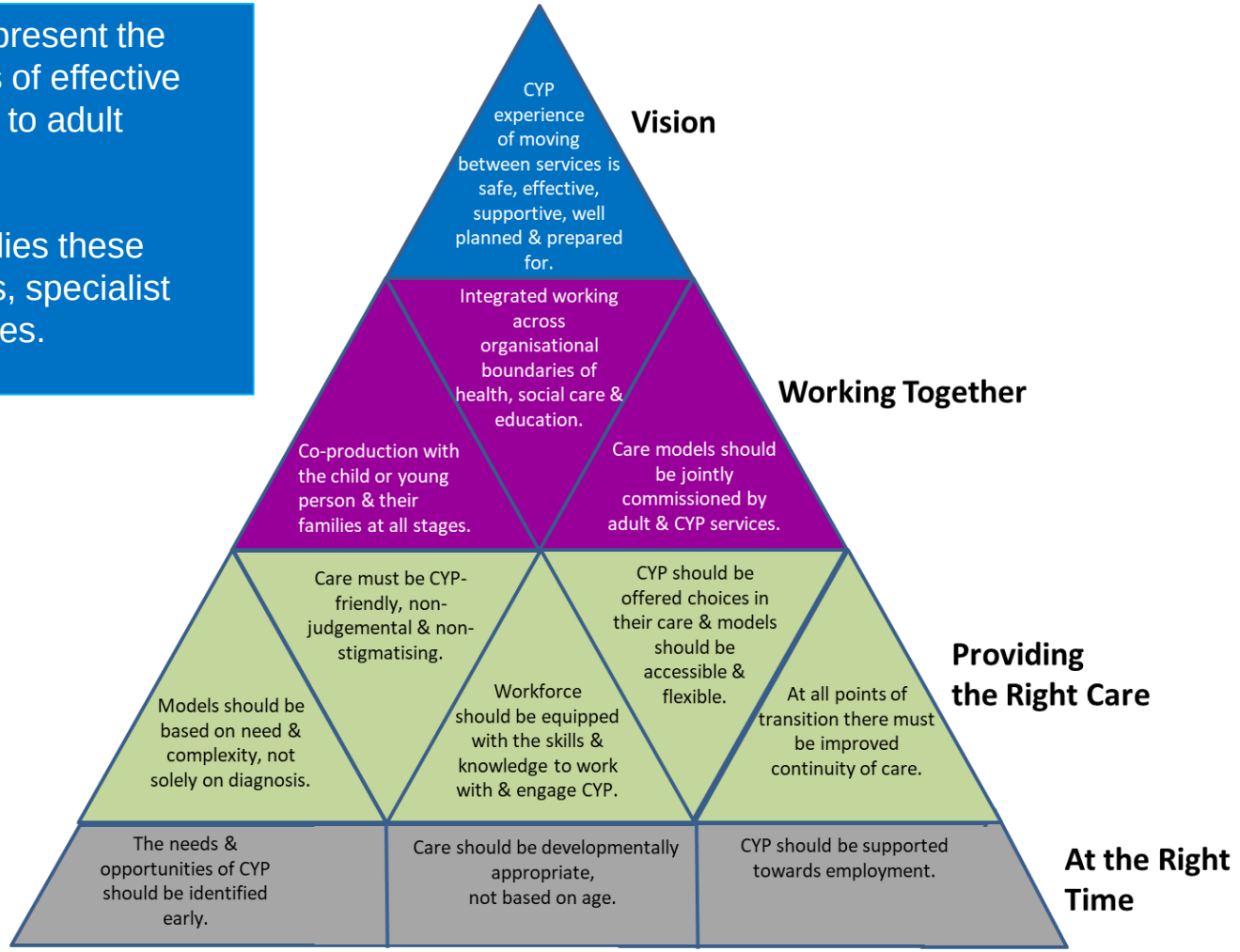
Providers

- Imbed the National standards and guidance of moving from child into adult services as outlined in this document
- Ensure services are young person friendly – measuring/assessing them using the You're Welcome Criteria for example
- Benchmark transition services against National standard
- Ensure staff are trained to the appropriate level of competency
- Meet the CQC framework guide to the delivery of transition
- Collect data that feeds into a robust evaluation of the service's processes, aims and outcomes related to transition

National Principles of a 0-25 model of care

These principles represent the overarching themes of effective transition from child to adult services.

The framework applies these principles to regions, specialist services and localities.



Core Capabilities

This Core Capabilities identify and describe the core skills, knowledge and behaviours which the healthcare workforce needs, in order to deliver high quality, compassionate, personalised and developmentally appropriate healthcare for young people and their preparation and support for transitioning from children's into adult physical and mental health services.

The aim is to ensure that young people are actively prepared for moving into adult services and are appropriately supported as a young person, to ensure they remain engaged with their care and treatment, to improve their experience and improve their long- term health outcomes.

It will be applicable to employers, commissioners, educational organisations and training providers, senior staff and leaders responsible for and promoting transition from children's into adult services.

The Capabilities are relevant to: all healthcare staff, both adult and children's services, all healthcare settings, young people, their parents, families and significant others and other partner sectors working with young people who can adapt the capabilities.

Specific Health Equity capabilities:

Capability 5. Challenges for, and influences on, young people

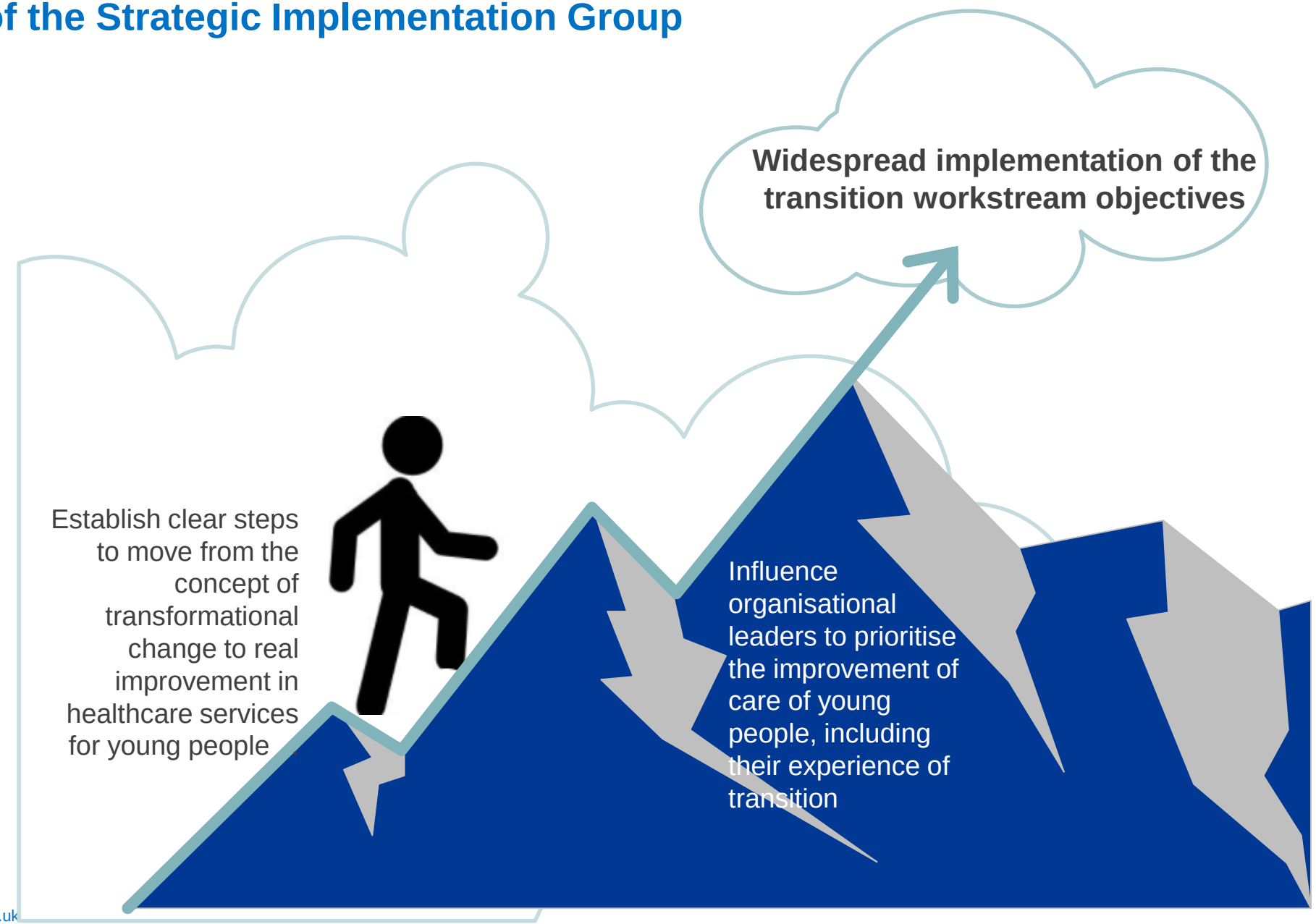
Understand the health inequalities faced by groups of young people and how to reduce them including those from varied socioeconomic, black and minority backgrounds, those with intellectual disabilities, brain injury, autism, SEND, SEMH, looked after children and care leavers. Practitioners should be mindful of potential racism and discrimination that may be encountered by YP and ensure structures are in place to combat discrimination in all shapes and forms.

Severe and Difficult to Treat Asthma – minimum standards of transition and ensuring developmentally appropriate care

Phase One of the National Bundle of Care for CYP with Asthma outlines key standards in the care of young people as they move form child to adult services

- Aligned to, and work closely with adult severe asthma service
- Follow-up in the different settings
- Joint decision making
- Transfer of care based on developmentally appropriate care and the needs and wishes of the YP and their families
- The paediatric team should support the YP in gaining greater autonomy in the management of their asthma
- This process should continue once the YP has transferred to adult care.

Aims of the Strategic Implementation Group



Key Responsibilities of the Strategic Implementation Group

The Group is tasked with establishing an implementation strategy for all of the transition workstreams within the CYP Transformation Programme.

The Group is responsible for:

- Agreeing the overall plan for transforming healthcare services for young people, particularly as they transition from children's to adult services
- In conjunction with the National Clinical Advisors for Children and Young People and key stakeholders, oversee the development of a jointly agreed and beneficial programme of work to improve care and outcomes in key population groups or areas of need.
- Overseeing progress against the plan and ensuring the success or failure of the programme in terms of delivering the overall vision
- Resolving issues and mitigating key risks
- Ensuring that the project is young person focused
- Ensuring that the views of stakeholders are heard and taken into account in delivering the programme, with particular attention to ensuring the CYP and Families voice is heard
- Communication of key issues/progress to stakeholders including CYP and Families
- Providing direction to the programme management team
- Influencing the future use of available improvement funds to best effect, ensuring that activity at all levels of the system is coordinated and aligned to a core set of outcomes.

Proposed Implementation Strategy

- Transition standards aligned with ICS deliverables.
- Monthly reporting through existing governance and reporting structures
- Performance monitoring through CYP Dashboard

- National Framework for Transition
- Minimum Standards of assessment
- Tool kits
- Webpage and/or CYP Futures Platform

- Core Capabilities
- Gap analysis
- Training Modules
- HEE Shopfront

- Seven regional leads for transition
- Strategic roles imbedded within the regional teams
- Pilot sites

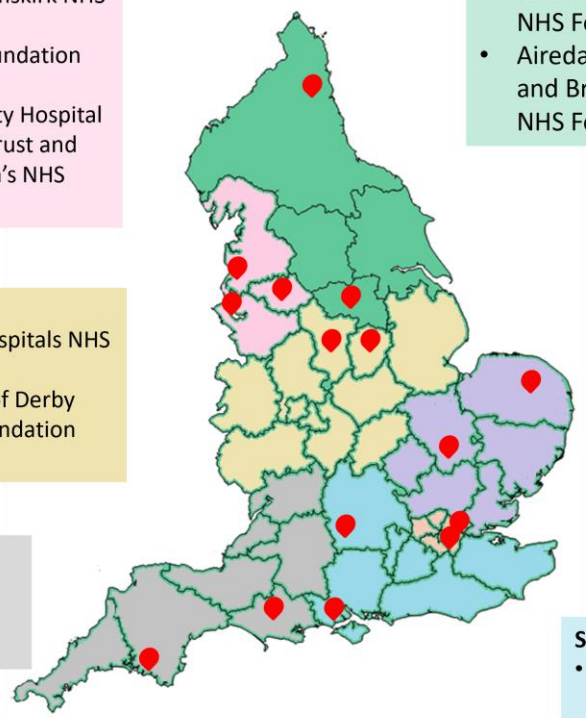
- CQC Brief Guide
- Transition Community Currency

Diabetes Transition and Young Adult Pilots

- 15 Pilot Sites
- Implementation of minimum specification (representing clinically-led consensus) + additional innovative components by sites

Key outcome metrics:

- Proportion of Type 1 patients within catchment population attending specialist services
- DKA admissions among catchment population group
- HbA1c of catchment population
- PROM with particular focus on mental wellbeing



North West
- Southport and Ormskirk NHS Trust
- Stockport NHS Foundation Trust
- Liverpool University Hospital NHS Foundation Trust and Alder Hay Children's NHS Foundation Trust

North East and Yorkshire
- Newcastle upon Tyne Hospitals NHS Foundation Trust
- Airedale NHS Foundation Trust and Bradford Teaching Hospitals NHS Foundation Trust

Midlands
- Sherwood Forest Hospitals NHS Foundation Trust
- University Hospital of Derby and Burton NHS Foundation Trust

East Of England
- East Suffolk and North Essex Foundation Trust (Ipswich Hospital)
- Norfolk and Norwich University Hospital NHS Foundation Trust

London
- Barts Health NHS Trust
- King's College Hospital NHS Foundation Trust

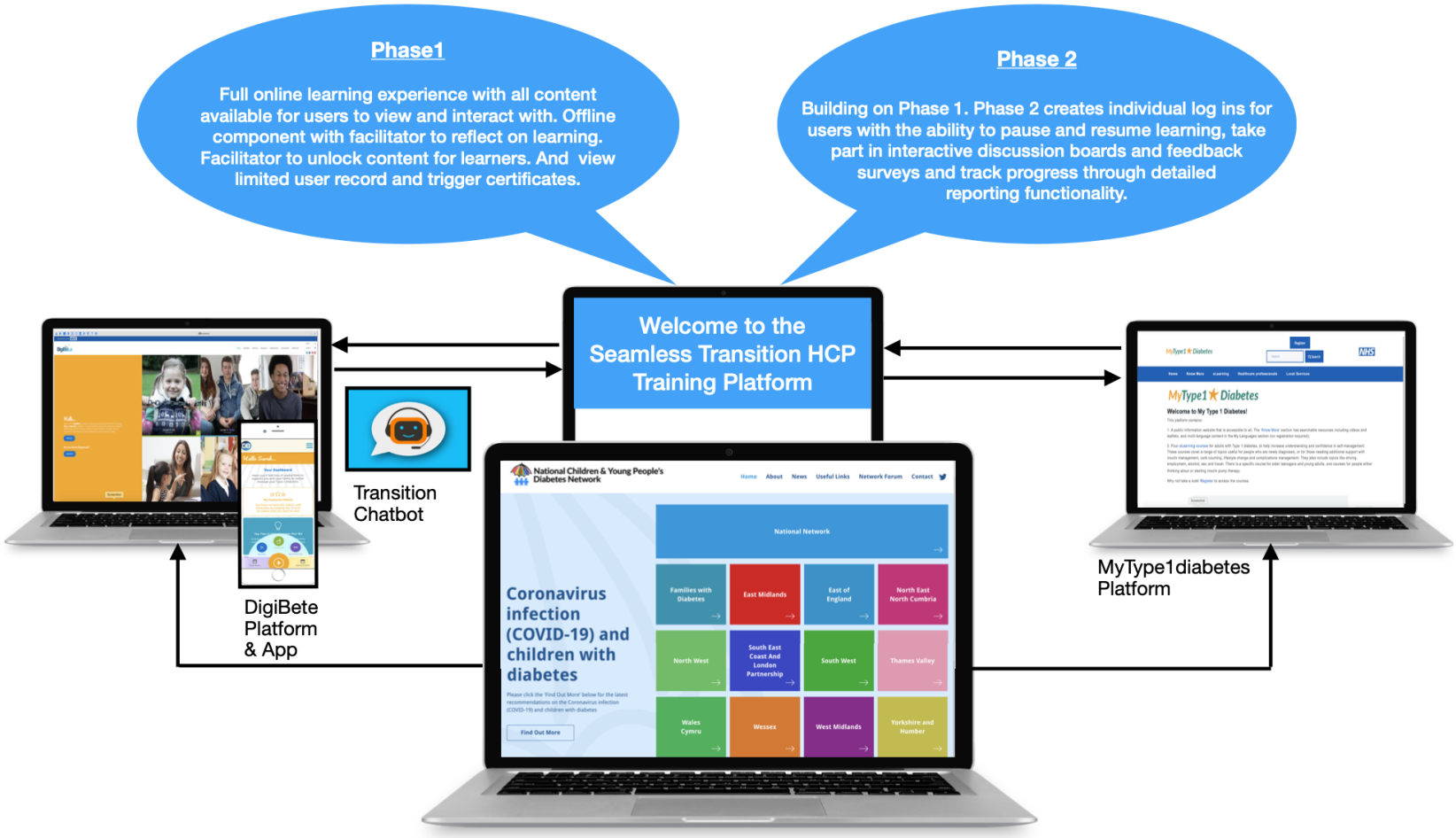
South West
- Torbay and South Devon NHS Foundation Trust
- Dorset ICS

South East
- Southampton General Hospital/ Royal South Hants/Southern Health
- Oxford University Hospitals

Key Specification Themes:	
Paediatric Preparation	**Planned Transfer**
Young Adult Specialist Care Services	**Integration with Primary Care**

Seamless Transition in Diabetes – a functional diagram

Seamless Transition Platform Technology Development Transition



Adherence and transition

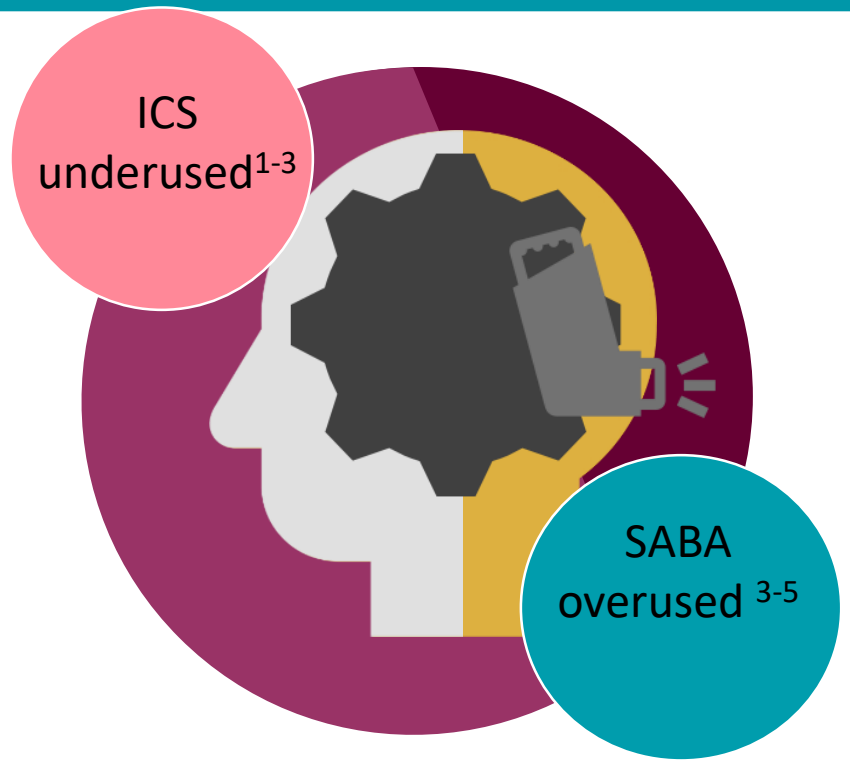
Rob Horne
Professor of Behavioural Medicine
UCL School of Pharmacy,
University College London, UK

Asthma UK Centre for Applied Research

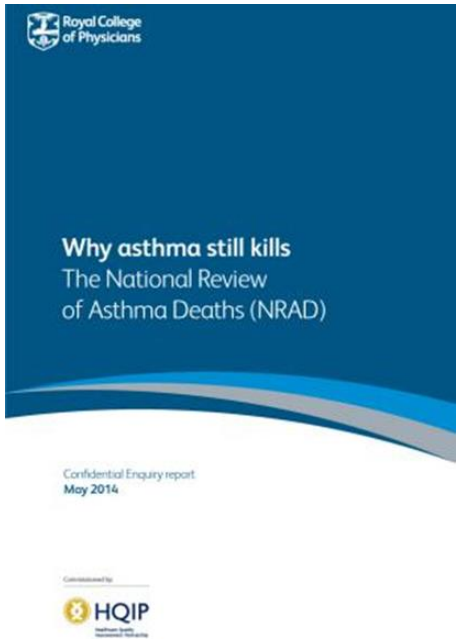
ASTHMA+ LUNG UK

beat asthma

ICS vs SABA: the adherence challenge



** SABA overuse = use of >1 SABA inhaler/month*



Review of 195 asthma deaths in England and Wales
February 2012 to January 2013

Overuse of relievers

- 39% prescribed >12 SABA

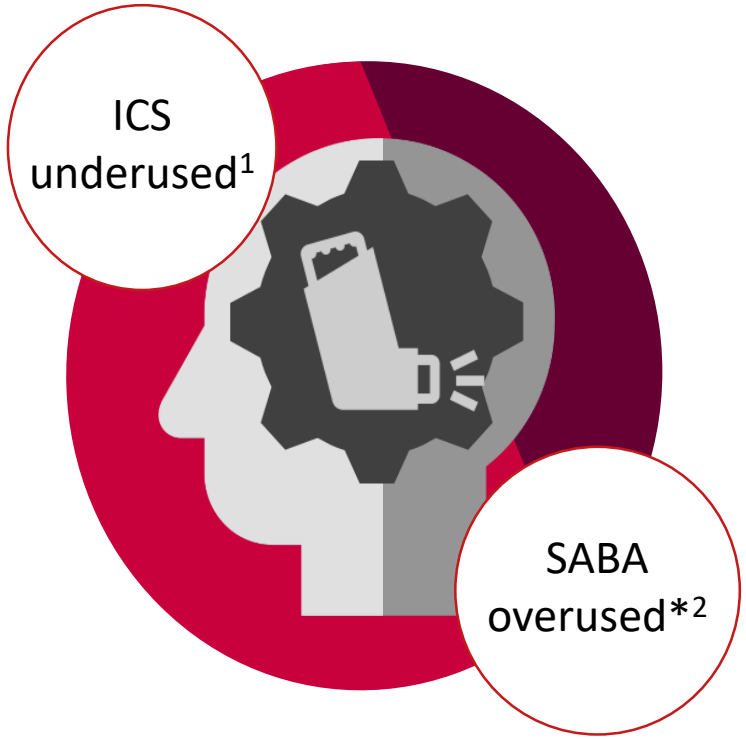
Underuse of preventers

- 80% prescribed <12 ICS
- 38% <4 ICS

Data presented for the year before death and as a % of the patients in whom prescribing information was available[6].

1. Demoly P, Paggiaro P, Plaza V, *et al*.. *European Respiratory Review*. 2009; 18(112):105-112. **2**. Kandane-Rathnayake RK, Matheson MC, Simpson JA, et al. *Thorax.* 2009;64(12):1025-1031. **3**. Morton RW, Everard ML, Elphick HE. *Arch Dis Child*. 2014; 99(10):949-953. 4. Thomson N C. *J Allergy Clin Immunol.* 2015;3(6):963-4. **5.** Slejko JF, Ghushchyan VH, Sucher B, et al. *J Allergy Clin Immunol*. 2014; 133: 1579–1587. **6.** Royal College of Physicians. Why asthma still kills: National Review of Asthma Deaths. Available at: https://www.rcplondon.ac.uk/projects/outputs/why-asthma-still-kills (Accessed August 2017).

The 2019 GINA strategy report: 'The most important change in asthma management in 30 years'?



**SABA overuse = 3 or more canisters/year*

Global Initiative for Asthma (GINA)[2]

- No longer recommends treatment with SABA alone as reliever across all severities
- Recommends symptom-driven or daily low-dose ICS-based (anti-inflammatory) treatment
- SABA over-reliance may be indicated by one of four signs of uncontrolled asthma:
  - daytime symptoms 3 or more times a week
  - woken by asthma at night
  - needed reliever 3 or more times a week
  - activity limited by asthma

1. Demoly P, Paggiaro P, Plaza V, et al. Prevalence of asthma control among adults in France, Germany, Italy, Spain and the UK. European Respiratory Review. 2009; 18(112):105-112. 2. Global Initiative for Asthma (GINA). Pocket Guide for asthma management and prevention (for adults and children older than 5 years). 2019. Available from: www.ginasthma.org [last accessed 01.08.19].

Nonadherence – a variable behaviour not a trait characteristic

Adherence rates vary…

between patients

within the same patient over time
& across treatments

Most of us are nonadherent some of the time

Nonadherence may be the NORM not the exception!

1.Horne R, Weinman J, Barber N, Elliott RA, Morgan M. *Concordance, Adherence and Compliance in Medicine Taking: A conceptual map and research priorities* (2005). National Co-ordinating Centre for NHS Service Delivery and Organisation R&D, London

Adherence/nonadherence as best understood as the interaction between an individual and a particular illness and treatment

The information – action gap

For information to change behaviour it needs to bridge the information-action gap[1-3]

INFORMATION

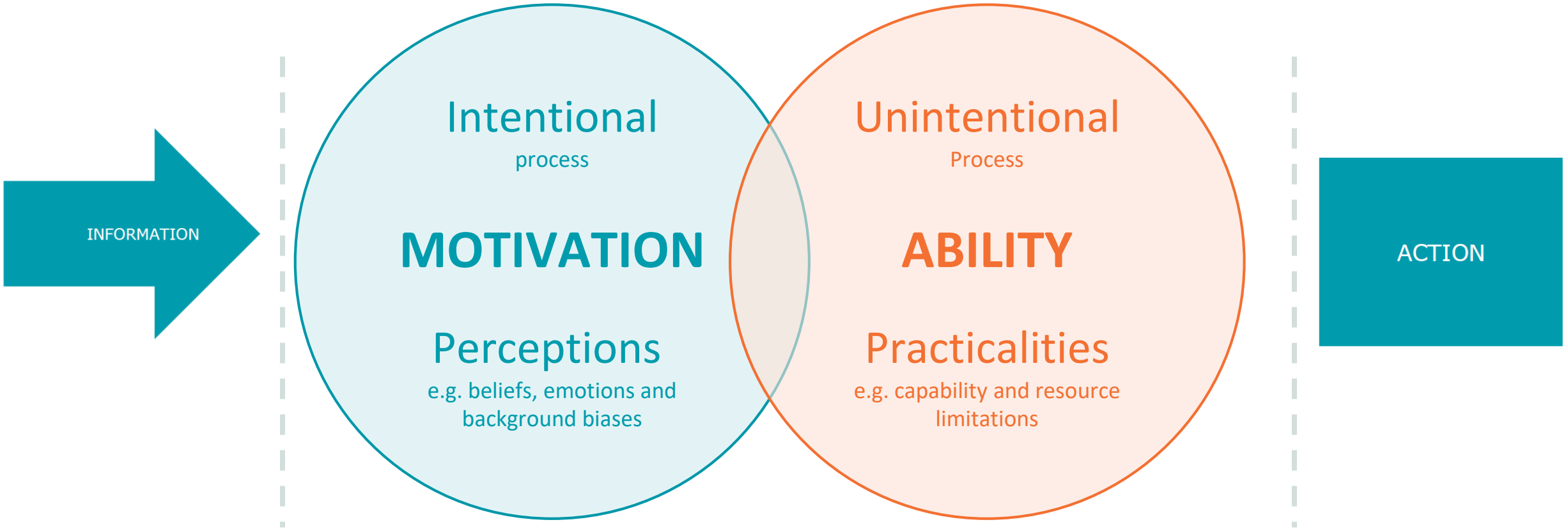
?

ACTION

1. Horne, R (2017) Decisions about medicines: scientific evidence in context. Paper invited by the Academy of Medical Sciences https://acmedsci.ac.uk/file-download/80849939.
2. Horne R, et al. (2013). Understanding patients' adherence-related beliefs about medicines prescribed for long-term conditions: a metaanalytic review of the Necessity-Concerns Framework. PLoS One 8, e80633.
3. Foot H, et al. The necessity-concerns framework predicts adherence to medication in multiple illness conditions: A meta-analysis. Patient Education & Counselling 2016; 99(5): 706-17.

Bridging the information-action gap: Perceptions & Practicalities Approach[1,2] (PAPA)

A framework for developing effective interventions
Applied in *NICE Medicines Adherence Guidelines*[3].



1. .Horne, R., et al (2005). Concordance, Adherence and Compliance in Medicine Taking: A conceptual map and research priorities. London: National Institute for Health Research (NIHR) Service Delivery and Organisation (SDO) Programme. http://www.sdo.nihr.ac.uk/sdo762004.html.
2. Horne R et al. Supporting Adherence to Medicines for Long-Term Conditions. ***European Psychologist*** **2019**; 24(1): 82-96.
3. NICE Guideline (2009). Medicines adherence: Involving patients in decisions about prescribed medicines and supporting adherence. Clinical guideline [CG76] **4**. Horne R et al. Supporting Adherence to Medicines for Long-Term Conditions. ***European Psychologist*** **2019**; 24(1): 82-96.

beat asthma

Case Study –1987

Kate – 17 year old with asthma admitted with ICU with life-threatening respiratory depression

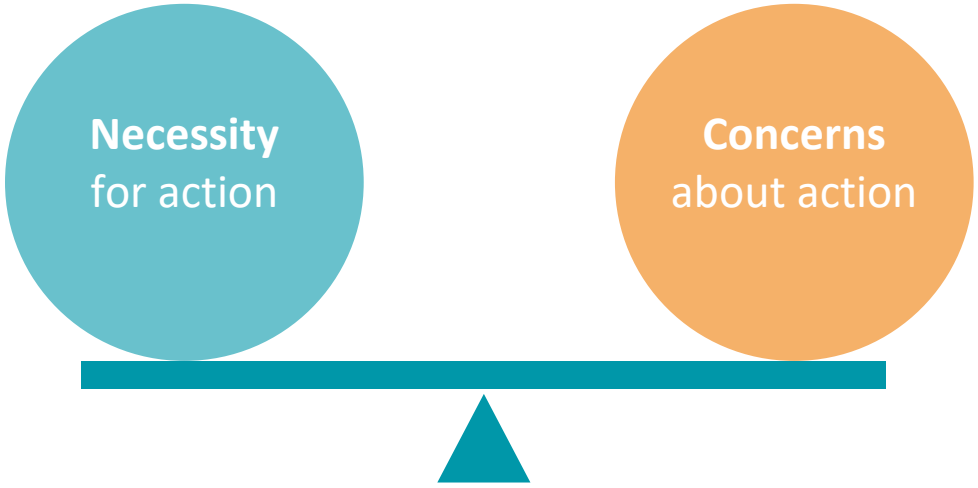
Doctors suspected she was not taking her 'preventer' medication

"But *why* won't you take your medication?"

"Whenever I'm in hospital, they inject me full of steroids. I put on weight, my face swells up and it takes me ages to get rid of it.

So there's *no way* I'm taking a steroid once I'm out."

Perceptions influencing engagement with medicines: The Necessity-Concerns Framework (NCF)[1,2]



A disease agnostic framework

Has been applied in:

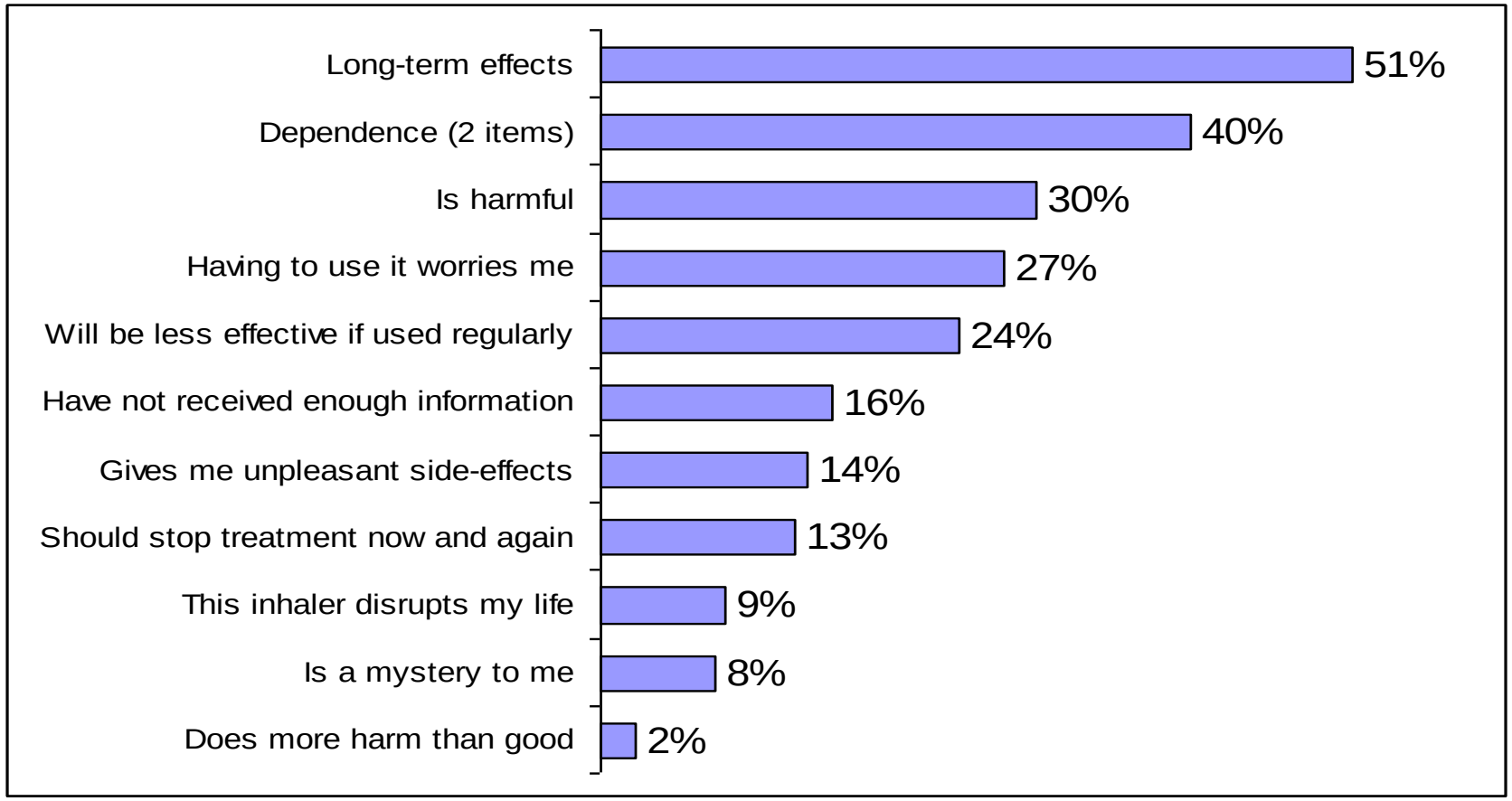
> 23 different therapy areas	> 27,000 patients	>18 countries and healthcare systems

Including asthma

1. Foot H, La Caze A, Gujral G, Cottrell N. The necessity-concerns framework predicts adherence to medication in multiple illness conditions: A meta-analysis. Patient Educ Couns. 2016;99(5):706-17.
2. Horne R, Chapman SC, Parham R, Freemantle N, Forbes A, Cooper V. Understanding patients' adherence-related beliefs about medicines prescribed for long-term conditions: a meta-analytic review of the Necessity-Concerns Framework. PLoS One. 2013;8(12): e80633.

Profile of concerns about ICS

Patients (%) endorsing individual concerns



N=2,372 community managed asthma patients at Step 2 and 3 of BTS Guidelines)

BTS, British Thoracic Society; ICS, inhaled corticosteroids
Clatworthy J, et al. *Prim Care Resp J*. 2009;18:300–5.

Christina.pearce.15@ucl.ac.uk
@ChristinaJCP

2. Concerns

I'm also **concerned about the long-term effects** of the inhaler…**so I might take it a little less regularly.** (P6, M, 14yrs)

…we went to the GP and she **said it (small weak teeth) was because of steroids**....That **hit my confidence about my inhalers…** (P8, M, 13yrs)

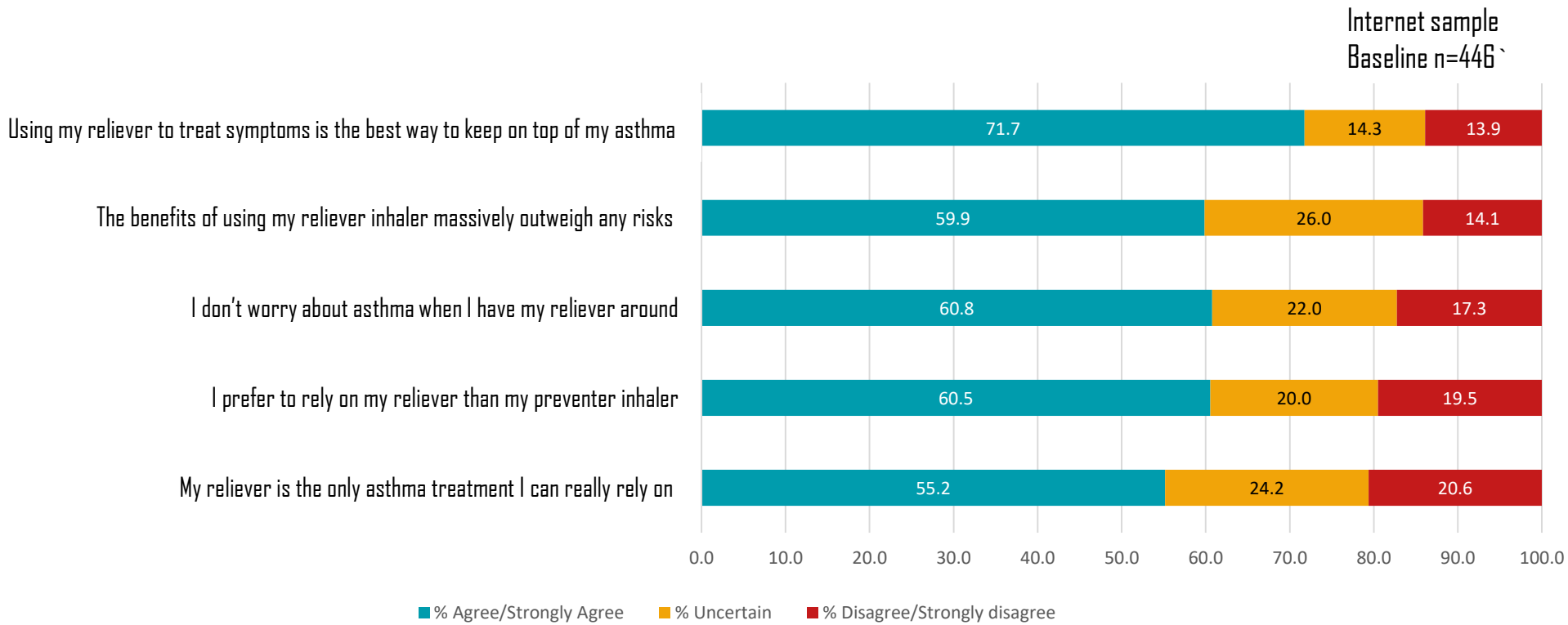
Qualitative study: Pearce CJ, Fleming L, Chan A, Jamalzadeh A, Bush A, Horne R, AUKCAR. Manuscript in preparation

- Motivation
- Perceptions

Asthma UK Centre for Applied Research
Imperial College London
Royal Brompton & Harefield NHS Foundation Trust

SABA Reliance Questionnaire (SRQ)

Percentage responding *Agree, Strongly agree (teal)* versus *Uncertain (amber)* versus *Disagree, Strongly disagree (red)* per BMQ-SABA™ Necessity item



Adapted from the Beliefs about Medicines Questionnaire[1] (BMQ), endorsed by the International Primary Care Respiratory Group (IPCRG) and Asthma Right Care, and fully funded by AstraZeneca UK Limited.

1. Horne R, Weinman J, Hankins M. The Beliefs about Medicines Questionnaire: the development and evaluation of a new method for assessing the cognitive representation of medication. Psychology & Health 1999;14:1-24.

Asthma UK Centre for Applied Research

Examples of common-sense default beliefs impeding adherence[1-4]

1. Cole S, Seale C, Griffiths C. 'The blue one takes a battering' why do young adults with asthma overuse bronchodilator inhalers? A qualitative study. *BMJ open* 2013; **3**(2): e002247.
2. Chapman S, Dale P, Svedsater H, et al. Modelling the effect of beliefs about asthma medication and treatment intrusiveness on adherence and preference for once-daily vs. twice-daily medication. *NPJ primary care respiratory medicine* 2017; **27**(1): 61.
3. Bidad N, Barnes N, Griffiths C, Horne R. Understanding patients' perceptions of asthma control: a qualitative study. Eur Respir J 2018; 51(6): 1701346
4. De Simoni A, Horne R, Fleming L, Bush A, Griffiths C. What do adolescents with asthma really think about adherence to inhalers? Insights from a qualitative analysis of a UK online forum. BMJ open 2017; 7(6): e015245.

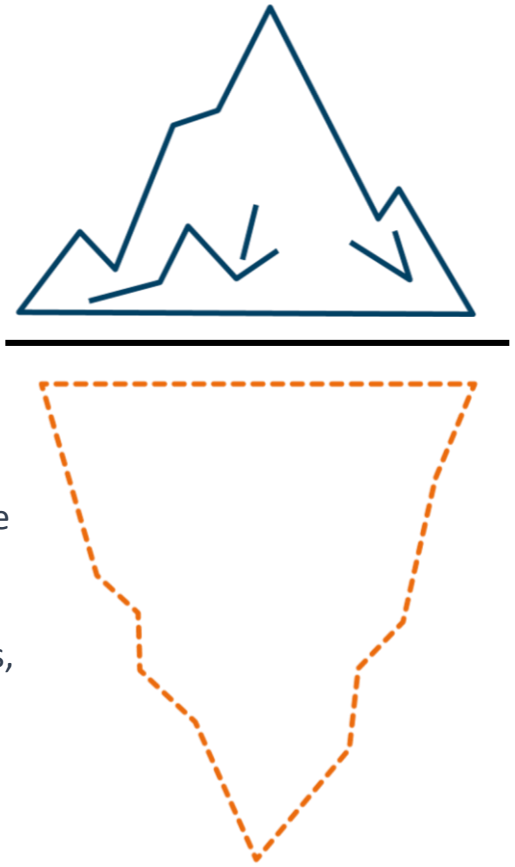
The reasons for nonadherence are often hidden and patients may have opposing views

Patient may have opposing views:

√ Trust the doctor

X Do NOT trust treatment

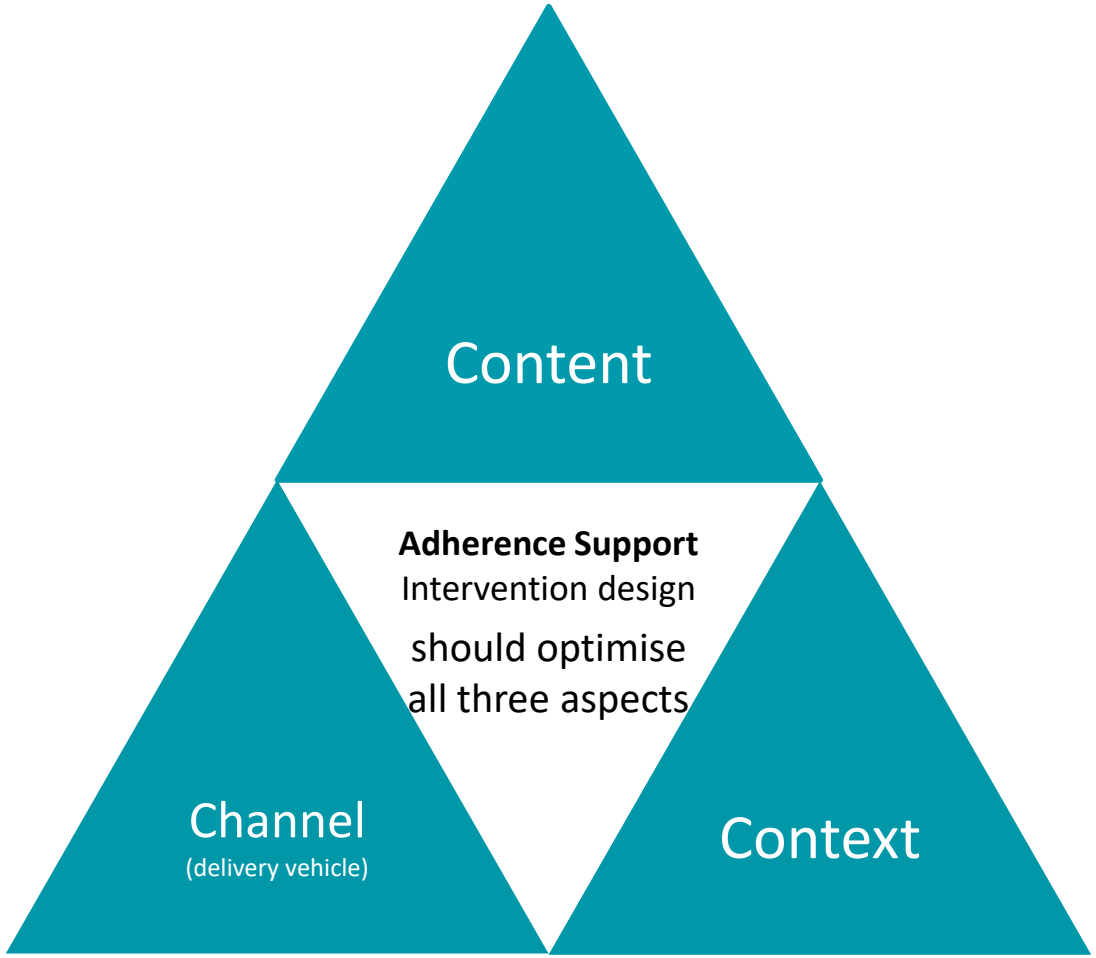
- Nonadherence is often a hidden problem – clinicians assume “adherence is a problem BUT not in my patients”[1]
- Patients are reluctant to express doubts, concerns or nonadherence, because they fear this will be interpreted by the clinician as a ‘doubt’ in them [1]



1. Horne R, Chapman SC, Parham R, Freemantle N, Forbes A, Cooper V. Understanding patients’ adherence-related beliefs about medicines prescribed for long-term conditions: a meta-analytic review of the Necessity-Concerns Framework. PloS one. 2013;8(12):e80633.

Three Components of Behaviour Change

Effective messaging: the need for intelligent design at all three points of the triangle



Perceived necessity and concerns drive patient engagement and adherence

SABA:
Patients don't see necessity for change

ICS-based therapy:
Patients have concerns about change

ICS: Inhaled corticosteroid

Necessity-Concerns Framework: Where we need to get to

SABA

Lower perceived necessity, e.g.:
"I don't need to rely on my blue reliever inhaler"

Higher concerns, e.g.:
"Over-using my SABA is bad for me"

Inhaled corticosteroid (ICS)-based anti-inflammatory reliever

Higher perceived necessity, e.g.:
"I understand why I need an anti-inflammatory to manage my asthma"

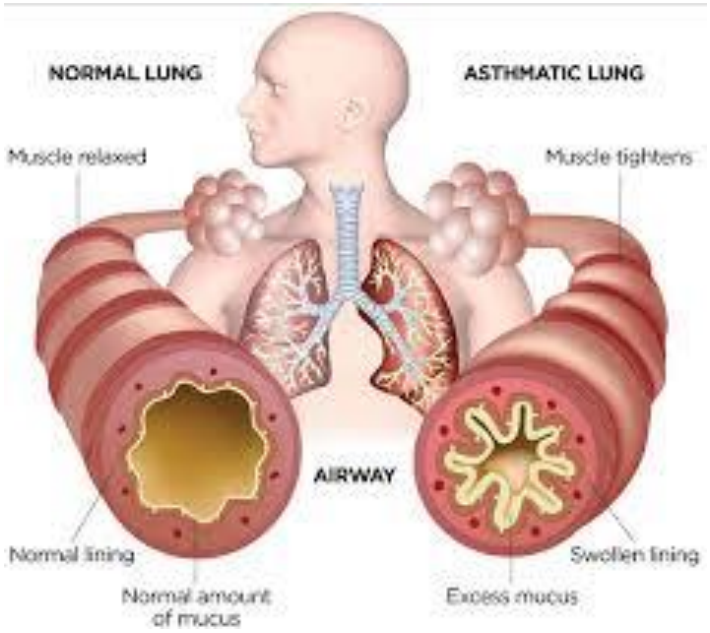
Lower concerns, e.g.:
"I accept that the dose of ICS is significantly lower than in other steroid drugs, and that it is safe to use"

Leads to less reliance on SABA and increase in engagement with ICS-based anti-inflammatory reliever; a shift in behaviour in line with the guidelines

ICS: Inhaled corticosteroid

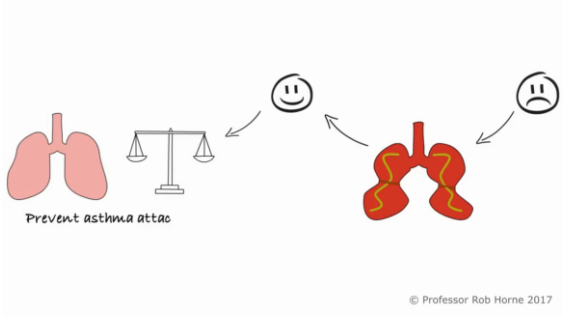
The Illness and Treatment Balance Model (ICBM)- 1

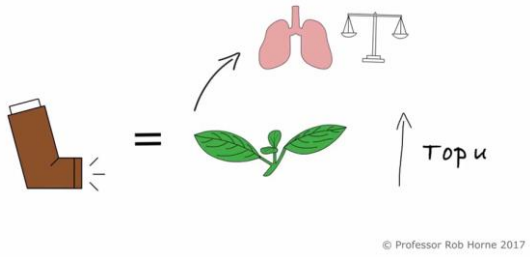
Application in asthma: perceptions of asthma



- Overall, the aim is to ‘re-brand’ asthma and ICS by creating a common-sense fit between perceptions of asthma and treatment advice (reduce SABA increase ICS).
- It provides an alternative explanation, which is simpler and communicates a more positive image of asthma, whilst staying medically accurate.
- The ITBM moves away from labelling people with asthma as ‘having a chronic illness’ and highlights that regular ICS use in the long run may support them to keep the impact of asthma on their daily lives to a minimum.
- This can have a positive impact on people’s overall sense of self in addition to impacting their overall attitudes towards treatment.

Tools to support adherence behaviour change:
(2) Asthma Balance Model (ABM)[1,2]





The ABM explains asthma and treatment in a way that addressing ‚common-sense default beliefs‘

NECESSITY beliefs

1. Reframe (re-brand asthma) – away from chronic disease to ‚*‘tendency for lungs to react too strongly‘*

2. Importance of ICS (preventer/antinflamory releiver vs SABA reliever)

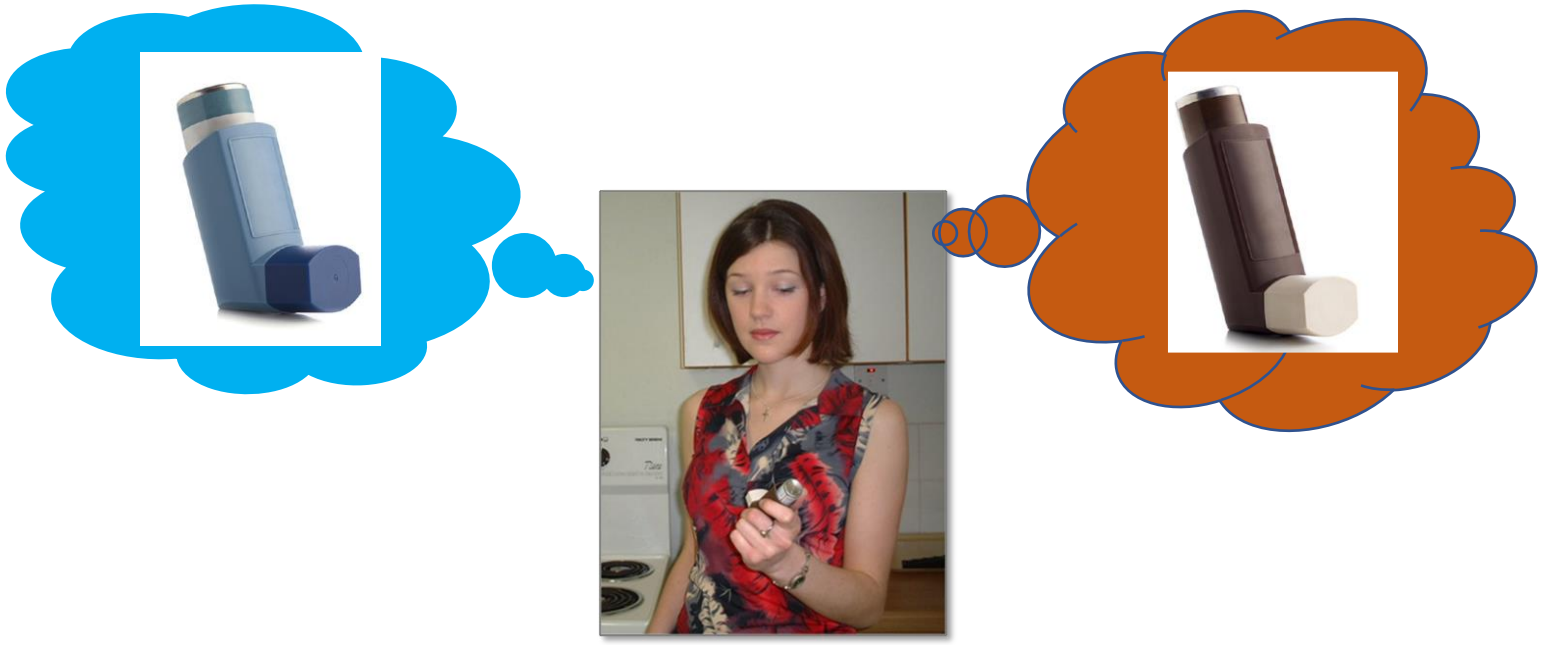
CONCERNS

3. Re-brand‘ ICS (draw on natural) and provide common sense fit with balance model

4. Distinguish between ICS and other steriods‘

1. Katzer CB, Mes MA, Chan AHY, Wileman V, Taylor SJC, Horne R. Acceptability of a theory-based adherence intervention for adults with asthma – a person-based approach**.** ***Journal of Asthma*** 2019: 1-9..
2. Katzer CB, Wileman V, Chan AHY, Taylor SJC, Horne R. Reframing asthma and inhaled corticosteroids (ICS) to modify treatment beliefs: an online randomised controlled trial. **Eur Respir J** 2018; 52(suppl 62): OA1644..

Out of the blue: changing the asthma treatment paradigm



- Applying Gina 2019 is a behavioural challenge at the core of asthma care
- Requires a no-blame approach that recognises patients' beliefs about SABA/ICS and attachment to SABA
- Need to develop ***persuasive*** messaging that communicates inflammatory treatment (including relivers) NOT SABA as the common-sense option

#AskAboutAsthma Conference 2022

6th October, 9:30 – 16:30

Session 3

NHS England London

Time	Topic	Speaker
15.05 – 15:15	**Break** Preventable film to be shown	
15.15 – 15:40	**How data can improve care and reduce health inequalities**	**Tiffany Watson-Koszel** • Policy Manager, CYP Transformation Programme Team
15.40 – 16:25	**Clinical update: National Asthma Bundle into action**	**Dr. Satish Rao** • Consultant Respiratory Paediatrician • Medical Director for Innovation and Transformation, Birmingham Women's Hospital
16.25 – 16.30	**Next steps**	**Viv Marsh**
16.30	**Close**	

βETA version not to be used for decision making

Children and Young People Transformation Programme

Asthma Dashboard

Produced on 1 September 2022

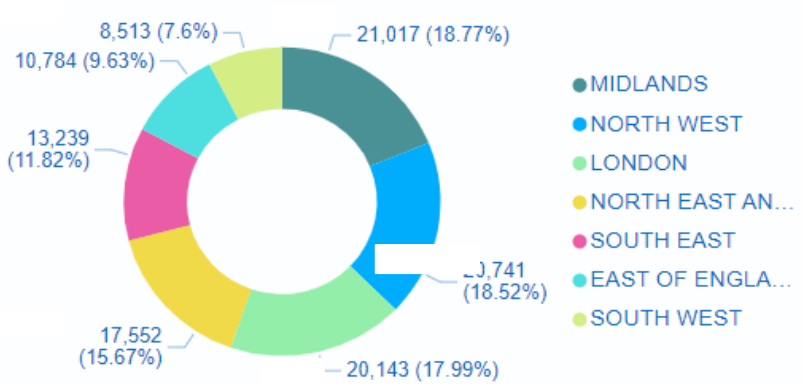
Asthma Non Elective Admissions Overview - England

Cover | Overview | Region | Benchmarking | Benchmarking_2 | ICS_Provider | ICS_Provider (100k) | PICU | PICU_IVBEPH | Region_ Map | ICB Map | Ethnicity_INEQ_1 | IMD_INEQ_1

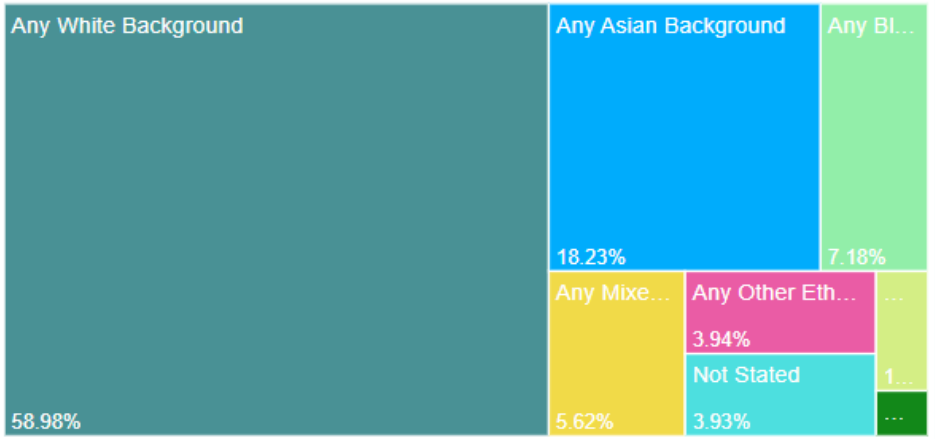
Age Group: Multiple select...

Financial Year: All

By Region



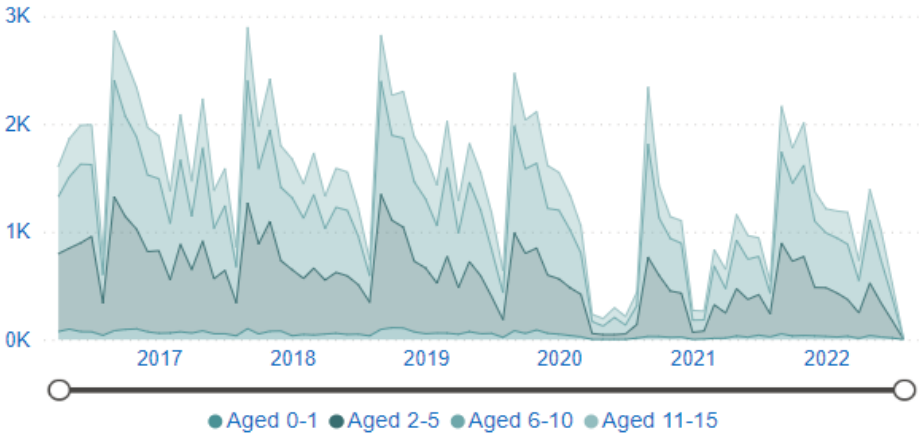
By Ethnic Category



IMD

IMD_Decile	%GT Count of IMD_Decile	Bar
1	19.05%	
2	15.70%	
3	13.15%	
4	10.82%	
5	8.90%	
6	7.92%	
7	6.99%	
8	6.45%	
9	5.87%	
10	5.15%	

By Month, Year and Age Group



VOICES TRANSFORM AND INSPIRE CHANGE

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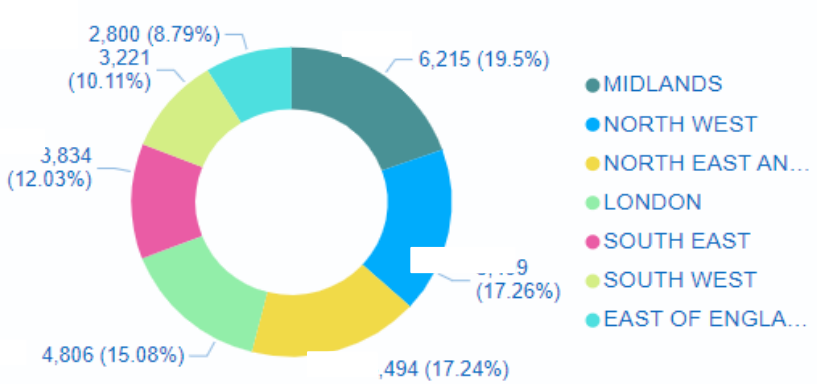
Asthma Non Elective Admissions Overview - England

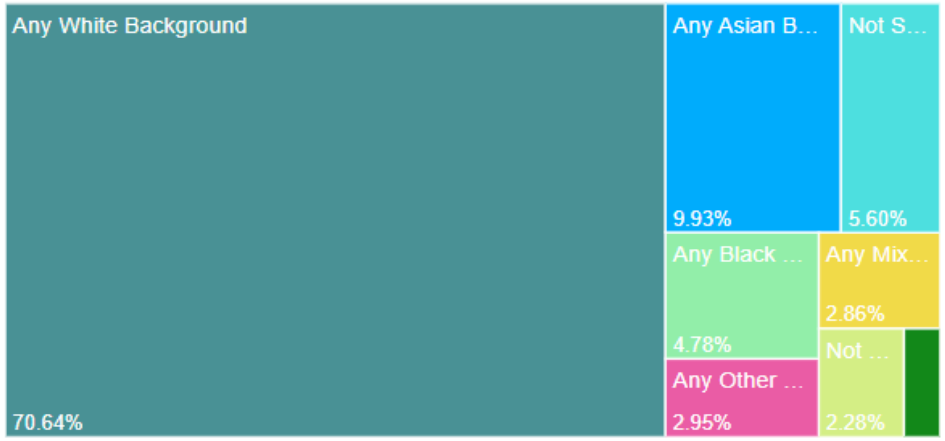
Age Group: Multiple select...

Financial Year: All

By Region



By Ethnic Category



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4	10.38%	
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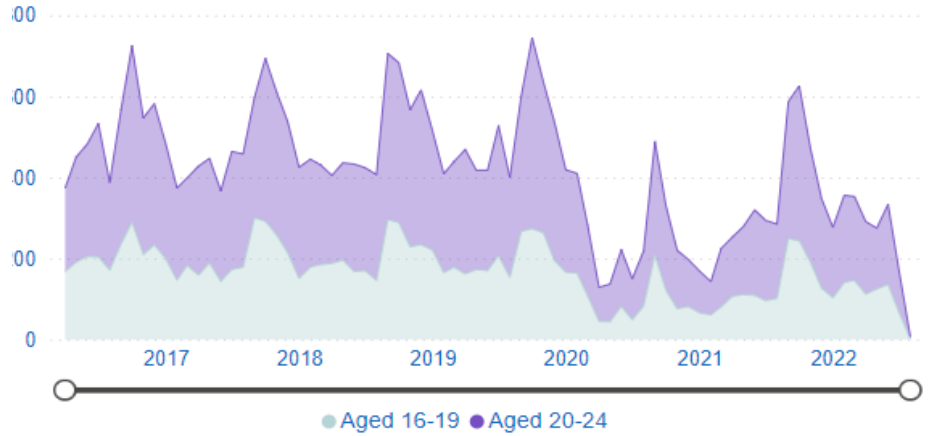
7	7.54%	
8	6.33%	
9	6.12%	
10	5.43%	

By Month, Year and Age Group



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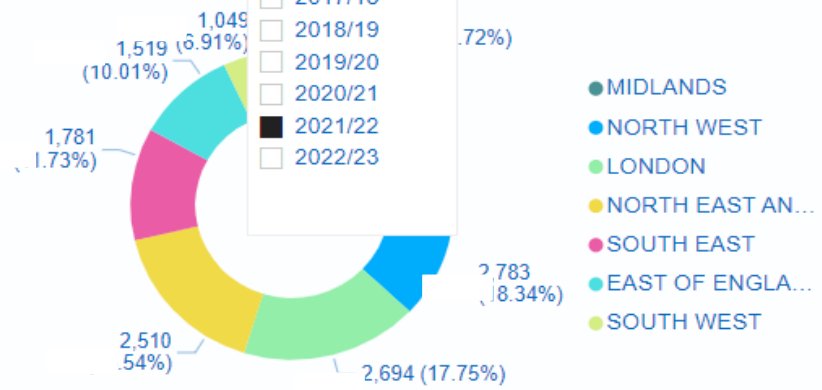
Age Group: Multiple select...

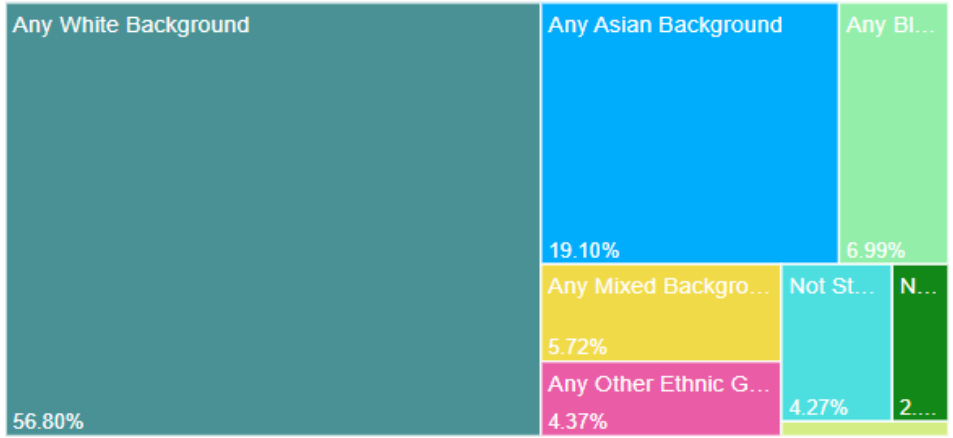
Financial Year: 2021/22

- 2016/17
- 2017/18
- 2018/19
- 2019/20
- 2020/21
- 2021/22
- 2022/23

By Region



By Ethnic Category



IMD

IMD_Decile	%GT Count of IMD_Decile	Bar
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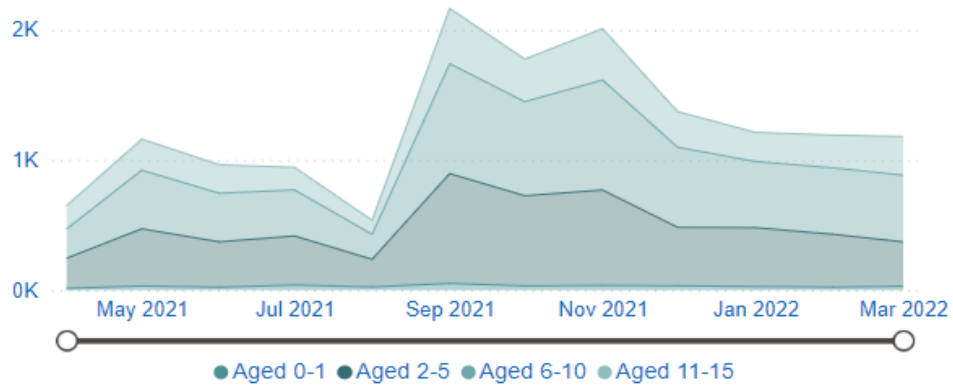
2	16.22%	
3	12.89%	
4	10.50%	
5	9.36%	
6	7.73%	
7	6.79%	
8	6.36%	
9	5.78%	
10	5.17%	

By Month, Year and Age Group



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THE CHILDREN AND YOUNG PEOPLE'S TRANSFORMATION PROGRAMME

NHS

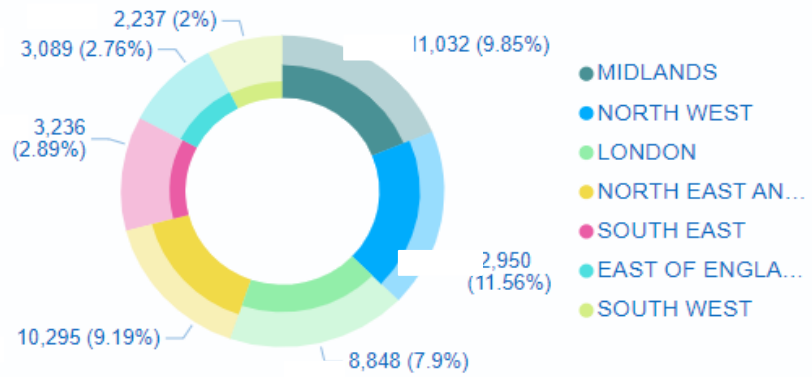
Asthma Non Elective Admissions Overview - England

Cover | Overview | Region | Benchmarking | Benchmarking_2 | ICS_Provider | ICS_Provider (100k) | PICU | PICU_IVBEPH | Region_Map | ICB Map | Ethnicity_INEQ_1 | IMD_INEQ_1

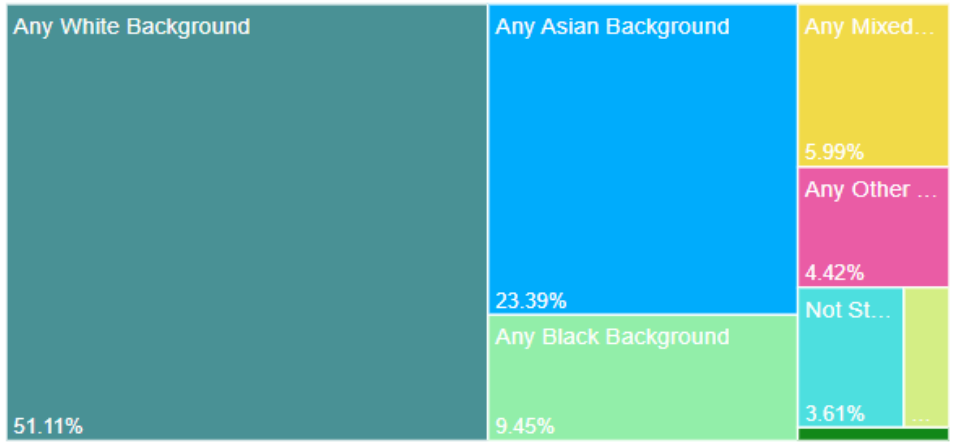
Age Group: Multiple select...

Financial Year: All

By Region



By Ethnic Category



IMD

IMD_Decile	%GT Count of IMD_Decile	Bar
1	19.05%	
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4	10.82%	
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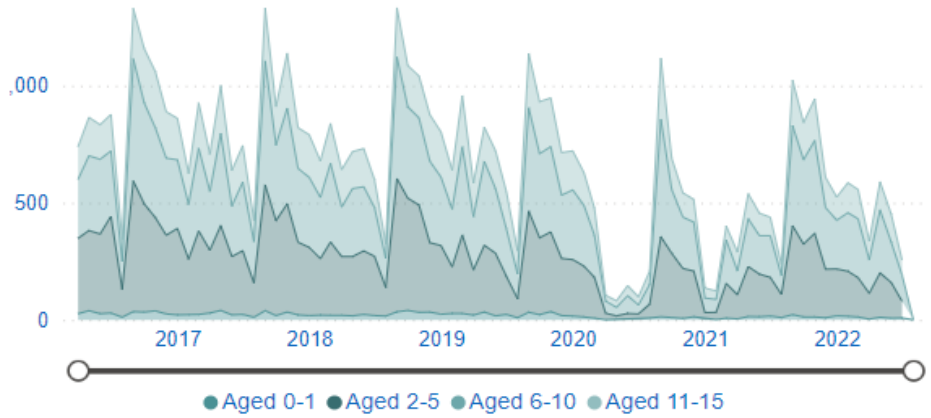
6	7.92%	
7	6.99%	
8	6.45%	
9	5.87%	
10	5.15%	

By Month, Year and Age Group



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Non Elective Admissions Month, Year and Age Group

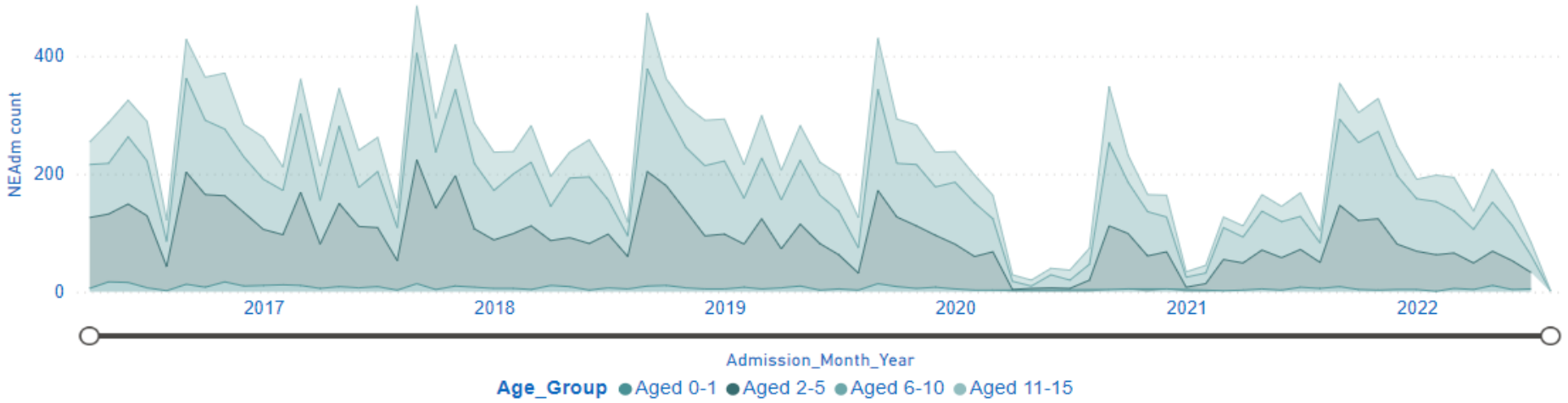
Age Group: Multiple select...

Orgnisation: NORTH EAST AND Y...

Financial Year: All

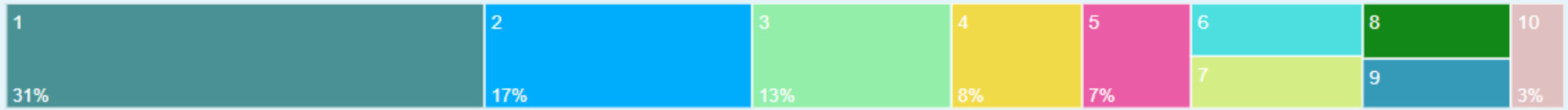
Year

Non Elective Admissions Month, Year and Age Group



By Ethnic Category

%GT Count of IMD_Decile by IMD_Decile



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THE CHILDREN AND YOUNG PEOPLE'S TRANSFORMATION PROGRAMME

NHS

Non Elective Admissions Month, Year and Age Group

Cover | Overview | Region | Benchmarking | Benchmarking_2 | ICS_Provider | ICS_Provider (100k) | PICU | PICU_IVBEPH | Region_Map | ICB Map | Ethnicity_INEQ_1 | IMD_INEQ_1

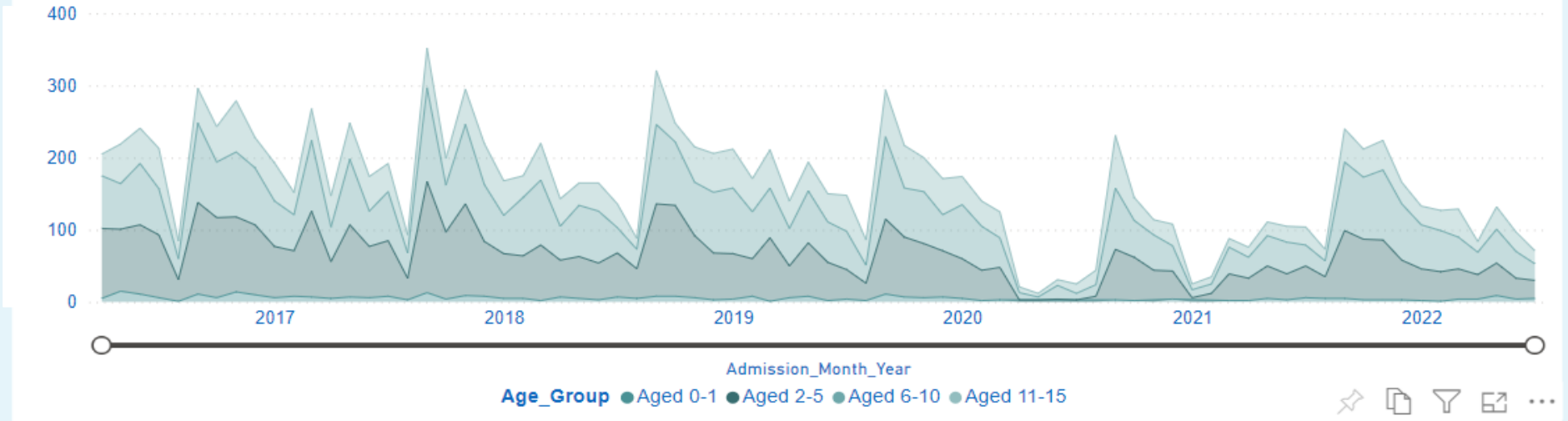
Age Group: Multiple select...

Orgnisation: NORTH EAST AND Y...

Financial Year: All

Year

Non Elective Admissions Month, Year and Age Group



By Ethnic Category

%GT Count of IMD_Decile by IMD_Decile

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Non Elective Admissions Month, Year and Age Group

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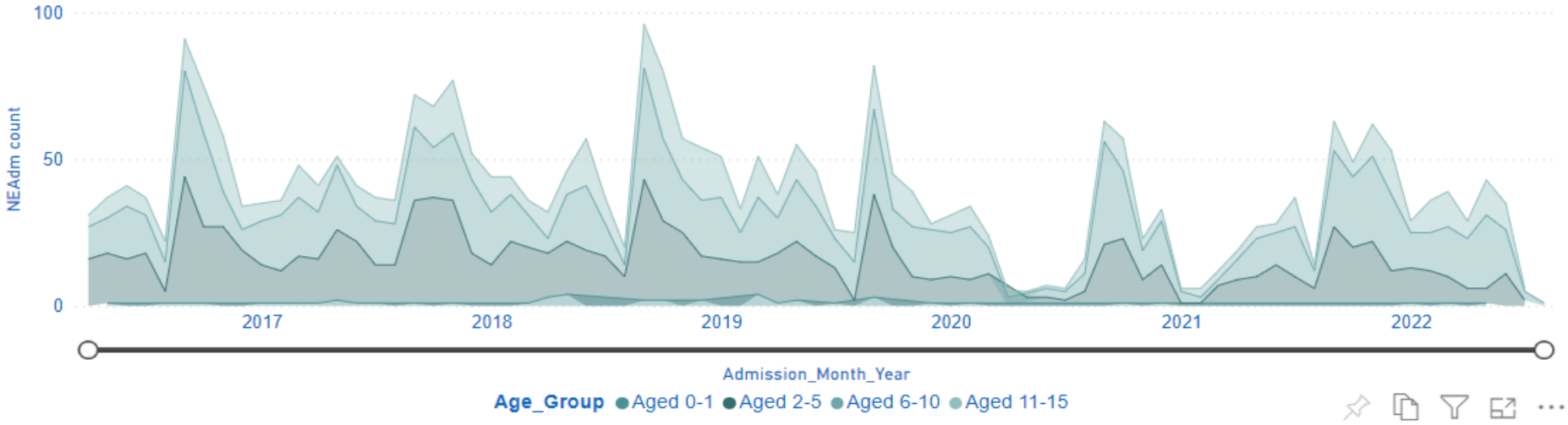
Age Group: Multiple select...

Orgnisation: NORTH EAST AND Y...

Financial Year: All

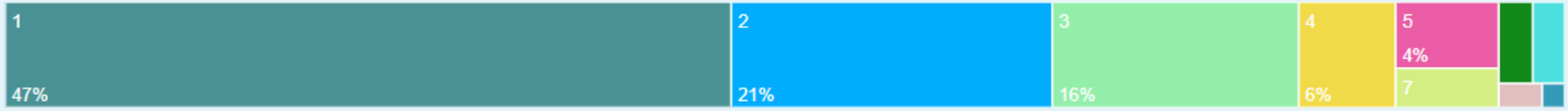
Year

Non Elective Admissions Month, Year and Age Group



By Ethnic Category

%GT Count of IMD_Decile by IMD_Decile



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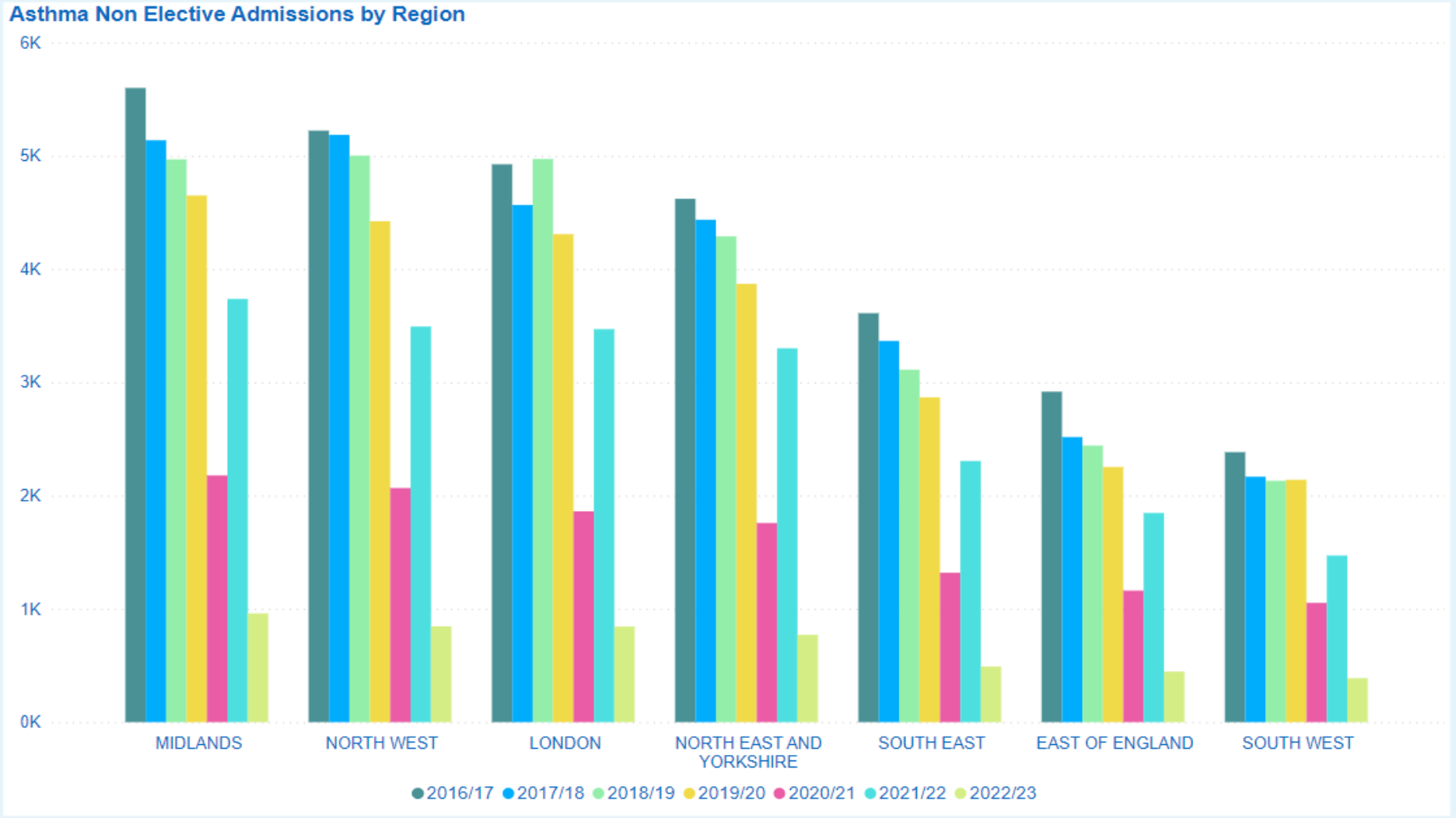
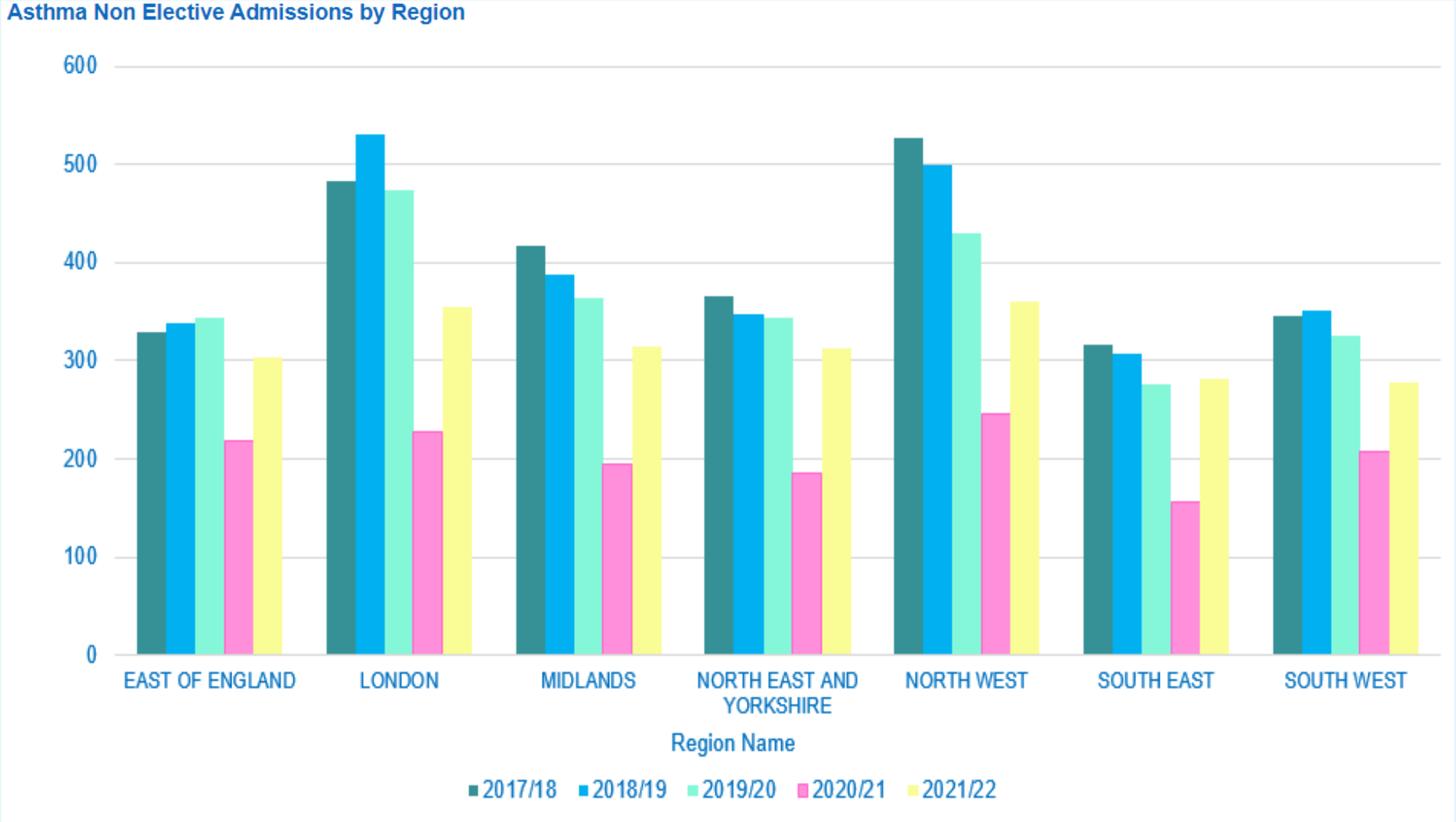
Asthma Non Elective Admissions by Region



Asthma Non Elective Admissions by Region

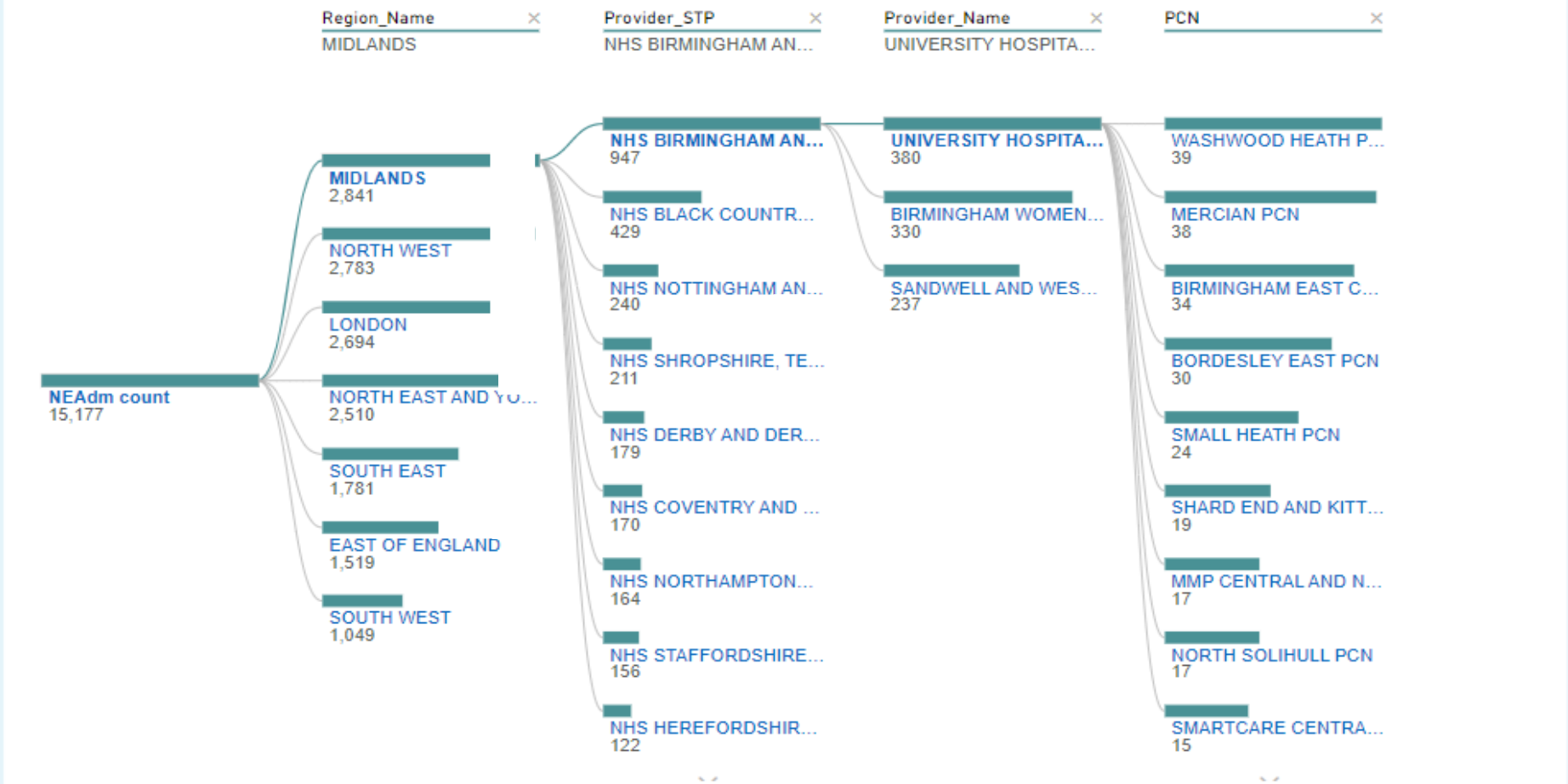


Asthma Non Elective Admissions - England, Region, STP/ICS and Trust

Age Group

Multiple select...

Asthma Non Elective Admissions - England, Region, STP/ICS and Trust



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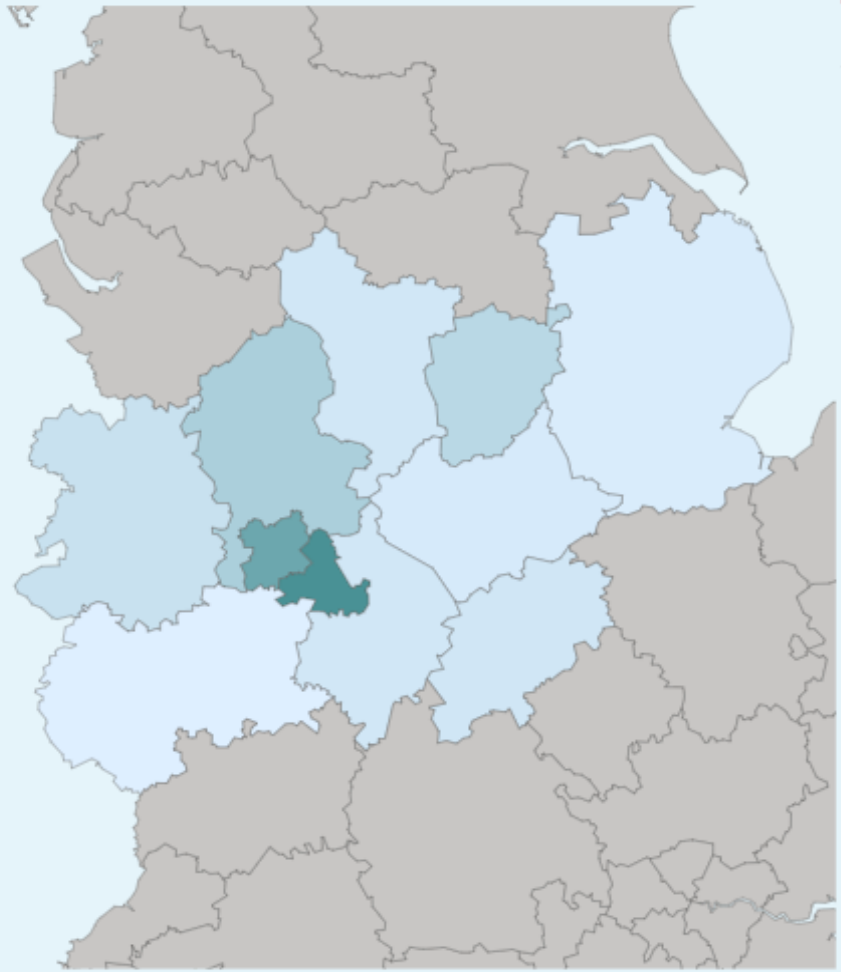
Non Elective Asthma Admissions

Organisaion: MIDLANDS

Age Group: Multiple select...

Financial Year: 2021/22



MDL

sht region - icb	∑ Admission Count (#)
MDL - B&S	722
MDL - BC	577
MDL - C&W	164
MDL - D&D	165
MDL - H&W	111
MDL - LIN	133
MDL - LL&R	142
MDL - N&N	261
MDL - NOR	169
MDL - S&S	321
MDL - ST&W	202
Total	2,931

* Small Number

VOICES TRANSFORM AND INSPIRE CHANGE

Service user: t.watson-koszel@england.nhs.uk | Report produced: 01 Sep 2022

Non Elective Admissions IMD

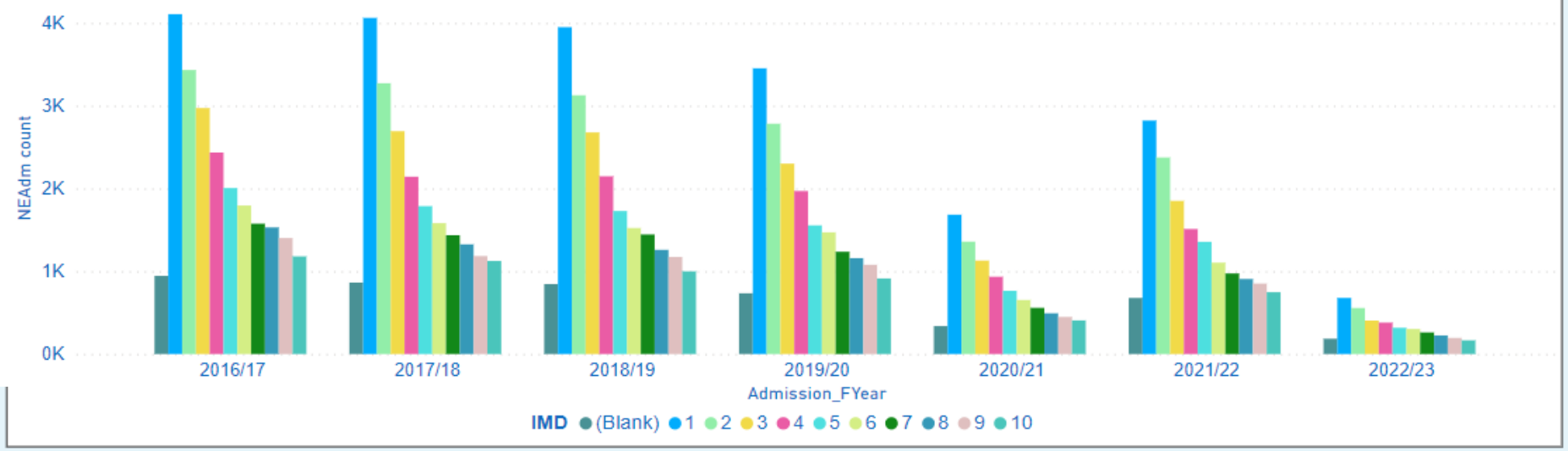
Orgnisation: All

Age Group: Multiple selections

Ethnicity: All

Financial Year: All

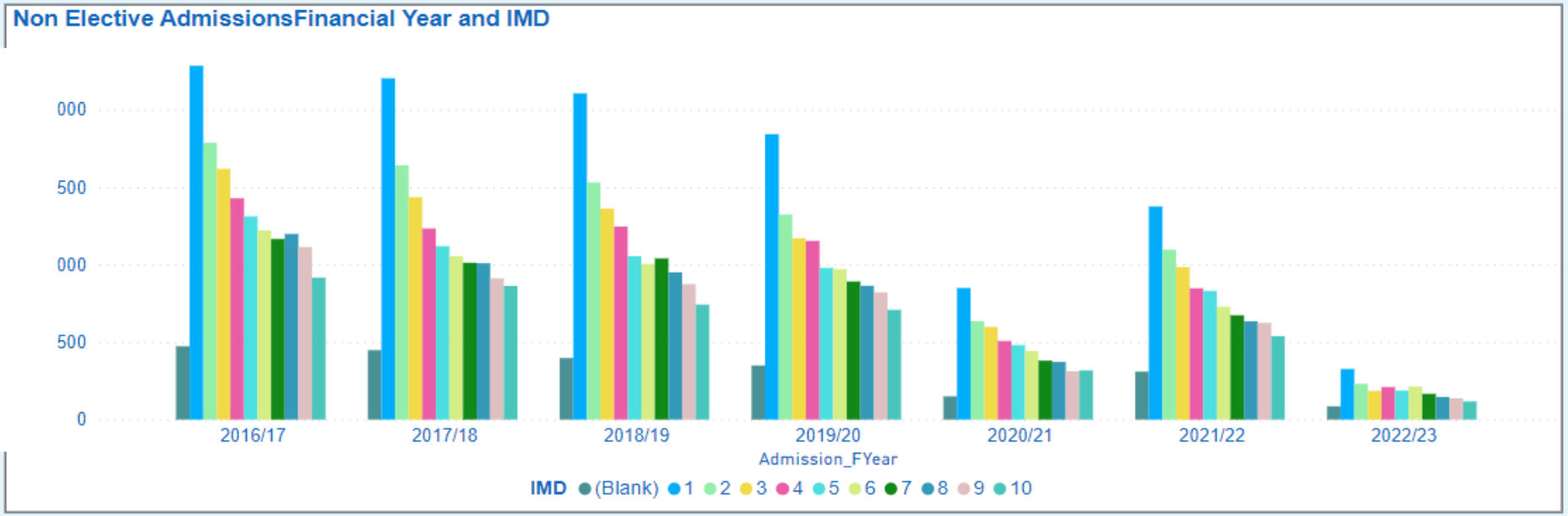
Non Elective AdmissionsFinancial Year and IMD



Admission_FYear	1	2	3	4	5	6	7	8	9	10
2016/17	4.04%	17.57%	14.68%	12.71%	10.42%	8.58%	7.68%	6.74%	6.54%	5.99%	5.05%
2017/18	4.02%	18.92%	15.24%	12.54%	9.98%	8.32%	7.37%	6.69%	6.17%	5.51%	5.24%
2018/19	4.05%	18.92%	14.98%	12.83%	10.29%	8.28%	7.30%	6.92%	6.03%	5.62%	4.79%
2019/20	3.94%	18.51%	14.92%	12.34%	10.56%	8.34%	7.89%	6.63%	6.21%	5.78%	4.89%
2020/21	3.86%	19.21%	15.49%	12.88%	10.66%	8.73%	7.45%	6.37%	5.61%	5.11%	4.63%
2021/22	4.47%	18.59%	15.65%	12.20%	9.96%	8.93%	7.27%	6.42%	5.98%	5.61%	4.92%
2022/23	5.04%	18.48%	15.15%	11.01%	10.36%	8.64%	8.26%	7.11%	6.13%	5.31%	4.50%

Non Elective Admissions IMD

Orgnisation: All | Age Group: Multiple selections | Ethnicity: Any White Ba... | Financial Year: All

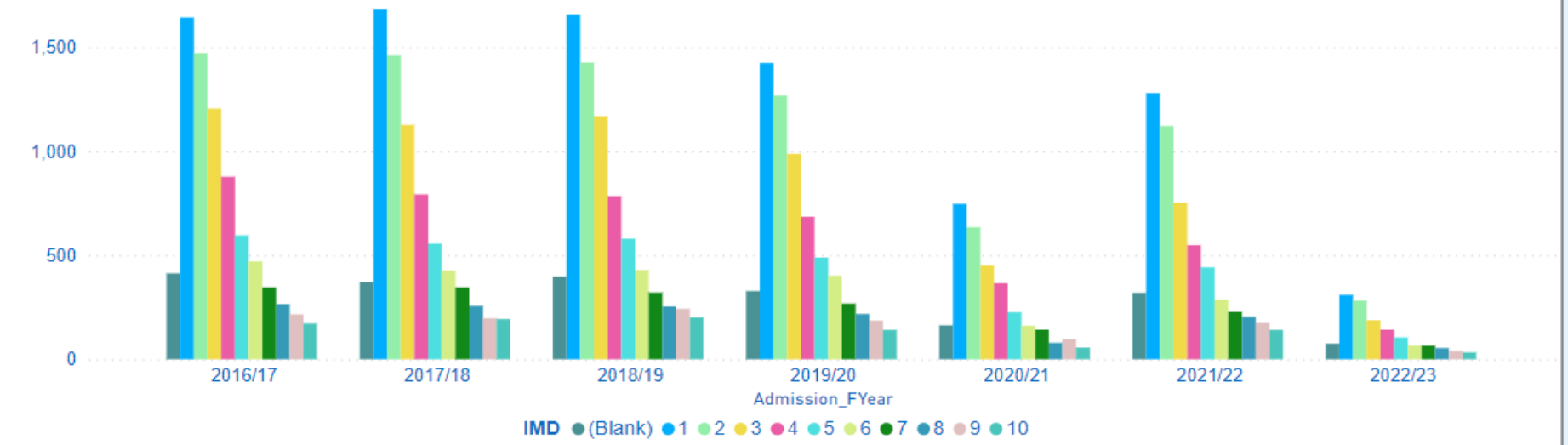


Admission_FYear	1	2	3	4	5	6	7	8	9	10
2016/17	3.26%	15.73%	12.31%	11.15%	9.84%	9.03%	8.41%	8.03%	8.26%	7.67%	6.31%
2017/18	3.47%	17.03%	12.69%	11.10%	9.54%	8.66%	8.16%	7.83%	7.81%	7.05%	6.67%
2018/19	3.23%	17.11%	12.43%	11.07%	10.13%	8.57%	8.16%	8.45%	7.72%	7.10%	6.03%
2019/20	3.15%	16.64%	11.95%	10.57%	10.42%	8.84%	8.77%	8.05%	7.80%	7.42%	6.40%
2020/21	2.98%	16.84%	12.59%	11.86%	10.06%	9.54%	8.77%	7.54%	7.38%	6.17%	6.29%
2021/22	3.58%	15.92%	12.69%	11.39%	9.81%	9.61%	8.43%	7.79%	7.34%	7.22%	6.23%
2022/23	4.29%	16.27%	11.53%	9.23%	10.48%	9.33%	10.63%	8.28%	7.29%	6.84%	5.84%

Non Elective Admissions IMD

Orgnisation: All | Age Group: Multiple selections | Ethnicity: Multiple selec... | Financial Year: All

Non Elective AdmissionsFinancial Year and IMD



Admission_FYear	1	2	3	4	5	6	7	8	9	10
2016/17	5.38%	21.41%	19.18%	15.70%	11.43%	7.76%	6.13%	4.51%	3.45%	2.81%	2.24%
2017/18	5.01%	22.71%	19.72%	15.21%	10.70%	7.50%	5.75%	4.67%	3.47%	2.66%	2.60%
2018/19	5.33%	22.18%	19.12%	15.67%	10.52%	7.77%	5.75%	4.30%	3.40%	3.26%	2.69%
2019/20	5.13%	22.27%	19.82%	15.44%	10.71%	7.64%	6.28%	4.19%	3.41%	2.91%	2.20%
2020/21	5.22%	23.95%	20.33%	14.44%	11.72%	7.24%	5.16%	4.55%	2.53%	3.07%	1.79%
2021/22	5.82%	23.28%	20.40%	13.68%	9.98%	8.04%	5.22%	4.15%	3.71%	3.16%	2.56%
2022/23	5.51%	22.76%	20.78%	13.80%	10.43%	7.71%	4.85%	4.85%	3.96%	2.94%	2.42%

Asthma Dashboard Future Phase releases

Phase II

- Prescribing by region, ICS and PCN rates and ratios for
  - Preventers
  - Relievers
  - Oral corticosteroids

- **Ethnicity at population level to provide admission rates by local population**
  - To identify if the non elective admissions are proportional to local population ethnic groups

Phase III

- Attendances to emergency care centres by type
  - Repeat attendance rates by region, ICS and PCN
- Asthma calls to 111
  - With breakdown of outcomes – GP, ED, prescription etc.

Asthma Dashboard Future Aspirations

Future aspirations

- Air pollution data
- Proportion of children on the Difficult to Treat and Severe asthma registry
- GP system data
    - Percentage of patients with a Personalised Action Plan (PAAP)
    - Post exacerbation review (ideally within 48hrs of discharge from hospital)
    - Percentage of patients who have had an annual review (within the last year)

NHS England London

Next steps

Babies, Children and Young People's Transformation – London

Viv Marsh, Clinical Lead for CYP Asthma Transformation, Black Country Integrated Board

Asthma- Clinical Update National Asthma Bundle- Putting into action

Dr Satish Rao
Consultant Respiratory Paediatrician
Medical Director for Innovation and Transformation
Birmingham Women's Hospital
Birmingham and Solihull Integrated Care System

Acknowledgements

- Saltley Academy, Olive Primary School, George Dixon Academy, Benson Community School, Chilwell Croft Academy
- Early Help
- George Coller Asthma Charity
- Dr Gandhi, Dr Ninan and team from UHB
- Dr Nagakumar, Sister Sue Frost, Teresa Evans, BWC
- Amy Maclean, West Birmingham ICS
- Drs Mukherjee and Akhtar- SWBH
- Dr Kay Crossman, Alison Wearer, Midland Medical Partnership
- Drs Aslam And Malik Urban Health PCN
- Drs Subeena Suleman and Vijaya Vipran East Birmingham Urgent Treatment Centre
- BSoL- Jo Carney, Bilal Jeewa and Alisdair Hurst

Overview

- Pre-school Wheeze
- Asthma Diagnosis
- Asthma Treatment
- Severe Asthma
- National Asthma Bundle- Putting into action

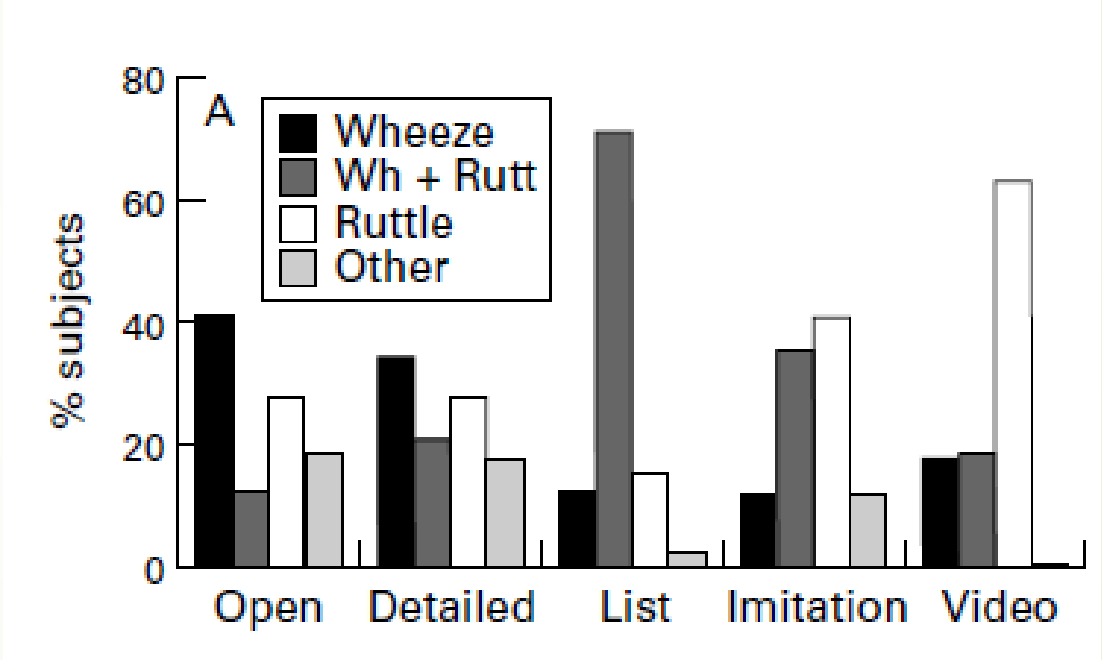
Pre-school wheeze is not a benign condition

- 60% become symptom free by 6 years of age[1]
- Longitudinal studies suggest that the reduced lung function in pre-school years may continue into adulthood[2,3,4]
- Low FEV1 in childhood correlates with poor respiratory outcomes and mortality in early adulthood[5]

1- Martinez et al 1995
2- Belgrave et al 2014
3- Taussig et al 2003
4- Phelan et al 2003
5- Chatziparasidis et al

Pre-school wheeze is not a benign condition

- Is it wheeze?



Survey of respiratory sounds in infants
H E Elphick, et al Archives 2001

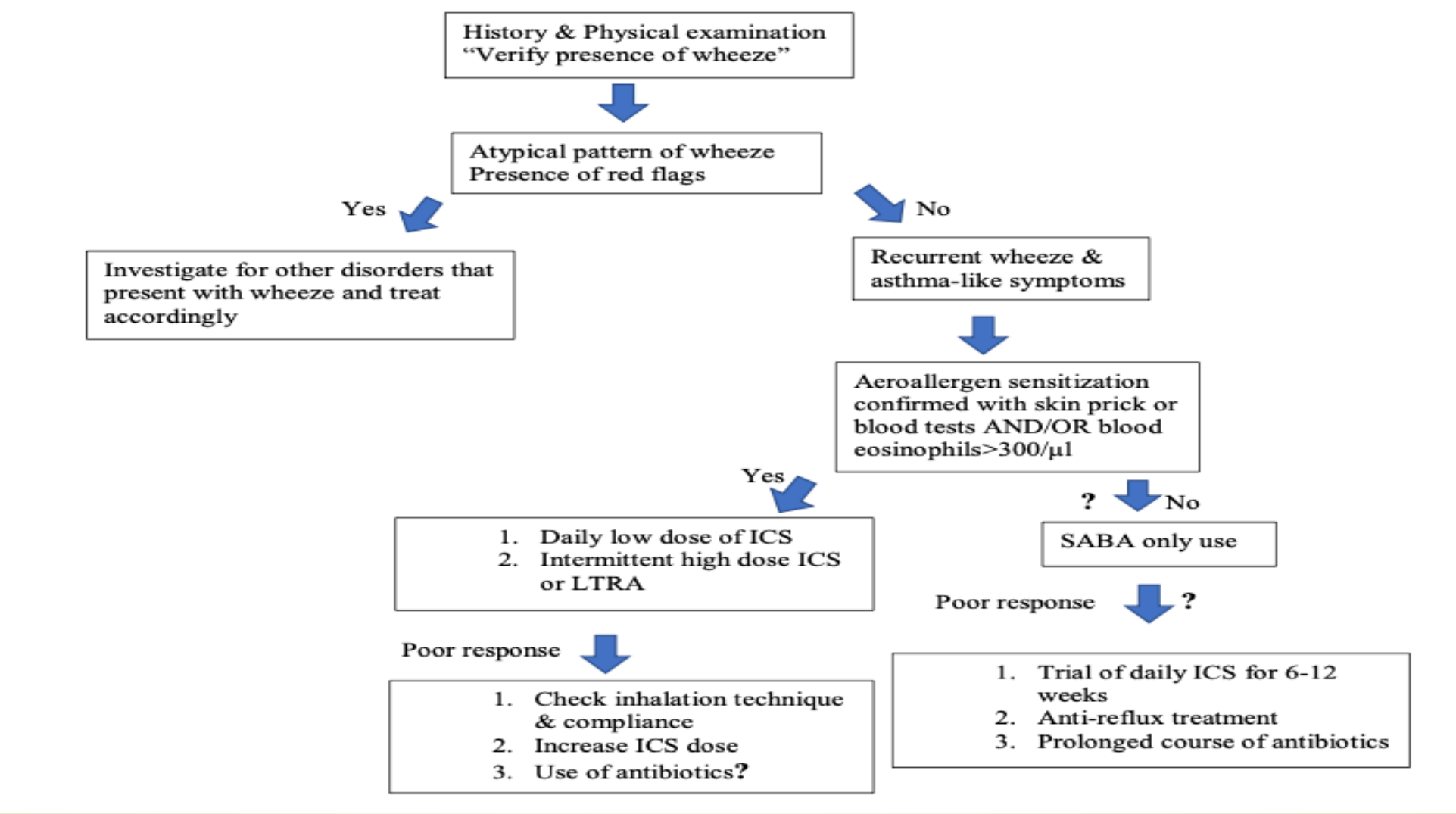
Red Flags

TABLE 3 Red flags in preschool wheezing suggesting further investigation is required

- Abnormality detected in antenatal ultrasound scans
- Stormy perinatal period in a term baby with neonatal intensive care unit admission
- Neonatal/infantile onset of symptoms
- Chronic wet cough with no periods of remission
- Abnormal signs e.g., digital clubbing, focal wheezing, persistent tachypnoea, hypoxaemia, failure to thrive
- Failure to respond to short acting beta agonist, and/or inhaled corticosteroids
- Wheezing associated with feeding or vomiting
- The toddler with a history of choking and/or very sudden onset of symptoms suggestive of foreign body inhalation
- Wheezing with little cough and varying with changes in position
- History of pulmonary or systemic infections suggestive of immunodeficiency (severe, persistent, unusual organisms, recurrent infection)

Chatziparasidis et al 2022

Who needs regular treatment?

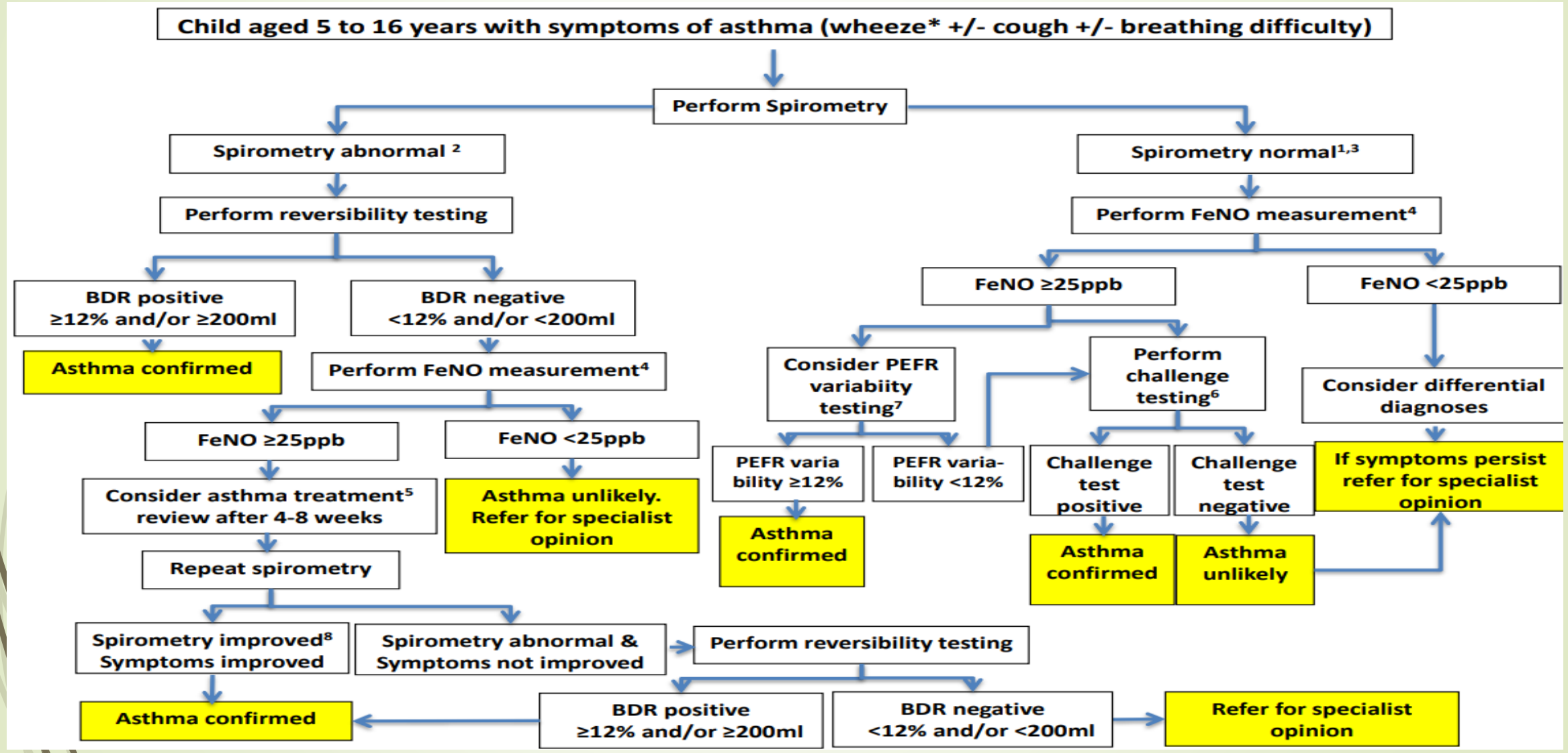


Chatziparasidis et al 2022

Asthma Diagnosis

- Still a clinical diagnosis
- Presence of supportive signs/symptoms- dry cough, wheeze, shortness of breath, atopic symptoms etc
- Absence of signs/symptoms such as persistent wet cough, poor growth and clubbing

A case for more objective assessment?



Limitations

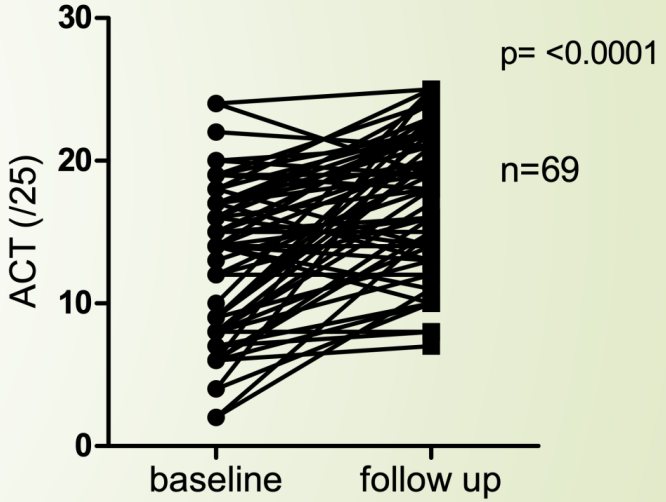
- Normal Lung function and FeNO does not rule out asthma[1]
- Likelihood of missing those with lowish lung function and not much symptoms can be minimised by good history, examination and attention to drug history
- Please don't hold back treatment waiting for spirometry when diagnosis can be made clinically
- Concerns that we might under-recognise asthma if diagnosis is strongly based on spirometry[2]

1- GINA guidelines 2021
2- Murray et al 2017

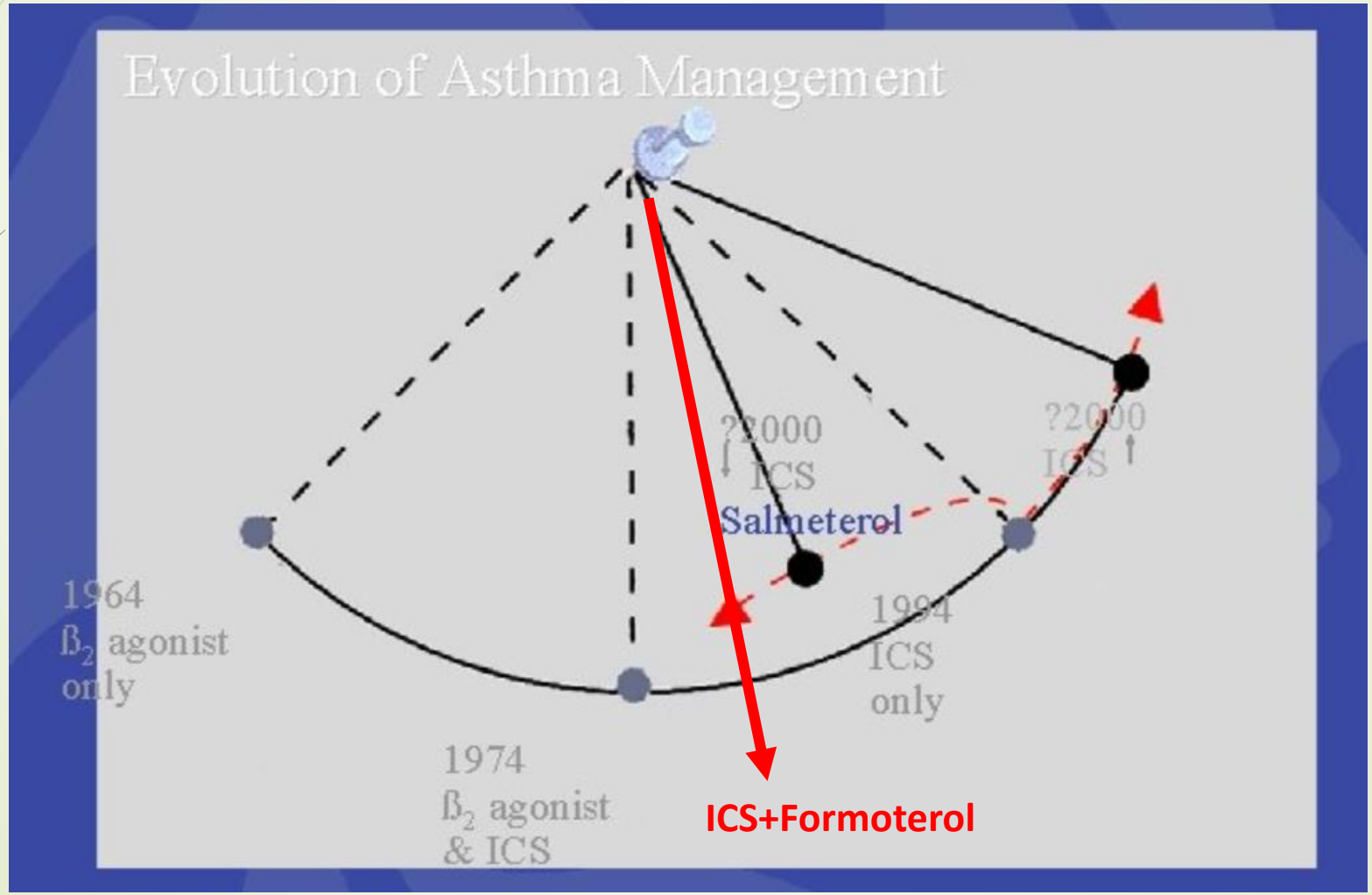
East Birmingham Locality Asthma Project

- Enhanced Primary Care Paediatrics
- Targeted support to primary care, schools and community
- Most deprived part of Birmingham
- 205 CYP seen since April 2022
- 69 with repeat Asthma Control Test (ACT) scores at 6-8 weeks after review

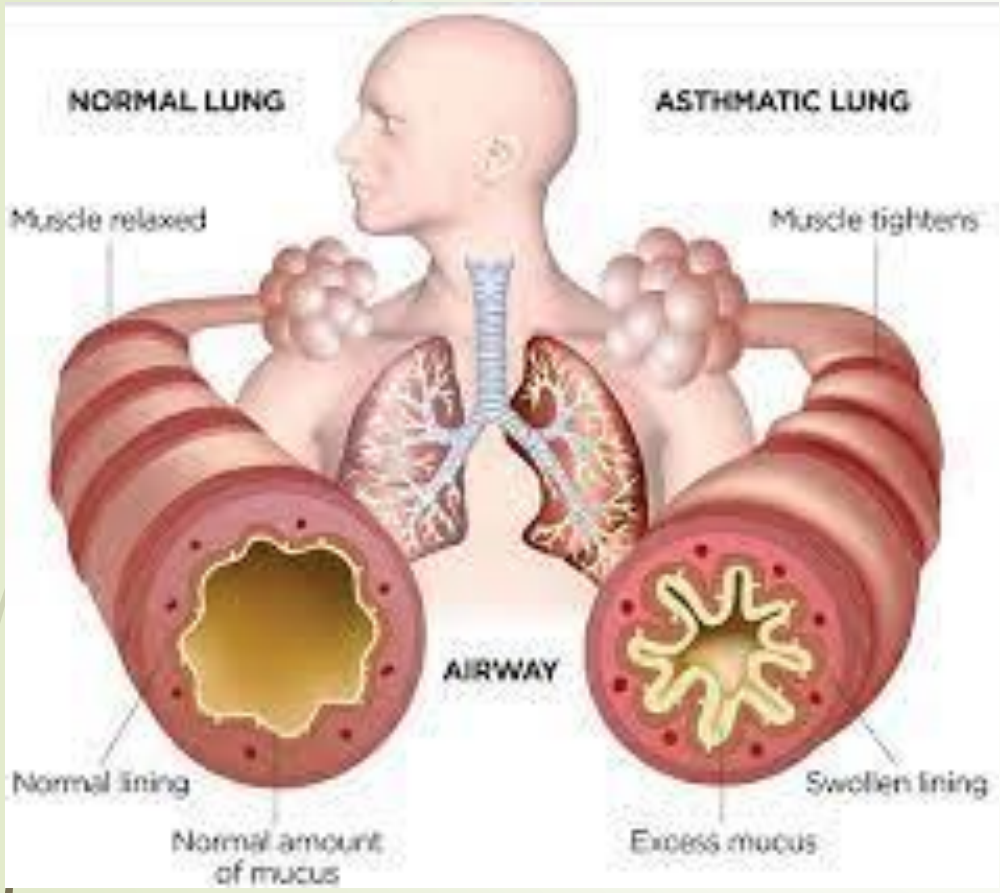
  Median ACT:
  At baseline = 14 (8, 17)
  Follow up: 19 (14,22)

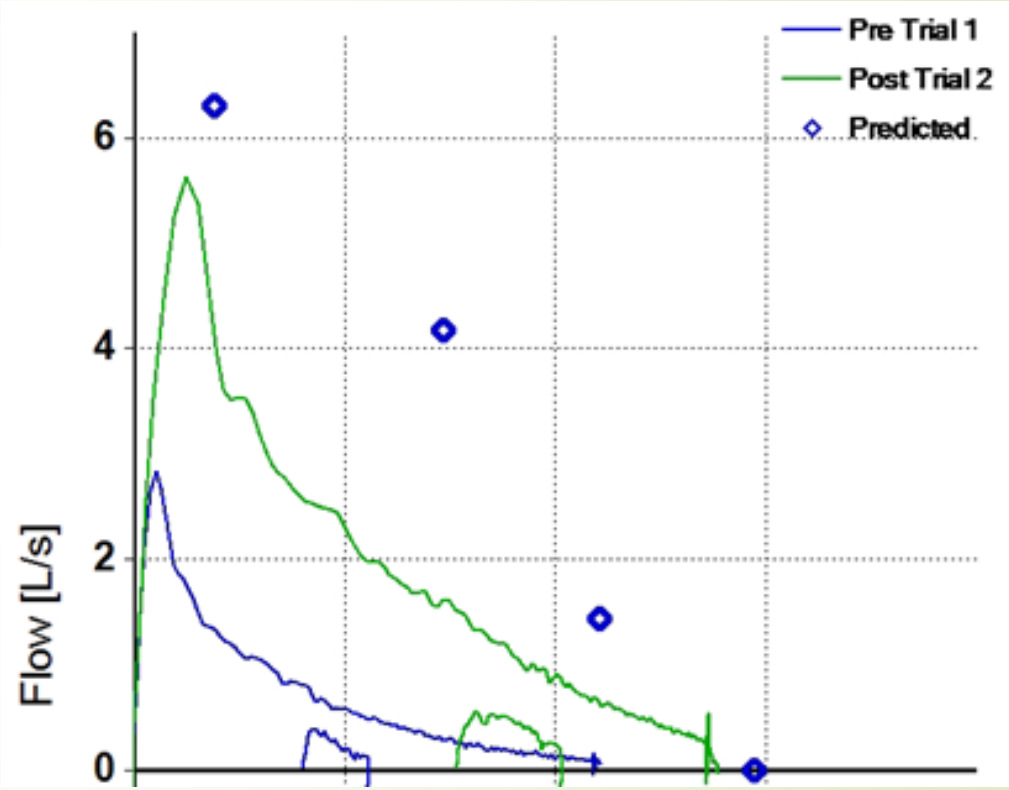


Asthma: Pendulum swings



Treat Inflammation *AND* bronchoconstriction





Adults & adolescents 12+ years

Personalized asthma management

Assess, Adjust, Review for individual patient needs

CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever

STEPS 1 – 2	STEP 3	STEP 4	STEP 5
As-needed low dose ICS-formoterol	Low dose maintenance ICS-formoterol	Medium dose maintenance ICS-formoterol	Add-on LAMA Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, ± anti-IgE, anti-IL5/5R, anti-IL4R, anti-TSLP

RELIEVER: As-needed low-dose ICS-formoterol

CONTROLLER and **ALTERNATIVE RELIEVER** (Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller

STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
Take ICS whenever SABA taken	Low dose maintenance ICS	Low dose maintenanc e ICS-LABA	Medium/high dose maintenance ICS-LABA	Add-on LAMA Refer for assessment of phenotype. Consider high dose maintenance ICS-LABA, ± anti-IgE, anti-IL5/5R, anti-IL4R, anti-TSLP

RELIEVER: As-needed short-acting beta$_2$-agonist

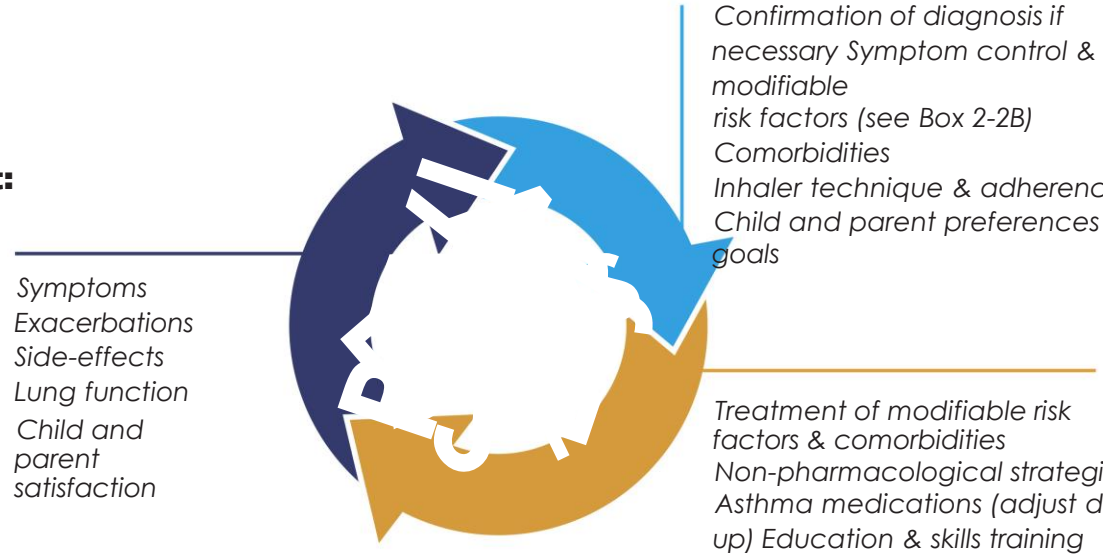
	Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT	*Medium dose ICS, or add LTRA, or add HDM SLIT*	*Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS*	*Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects*

Other controller options for either track (limited indications, or less evidence for efficacy or safety)

See GINA severe asthma guide

Children 6-11 years

Personalized asthma management:
Assess, Adjust, Review



Asthma medication options:
Adjust treatment up and down for individual child's needs

	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
PREFERRED CONTROLLER to prevent exacerbations and control symptoms	Low dose ICS taken whenever SABA taken	Daily low dose inhaled corticosteroid (ICS) (see table of ICS dose ranges for children)	Low dose ICS-LABA, OR medium dose ICS, OR very low dose* ICS-formoterol maintenance and reliever (MART)	Medium dose ICS-LABA, OR low dose† ICS-formoterol maintenance and reliever therapy (MART). Refer for expert advice	Refer for phenotypic assessment ± higher dose ICS-LABA or add-on therapy, e.g. anti-IgE, anti-IL4R
Other controller options (limited indications, or less evidence for efficacy or safety)	*Consider daily low dose ICS*	*Daily leukotriene receptor antagonist (LTRA), or low dose ICS taken whenever SABA taken*	*Low dose ICS + LTRA*	*Add tiotropium or add LTRA*	*Add-on anti-IL5 or, as last resort, consider add-on low dose OCS, but consider side-effects*
RELIEVER	As-needed short-acting beta$_2$-agonist (or ICS-formoterol reliever in MART in Steps 3 and 4)				

**Very low dose: BUD-FORM 100/6 mcg*
†Low dose: BUD-FORM 200/6 mcg (metered doses).

Implications

- ICS and LABA combination might become the norm in few years time
- Lack of right dose and device for 6-11yrs old
- Institution of dry powder device requires more training and better follow-up
- For now, might be a good strategy for selected individual over 12yr old

Do you know when the inhaler is empty?

I Fullwood,[1] T Evans,[1] Benjamin Davies ,[1] T Ninan,[2] C Onyon,[3] J Clarke,[4] Rajesh Srikanthiah,[5] Susan Frost,[1] N Iqbal,[6] M Atkinson,[7] Satish Rao,[1] Prasad Nagakumar [1,8]

ABSTRACT

Background Medication review is recommended at asthma appointments. The presence of propellant in the metered dose inhalers (MDIs) makes it challenging to identify when the inhaler is empty. The COVID-19 pandemic has resulted in move towards more virtual monitoring of care. We aimed to evaluate if patients identify when the inhaler is empty and the method of inhaler disposal.

Methods Prospective, multicentre quality improvement project. Data collected from children with asthma and other respiratory conditions.

Outcome measures Children/carers attending hospital were asked how they identify an empty salbutamol inhaler; dose counters in the preventer inhalers and disposal practices were reviewed.

Results 157 patients recruited. 125 (73.5%) patients deemed an empty inhaler as either full/partially full. 12 of 66 (18.2%) preventer inhalers with a dose counter were empty. 83% disposed their inhalers in a dustbin.

Conclusions Patients cannot reliably identify when their MDI is empty. There is an urgent need for improving

What is already known on this topic

⇒ Asthma is one of the most common chronic diseases in children.
⇒ The COVID-19 pandemic has resulted in more virtual medical reviews.
⇒ Medication reviews are recommended during clinic appointments.

What this study adds

⇒ Children and families are unable to identify when their salbutamol metered dose inhalers (MDIs) are empty.
⇒ There is no consistent information available in national asthma guidelines and medication information leaflets in identifying when the inhalers are empty.
⇒ One-fifth of preventer inhalers with the dose

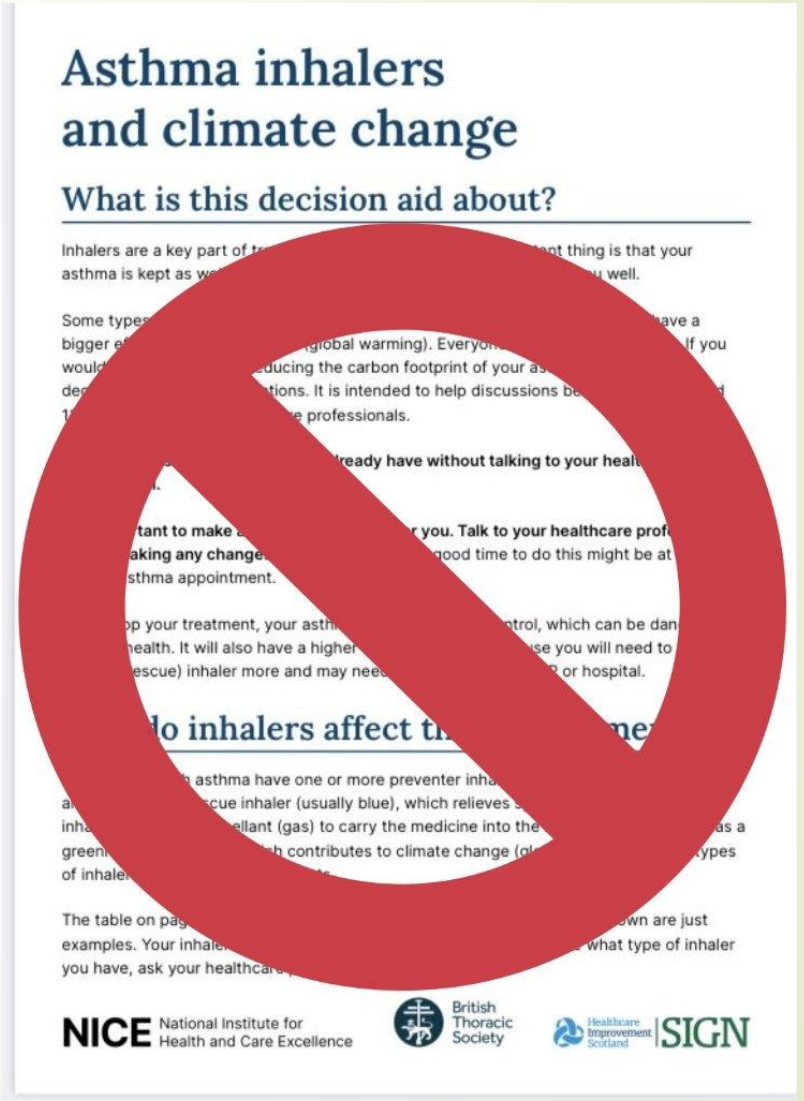
Empty Inhalers

N	157
Male(n, %)	107 (68.1%)
Age	9.5 yr (2, 15 yr)
Diagnosis (n,%) Asthma PSW CF Bronchiectasis	 118 (75.2%) 19 (12.1%) 5 (3.2%) 15 (9.5%)
Asthma/wheeze attacks (n=137) ED HDU	 2 (0,10) 0.5 (0, 4)
Preventer inhaler (n) Preventer inhaler empty – by dose counter	66 12/66 (18.2%)

Do you know when your inhaler is empty **Yes** **No/unsure**	 86, 54.8% 71, 45.2%
How do you know if the inhaler has medicine in it (n) By shaking the inhaler Aerosol when inhaler actuated Remember the actuations Look at dose counter	157 105 (69.9%) 47 (29.9%) 2 3
Disposing inhalers (n) General waste Return to pharmacy Recycle bin	133 111(83%) 12 (9%) 10 (8%)
Inhaler technique checked (n) Satisfactory Suboptimal Spacer device checked (n) Right spacer Wrong spacer	152/157 (96.8%) 127/152 (83.5%) 25/152 (16.5%) 138/157 (87.9%) 127/138 (92%) 11/138 (8%)

Dry powder inhalers

- ? Environmentally friendly
- Groups unable to use DPI
- Changing inhalers without proper assessment of the suitability/technique could pose more risk to patients



Uncontrolled, Difficult to treat and Severe Asthma

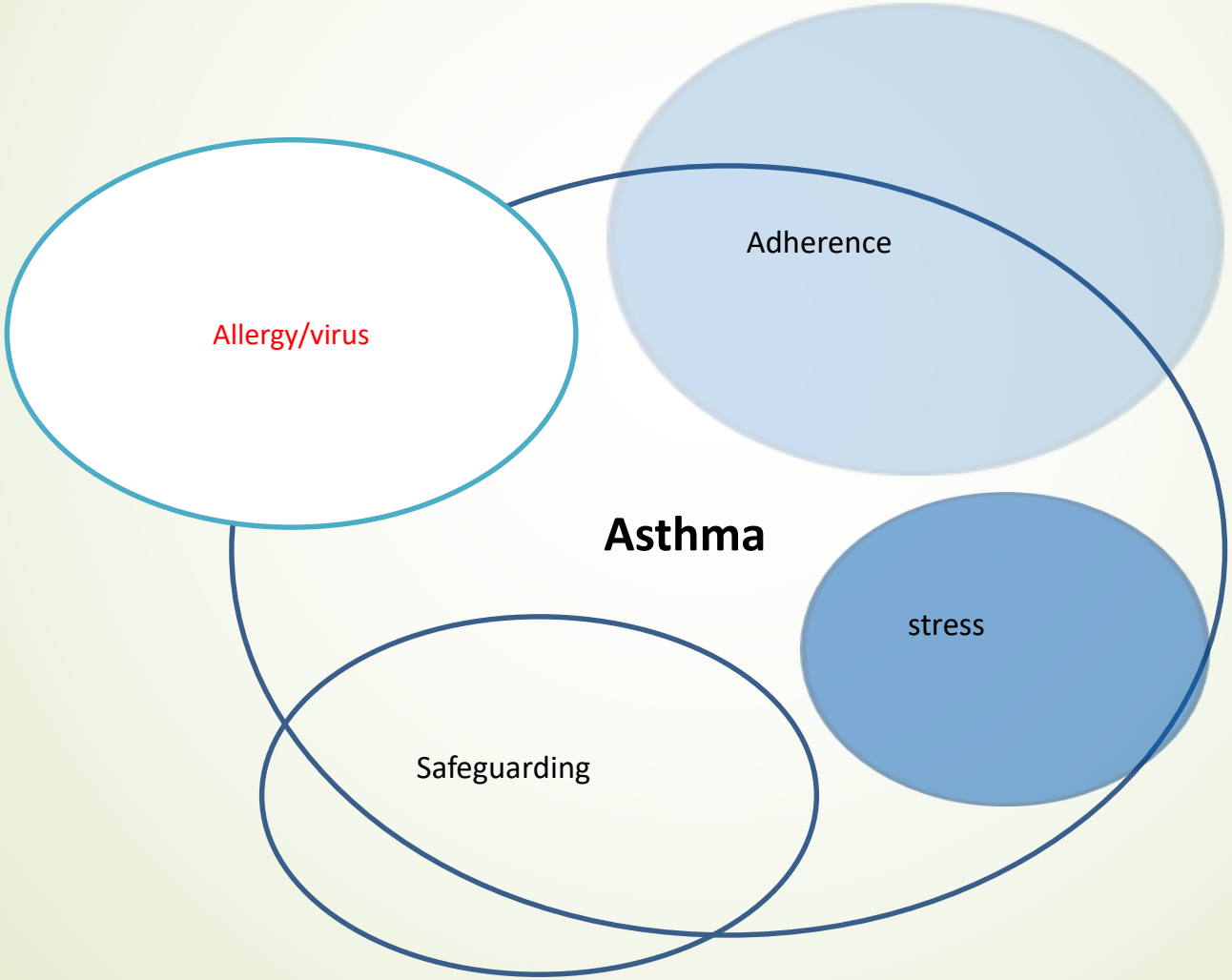
- Uncontrolled asthma
  - Poor symptom control
  - Frequent exacerbations

- Difficult to treat- uncontrolled despite Step 4 or 5
  - modifiable factors such as adherence, technique etc

- Severe asthma or severe *(refractory)* asthma- subset of difficult to treat asthma

Gina Guidelines 2021

Difficult to treat asthma



Who needs Severe Asthma Service?

- **ALL** children who meet any of the following criteria should be assessed by the regional tertiary difficult/severe asthma service for an initial assessment and then at least annually if they continue to meet any of these criteria.

1. **Children prescribed maintenance oral steroids (≥4 weeks over past 12 months)**

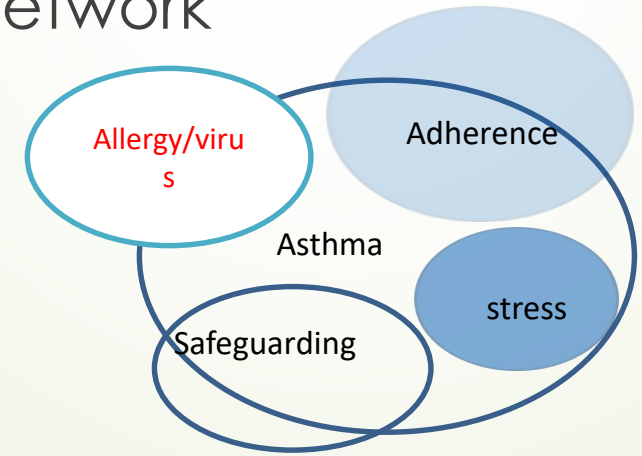
2. **Admission to PICU**

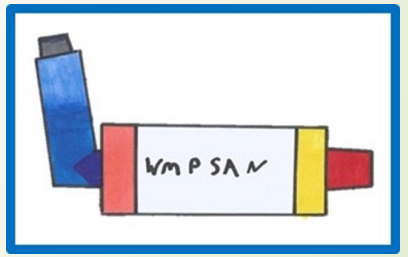
3. **On-going poor control despite optimised management and the prescription of high dose inhaled corticosteroids plus a long acting beta agonist**

National Asthma Bundle

MDT assessment is crucial

- Established paediatric severe asthma MDT
- Recognition/ management of comorbidities
- New biologics: Mepolizumab, Dupilumab
- Network approach : West Midlands Paediatric Severe Asthma Network





Essential Asthma Treatment and Monitoring remains sub-optimal

National Asthma Bundle into action

Initial focus: what do we want to achieve?

- Improve asthma control for every CYP with asthma
- Improve QoL and PROM for every CYP
- Reduce unscheduled visits
- Consistent education and management across the system
- Integrated working to meet holistic needs of the family
- Prevention: focus on air pollution

At risk children

Risk Stratification Approach

High Risk (last 12 months)

- Hospital admission
- 3 or more GP encounters for asthma exacerbation
- 2 or more Oral steroids issued
- 3 or more nebulisers
- 6 or more SABA inhalers
- BTS step 3 and above
- ICU or HDU admns

Intermediate risk (last 12 months)

- ≤ 2 Gp encounters for asthma exacerbation
- ≤ 2 Oral steroids issued
- ≤2 Nebulisers
- 3-6 SABA inhalers issued

Low risk (Last 12 months)

- No exacerbation
- No Oral steroid issued
- <3 SABA inhalers issued
- Patients only on ICS and SABA.

Approaches for integration

Basic Principles

- Take expertise out to where it is needed
- Build expertise and capability as a system
- Look at how to sustain changes- both in health and within families/communities
- Arrive at an integrated way- co-produced with CYP, families and all sectors involved
- Bite-size problem- start with at risk children
- Link in with schools, Early Help
- Prevention- air quality

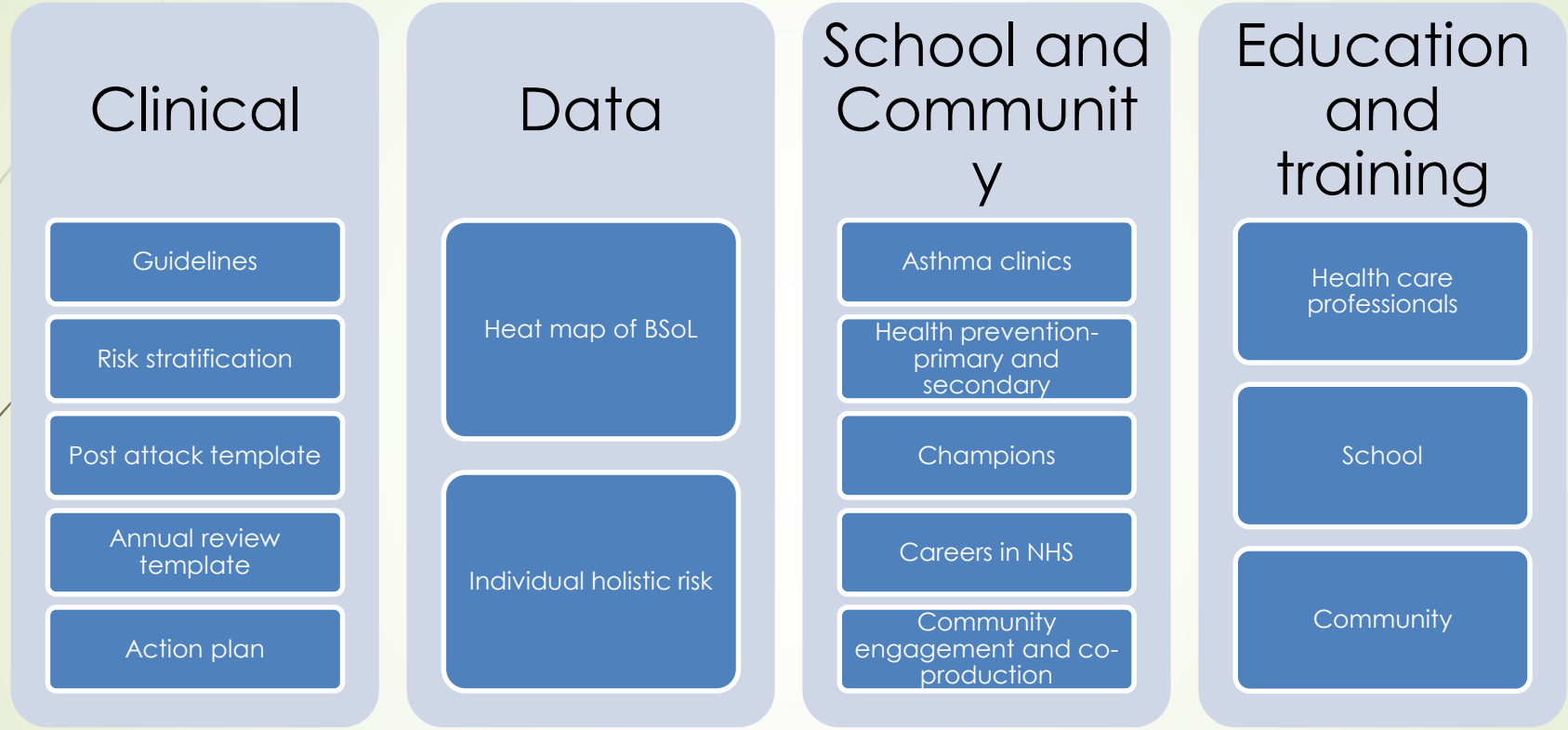
Co-production with CYP, families and communities

Training professionals

Data

Research

Workstreams



Research and Evaluation

Pilot Projects

Asthma clinic at Midland Medical Partnership (North and South Birmingham)

Specialist nurse clinics at East Birmingham Treatment Centre

Risk stratification approach at West Birmingham PCNs

Benson School Parent Power Asthma Project

Plan on a Page

NHS
Birmingham Women's and Children's
NHS Foundation Trust

- Parents and school not consistently educated about how inhalers can and should work to manage child's asthma.
- Longer-term plans include sharing information directly with GPs.
- In the meantime, we held 3 workshops in a day to empower the families to work with their GP and school for a plan that enables the child to be well.
- A local GP sat in and gave the afternoon session and will continue to maintain links with the school as a

Feedback—

'Why didn't I know this before?' (parent)

'We asked our teachers to come to the sessions as it helps for us to know how to care for children with asthma. It's great to have support from our local health leaders. (Head of school)

ASTHMA PARENT CHAT

13 October, Benson Community School: 9am, 2:30pm, 7pm (online)

Please share this note with your GP:

1. My child has a wheeze- do they have asthma?
2. My child is using a reliever (blue inhaler), do they need a preventer (e.g., brown inhaler)?
3. My child needs to know how to use the inhalers with spacers properly; how and where can we learn?
4. My child needs an action plan to tell us how to manage asthma attacks.
5. Have I shared the information with school?

Questions? If you need any support, please email

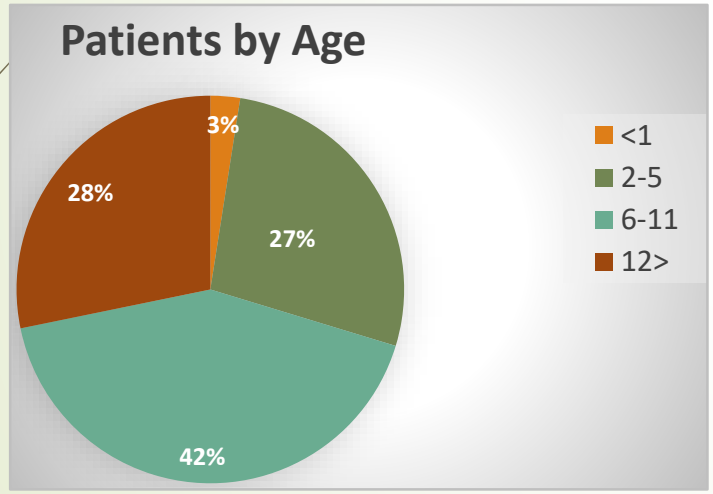
AMY.MACLEAN@NHS.NET

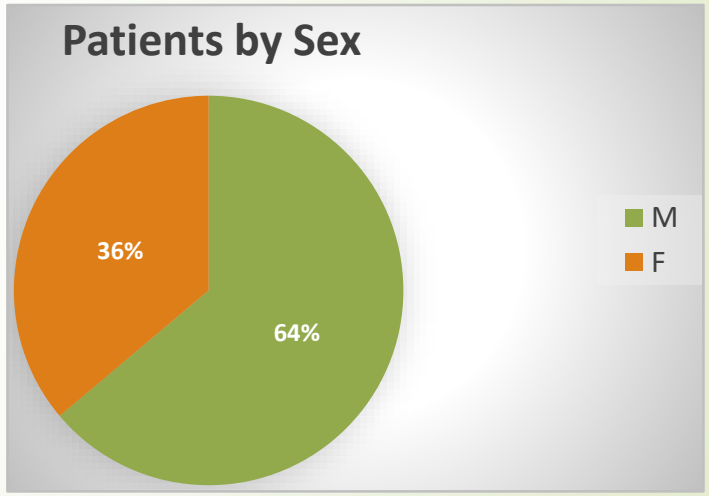
East Birmingham Locality Asthma Project

- One of most deprived areas
- Ethnically diverse
- Health integration project involving 7 Primary Care Networks, 2 Acute Hospitals, Early Help and Schools
- Launched in March 22

Demographics

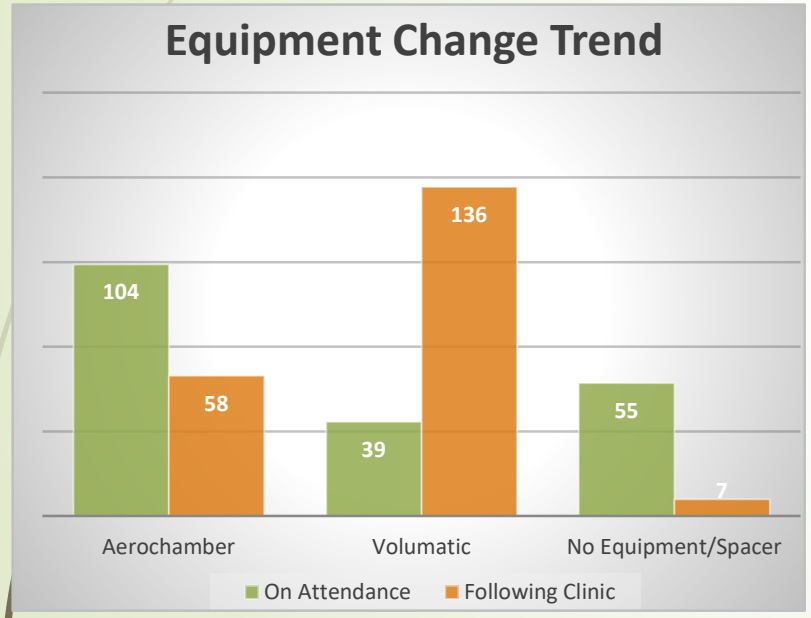
- **A total of 202 unique patients have been seen at the clinic.**
- 77 patients have had 1 further appointment/review at the clinic between 4 and 8 weeks after their first.
- Most patients (72%) were under 11.

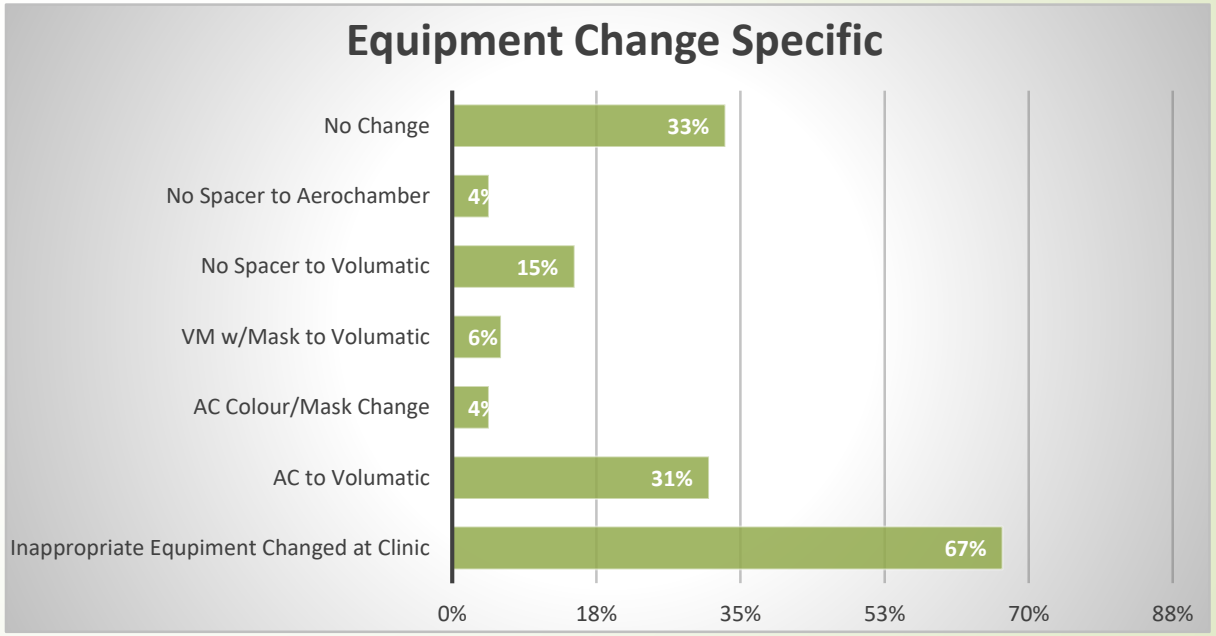




Equipment

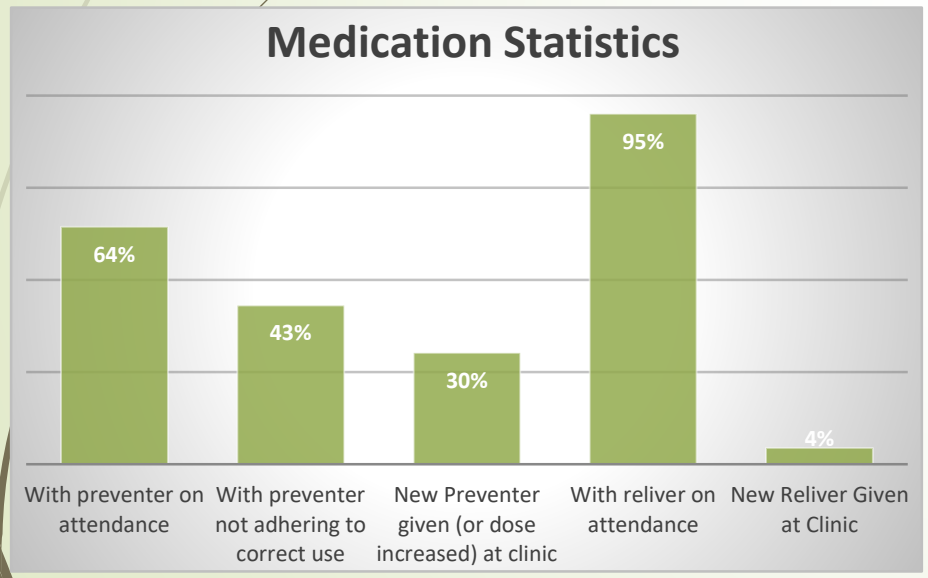
- 67% of patients had inappropriate equipment (wrong or no spacer) and were given appropriate equipment at the clinic.
- The majority of equipment changes were from Aerochambers to Volumatics, or to the use of Volumatic from no spacer at all.

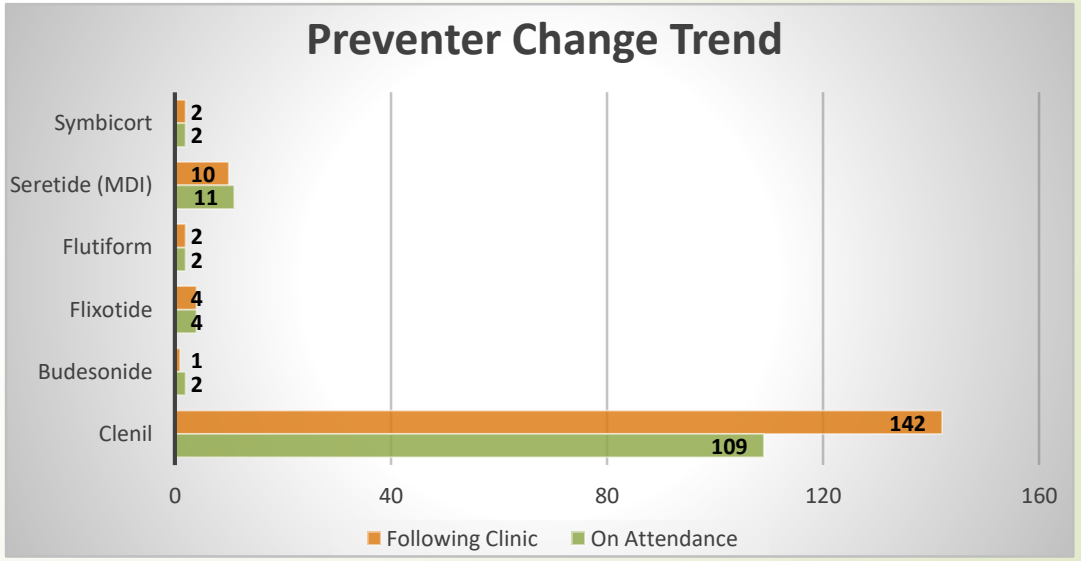




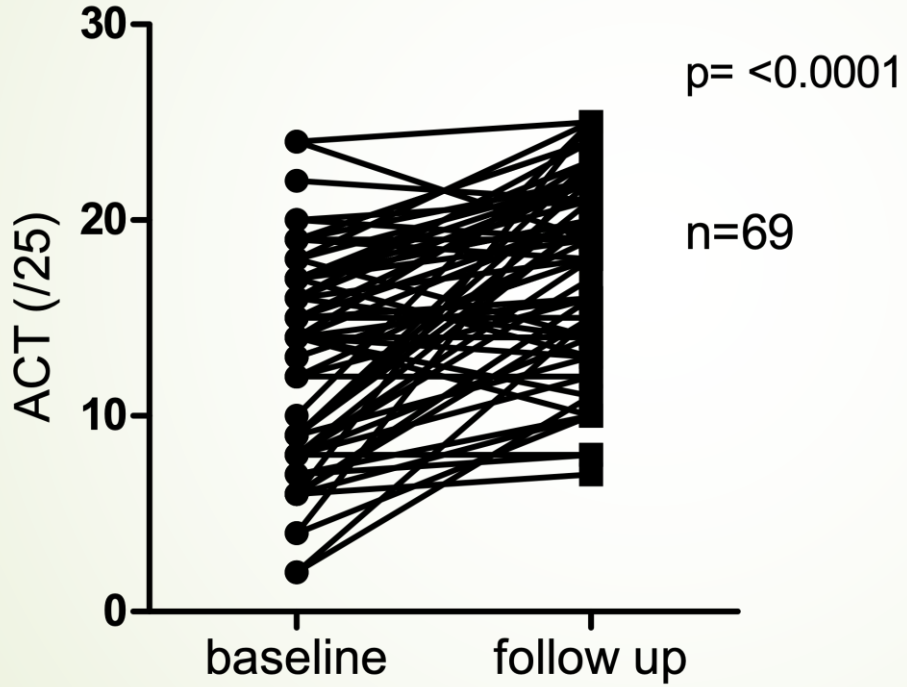
Medication

- Almost all (95%) of patients already had Reliver medication when attending the clinic, the remaining 5% were prescribed one at the clinic.
- 130 patients (64%) had Preventer medication on attendance, however 87 of these patients (43% of total patients) were not using these preventers correctly and were advised on their correct use.
- 61 patients (31%) were given a new or different Preventer, or had their dosage increased.
- None has acute management plan before clinic visit





Significant improvement in ACT scores



69 patients
Median ACT:
At baseline = 14 (8, 17)
Follow up: 19 (14,22)

User Feedback

- 44 Families have completed experience feedback forms so far
- The feedback form also contains 3 questions to assess general understanding of asthma, correct use of spacer/equipment and recognition of the start of an asthma attack.
- 100% of feedback forms showed improvement in patient/parent understanding following the clinic
  - Majority of questions given 5 out of 5 in understanding after the appointment, from an average of 3 out of 5 before the appointment.
  - Before the consultation, parent/carers were least confident in the knowledge of spacers/equipment and its use. However, this area also saw the biggest improvement in scores following their appointment.
- Further comments include:
  - “Feel reassured and happy with the advice given to me today, thank you very much. I have learnt a lot about how to use the two inhalers now.“
  - “This appointment has helped me understand a lot more in managing her asthma, really happy with it. Thank you.”
  - “Very informative and usual tools, great for my child to understand her condition.”
  - “This is definitely a brilliant service especially for those who are new to Asthma issues.”

Asthma Friendly School Programme- Olive Primary School

- One of the pilot schools- high non-attendance due to asthma
- Asthma policy at school
- Asthma register
- Staff training
- Building champions- staff, children and families
- Asthma clinic in October

Summary of East Birmingham Pilot

- The preliminary data shows a health integration project in one of the most deprived areas of Birmingham resulted significant improvement in asthma control in children and young people.
- The project has shown that by focussing on
  - Access to healthcare- locality service, smooth referral pathways
  - Delivering high quality care by removing unwarranted clinical variations in essential asthma care
  - Connected with the communities- focus on school and integrating with Early Help.
  - Early development of asthma champions in the community
- Excellent parent/carer feedback
- Future plans include extending the project to wider PCNs and integrating with non-health sector e.g. council etc

Further work

- Development of BSoL Heatmap for asthma
- Common templates across primary care
- Asthma clinics at school
- Integration with non-health sectors- air quality, family support, healthy living

Summary

- More than new knowledge, successful implementation of current knowledge
- Requires an integrated approach
- Health inequalities
  - Need to make the service accessible
  - Essential asthma care of high quality without unwarranted clinical variation
  - Integrate with local resources like schools etc
  - Develop asthma champions in the community

Thank you to everyone for joining today's conference, your time and contributions are appreciated

#AskAboutAsthma #AsthmaCareForAll

This week's content including today's conference recording will be available to access on:
https://www.healthylondon.org/ask-about-asthma