## Asthma Clinics in Schools

Addressing inequalities in childhood asthma: a project to improve accessibility to asthma services by holding reviews in schools in deprived areas of Norfolk and Waveney.


Why do we need to challenge health inequalities in childhood asthma? National and Local Picture:

Children from financially deprived backgrounds are more than twice as likely to be require an emergency asthma admission

Children from deprived areas less likely to attend preventative asthma reviews

Potentially save the NHS
£8.5million a year in
England alone.

## "Polishen is bad"

"NHS is her to help"

"hospital help me"



## "Preventable childhood asthma deaths".........We

 can fix this!Two thirds of childhood asthma deaths could have been prevented (National Review of Asthma Deaths, 2014)

"Sadly, despite the NRAD report highlighting ongoing preventable factors for asthma deaths, the UK's poor record ......persists with many examples of preventable asthma astacks_ asthma deaths" (Levy, 2021)


A regular medical review, and a written personal asthma action plan halves the risk of hospitalisation, (Pinnock, 2015)

Getting it right now: "would establish lifelong healthy behaviours" (Nuffield Trust, 2017)


## Aims of asthma in school clinics



- Promote accessibility to asthma clinics by holding them in schools in more deprived areas of Norwich.
- Educate families on the importance of annual asthma reviews
- Promote asthma control through skilled self management (education).
- Promote prevention of asthma symptoms by medicine optimisation (treating the cause of the symptoms thereby preventing symptoms, not waiting until too late when symptoms arise).
- Ensure inhaler technique effective.
- A personal asthma action plan (shared with school).
- Training staff in schools.
- (Also consider air pollution, smoking cessation and obesity support).



## Poverty:

Problem: Children from deprived backgrounds are more than twice as likely to attend hospital and least likely to attend preventative asthma reviews.

Asthma in Schools solution: Focus clinics in deprived areas of Norwich and following ICB approval expansion across all of Norfolk and Waveney:

Prevalence of children with asthma in high levels of deprivation in Norfolk \& Waveney. (Health of the Nation East of England, April 2022).


Great Yarmouth


Norwich


## Access

- Problem: Families report struggling to access their GP surgery
- Solution : Improve ease of access by holding clinics in schools.
'Great idea as difficult to get into GP surgery"
- Impact: Almost two thirds of the families that attended school reviews had not had an asthma review at their GP surgery in the past year or they had not been invited to the surgery at all.
- Large volume ( $25 \%$ of families that attended) with some degree of safeguarding input chose to access reviews through school.
- Other advantages: tackles digital poverty and cost of travel.
- Conclusion: Holding reviews in schools appears to improve accessibility and therefore significantly increase uptake. This is in deprived areas, where uptake in asthma reviews is especially challenging.



## Poverty and air pollution

More than a quarter of all British schools and colleges are located in areas which have dangerously high levels of air pollution. (3.4million children)

The impacts of air pollution, alongside other environmental stressors, are not evenly distributed across society and are more likely to be borne by those from poorer or more deprived communities.
https://www.eea.europa.eu/publications/unequal-exposure-and-unequal-impacts/


## Air pollution:

## What is particulate matter?

Particulate matter is a complex mixture of solids and liquids, including carbon, complex organic chemicals, sulphates, nitrates, mineral dust, and water suspended in the air. Concentrations across the UK are much higher than the levels the World Health Organization considers safe.

## What is nitrogen dioxide?

Nitrogen dioxide (NO2) is a poisonous gas.Since 2010, the UK has exceeded EU annual legal limits for nitrogen dioxide. The latest statistics show that $86 \%$ of areas measured have levels above the legal limit.


## Air pollution links to asthma in schools clinics.

- Poverty and air pollution co-incide.
- Air pollutants probably cause oxidative injury to the airways, leading to inflammation, remodelling, and increased risk of sensitisation
- Medicine optimisation (ie preventor medicines) important for the environment too with carbon footprint three times higher in those poorly controlled than those well controlled.
- UK SABA (reliever) use is three times that of other European Countries.
- $13 \%$ of NHS carbon footprint comes from pressurised metered dose inhalers
- Asthma made worse by air pollution (nitrogen dioxide) but the asthma treatment propellant in inhalers (hydrofluoroalkanes (HFA) 134a and 227ea.) contributes to pollution including air pollution.
- Children should have the right to breathe clean air.

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SCHOOL REPORT:

## "Could do better "

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## "Could do better "

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## OneNorwich Practices



## Problem: Lack of knowledge on asthma self management: One child...

- "Can you tell me when you use your inhaler?"
- "When my ears are sore"


## Improved management : such a need! Symptoms are preventable :

Asthma Control poor in half the children reviewed and 69\% of children required correction of inhaler technique.

## Asthma Control Tool Scores



- <14 - Asthma Very Poorly Controlled = 15-19 - Asthma Partially Controlled
- >20 - Asthma Under Control
\% of Inhaler Techniques Checked that Required Correction



## Inhalers/ spacers in school:

Only 53\% of children had their own reliever inhaler at school
\% of Patient's Own Inhaler Available In Schools



69\% of children did not have the appropriate spacer at school, (eg not at all, or frequently incorrect size: infant spacer for a 9 year old etc!).
\% of Appropriate Spacers Available in Schools


- Unknown
- Not Appropriate
- Appropriate

Symptoms treated but not the underlying inflammatory cause:

- Only half the pupils reviewed had their asthma under control. This related to worryingly excessive SABA use in some children with $20 \%$ having 4 or more inhalers per year, (sometimes up to 12 or 13 reliever inhalers per year).

Only half the prescribed preventor inhalers were requested

No. of Preventer Inhalers Ordered vs No. Expected


## Able to do football and karate



## Medicine optimisation

- Improved health for child
- Improved health for the environment.
- Dry powders ?
- https://thorax.bmj.com/content/early/2022/01/12/tho raxjnl-2021-218088
- (Woodcock et al, 2022)



## Where a pMDI still necessary:

## OneNorwich Practices <br> ) $)^{( }\left({ }^{2}\right.$



Salamol


## Internal / External Air Pollution

- Housing internal pollution damp / mould
- Social prescribing, letters to landlords, advice on ventilation, heating etc.
- External pollution, walking quieter roads, etc
- School safer streets, parking etc.
https://www.livingstreets.org.u k/get-involved/campaign-with-us/safer-routes-to-school


## Improved

## management:

## Patients with a PAAP

NRAD recommendation that all children should have a personal asthma action plan. Research suggests annual reviews and a personal asthma action plan (PAAP) half the incidence of hospitalization. Pre asthma in schools clinics, $81 \%$ did not have an asthma plan. Following reviews in schools, $100 \%$ of those reviewed had a PAAP.
\% of Patients with a PAAP


## Parental knowledge improvement

Parent Prior to Clinic

- No Knowledge
- Good Knowledge

How much knowledge do you feel you have on asthma and how to prevent/ reduce attacks?

How much knowledge do you feel you have on treating an asthma attack?

## Parent Post Clinic

No Knowledge

- Good Knowledg

How much know ledge do you feel you have on asthma and how to prevent/reduce attacks?

How much knowledge do you feel you have on reating an asthma attack?

"I think having this appointment is brilliant and gives a fantastic opportunity to talk to somebody about my child's asthma after not being able to visit the doctors for so long. The lady we saw was amazing and really explained everything clearly and in depth. We all have a much better understanding"

## School training:



School should be more aware of asthma ....no one could help when my son had an attack

Unmet needs among school staff identified:
3 children per class with asthma
Staff, children and parents felt schools needed further training
Asthma - RCPCH - State of Child Health, 2020.
Asthma training became an additional key role.


Long term, the aim will be to develop "asthma friendly schools" (including those with complex needs pupils) and writing a county wide asthma school policy.

AND FOLLOWING TODAY DISCUSS WITH SCHOOLS FAR MORE ABOUT AIR POLLUTION RESOURCES !!!


## Feedback from school

- "We were thrilled with how it went and the feedback from parents have been 100\% positive. One parent even commented that it has changed his life already as his breathing is so much better now you have reviewed him and have it his asthma properly managed.......I would be VERY keen to repeat this"


- Overwhelmingly positive feedback
- ICB funding secured to expand to the whole of Norfolk and Waveney
- Journal write-up "Nursing Children and Young People"
- National interest with presentations to other ICBs / Community of Practice and national asthma training bodies.
- Shortlisted for the Health Service Journal Awards, (Nov,2022) for "Innovation and Improvement in Reducing Healthcare Inequalities Award"
- And General Practice Awards, (Dec, 2022) in the "Long Term Conditions" Category.


## Response from NHS England:

"A really exciting project that innovatively crosses the traditional boundaries between Health and Education to identify and help the most vulnerable children with asthma".
Dr Richard Isles, Asthma Regional Lead, NHS England.
"Making asthma care more accessible for children and young people is a key priority of NHS England's asthma programme. The provision of Asthma Friendly Schools is an initiative that will address the stark health inequalities faced by CYP in England with asthma and as such is one of the standards set out in the National Bundle of Care for CYP with asthma. The innovative project in Norwich aligns exceptionally well with the National priorities and is already yielding some promising results. Our hope is that other localities use the knowledge and understanding gained through the project in Norwich to set up similar initiatives in their own areas. We are excited to continue to monitor the success of the project and look forward to sharing the work with other systems in the future".
Katie Puplett, Policy Lead for CYP Asthma, CYP Transformation Team, NHS England.


# Asthma clinics in schools is cool because.... 

## Access

Scalable

Transferable

Improved outcome for deprived children with asthma (and beginning to address "polishen")

## Teaching Resources:

- Clean Air Detectives - Workshop presentation.pdf
- file:///C:/Users/gina.eyles/OneDrive\%20-\%20NHS/Desktop/Clean\%20Air\%20Detectives\%20-\%20Workshop\%20presentation.pdf
- Global Action Plan.org.uk https://www.globalactionplan.org.uk/n...
- https://youtu.be/JqLrEh8ZYbA
- https://youtu.be/3qSrJhxrVAQ
- https://youtu.be/K SqROWIZsE?t=181
- Greenpeace
- https://www.eco-schools.org.uk/wp-content/uploads/2016/11/Air-Pollution-Teachers-Pack.pdf



## Guidelines for Schools on Internal /External Air Pollution.

Be aware of air quality in your school or college Internal air quality
-DfE guidelines on internal air quality in schools give information on relevant health and safety legislation, and when internal air filtration systems may be appropriate.

New buildings and developments

- NICE guidelines on external air pollution recommend buildings are built away from busy roads and schools are built in areas where air pollution is low.
- The Institute of Air Quality Management recommends that school buildings are built 100 metres from roads to reduce exposure to air pollution.
- Air pollution guidance for school and college staffJoint guidance from the British Lung

Foundation, Living Streets and the NEU

## Resources

## SAMHE

- (Schools' Air quality Monitoring for Health and Education)
- Supported by the Department for Education
- Help to understand indoor air quality in UK schools.
- poor air quality can have impacts on pupils' concentration levels and their health, affecting both attendance and attainment
- gives pupils the opportunity to be citizen scientists and do hands-on experiments with their monitors.



## Clean Air for Schools Framework

- https://www.transform-our-world.org/tools/clean-air-for-schools-framework
- Create your own bespoke clean air plan by choosing from the recommended air pollution tackling actions and using the suggested advice and resources to help your school become a clean air school.
- 
- The Framework will support you to:
- 1) Reduce air pollution from your own operations.
- 2) Tackle air pollution at the school gate, including the school run next generation to help them and their families make cleaner air choices.
- 3) Educate the next generation to help them and their families make cleaner air choices.
- 4) Become a local leader on air pollution, working with local partners to improve air quality in the local area.


## Useful Links:

- Clean Air Parents Network:
- https://www.action.clientearth.org/join-clean-air-parents-network
- Mums for Lungs:
- https://www.healthylondon.org/asthma-and-its-link-to-air-pollution/
- Air pollution alerts DEFRA
- https://uk-air.defra.gov.uk/latest/alerts
- Living Streets
- https://www.livingstreets.org.uk/get-involved/campaign-with-us/safer-routes-to-school
- https://www.livingstreets.org.uk/media/2035/park-and-stride-print.pdf
- https://www.livingstreets.org.uk/products-and-services/projects/wow


## Asthma in Schools Links

Training for school staff etc, "Tier 1 Children and Young People's Transformation Programme e-learning" https://www.educationforhealth.org/course/supporting-children-and-young-peoples-health-improving-asthma-care-together

Asthma Friendly Schools:
https://www.healthylondon.org/resource/london-asthma-toolkit/schools/asthma-friendly-schools/

Guidance on the use of emergency salbutamol inhalers in schools (2015)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment data/file/416468/ emergency inhalers in schools.pdf
https://www.healthylondon.org/wp-content/uploads/2021/03/Supply-of-Salbutamol-Inhalers-to-Schools-Pharmacy-Guide-2020-.pdf

The National Education Union has guidance on asthma in schools https://neu.org.uk/advice/asthma-schools

## One Solution?




## Any questions?

## OneNorwich Practices



