### **The Problem**

822,392 UK children are suffering from Asthma (1)



Asthma is the most common longterm medical condition for children and the most common reason for urgent admissions to hospital in children and young people in England<sup>2</sup>.

There is a lack of time to provide proper asthma healthcare training (the mean duration of a GP surgery consultation is **between 9.22 - 10.22** minutes)3-4.

93% of asthma sufferers use their inhalers incorrectly<sup>5</sup>.



### **Primary Care**

Incorrect teaching and assessment increases use of healthcare resources, wastes medicines and ultimately means worsening symptoms. (6)

techniques in order to educate their patients

effectively in their use. (6)

Of HCPs have sufficient knowledge of inhaler

Caring for people who experience

an asthma attack costs

3.5 times more than caring for those whose

asthma is well managed. (7)

**69%** children take time off work to

look after asthmatic children. (8)

Patients should see a GP or asthma nurse within 48 hours

of leaving hospital, or ideally on the same day if they did not

need hospital treatment. (8)

#### **Hospital Admissions** Every 10 seconds someone is having a potentially life-threatening

asthma attack and unable to breathe. (9) 75% of hospital admissions for

of asthma admissions are thought to be preventable; small improvements could significantly reduce admissions. (10)

**SABA Use** 

asthma and as many as

of the deaths from asthma are preventable. (11)

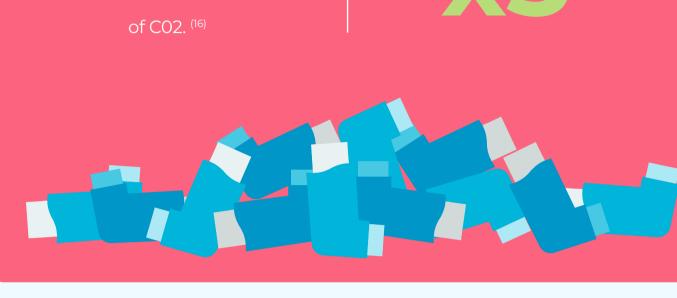
An asthma related hospital

emergency admission costs on average people treated in hospital for an asthma attack need hospital care

The burden of asthma is greater than the cost to the NHS, accruing approximately **two million** sick days off work and school because of their poorly controlled asthma or from having asthma attacks across a 12-month period. (13)

# Carbon Footprint 73 Million of **91,052,535 kg / yr.** The **average** carbon footprint per inhaler is Landfill disposal of inhalers is harmful to the environment both in material waste and greenhouse gas emissions. (14)

#### The UK has high levels of SABA use indicating poor disease management. SABA does not address inflammation but only immediate symptom relief. (16) High SABA use (>3 SABA canisters / yr) has been observed in over one-third of UK asthma patients. (16) Overuse is responsible for Average number of inhalers per patient per year is 250.000 tonnes of CO2. (16)



#### Award winning augmented reality asthma inhaler training platform for 6 – 13 year olds addressing incorrect inhaler use and asthma management. A fun medically

WHAT IS MYSPIRA®

approved AR healthcare tool to engage the user with the learning experience. HOW

#### Using a mobile device, a child takes 20 minutes to complete 8 fun and critical chapters developed by Healthcare Professionals including:

✓ Asthma Keywords How to prepare an inhaler

- Asthma scenarios
- What happens in the lungs
- Triggers and symptoms
- With a clearer understanding of the disease, children are better equipped to
- ✓ Inhaler procedure

Preventer and Reliever

How to use a spacer

manage their symptoms.

### gap between virtual and physical spaces

**Key Features** 

✓ Uses gamification principles in teaching and behavioral change

✓ Award winning AR experience available on most mobile devices bridging the

- ✓ A feedback loop that encourages learning and provides intrinsic and
- ✓ Meet fun-loving characters in 3D
- ✓ Asthma Trigger Tracker ✓ Bonus AR game

✓ Create personalised Asthma Action Plan







#### After the HCP consultation, the child can take it home and continue to learn and practice in an environment they are comfortable in. The interaction and gamification is what's key to the high degree of learning engagement and outcomes.

**Approach** 

**Expected Benefits** 



and understanding of the disease.

engagement









by 50%<sup>(15)</sup>





### **Hospital Admissions** In 2019/20 for children aged 5-15 years, asthma accounted for 14,807 emergency admissions costing the NHS £10,690,654<sup>(21)</sup> (Each admission costs £722).<sup>(12)</sup>

Where proper inhaler training programs have been put in place, emergency admissions have reduced by **50%** and asthma associated deaths by 75%.(15)

Scenario 1 - 50% cost saving based on NICE findings emergency admissions. Where proper inhaler training programmes have been put in Potential saving in reduction of

emergency admissions. Potential saving in reduction of emergency admissions £3m

emergency admissions.

Potential saving in

emergency admissions

£4.1m

reduction of emergency admissions between £2.1m - £3.9m MySpira could potentially save the NHS millions in admissions (5-15 years - £4.1m - £3m). Average number of children with asthma within an ICB is 19,580.

Scenario 2 - assuming that 20% of the emergency admissions had effective inhaler training

Scenario 3 - assuming that 50% of the emergency

admissions had effective inhaler training

place emergency admissions have reduced

**Primary Care SABA Use** Effective asthma education and adherence is An Asthma appointment costs the NHS on

#### (lasting 9.22 minutes). (24) Calculations indicate that on average, approximately £9 million is spent by the NHS on pediatric asthma appointments every year.

Additionally, only **7%** of HCPs have sufficient knowledge of £7.9m Per annum inhaler techniques (23), indicating a potential wastage of

average: £10.33 for an Asthma nurse (lasting

15.5 minutes) and £33.70 for a GP to carry out

The average cost to implement £39,162 + VAT MySpira within each ICB territory would be just

it can be **double** this amount. <sup>(14</sup>

#### OR 574,913 asthma sufferers have been noted as having high $lue{1}$ SABA usage in the UK. $^{(13)}$

Potential savings to the NHS Potential savings from a reduction

likely to reduce SABA use to less than 3 times

a week equating to 2 inhalers per annum. (15)

this could save 512,330 tonnes of

CO2 (14), the same as a VW Golf being

of **1/3** of prescribed SABA inhalers

to 5-15 year olds.

technique has been predicted to

reduce inhaler use from 3 to 2 per

annum (15), reducing the carbon

**20kg** (14), meaning an annual saving

Reduction of over 250,000 tonnes

of CO2 per annum. (14)

per annum

### olds in England that equated to a carbon

Carbon Footprint

output of

91,052,535kg per year

average carbon footprint of **20kg** per inhaler but often

(baseline change) (baseline change)

## **Research Case Study**

**Examining the Efficacy of a Novel Augmented Reality Mobile Delivery PlaGorm for the Enhancement of** Asthma Care Education for Children<sup>(25)</sup> **University** In collaboration with University of Suffolk, MySpira was

particularly in the younger group (aged 6-9 years). MySpira may enhance the level

of available asthma care in an attempt to resolve one of the major problems facing

of Suffolk in a cohort of 96 children. The findings indicate that MySpira surpasses the traditional educational materials,

Spira is a creative app that will

give children with Asthma an

their condition. The learning

independence.

1. NHS Digital Quality and Outcomes Framework 2019-20

opportunity to fully understand

Karyn McBride, Senior Asthma

 $\textbf{2. NHS England: childhood asthma} \ https://www.england.nhs.uk/childhood-asthma/#:~:text=Asthma%20 is \%20 is \%$ 

**Nurse at NHS Stowhealthw** 

asthma suffers and their carers.

involved in a research study comparing 3 types of learning specifically in terms of enjoyment rating, the use of different inhalers' techniques,

> CYBER **ESSENTIALS PLUS**



Video's are 33%

more effective

than a leaflets

It really helps if you want to learn

about your inhalers. If you don't

use your inhalers properly, your

**Crawford Church of England** 

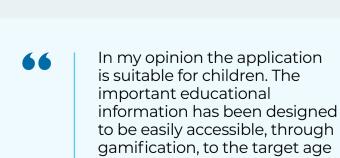
chest will go all funny.

MY SPIRA

MySpira is 36%

more effective

than video's



process will help them to take to be easily accessible, through gamification, to the target age better control and gain more range of this application.

**Dr Simon Rudland (FRCGP)** 

We know that allergies can trigger asthma exacerbations in up to 90% of children with asthma, and whilst it is a condition that cannot currently be cured, it can be well controlled with a good action plan and inhaler technique. 21st Century children are digital natives, so it makes perfect sense to use technology as a means of educating and engaging them about

their health.

Amena Warner, Head of Clinical

Services at Allergy UK

**Digital Technology Assessment** 

**Criteria (DTAC)** 

**Primary School student** 

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11. Yorkshire and Humber Network: Asthma Better for Less https://www.networks.nhs.uk/nhs-networks/respiratory-

We would be happy to provide this data for your ICS region, so please contact us either through our website www.MySpira.com or via email on hello@myspira.com

admissions in children aged 5-15 years (22) https://www.nhs.uk/conditions/asthma/asthma-attack/ (23) Baverstock M, Woodhall N & Maarman V Do Healthcare Professionals have sufficient knowledge of Inhaler Techniques in Order to Educate Their Patients Effectively In Their Use? (24) Curtis, Lesley A. and Burns, Amanda. Unit Cost of Health and Social Care 2020. GP £28.16-£39.23 (£33.70) per patient contact lasting 9.22 minutes. GP practice nurse £38-£42 (£40.00) per hour. £10.33 per patient contact lasting 15.5 minutes (Unit Cost of Health and Social Care 2015)

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Granular data for your ICB available