Improving Outcomes for under 18-year-olds Requiring Inhalers with no Diagnosis of Asthma in Primary Care

Quality Improvement Project

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Abstract

Background

Around 1.1 million children currently receive asthma treatment in the UK [1]. Emergency admissions and deaths from asthma are largely preventable with appropriate management and monitoring. The National Review of Asthma found 46% of children who died from asthma had received an inadequate standard of care[2]. In 2020, the West Midlands had the highest mortality rate of asthma. In 2023 there were 2 avoidable deaths of children <18 years in this area. This triggered a process of urgent reviews by the West Midlands Integrated Care Board and prompted an investigation into current gaps in standards of care.

One of such gaps involves identifying children who have no formal diagnosis yet build up a pattern of requiring multiple inhalers both for relief and prevention annually in primary care. Children may present with wheezy episodes requiring either bronchodilator (reliever) therapy or in some cases inhaled corticosteroids (preventer) therapy. Over the years these children may go undiagnosed and unmonitored, placing them at a higher risk of mortality.

Aim

Identifying at-risk groups will help us identify children who need consideration for an asthma diagnosis and are currently not being managed to best practice standards. This will help by improving evidence-based diagnosis, management, and monitoring.

Methods

We started with a retrospective analysis of primary care electronic database (EMIS) data to determine the proportion of <18-year-olds who were prescribed 1+ inhaler in the past year with no formal diagnosis of Asthma. This identified groups of

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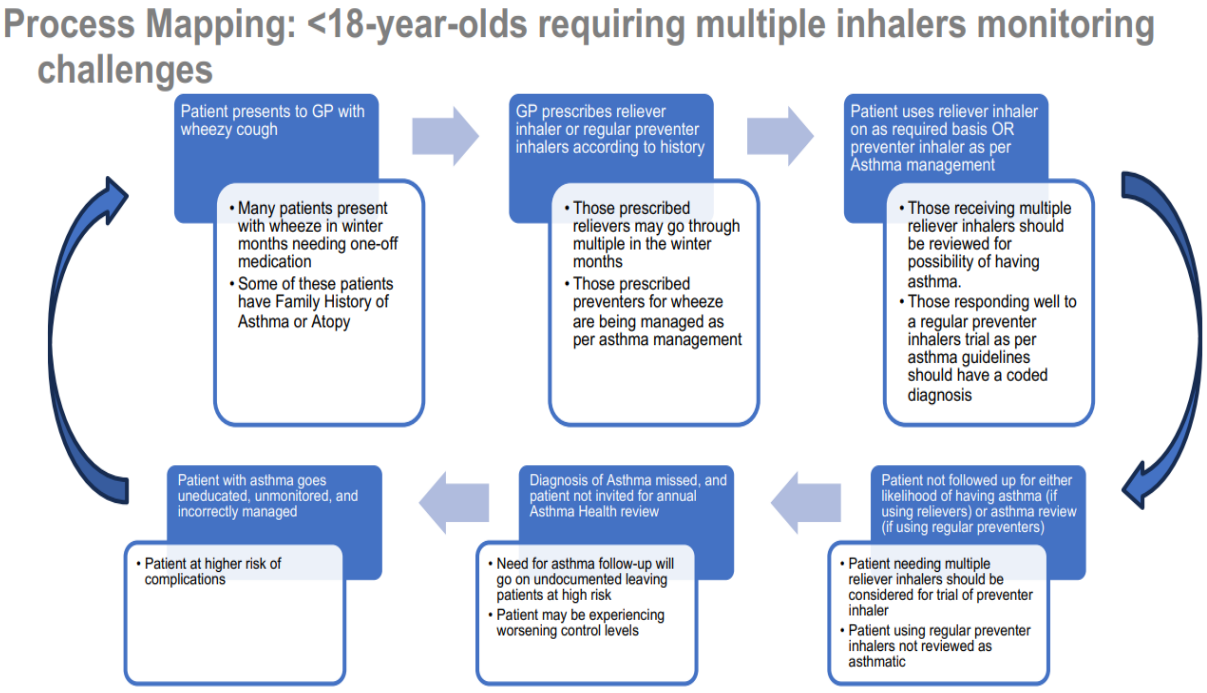
patients with yearly wheezy episodes, who were requiring multiple reliever inhalers and therefore needed a review for further management, or those requiring regular preventer inhalers who needed consideration of asthma diagnosis.

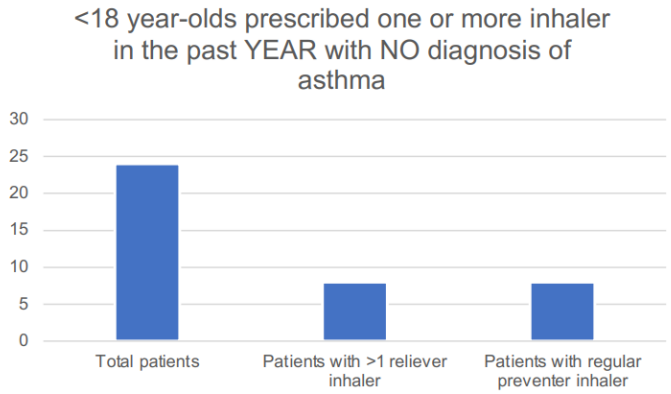
We used 'Process Mapping' to determine the Primary Care Practice's major stakeholders and to ascertain the possible underlying causes of current performance. We then devised a solution – organised a clinic for patients using multiple reliever inhalers who likely needed a review and consideration of a preventer inhaler trial. We also EMIS-coded patients using regular preventer inhalers with a diagnosis of Asthma.

We then implemented the solution – we sent out letters inviting the reliver-group patients for clinical review. We included the preventer-group of patients in the Annual Asthma Health Review.

We measured the outcome – as the number of patients needing a review for regular reliever inhaler use. We also recorded the number of patients using preventer inhalers with new diagnoses of Asthma and addition to the Annual Health Review.



Results



Patients with >1 reliever inhaler: 33%

Upon an initial clinician review, 25% of these patients were identified using multiple reliever inhalers yearly for wheezy episodes, thus requiring further review.

Patients with regular preventer inhaler: 33%

Upon a further clinician review, 16.7% of these patients went on to have a coded diagnosis of asthma.

Results

Approximately 25% of the patients identified on the initial search were invited to a review in clinic to discuss the possibility of an asthma diagnosis. This is because these patients were found to be using multiple inhalers yearly for wheezy episodes placing them at risk of having undiagnosed and incorrectly managed asthma. 17% of the patients identified on the initial search were coded as having an asthma diagnosis, and thus included in the Annual Asthma Review invitations. This is because these patients were found to be using and responding to a regular preventer inhaler for wheezy episodes. Alongside their clinical picture these patients seemed suffice to diagnose with asthma.

Implementation of the change

Staff at the practice were informed regarding this quality improvement measure. The key points were:

- When prescribing further relieve or preventer inhalers, to look at a patient's history and consider whether those under the age of 18 have had multiple inhaler requirements.
- Identify if the patient needs to be called in for a review.
- Consider whether they met the clinical criteria for inclusion in the annual asthma review.
- If the patient needs a regular preventer inhaler. Code patient requiring a diagnosis.

Strengths of the project: There is a lack of objective testing available in this small, remote practice and thus building a clinical basis for early diagnosis within the community is vital to prevent unnecessary mortality. The practice identified patient populations who were likely to have undiagnosed asthma and were currently unmonitored, placing them at higher risk. These patients now have a more robust monitoring process in system. The staff were aware of the previous limitations, and likely to be more vigilant in the future.

Limitations of the project: Reliance on accurate coding of patients for correct identification of key risk factors and patterns. Several assumptions were made about the data set about the history suggestive of asthma and that formal spirometry or peak flow monitoring was not utilised.

Further goals: The practice has granted permission for the data set in this QIP to be analysed one year on, and thus further analysis of the implementation of these changes will be available.

References

1. Asthma UK 'Facts and Stats' Royal College of Paediatrics and Child Health (2020) State of Child Health. London: RCPCH. [Available at: stateofchildhealth.rcpch.ac.uk]
2. Royal College of Physicians (2014) Why asthma still kills: The National Review of Asthma Deaths (NRAD).