Introduction

This quality improvement (QI) priority concise guide provides details of the five QI priorities outlined in the NACAP children and young people (CYP) asthma 2019/20 combined clinical and organisational audit report* published in May 2021 that presents data on:

> CYP admitted to hospital with asthma attacks from 1 June 2019 and discharged by 31 January 2020
> the structure and resourcing of CYP asthma services between December 2019 – March 2020.

These QI priorities have been selected because of the strong evidence base for their effectiveness in improving patient care, outcomes and service delivery. Each of the priorities is presented with its reference number to allow an easy link with the combined report itself and a rationale as well as tips for achieving it.

How to use these QI priorities

Use these priorities to guide your local improvement work. Measure your own performance against these priorities using local data and identify and deliver a cycle of improvement where necessary. Information on QI resources available to support local improvement can be found on page 6 of this guide.

Where your performance is above the standard required for the QI priorities, monitor regularly and consider sharing your approach with others. You can do this by submitting a case study for the CYP good practice repository via asthma@rcplondon.ac.uk

* Download the full combined report, which includes all necessary recommendations, key findings and links to national standards and guidelines at: www.rcplondon.ac.uk/nacap-cyp-asthma-2019/20
Clinical audit QI priorities

These are linked specifically to clinical care and patient outcomes.

National QI priority C1: Record smoking status and exposure to second-hand smoke for 95% of children and young people.

Rationale
Smoking and exposure to second-hand smoke is a big risk factor for acute asthma attacks and also for accelerated lung function decline and development of COPD later in life. Nicotine is one of the most addictive substances in the world and specialist services are shown to improve rates of smoking cessation.

Tips to achieve this priority
- Survey staff working in the emergency department to understand the barriers to asking about smoking habits of CYP and parents on admission.
- Develop tailored support and systems to overcome identified barriers.
- Provide education and training to all staff on the importance of smoking or second-hand exposure as a risk for acute asthma attacks.

BTS/SIGN 2019 [6.2.3], NICE 2013 QS43 [QS2]

National QI priority C2: Administer systemic steroids within 1 hour of arrival at hospital to 95% of children and young people aged 6 years old or over, who have not received systemic steroids as part of pre-hospital care.

Rationale
Early administration of systemic steroids prevents hospital admission.

Tips to achieve this priority
- Staff should undertake reviews of cases where steroids were not given within 1 hour, to better understand the barriers to effective care and then to implement an improvement change.
- Provide education and training to staff on when to administer oral steroids, and the evidence behind early administration.
- Build prompts into electronic and other systems to encourage delivery of oral steroids at triage.

BTS/SIGN 2016 [9.8.4] NICE 2013 QS25 [QS8], RCEM asthma guidance [standards 5a and 5b]

1 Pontieri FE, Tanda G, Orzi F, DiChiara G. Effects of nicotine on the nucleus accumbens and similarity to those of addictive drugs. Nature 1996;382:255–7 DOI: 10.1038/382255a0. www.nature.com/articles/382255a0
Clinical audit

National QI priority C3: Provide 95% of children and young people with the following as part of their discharge bundle:

1. Review or issue of a personalised asthma action plan (PAAP).
2. Check of their inhaler technique.
3. A follow-up appointment in a paediatric asthma clinic requested within 4 weeks.

Rationale

As highlighted in the National Review of Asthma Deaths report, one key factor in CYP who died from asthma was a lack of understanding of the basic elements of self-management and this is the same for many CYP admitted to hospital with severe life-threatening asthma. Given that the most consistent risk factor for having an asthma attack is a recent history of an acute exacerbation, it is important to focus on these elements of education using a PAAP before discharge.

Tips to achieve this priority

> Survey staff to understand the challenges to administering this education to CYP in the emergency department and on the wards.
> Develop tailored support and systems to overcome identified challenges.
> Develop standardised written information.
> Provide education and training to staff on inhaler technique and personalised asthma action plans.
> Encourage these actions by mandating they be recorded in electronic systems.
Organisational audit QI priorities

These are linked specifically to the structure and resourcing of paediatric asthma services.

**National QI priority O1: 85% of hospitals should have a respiratory nurse specialist trained in the care of children and young people with asthma.**

### Rationale

Involvement of a respiratory nurse specialist as part of a multidisciplinary team (MDT) was associated with improvements in care. These improvements are noted on page 23 of the 2019/20 combined clinical and organisational audit report. Further evidence of improvements in care led by specialist nurses can be seen in the case studies included in this report.

Respiratory nurses can improve the care of CYP with asthma in several ways.

- In the inpatient setting they can be involved in the acute management and discharge planning of CYP with asthma.

- In clinics they can provide education for CYP and families to empower self-management, conduct physiological testing where needed and with appropriate training can function as independent practitioners. This is important because general paediatric clinics are often busy, and these elements of care can be time-consuming for doctors to do thoroughly.

- They can fulfil wider roles such as on the training ward, in the emergency department and as primary care healthcare professionals, and by contributing to local governance tasks such as audit.

- They have a pivotal role in arranging transition to adult services.

Other types of healthcare professional (eg physiotherapists, pharmacists, physician associates, and psychologists) can of course be beneficial for CYP with asthma but they are unlikely to be a protected resource for CYP with asthma in district general hospital settings, and may be better utilised in the management of uncontrolled and severe asthma.

### Tips to achieve this priority

The main step in this process is to develop a business case for a respiratory specialist nurse.

- Developing a business case for an asthma specialist nurse could initially focus on clinical benefits: improving the quality of care given to CYP may reduce length of stay, and better education before discharge will reduce the rates of readmission. Centres without asthma specialist nurses could work with their local business intelligence team to identify the rates of reattendance and readmission, which can be a useful baseline for calculating cost savings.

- Use NACAP benchmarking data from the clinical and organisational audit to highlight the need for an asthma specialist nurse. The data suggest that developing an MDT improves the quality of care for CYP.

- Involve CYP and their parents and carers in identifying the benefits of having an asthma specialist nurse in your department.
Organisational audit QI priorities

These are linked specifically to the structure and resourcing of paediatric asthma services.

**Organisational audit**

**National QI priority O2:** 80% of hospitals should have access to fractional exhaled nitric oxide (FeNO) as a diagnostic tool for paediatric asthma services.

1. Review or issue of a personalised asthma action plan (PAAP).
2. Check of their inhaler technique.
3. A follow-up appointment in a paediatric asthma clinic requested within 4 weeks.

**Rationale**

Markers of inflammation are more likely to be useful in cases of equivocal diagnosis of asthma than measures of airway obstruction (such as PEFR). In the largest UK cohort study evaluating different physiological tests for asthma in CYP, FeNO emerged as the most useful first thing to measure.\(^2\) FeNO is mandated in the NICE guidelines as a necessary test in the asthma diagnosis pathway, and recommended as a useful test in the BTS guidelines, **BTS/SIGN 2019 [3.3.4]**. The accurate identification of asthma in children is important, and the NICE guidelines evaluation has shown that despite an initial investment it is a cost-effective approach to diagnosis.

**Tips to achieve this priority**

> Work with existing adult physiology departments to identify if this is a service they can offer. If not, use successful business cases from neighbouring centres in your network for ideas.

> Refer to NICE guidelines which advocate the use of FeNO in the diagnosis of asthma. **NICE NG80 [1.3.3]**.

> Ensure that whoever will do the tests has appropriate training in the conduct of the test and maintenance of the machines.

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What resources are available to support local improvement?

NACAP provides a variety of resources to support local QI and service development.

Performance tracking and monitoring

> Real time run charts to track performance over time and service level reports offering national and country level benchmarking both at www.nacap.org.uk to logged in users.

> Benchmarked key indicators at www.rcplondon.ac.uk/nacap-cyp-asthma-2019/20

QI guidance and resources

> Information to help you use NACAP reports and identify and run a QI project is available at www.rcplondon.ac.uk/nacap-cyp-asthma-resources

> A CYP 2019/20 combined report QI slide set which provides information and guidance on starting QI projects based on the combined report results is available at www.rcplondon.ac.uk/nacap-cyp-asthma-2019/20

> CYP good practice repository, which provides examples of good practice and case studies from other PR services on key areas of care and service provision: www.rcplondon.ac.uk/nacap-cyp-asthma-resources