Royal College of Physicians | NACAP

National Asthma and Chronic Obstructive Pulmonary Disease Audit Programme (NACAP)

Children and young people asthma organisational audit 2019/20

Resource and organisation of children and young people asthma services in England, Scotland and Wales 2019/20

Organisational audit: data and methodology report

Published July 2021

In association with:

ARNS Association of Respiratory Nurse Specialists

asthma UK

British Lung Foundation

THE ASTHMA UK AND BRITISH LUNG FOUNDATION PARTNERSHIP

British Thoracic Society

Imperial College London

PCRS Primary Care Respiratory Society

RCGP Royal College of General Practitioners

RCPCH Royal College of Paediatrics and Child Health Leading the way in Children's Health

Commissioned by:

HQIP Healthcare Quality Improvement Partnership

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NACAP

NACAP is a programme of work that aims to improve the quality of care, services and clinical outcomes for patients with asthma and COPD in England, Scotland and Wales. Spanning the entire patient care pathway, NACAP includes strong collaboration with asthma and COPD patients, as well as healthcare professionals, and aspires to set out a vision for a service which puts patient needs first. To find out more about the NACAP visit: **www.rcplondon.ac.uk/nacap**

Children and young people asthma: organisational audit of children and young people asthma services in England, Scotland and Wales 2019/20

This report was prepared by the following people, on behalf of the NACAP asthma advisory group. The full list of members can be found on the NACAP resources page: **www.rcplondon.ac.uk/nacap-cyp-asthma-resources**

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www.rcplondon.ac.uk/nacap-cyp-asthma-2019/20
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Contents

How to use this report

1. Scope and report structure

This data analysis and methodology report presents the results from an analysis of the data derived from the children and young people asthma (CYP) organisational audit component of the National Asthma and COPD Audit Programme (NACAP). Data collection for the organisational audit took place between 2 December 2019 and 13 March 2020 across England, Scotland and Wales. The audit collected information on the resourcing and organisation of services relevant to the care of CYP admitted to hospital with asthma attacks.

These data are presented largely in tabular form with explanatory notes where appropriate. The key messages and recommendations, as well as an infographic to summarise key data, can be found in the short national clinical and organisational audit report (via **www.rcplondon.ac.uk/nacap-cyp-asthma-2019/20**). Details of the statistical and data collection methodologies used are provided in **Appendix A.**

The organisational audit dataset, as well as the resources supplied for both the organisational and clinical audit (such as FAQs and good practice repositories), can be found via our website: **www.rcplondon.ac.uk/nacap-cyp-asthma-resources**

2. Report coverage

In total, 110/154 (71%) eligible hospitals in England, 2/14 (14%) eligible hospitals in Scotland and 7/13 (54%) eligible hospitals in Wales provided a full organisational audit record and were included in the final analysis of this report. A further 23 (13%) hospitals provided partial information but were not included in the final analysis. Only services which fully completed their organisational audit have been included in the analysis for this report. For full lists of participating hospitals, part-participating and non-participating hospitals please see **section 8** of this report. Please note that all tables include a count total/denominator (denoted as n=X) for each column.

This is the first national organisational audit report under the NACAP to report on children and young people hospital resources and services for asthma therefore no comparative data is available.

The low rate of recruitment to the audit in Scotland provided small numbers (two hospitals) that cannot be meaningfully analysed as a representative sample of the hospital services available to CYP in Scotland. Scottish participation in the NACAP CYP ceased in March 2020 following the discontinuation of commissioning for some major elements of the **National Clinical Audit and Patient Outcomes Programme (NCAPOP)**.

3. Service-level data

The data presented here are provided at national and devolved nation level. In addition, a series of key indicators at hospital level are presented in **section 8** of this report, benchmarking hospitals against other participating units along with a methodological explanation. No data are provided at trust or health board level.

Alongside the publication of this report, hospitals have also been provided with site-level reports, presenting their own service-level data against both the national and relevant devolved nation average. These reports are provided directly to the hospital team responsible for participation in the NACAP CYP audits via the NACAP web tool (**www.nacap.org.uk**). These data will also be made publicly available at hospital level on the report webpages **www.rcplondon.ac.uk/nacap-cyp-asthma-2019/20** and **www.data.gov.uk,** in line with the government's transparency agenda.

4. Audience and links to relevant standards

This data analysis and methodology report is intended to be read by healthcare professionals, NHS managers, chief executives and board members, service commissioners and policy makers, as well as voluntary organisations and service users. We strongly advise that secondary care teams discuss these findings between themselves, as well as with their colleagues in primary care, their commissioners and other relevant healthcare teams. Separate reporting outputs will be produced for patients and the public and available at: **www.rcplondon.ac.uk/nacap-cyp-asthma-2019/20**

References to the appropriate British Thoracic Society (BTS) and Scottish Intercollegiate Guidelines Network (SIGN) guidelines, (**Appendix B**), National Institute for Health and Care Excellence (NICE) clinical guidelines and quality statements (**Appendix C**) and Royal College of Physicians (RCP) Why asthma still kills: National Review of Asthma deaths (NRAD) recommendations (**Appendix D**), relevant to children and young people asthma secondary care, are inserted throughout the report.

Recommendations

National

Organisational audit recommendations (OA)

OA1 Nationally there should be a collaborative focus on developing functional regional paediatric asthma networks to facilitate:

- best practice
- partnership approaches to the provision of care with appropriate input from different healthcare sectors and non-healthcare agencies
- the involvement of children and young people, parents and carers to support the development of regional strategies.

These networks should have representation from professional groups, patients and relevant services, including

- primary care
- community asthma services
- district general hospitals
- tertiary specialist services
- local area authorities
- other non-health agencies.

For providers of children and young people asthma services

This report outlines two key national quality improvement (QI) priorities for providers of CYP asthma secondary care.

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

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

For commissioners / health boards / sustainability and transformation partnerships / integrated care services

Organisational audit recommendations (OA)

OA2 Provide secondary care services with adequate resources to ensure they have a multidisciplinary team (MDT) for children and young people with asthma. This must include at least:

- a paediatric asthma clinical lead
- a respiratory nurse specialist with responsibility for inpatient and outpatient management of children and young people with asthma.

For children and young people living with asthma and their families and carers

Organisational audit recommendations (OA)

OA3 Children and young people and their parents and carers should advocate for the universal implementation of national quality standards across all hospitals.

OA4 Children and young people and their parents and carers should consider participating in strategic groups, including those set up at network level, for paediatric asthma.

Section 1: Admissions – numbers and beds

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Key findings

- Between 1 April 2019 and 31 March 2020 (the 2019/20 financial year) the median number of paediatric medical beds available for use by children and young people (CYP) asthma patients was **22 (interquartile range (IQR): 17–28).**
- **81 out of 119 hospitals** have a paediatric high dependency unit (HDU) to which CYP asthma patients can be admitted.
- **9 out of 119 hospitals** have a paediatric intensive care unit (PICU) to which CYP can be admitted.

Navigation

This section contains the following tables and graphs. If you are viewing this report electronically, you can select the table that you wish to view by clicking on the hyperlink from the list below. Please note the subsection numeration in this section does not align to the question numbering the dataset itself.

Part A: Externally sourced admissions data

The following admissions data were collected from existing external datasets, rather than sourced from hospital teams directly. Externally sourced admissions data were collected to ensure a reduction in the data collection burden on hospital teams during the organisational audit snapshot period, as well as to optimise data completeness and accuracy. The following external datasets were used in this section:

1. NHS Digital Hospital Episodes Statistics (HES) database – for English hospital admissions data.
2. NHS Wales Informatics Service (NWIS) Patient Episode Database for Wales (PEDW) – for Welsh hospital admissions data.

Please note that:

- Information on CYP aged between 16–18, admitted to adult services and therefore normally excluded from the CYP audit, were not able to be separated from the data provided by these existing datasets. Therefore, the data presented in tables A, B and C include ALL CYP patients aged 1–18 years old.
- Admissions data could not be obtained for Scotland in time for the production of this report.

A. Average number of 2019/20 financial year paediatric medical emergency admissions (CYP ages 1–18 years old) per medical bed

	2019/20 financial year		
Number of paediatric medical emergencies	**All*** (n=110)**	**England (n=106)**	**Wales (n=4)**
Median (IQR*) per medical bed	10.75 (7.2–18.0)	11.1 (7.5–18.0)	4.2 (4.1–12.2)
Mean (SD) per medical bed**	14.6 (12.4)	14.8 (12.5)	8.1 (7.9)

**Interquartile range*
***Standard deviation*
****Does not include Scotland*

B. Average number of 2019/20 financial year paediatric respiratory coded emergency admissions (CYP aged 1–18 years old) per medical bed

	2019/20 financial year		
Number of paediatric respiratory emergencies	**All* (n=110)**	**England (n=106)**	**Wales (n=4)**
Median (IQR) per respiratory bed	1.3 (0.8–2.0)	1.3 (0.8–2.1)	0.6 (0.45–1.1)
Mean (SD) per respiratory bed	2.3 (5.3)	2.4 (5.4)	0.8 (0.5)

**Does not include Scotland*

C. Average number of 2019/20 financial year paediatric asthma coded emergency admissions per 1,000 paediatric medical emergency admissions (CYP aged 1–18 years old)

	2019/20 financial year		
Number of paediatric asthma emergencies	**All* (n=114)**	**England (n=107)**	**Wales (n=7)**
Median (IQR) per 1,000 CYP medical emergency admissions	25 (16.3–40)	25.6 (17–42.1)	11 (0–19.4)
Mean (SD) per 1,000 CYP medical emergency admissions	33.1 (40.3)	34.5 (41.1)	12.0 (13.6)

**Does not include Scotland*

Section B: Admissions and beds

The admissions data presented below, as well as all subsequent data, were derived directly from data collected by hospital teams participating in the NACAP CYP asthma organisational audit. All tables are numbered in line with the ordering of the organisational audit dataset used during the snapshot audit between 2 December 2019 and 13 March 2020.

1.1 How many paediatric medical beds are there in your hospital which can be used for CYP asthma patients?

	2019/20		
Paediatric asthma beds	All (n=119)	England (n=110)	Wales (n=7)
Median (IQR*)	22 (17–28)	23 (18–28)	6 (0–2)
Mean (SD**)	25.7 (19.6)	27.0 (19.7)	10.3 (11.2)

**Interquartile range*
***Standard deviation*

1.2 Does your hospital have a paediatric high dependency unit(s) (HDU) to which CYP asthma patients can be admitted?

	2019/20		
HDU for paediatric asthma patients	All (n=119)	England (n=110)	Wales (n=7)
Yes	81 (68.1%)	75 (68.2%)	4 (57.1%)
No	38 (31.9%)	35 (31.8%)	3 (42.9%)

1.2.1 How many beds does your paediatric HDU have?*

	2019/20		
No of beds in paediatric HDU	All (n=81)	England (n=75)	Wales (n=4)
Median (IQR)	2 (2–4)	2(2–4)	3.5 (2.5–4.5)
Mean (SD)	3.2 (2.3)	3.2 (2.3)	3.5 (1.3)

**Out of hospitals that had an HDU*

1.3 Does your hospital have a paediatric intensive care unit (PICU) to which CYP asthma patients can be admitted?

	2019/20		
PICU for CYP asthma patients	All (n=119)	England (n=110)	Wales (n=7)
Yes	9 (7.6%)	9 (8.2%)	0 (0.0%)
No	110 (92.4%)	101 (91.8%)	7 (100%)

1.3.1 How many beds does your PICU have?*

	2019/20		
No of beds in PICU	**All (n=9)**	**England (n=9)**	**Wales (n=0)**
Median (IQR)	10 (8–15)	10 (8–15)	0 (0–0)
Mean (SD)	13.2 (7.9)	13.2 (7.9)	0 (0)

**Out of hospitals that had a PICU*

Section 2: Staffing levels

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Key findings

There is a lack of key health professionals in post who can contribute to the care of CYP with asthma.
Of participating hospitals:

- **58.8%** have a respiratory nurse specialist
- **48.7%** have a paediatric physiotherapist
- **29.4%** have a paediatric psychologist
- **76.5%** have a paediatric pharmacist.

Navigation

This section contains the following tables and graphs. If you are viewing this report electronically, you can select the table that you wish to view by clicking on the hyperlink from the list below.

2.1 How many of each of the following staff posts (filled and unfilled) are there in your acute paediatric service?

Staff posts	2019	Number of units with:				Median (IQR) WTE	Median (IQR) WTE CYP emergency respiratory admissions*	Median (IQR) WTE CYP emergency asthma admissions*
		No WTE	0.1-1.0 WTE	1.1-3.0 WTE	>3.0 WTE			
Physician posts								
FY1/FY2	All (n=119)	13 (10.9%)	17 (14.3%)	53 (44.5%)	36 (30.3%)	3 (1–4)	8 (5–16)	31.65 (20–75)
	England (n=110)	9 (8.2%)	16 (14.6%)	51 (46.4%)	34 (30.9%)	3 (2–4)	8 (5–15)	30 (20–72.5)
	Wales (n=7)	2 (28.6%)	1 (14.3%)	2 (28.6%)	2 (28.6%)	2 (0–6)	22.2 (0–50)	150 (75–400)
ST1/ST2	All (n=119)	9 (7.6%)	6 (5.0%)	19 (16.0%)	85 (71.4%)	5 (3–8)	17.7 (8.6–37)	75 (36.65–152.5)
	England (n=110)	5 (4.6%)	5 (4.6%)	18 (16.4%)	82 (74.6%)	5.4 (3–8)	17.6 (8.6–30)	75 (33.3–150)
	Wales (n=7)	2 (28.6%)	1 (14.3%)	1 (14.3%)	3 (42.9%)	2 (0–9)	22.2 (0–100)	200 (125–325)
ST3 and above	All (n=119)	7 (5.9%)	4 (3.4%)	20 (16.8%)	88 (74.0%)	6 (3–8)	20 (9.2–34.3)	82.5 (45.85–178.75)
	England (n=110)	5 (4.6%)	2 (1.8%)	17 (15.5%)	86 (78.2%)	6.1 (3.8–8.5)	20 (9.2–33.3)	78.5 (42.5–175)
	Wales (n=7)	1 (14.3%)	2 (28.6%)	2 (28.6%)	2 (28.6%)	2 (1–6)	25 (7.7–66.7)	200 (125–290)
Paediatric consultant	All (n=119)	2 (1.7%)	0 (0.0%)	0 (0.0%)	117 (98.3%)	10 (8–13)	40 (26.7–63.3)	172.5 (100–260.85)
	England (n=110)	1 (0.9%)	0 (0.0%)	0 (0.0%)	109 (99.1%)	10 (8–13)	37.6 (24.5–54.3)	168.5 (99–250)
	Wales (n=7)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (100%)	8 (5–8)	155.6 (61.5–200)	450 (333.35–600)
Paediatric respiratory consultant	All (n=119)	75 (63.0%)	22 (18.5%)	15 (12.6%)	7 (5.9%)	0 (0–1)	0 (0–3.3)	0 (0–20)
	England (n=110)	66 (60.0%)	22 (20.0%)	15 (13.6%)	7 (6.4%)	0 (0–1)	0 (0–4)	0 (0–20)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0–0)	0 (0–0)	0 (0–0)
Associate specialist	All (n=119)	86 (72.3%)	20 (16.8%)	10 (8.4%)	3 (2.5%)	0 (0–1)	0 (0–1.5)	0 (0–6.35)
	England (n=110)	80 (72.7%)	19 (17.3%)	8 (7.3%)	3 (2.7%)	0 (0–0.7)	0 (0–1.5)	0 (0–4.15)
	Wales (n=7)	4 (57.1%)	1 (14.3%)	2 (28.6%)	0 (0.0%)	0 (0–2)	0 (0–15.4)	25 (0–58.35)
Staff grade	All (n=119)	46 (38.7%)	23 (19.3%)	26 (21.9%)	24 (20.2%)	1 (0–3)	3.3 (0–12.5)	14.5 (0–50)
	England (n=110)	42 (38.2%)	22 (20.0%)	25(22.7%)	21 (19.1%)	1 (0–3)	3.1 (0–12)	13.65 (0–50)
	Wales (n=7)	2 (28.6%)	1 (14.3%)	1 (14.3%)	3 (42.9%)	2 (0–6)	22.2 (0–250)	75 (25–300)
Nurse posts in respiratory team								
Asthma nurse specialist	All (n=119)	49 (41.2%)	43 (36.1%)	22 (18.5%)	5 (4.2%)	0.7 (0–1)	1.4 (0–5)	6.5 (0–25)
	England (n=110)	45 (40.9%)	41 (37.3%)	19 (17.3%)	5 (4.6%)	0.65 (0–1)	1.3 (0–4.4)	6 (0–23.15)
	Wales (n=7)	3 (42.9%)	2 (28.6%)	2 (28.6%)	0 (0.0%)	1 (0–2)	7.7 (0–15.4)	75 (41.65–150)

Nurse consultant /other specialist nurse	**All (n=119)**	88 (74.0%)	13 (10.9%)	10 (8.4%)	8 (6.7%)	0 (0–0.6)	0 (0–0.5)	0 (0–3.8)
	England (n=110)	79 (71.8%)	13 (11.8%)	10 (9.1%)	8 (7.3%)	0 (0–0.8)	0 (0–1)	0 (0–4.65)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0–0)	0 (0–0)	0 (0–0)
Other healthcare professional posts								
Specialist respiratory /paediatric physiotherapist	**All (n=119)**	61 (51.3%)	38 (31.9%)	12 (10.1%)	8 (6.7%)	0 (0–1)	0 (0–3.3)	0 (0–22.5)
	England (n=110)	55 (50.0%)	36 (32.7%)	11 (10.0%)	8 (7.3%)	0.05 (0–1)	0 (0–3.3)	0 (0–20)
	Wales (n=7)	5 (71.4%)	1 (14.3%)	1 (14.3%)	0 (0.0%)	0 (0–1)	0 (0–7.7)	16.65 (0–56.65)
Paediatric psychologist	**All (n=119)**	84 (70.6%)	24 (20.2%)	9 (7.6%)	2 (1.7%)	0 (0–0.6)	0 (0–0.6)	0 (0–3.65)
	England (n=110)	76 (69.1%)	24 (21.8%)	8 (7.3%)	2 (1.8%)	0 (0–0.8)	0 (0–0.7)	0 (0–4.65)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0–0)	0 (0–0)	0 (0–0)
Paediatric pharmacist	**All (n=119)**	28 (23.5%)	74 (62.2%)	15 (12.6%)	2 (1.7%)	1 (0.2–1)	3.1 (0.4–5.7)	13.3 (2.25–25)
	England (n=110)	25 (22.7%)	68 (61.8%)	15 (13.6%)	2 (1.8%)	1 (0.3–1)	2.9 (0.4–5)	12.3 (2–25)
	Wales (n=7)	2 (28.6%)	5 (71.4%)	0 (0.0%)	0 (0.0%)	1 (0–1)	7.7 (0–11.1)	50 (41.65–75)
Other – not listed	**All (n=119)**	111 (93.3%)	3 (2.5%)	3 (2.5%)	2 (1.7%)	0 (0–0)	0 (0–0)	0 (0–0)
	England (n=110)	102 (92.7%)	3 (2.7%)	3 (2.7%)	2 (1.8%)	0 (0–0)	0 (0–0)	0 (0–0)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0–0)	0 (0–0)	0 (0–0)

Due to rounding of percentages some lines of data may not add up to 100

**Admissions data includes ALL CYP patients between 1–18 years old but does not include Scotland*

2.2 Number of unfilled posts in acute paediatric service

Staff post	2019	Number of units with:			
		No WTE	0.1–1.0 WTE	1.1–3.0 WTE	>3.0 WTE
Unfilled physician posts in respiratory team					
FY1/FY2	All (n=119)	111 (93.3%)	7 (5.9%)	1 (0.8%)	0 (0.0%)
	England (n=110)	103 (93.6%)	7 (6.4%)	0 (0.0%)	0 (0.0%)
	Wales (n=7)	6 (85.7%)	0 (0.0%)	1 (14.3.0%)	0 (0.0%)
ST1/ST2	All (n=119)	88 (74.0%)	19 (16.0%)	11 (9.2%)	1 (0.8%)
	England (n=110)	80 (72.7%)	19 (17.3%)	11 (10.0%)	0 (0.0%)
	Wales (n=7)	6 (85.7%)	0 (0.0%)	0 (0.0%)	1 (14.3%)
ST3 and above	All (n=119)	53 (44.5%)	27 (22.7%)	29 (24.4%)	10 (8.4%)
	England (n=110)	49 (44.6%)	25 (22.7%)	26 (23.6%)	10 (9.1%)
	Wales (n=7)	3 (42.9%)	2 (28.6%)	2 (28.6%)	0 (0.0%)
Paediatric consultant	All (n=119)	85 (71.4%)	17 (14.3%)	12 (10.1%)	5 (4.2%)
	England (n=110)	81 (73.6%)	16 (14.6%)	10 (9.1%)	3 (2.7%)
	Wales (n=7)	3 (42.9%)	0 (0.0%)	2 (28.6%)	2 (28.6%)
Paediatric respiratory consultant	All (n=119)	116 (97.5%)	3 (2.5%)	0 (0.0%)	0. (0.0%)
	England (n=110)	107 (97.3%)	3 (2.7%)	0 (0.0%)	0 (0.0%)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Associate specialist	All (n=119)	114 (95.8%)	4 (3.4%)	1 (0.8%)	0 (0.0%)
	England (n=110)	106 (96.4%)	4 (3.6%)	0 (0.0%)	0 (0.0%)
	Wales (n=7)	6 (85.7%)	0 (0.0%)	1 (14.3%)	0 (0.0%)
Staff grade	All (n=119)	101 (84.9%)	7 (5.9%)	7 (5.9%)	4 (3.4%)
	England (n=110)	94 (85.5%)	7 (6.4%)	6 (5.5%)	3 (2.7%)
	Wales (n=7)	5 (71.4%)	0 (%)	1 (14.3%)	1 (14.3%)
Unfilled nurse posts					
Asthma nurse specialist	All (n=119)	106 (89.1%)	13 (10.9%)	0 (0.0%)	0 (0.0%)
	England (n=110)	97 (88.2%)	13 (11.8%)	0 (0.0%)	0 (0.0%)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Nurse consultant/other specialist nurse	All (n=119)	115 (96.6%)	3 (2.5%)	1 (0.8%)	0 (0.0%)
	England (n=110)	106 (96.4%)	3 (2.7%)	1 (0.9%)	0 (0.0%)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Unfilled other healthcare professional posts in respiratory team					
Specialist respiratory/paediatric physiotherapist	All (n=119)	114 (95.8%)	3 (2.5%)	2 (1.7%)	0 (0.0%)
	England (n=110)	105 (95.5%)	3 (2.7%)	2 (1.8%)	0 (0.0%)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Paediatric psychologist	All (n=119)	111 (93.3%)	8 (6.7%)	0 (0.0%)	0 (0.0%)
	England (n=110)	102 (92.7%)	8 (7.3%)	0 (0.0%)	0 (0.0%)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Paediatric pharmacist	All (n=119)	114 (95.8%)	4 (3.4%)	1 (0.8%)	0 (0.0%)
	England (n=110)	105 (95.5%)	4 (3.6%)	1 (0.9%)	0 (0.0%)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Other – not listed	All (n=119)	119 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	England (n=110)	110 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Wales (n=7)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

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 an MDT was associated with improvements in care. These improvements are noted on page 23 of the combined clinical and organisational audit report. Further evidence of improvements in care led by specialist nurses can be seen in the case studies on page 17, page 25 and page 27, in the combined 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 training ward, emergency department, and primary care healthcare professionals, and 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.

Section 3: Access to specialist staff and services on weekdays and weekends (7-day working)

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Key standards

- BTS/SIGN 2019 [3.3.4] In adults and children with an intermediate probability of asthma and normal spirometry results, undertake challenge tests and/or measurement of FeNO to identify eosinophilic inflammation.[1]
- BTS/SIGN 2019 [6.2.3] People with asthma and parents/carers of children with asthma should be advised about the dangers of smoking and second-hand tobacco smoke exposure, and should be offered appropriate support to stop smoking.[1]
- BTS/SIGN 2019 [6.2.9]: Weight-loss interventions (including dietary and exercise-based programmes) can be considered for overweight and obese adults and children with asthma to improve asthma control.[1]
- BTS/SIGN 2019 [10.1]: Patients with difficult asthma should be systematically evaluated, including: confirmation of the diagnosis of asthma and identification of the mechanism of persisting symptoms and assessment of adherence to therapy.
  The assessment should be facilitated through dedicated multidisciplinary difficult asthma service, by a team experienced in assessment and management of difficult asthma.[1]
- NICE 2017 Asthma: diagnosis monitoring and chronic asthma management NG80 [1.3.3] Consider a FeNO test in children and young people (aged 5–16) if there is diagnostic uncertainty after initial assessment and they have either: normal spirometry or obstructive spirometry with a negative bronchodilator reversibility (BDR) test.[2]
- NICE 2013 Smoking: acute, maternity and mental health services PH48 [Recommendation 5] Provide information and advice for carers, family, other household members and hospital visitors.[3]
- NICE 2013 Smoking: supporting people to stop QS43 [QS2] People who smoke are offered a referral to an evidence-based smoking cessation service.[4]
- NRAD 2014 why asthma still kills: organisation of NHS services [Recommendation 1] Every hospital and general practice should have a designated, named clinical lead for asthma services, responsible for formal training and management of acute asthma.[6]
- NRAD 2014 why asthma still kills: organisation of NHS services [Recommendation 2] Patients with asthma must be referred to a specialist asthma service if they have required more than two courses of systemic corticosteroids, oral or injected, in the previous 12 months or require management using British Thoracic Society (BTS) stepwise treatment 4 or 5 to achieve control.[6]
- NRAD 2014 why asthma still kills: patient factors and perception of risk [Recommendation 2] A history of smoking and/or exposure to second-hand smoke should be documented in the medical records of people with asthma. Current smokers should be offered referral to a smoking cessation service.[6]

Key findings

Local and network asthma care and leadership

Of participating hospitals:

- **69.8%** are part of a regional paediatric asthma network[i]
- **80.7%** have a designated lead for paediatric asthma services (either as a designated paediatric lead or lead for both adult and paediatric services)
- **68.9%** have a specific service for paediatric asthma
- **49.9%** of their admitted CYP asthma patients have access to a paediatric respiratory nurse specialist. However, at weekends only **5.2%** of centres have a respiratory nurse specialist available for CYP.

Access to services to address socio-economic, environmental, and lifestyle factors that affect asthma in CYP

Of participating hospitals:

- **72.3%** have a smoking cessation service to which they signpost parents, carers or CYP asthma patients as required
- **52.1%** have a smoking cessation service to which they can refer CYP asthma patients
- **30.3%** have a dedicated service for childhood obesity to which they can refer patients.

Access to physiology services

Of participating hospitals:

- **89.9%** have access to spirometry
- **41.2%** have access to fractional exhaled nitric oxide (FeNO), as a diagnostic tool for CYP asthma patients.

[i] For further information on paediatric networks, please refer to section 3 (3.45, 3.46, 3.47 and 3.5) of the NHS Long Term Plan: https://www.longtermplan.nhs.uk/publication/nhs-long-term-plan/

Navigation

This section contains the following tables and graphs. If you are viewing this report electronically, you can select the table that you wish to view by clicking on the hyperlink from the list below.

3.1 On which days does a senior decision maker from paediatric team (ST3 or above) undertake a ward round of new CYP asthma patients on the paediatric admission unit (PAU)?

	2019/20		
Senior team decision maker ward round of CYP asthma patients	All (n=119)	England (n=110)	Wales (n=7)
Weekdays	112 (94.1%)	105 (95.5%)	6 (85.7%)
Weekends*	109 (91.6%)	102 (92.7%)	6 (85.7%)
Out of hours **	74 (62.2%)	71 (64.6%)	3 (42.9%)
None	7 (5.9%)	5 (4.6%)	1 (14.3%)

Services that did not have paediatric admissions unit (PAU) were advised to leave this question blank.
Please note that this question followed a tick all that apply format
**Weekends are defined as between 18:30 on a Friday until 08:00 on a Monday*
***Out of hours are defined as 18:30–08:00 on weekdays*

3.1.1 How often are CYP patients on the paediatric admissions ward routinely reviewed by a senior decision maker (ST3 or above)?

	2019/20		
Senior team decision maker routine ward round	All (n=119)	England (n=110)	Wales (n=7)
On weekdays?			
Twice daily	49 (41.2%)	46 (41.8%)	3 (42.9%)
Daily	67 (56.3%)	62 (56.4%)	3 (42.9%)
Other	3 (2.5%)	2 (1.8%)	1 (14.3%)
At weekends?			
Twice daily	32 (26.9%)	30 (27.3%)	2 (28.6%)
Daily	83 (69.8%)	77 (70.0%)	4 (57.1%)
Other	4 (3.4%)	3 (2.7%)	1 (14.3%)

Due to rounding of percentages some lines of data may not add up to 100

3.2 On which days does a senior decision maker from paediatric team (ST3 or above) undertake a ward round of new CYP asthma patients on the paediatric ward(s)?

	2019/20		
Senior team decision maker paediatric ward round	All (n=119)	England (n=110)	Wales (n=7)
Weekdays	117 (98.3%)	109 (99.1%)	6 (85.7%)
Weekends*	116 (97.5%)	108 (98.2%)	6 (85.7%)
Out of hours**	68 (57.1%)	65 (59.1%)	3 (42.9%)
None	2 (1.7%)	1 (0.9%)	1 (14.3%)

Please note that this question followed a tick all that apply format
**Weekends are defined as between 18:30 on a Friday until 08:00 on a Monday*
***Out of hours are defined as 18:30–08:00 on weekdays*

3.3 Which admitted CYP asthma patients have access to a paediatric respiratory nurse?

	2019/20		
Access to paediatric respiratory nurse	All (n=119)	England (n=110)	Wales (n=7)
None	42 (35.3%)	38 (34.6%)	3 (42.9%)
All CYP asthma patients	59 (49.6%)	54 (49.1%)	4 (57.1%)
Those under the care of a paediatric respiratory consultant	6 (5.0%)	6 (5.5%)	0 (0.0%)
Other	12 (10.1%)	12 (10.9%)	0 (0.0%)

Due to rounding of percentages some lines of data may not add up to 100

3.3.1 On which days is a respiratory nurse(s) available to review paediatric asthma inpatients?*

	2019/20		
Respiratory nurse review of CYP asthma inpatients	All (n=77)	England (n=72)	Wales (n=4)
Weekdays	72 (93.5%)	67 (93.1%)	4 (100.0%)
Weekends **	4 (5.2%)	4 (5.6%)	0 (0.0%)
Out of hours ***	0 (0.0%)	0 (0.0%)	0 (0.0%)
No paediatric respiratory nurse available	4 (5.2%)	4 (5.6%)	0 (0.0%)

Please note that this question followed a tick all that apply format
**Out of hospitals with access to respiratory nurse*
***Weekends are defined as between 18:30 on a Friday until 08:00 on a Monday*
****Out of hours are defined as 18:30–08:00 on weekdays*

3.4 What is your hospital's access to an on-call paediatric respiratory consultant for CYP asthma patients?

	2019/20		
Access to on-call respiratory consultant	All (n=119)	England (n=110)	Wales (n=7)
On site	11 (9.2%)	11 (10.0%)	0 (0.0%)
On the phone	40 (33.6%)	38 (34.6%)	2 (28.6%)
Regional outreach service	54 (45.4%)	52 (47.3%)	2 (28.6%)

This was a tick all that apply question and a number of respondents left it blank, therefore it is not possible say with certainty how many hospitals do not have access to an on-call paediatric respiratory consultant or just left the question blank. However, from the responses given we have deduced that approximately 23.5% of hospitals do not have access to an on-call paediatric respiratory consultant.

3.5 On which days does your hospital provide a PICU outreach service for critically ill CYP requiring PICU management?

	2019/20		
Provision of PICU outreach service for critically ill CYP	**All (n=119)**	**England (n=110)**	**Wales (n=7)**
Weekdays	19 (16.0%)	19 (17.3%)	0 (0.0%)
Weekends*	19 (16.0%)	19 (17.3%)	0 (0.0%)
Out of hours**	18 (15.1%)	18 (16.4%)	0 (0.0%)
No outreach service	100 (84.0%)	91 (82.7%)	7 (100%)

Please note that this question followed a tick all that apply format
**Weekends are defined as between 18:30 on a Friday until 08:00 on a Monday*
***Out of hours are defined as 18:30 – 08:00 on weekdays*

3.6 Is your service part of a regional paediatric asthma network?

	2019/20		
Regional paediatric asthma network	**All (n=119)**	**England (n=110)**	**Wales (n=7)**
Yes	83 (69.8%)	75 (68.2%)	7 (100%)
No	30 (25.2%)	29 (26.4%)	0 (0.0%)
Not known	6 (5.0%)	6 (5.5%)	0 (0.0%)

Due to rounding of percentages some lines of data may not add up to 100

3.7 Does your hospital have a designated named clinical lead for asthma services?

	2019/20		
Provision of designated name clinical lead for asthma services	**All (n=119)**	**England (n=110)**	**Wales (n=7)**
Paediatric lead only	78 (65.6%)	70 (63.6%)	7 (100%)
Adult lead only	4 (3.4%)	4 (3.6%)	0 (0.0%)
Single lead for both adults and paediatrics	18 (15.1%)	18 (16.4%)	0 (0.0%)
No lead	19 (16.0%)	18 (16.4%)	0 (0.0%)

Services that have different clinical leads for paediatric and adult asthma were advised to select 'paediatric lead only'
Due to rounding of percentages for the purposes of presenting this data some lines of data may not add up to 100

3.7.1 Is the designated named clinical lead role currently filled?*

	2019/20		
Is clinical lead role filled?	All (n=100)	England (n=92)	Wales (n=7)
Yes	96 (96.0%)	88 (95.7%)	7 (100%)
No	2 (2.0%)	2 (2.2%)	0 (0.0%)
Not known	2 (2.0%)	2 (2.2%)	0 (0.0%)

Due to rounding of percentages some lines of data may not add up to 100
**Out of hospitals that had a designated named clinical lead*

3.7.2 Is the asthma lead responsible for formal training in the management of acute paediatric asthma?*

	2019/20		
Training in the management of acute paediatric asthma	All (n=100)	England (n=92)	Wales (n=7)
Yes – paediatric only	73 (73.0%)	66 (71.7%)	7 (100%)
Yes – paediatric and adult	6 (6.0%)	6 (6.5%)	0 (0.0%)
No	21 (21.0%)	20 (21.7%)	0 (0.0%)

**Out of hospitals that had a designated named clinical lead*

3.8 Does your hospital have a specific service for paediatric asthma?

	2019/20		
Specific service for paediatric asthma	All (n=119)	England (n=110)	Wales (n=7)
Yes	82 (68.9%)	76 (69.1%)	4 (57.1%)
No	35 (29.4%)	32 (29.1%)	3 (42.9%)
Not known	2 (1.7%)	2 (1.8%)	0 (0.0%)

3.8.1 If not, do you have set criteria for referral to an off-site specialist paediatric asthma service?*

	2019/20		
Criteria for referral to an offsite specialist paediatric asthma service	All (n=37)	England (n=34)	Wales (n=3)
Yes	18 (48.7%)	18 (52.9%)	0 (0.0%)
No	19 (51.4%)	16 (47.1%)	3 (100%)

**Out of hospitals that did not have a specific service for paediatric asthma or selected not known*

3.9 When CYP with poor asthma control or severe illness have been identified in clinic, does the asthma lead review the CYP prior to referral to a specialist paediatric asthma service?*

	2019/20		
Review of CYP by asthma lead, prior to referral to specialist paediatric asthma service	All (n=100)	England (n=92)	Wales (n=7)
Yes	60 (60.0%)	57 (62.0%)	3 (42.9%)
No	20 (20.0%)	19 (20.7%)	1 (14.3%)
Not applicable – we have specialist advice on site	11 (11.0%)	10 (10.9%)	0 (0.0%)
Not known	9 (9.0%)	6 (6.5%)	3 (42.9%)

Due to rounding of percentages some lines of data may not add up to 100
**Out of hospitals that had a designated named clinical lead*

3.10 Is there a smoking cessation service to which you can refer or signpost parents/carers of your CYP asthma patients?

	2019/20		
Provision of smoking cessation service for parents/carers	All (n=119)	England (n=110)	Wales (n=7)
Yes	86 (72.3%)	78 (70.9%)	6 (85.7%)
No	20 (16.8%)	19 (17.3%)	1 (14.3%)
Not known	13 (10.9%)	13 (11.8%)	0 (0.0%)

3.10.1 Please let us know more about the provision of this service*

	2019/20		
Service details	All (n=86)	England (n=78)	Wales (n=6)
Hospital-based team	14 (16.3%)	14 (18.0%)	0 (0.0%)
Community-based team	45 (52.3%)	43 (55.1%)	2 (33.3%)
Both hospital and community-based teams	18 (20.9%)	16 (20.5%)	1 (16.7%)
Single team that works across the community/secondary care interface	9 (10.5%)	5 (6.41%)	3 (50.0%)

Services that have both hospital and community- based teams and a single team that works across the community secondary care interface were advised to select the 'single team that works across the community/secondary care interface' option
Due to rounding of percentages some lines of data may not add up to 100
**Out of hospitals with a smoking cessation service they can signpost parents/carers to*

3.11 Is there a smoking cessation service to which you can refer CYP asthma patients?

	2019/20		
Provision of smoking cessation service for CYP patients	All (n=119)	England (n=110)	Wales (n=7)
Yes	62 (52.1%)	58 (52.7%)	2 (28.6%)
No	42 (35.3%)	39 (35.5%)	3 (42.9%)
Not known	15 (12.6%)	13 (11.8%)	2 (28.6%)

3.11.1 Please let us know more about the provision of this service*

	2019/20		
Service details	All (n=62)	England (n=58)	Wales (n=2)
Hospital-based team	13 (21.0%)	12 (20.7%)	1 (50.0%)
Community-based team	34 (54.8%)	32 (55.2%)	1 (50.0%)
Both hospital and community-based teams	8 (12.9%)	8 (13.8%)	0 (0.0%)
Single team that works across the community/secondary care interface	7 (11.3%)	6 (10.3%)	0 (0.0%)

**Out of hospitals with a smoking cessation service they can signpost CYP asthma patients to*

3.12 Do you have a dedicated service for childhood obesity, to which your CYP asthma patients can be referred?

	2019/20		
Provision of childhood obesity service	All (n=119)	England (n=110)	Wales (n=7)
Yes	36 (30.3%)	35 (31.8%)	0 (0.0%)
No	82 (68.9%)	74 (67.3%)	7 (100%)
Not known	1 (0.8%)	1 (0.9%)	0 (0.0%)

3.13 Can the paediatric team refer CYP asthma patients to a home-based community service post discharge?

	2019/20		
Paediatric team referrals to a home-based community service	All (n=119)	England (n=110)	Wales (n=7)
Yes	69 (58.0%)	66 (60.0%)	1 (14.3%)
No	49 (41.2%)	43 (39.1%)	6 (85.7%)
Not known	1 (0.8%)	1 (0.9%)	0 (0.0%)

3.14 In your hospital, do you have access to the following diagnostic tools for CYP asthma patients?

	2019/20		
Access to diagnostic tools for CYP asthma	**All (n=119)**	**England (n=110)**	**Wales (n=7)**
Spirometry	107 (89.9%)	100 (90.9%)	5 (71.4%)
Peak expiratory flow (PEF)	116 (97.5%)	107 (97.3%)	7 (100%)
Fractional exhaled nitric oxide (FeNO)	49 (41.2%)	48 (43.6%)	1 (14.3%)
Skin prick test	102 (85.7%)	96 (87.3%)	4 (57.1%)
None	1 (0.8%)	1 (0.9%)	0 (0.0%)

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

Rationale

Markers of inflamation 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.[ii] 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.

[ii] **https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(17)30008-1/fulltext**

Section 4: Management of care

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Key standard:

> BTS/SIGN Asthma Guidelines 2019 [9.7.2]: Consider intensive inpatient treatment of children with SpO_2 <92% in air after initial bronchodilator treatment.[1]

Key findings

Of participating hospitals:

> **52.9%** have a paediatric oxygen policy
> **74.8%** have ward based paediatric medication charts with a designated space to record the prescription of oxygen
> **99.2%** use a paediatric early warning system (PEWS)
> **72%** utilise a PEWS which incorporates space to record subjective nursing concerns about a patient's clinical status.

Navigation

This section contains the following tables and graphs. If you are viewing this report electronically, you can select the table that you wish to view by clicking on the hyperlink from the list below.

4.1 Does the paediatric service in your hospital have an Electronic Patient Record (EPR) system?

	2019/20		
Electronic Patient Record (EPR) system	All (n=119)	England (n=110)	Wales (n=7)
Yes	75 (63.0%)	71 (64.6%)	3 (42.9%)
No	44 (37.0%)	39 (35.5%)	4 (57.1%)

4.2 Does your hospital have a paediatric oxygen policy?

	2019/20		
Paediatric oxygen policy	All (n=119)	England (n=110)	Wales (n=7)
Yes – paediatric specific	63 (52.9%)	60 (54.6%)	2 (28.6%)
Yes – combined adult and paediatric policy	20 (16.8%)	18 (16.4%)	2 (28.6%)
Neither a paediatric nor adult policy	14 (11.8%)	13 (11.8%)	0 (0.0%)
Not known	22 (18.5%)	19 (17.3%)	3(42.9%)

Services with adult policy only were advised to select neither paediatric nor adult

4.3 Do the ward-based paediatric medication charts/records have a designated place in which to record the prescription of oxygen?

	2019/20		
Recording oxygen prescription on ward - based medication charts	All (n=119)	England (n=110)	Wales (n=7)
Yes	89 (74.8%)	83 (75.5%)	4 (57.1%)
No	30 (25.2%)	27 (24.6%)	3 (42.9%)

4.4 Does your hospital use a system of paediatric early warning detection, eg PEWS?

	2019/20		
Utilisation of PEWS	All (n=119)	England (n=110)	Wales (n=7)
Yes	118 (99.2%)	110 (100%)	6 (85.7%)
No	1 (0.8%)	0 (0.0%)	1 (14.3%)

4.4.1 Does your early warning detection system allow the following to be recorded?*

	2019/20		
Can the following be recorded on your early warning system?	**All (n=118)**	**England (n=110)**	**Wales (n=6)**
Target oxygen saturation	53 (44.9%)	50 (45.5%)	2 (33.3%)
Actual oxygen saturation	113 (95.8%)	105 (95.5%)	6 (100.0%)
Amount of oxygen administered	111 (94.1%)	104 (94.6%)	5 (83.3%)
None of the above	1 (0.9%)	1 (0.9%)	0 (0.0%)

**Out of hospitals with a PEWS system*

4.4.2 Does your early warning detection system incorporate a section in which nurses can record a qualitative measure of how worried they are about the CYP?*

	2019/20		
Can nurses record a qualitative measure of concern about CYP on your early warning system?	**All (n=118)**	**England (n=110)**	**Wales (n=6)**
Yes	85 (72.0%)	77 (70.0%)	6 (100.0%)
No	29 (24.6%)	29 (26.4%)	0 (0.0%)
Not known	4 (3.4%)	4 (3.6%)	0 (0.0%)

**Out of hospitals with a PEWS system*

Section 5: Patient and carer engagement

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Key findings

Of participating hospitals

- **17.7%** have a strategic group for paediatric asthma services
- **23.8%** have strategic groups that include a CYP or a parent/carer of a CYP with asthma
- **87.4%** routinely conduct surveys of parent/carer views on paediatric services. Of these, **35.3%** of hospitals **conduct this on a continuous basis** with all patients.

Navigation

This section contains the following tables and graphs. If you are viewing this report electronically, you can select the table that you wish to view by clicking on the hyperlink from the list below.

5.1 Does your trust have a strategic group for paediatric asthma services?

	2019/20		
Strategic group for paediatric asthma service	All (n=119)	England (n=110)	Wales (n=7)
Yes	21 (17.7%)	17 (15.5%)	3 (42.9%)
No	94 (79.0%)	89 (80.9%)	4 (57.1%)
Not known	4 (3.4%)	4 (3.6%)	0 (0.0%)

5.1.1 If yes, does this group have CYP or parent/carer representation?*

	2019/20		
Patient, parent/carer representation on strategic group	All (n=21)	England (n=17)	Wales (n=3)
Yes	5 (23.8%)	5 (29.4%)	0 (0.0%)
No	13 (61.9%)	10 (58.8%)	3 (100%)
Not known	3 (14.3%)	2 (11.8%)	0 (0.0%)

**Out of hospitals that have strategic group for paediatric asthma services*

5.2 How often is a formal survey seeking CYP and parent/carer views on paediatric services undertaken?

	2019/20		
Undertaking CYP, parent/carer survey reviews	All (n=119)	England (n=110)	Wales (n=7)
Continuous (every patient)	42 (35.3%)	41 (37.3%)	1 (14.3%)
More than 4 times a year	14 (11.8%)	13 (11.8%)	1 (14.3%)
3–4 times a year	2 (1.7%)	2 (1.8%)	0 (0.0%)
1–2 times a year	19 (16.0%)	19 (17.3%)	0 (0.0%)
Less than once a year	27 (22.7%)	25 (22.7%)	1 (14.3%)
Never	15 (12.6%)	10 (9.1%)	4 (57.1%)

Section 6: Transitional care

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Key standards

- BTS/SIGN 2019 [11.11.3]: In the initial period after transition to adult services in secondary care, adolescents are best seen by one consultant to build their confidence and encourage attendance.[1]
- BTS/SIGN 2019 [11.11.4]: Transition should be seen as a process and not just the event of transfer to adult services. It should begin early, be planned, involve the young person and be both age and developmentally appropriate.
  - Young people should be given the opportunity to be seen without their parents/carers.
  - Transition services must address the needs of parents/carers whose role in their child's life is evolving at this time.
  - Transition services must be multidisciplinary and multi-agency. Optimal care requires a cooperative working relationship between adult and paediatric services, particularly where the young person has complex needs with multiple specialty involvement.
  - Coordination of transitional care is critical. There should be an identified coordinator who supports the young person until he or she is settled within the adult system.
  - Young people should be encouraged to take part in transition/support programmes and/or put in contact with other appropriate youth support groups.
  - The involvement of adult physicians prior to transfer supports attendance and adherence to treatment.
  - Transition services must undergo continued evaluation.[1]
- BTS/SIGN 2019 [11.12.1]: Design of individual or group education sessions delivered by healthcare professionals should address the needs of adolescents with asthma.[1]

Key finding

- **52.1%** of hospitals have formal transitioning processes in place for young people transitioning from paediatric to adult services.

Navigation

This section contains the following tables and graphs. If you are viewing this report electronically, you can select the table you wish to view by clicking on the hyperlink from the list below.

6.1 Do your processes for transitioning young people from paediatric to adult service include ensuring that:

	2019/20		
Processes for transitioning young people from paediatric to adult services	**All (n=119)**	**England (n=110)**	**Wales (n=7)**
The young person has a full record of their condition	50 (42.0%)	46 (41.8%)	3 (42.9%)
The GP is sent the same record	56 (47.1%)	51 (46.4%)	4 (57.1%)
The young person is given the opportunity to be seen without their parents/carers	56 (47.1%)	54 (49.1%)	1 (14.3%)
The needs of the parents/carers are addressed	59 (49.6%)	55 (50.0%)	3 (42.9%)
The young person has a transition plan that has been agreed with both paediatric and adult clinicians	43 (36.1%)	41 (37.3%)	1 (14.3%)
The young person is allocated a coordinator/case worker to support them until settled within the adult system	18 (15.1%)	17 (15.5%)	0 (0.0%)
We provide individual/group education sessions to young people transitioning to the adult system	21 (17.7%)	20 (18.2%)	0 (0.0%)
The transition service undergoes continued evaluation	22 (18.5%)	21 (19.1%)	0 (0.0%)
We do not have any formal transition arrangements	57 (47.9%)	53 (48.2%)	3 (42.9%)

Please note that this question followed a tick all that apply format

Section 7: Reimbursement of costs of care

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Key findings

Of participating hospitals:

- **52.9%** receive reimbursement of costs for CYP asthma patients through block contracts.
- **95.8% do not have** a CQUIN (Commissioning for Quality Innovation) or LIP (Local Incentive Payment) for CYP asthma care.

Navigation

This section contains the following tables and graphs. If you are viewing this report electronically, you can select the table you wish to view by clicking on the hyperlink from the list below.

7.1 How is reimbursement of costs of care for CYP patients with asthma achieved?

	2019/20		
Reimbursement of costs for CYP asthma patients	**All (n=119)**	**England (n=110)**	**Wales (n=7)**
Payment via block contract	63 (52.9%)	62 (56.4%)	1 (14.3%)
Payment by results	27 (22.7%)	27 (24.6%)	0 (0.0%)
Locally negotiated tariff	14 (11.8%)	12 (10.9%)	1 (14.3%)
Other	15 (12.6%)	9 (8.2%)	5 (71.4%)

7.2 Has your commissioner/health board agreed a Commissioning for Quality and Innovation (CQUIN) payment of Local Incentive Payment (LIP) in relation to CYP asthma care?[iii]

	2019/20		
Is a CQUIN or LIP in place for CYP asthma care?	**All (n=119)**	**England (n=110)**	**Wales (n=7)**
Yes	5 (4.2%)	5 (4.6%)	0 (0.0%)
No	114 (95.8%)	105 (95.5%)	7 (100%)

[iii] There is a severe asthma CQUIN in place. This is not applicable to all hospitals. Please refer to https://www.england.nhs.uk/publication/pss8-severe-asthma-flat-final-pss-cquin-indicator/ for further information.

Section 8: Benchmarked key indicators and participation

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8.1 Benchmarking of key indicators for participating hospitals

Table 1 presents the indicators that have been selected for benchmarking, as well as the criteria required for hospitals to meet each indicator based on the answer options provided in the children and young people (CYP) asthma organisational audit dataset.

Table 2 presents whether each hospital meets each indicator (target met – coloured light green) or not (target not met – coloured light pink). Please note that hospitals that are not currently registered for the CYP audit were excluded from benchmarking analyses.

Table 1. Methodology for benchmarking key indicators

Benchmarking dashboard performance indicator	Rationale
Process items	
Does your hospital have a paediatric high dependency unit (HDU) to which CYP asthma patients can be admitted? (Q1.2)	> A proportion of CYP admitted to hospital will have refractory asthma with life-threatening features and will probably require admission to an HDU for intravenous therapy and support.
Does your hospital have a designated, named clinical lead for asthma services? (Q3.7)	> One of the recommendations from the National Review of Asthma Deaths (**NRAD**) was that healthcare facilities should identify a lead person for asthma. > The approaches and requirements of asthma services will vary between CYP and adult care.
Is there a smoking cessation service to which you can refer or signpost parents/carers of your CYP asthma patients? (Q3.10)?	> 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 on in life. Nicotine is one of the most addictive substances in the world and specialist services are shown to improve rates of smoking cessation. Smoking cessation approaches for CYP will differ from those effective in adults. > Maps to **BTS/SIGN 2019 [6.2.3]**
Is there a smoking cessation service to which you can refer CYP asthma patients? (Q3.11)	> 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 on in life. Nicotine is one of the most addictive substances in the world and specialist services are shown to improve rates of smoking cessation. Smoking cessation approaches for CYP will differ from those effective in adults. > Maps to **BTS/SIGN 2019 [6.2.3]**
In your hospital, do you have access to the following diagnostic tools for CYP asthma patients? (Q3.14) (spirometry and fractional exhaled nitric oxide (FeNO)	> These are recommended in NICE guidelines as useful tool for accurately making a diagnosis of asthma in CYP and adults. > Maps to **NICE NG80 [1.3.3]**

Table 2. Unadjusted benchmarking of key indicators for hospitals in England, Scotland and Wales

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
England						
Airedale NHS Foundation Trust	Airedale General Hospital					
Ashford and St Peter's Hospitals NHS Foundation Trust	St Peter's Hospital					
Barking, Havering and Redbridge University Hospitals NHS Trust	King George Hospital					
Barking, Havering and Redbridge University Hospitals NHS Trust	Queens Hospital Romford					
Barnsley Hospital NHS Foundation Trust	Barnsley District General Hospital					
Barts Health NHS Trust	Newham General Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Basildon and Thurrock University Hospitals NHS Foundation Trust	Basildon Hospital					
Bedford Hospital NHS Trust	Bedford Hospital					
Birmingham Women's and Children's NHS Foundation Trust	Birmingham Children's Hospital					
Bolton NHS Foundation Trust	Royal Bolton Hospital					
Bradford Teaching Hospitals NHS Foundation Trust	Bradford Royal Infirmary					
Brighton and Sussex University Hospitals NHS Trust	Royal Alexandra Children's Hospital					
Buckinghamshire Healthcare NHS Trust	Stoke Mandeville Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Calderdale and Huddersfield NHS Foundation Trust	Calderdale Royal Hospital					
Chelsea and Westminster Hospital NHS Foundation Trust	Chelsea and Westminster Hospital					
Chesterfield Royal Hospital NHS Foundation Trust	Chesterfield Royal Hospital					
County Durham and Darlington NHS Foundation Trust	Darlington Memorial Hospital					
County Durham and Darlington NHS Foundation Trust	University Hospital of North Durham					
Dartford and Gravesham NHS Trust	Darent Valley Hospital					
Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust	Bassetlaw District General Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust	Doncaster Royal Infirmary					
Dorset County Hospital NHS Foundation Trust	Dorset County Hospital					
East Kent Hospitals University NHS Foundation Trust	Queen Elizabeth the Queen Mother Hospital					
East Kent Hospitals University NHS Foundation Trust	William Harvey Hospital					
East Lancashire Hospitals NHS Trust	Royal Blackburn Hospital					
East Sussex Healthcare NHS Trust	Conquest Hospital					
Epsom and St Helier University Hospitals NHS Trust	Epsom Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Epsom and St Helier University Hospitals NHS Trust	St Helier Hospital					
Frimley Health NHS Foundation Trust	Frimley Park Hospital					
Frimley Health NHS Foundation Trust	Wexham Park Hospital					
George Eliot Hospital NHS Trust	George Eliot Hospital					
Guy's and St Thomas' NHS Foundation Trust	St Thomas' Hospital					
Hampshire Hospitals NHS Foundation Trust	Basingstoke and North Hampshire Hospital					
Hampshire Hospitals NHS Foundation Trust	Royal Hampshire County Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Harrogate and District NHS Foundation Trust	Harrogate District Hospital					
Homerton University Hospital NHS Foundation Trust	Homerton Hospital					
Hull University Teaching Hospitals NHS Trust	Hull Royal Infirmary					
Imperial College Healthcare NHS Trust	St Marys Hospital, Paddington					
King's College Hospital NHS Foundation Trust	Princess Royal University Hospital (Bromley)					
Kingston Hospital NHS Foundation Trust	Kingston Hospital					
Lancashire Teaching Hospitals NHS Foundation Trust	Royal Preston Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Leeds Teaching Hospitals NHS Trust	Leeds General Infirmary					
Lewisham and Greenwich NHS Trust	Queen Elizabeth Hospital, Woolwich					
Lewisham and Greenwich NHS Trust	University Hospital Lewisham					
Maidstone and Tunbridge Wells NHS Trust	Tunbridge Wells Hospital					
Manchester University NHS Foundation Trust	Royal Manchester Children's Hospital					
Manchester University NHS Foundation Trust	Wythenshawe Hospital					
Mid Cheshire Hospitals NHS Foundation Trust	Leighton Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Mid Essex Hospital Services NHS Trust	Broomfield Hospital					
Milton Keynes University Hospital NHS Foundation Trust	Milton Keynes General Hospital					
North Cumbria Integrated Care NHS Foundation Trust	Cumberland Infirmary					
North Cumbria Integrated Care NHS Foundation Trust	West Cumberland Infirmary					
North Middlesex University Hospital NHS Trust	North Middlesex Hospital					
North Tees and Hartlepool NHS Foundation Trust	University Hospital of North Tees					
North West Anglia NHS Foundation Trust	Hinchingbrooke Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Northampton General Hospital NHS Trust	Northampton General Hospital					
Northern Devon Healthcare NHS Trust	North Devon District Hospital					
Northern Lincolnshire and Goole NHS Foundation Trust	Diana, Princess of Wales Hospital					
Northern Lincolnshire and Goole NHS Foundation Trust	Scunthorpe General Hospital					
Northumbria Healthcare NHS Foundation Trust	Northumbria Specialist Emergency Care Hospital					
Pennine Acute Hospitals NHS Trust	North Manchester General Hospital					
Poole Hospital NHS Foundation Trust	Poole General Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Portsmouth Hospitals NHS Trust	Queen Alexandra Hospital					
Royal Berkshire NHS Foundation Trust	Royal Berkshire Hospital					
Royal Cornwall Hospitals NHS Trust	Royal Cornwall Hospital					
Royal Devon and Exeter NHS Foundation Trust	Royal Devon and Exeter Hospital					
Royal United Hospitals Bath NHS Foundation Trust	Royal United Hospital Bath					
Salford Royal NHS Foundation Trust	Salford Royal Hospital					
Salisbury NHS Foundation Trust	Salisbury District Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Sandwell and West Birmingham Hospitals NHS Trust	Birmingham City Hospital					
Sandwell and West Birmingham Hospitals NHS Trust	Sandwell District Hospital					
Sheffield Children's NHS Foundation Trust	Sheffield Children's Hospital					
Sherwood Forest Hospitals NHS Foundation Trust	King's Mill Hospital					
South Tees Hospitals NHS Foundation Trust	James Cook University Hospital					
Southend University Hospital NHS Foundation Trust	Southend Hospital					
Southport and Ormskirk Hospital NHS Trust	Ormskirk and District General Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
St George's University Hospitals NHS Foundation Trust	St George's Hospital					
St Helens and Knowsley Teaching Hospitals NHS Trust	Whiston Hospital					
Stockport NHS Foundation Trust	Stepping Hill Hospital					
Surrey and Sussex Healthcare NHS Trust	East Surrey Hospital					
Tameside and Glossop Integrated Care NHS Foundation Trust	Tameside General Hospital					
Taunton and Somerset NHS Foundation Trust	Musgrove Park Hospital					
The Dudley Group NHS Foundation Trust	Russells Hall Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
The Hillingdon Hospitals NHS Foundation Trust	Hillingdon Hospital					
The Princess Alexandra Hospital NHS Trust	Princess Alexandra Hospital					
The Rotherham NHS Foundation Trust	Rotherham General Hospital					
The Royal Wolverhampton NHS Trust	New Cross Hospital					
Torbay and South Devon NHS Foundation Trust	Torbay Hospital					
United Lincolnshire Hospitals NHS Trust	Lincoln County Hospital					
United Lincolnshire Hospitals NHS Trust	Pilgrim Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
University College London Hospitals NHS Foundation Trust	University College Hospital					
University Hospitals Coventry and Warwickshire NHS Trust	University Hospital Coventry					
University Hospitals of Derby and Burton NHS Foundation Trust	Queens Hospital					
University Hospitals of Derby and Burton NHS Foundation Trust	Royal Derby Hospital					
University Hospitals of Morecambe Bay NHS Foundation Trust	Furness General					
University Hospitals of Morecambe Bay NHS Foundation Trust	Royal Lancaster Infirmary					
University Hospitals of North Midlands NHS Trust	Royal Stoke University Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
University Hospitals Plymouth NHS Trust	Derriford Hospital					
Walsall Healthcare NHS Trust	Manor Hospital					
Warrington and Halton Hospitals NHS Foundation Trust	Warrington District General Hospital					
West Suffolk NHS Foundation Trust	West Suffolk Hospital					
Western Sussex Hospitals NHS Foundation Trust	St Richard's Hospital					
Western Sussex Hospitals NHS Foundation Trust	Worthing Hospital					
Whittington Health NHS Trust	Whittington Hospital					
Wirral University Teaching Hospital NHS Foundation Trust	Arrowe Park Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Worcestershire Acute Hospitals NHS Trust	Worcestershire Royal Hospital					
Wrightington, Wigan and Leigh NHS Foundation Trust	Royal Albert Edward Infirmary					
Wye Valley NHS Trust	County Hospital Hereford					
Yeovil District Hospital NHS Foundation Trust	Yeovil District Hospital					
York Teaching Hospital NHS Foundation Trust	York District Hospital					
Scotland						
Borders	Borders General Hospital					
Tayside	Ninewells Hospital					

Trust name / local health board	Service name	HDU on site	Designated clinical lead for asthma	Smoking cessation service available to signpost parents/carers of your paediatric asthma patients	Access to smoking cessation service for patients with asthma	Access to the following diagnostic tools: Spirometry and exhaled nitric oxide (FeNO)
Indicator no.		**1**	**2**	**3**	**4**	**5**
Wales						
Cwm Taf Morgannwg University Local Health Board	Prince Charles Hospital					
Cwm Taf Morgannwg University Local Health Board	Princess of Wales Hospital					
Cwm Taf Morgannwg University Local Health Board	Royal Glamorgan					
Hywel Dda University Local Health Board	Bronglais General Hospital					
Hywel Dda University Local Health Board	Glangwili General Hospital					
Hywel Dda University Local Health Board	Withybush General Hospital					
Swansea Bay Local Health Board	Morriston Hospital					

8.2 Audit part and non-participation

Partially participating children and young people's asthma services

Services that provided some organisational audit data but were not included in the final analysis.

Trust / health board	Hospital
England	
Barts Health NHS Trust	Whipps Cross Hospital
Bedfordshire Hospitals NHS Foundation Trust	Luton and Dunstable Hospital
Cambridge University Hospitals NHS Foundation Trust	Addenbrooke's Hospital
Chelsea and Westminster NHS Foundation Trust	West Middlesex Hospital
Countess of Chester Hospital NHS Foundation Trust	Countess of Chester Hospital
Croydon Health Services NHS Trust	Croydon University Hospital
Great Western Hospitals NHS Foundation Trust	The Great Western Hospital
Isle of Wight NHS Trust	St Mary's Hospital, Newport
James Paget University Hospitals NHS Foundation Trust	James Paget Hospital
Kettering General Hospital NHS Foundation Trust	Kettering General Hospital
King's College Hospital NHS Foundation Trust	King's College Hospital
Mid Yorkshire Hospitals NHS Trust	Pinderfields General Hospital
North West Anglia NHS Foundation Trust	Peterborough City Hospital
Nottingham University Hospitals NHS Trust	Nottingham Children's Hospital (QMC Paediatrics)
Royal Surrey NHS Foundation Trust	Royal Surrey County Hospital
South Warwickshire NHS Foundation Trust	Warwick Hospital
University Hospital Southampton NHS Foundation Trust	Southampton Children's Hospital
West Hertfordshire Hospitals NHS Trust	Watford General Hospital
Scotland	
NHS Fife	Victoria Hospital, Kirkcaldy
NHS Greater Glasgow & Clyde	Royal Hospital for Children
NHS Lothian	Royal Hospital for Sick Children (Edinburgh)
Wales	
Aneurin Bevan University Local Health Board	Nevill Hall Hospital
Betsi Cadwaladr University Local Health Board	Ysbyty Gwynedd Hospital

Non-participating children and young people asthma services

Services that provided no organisational audit information.

The hospitals included in this list either did not register for the audit (denoted in grey), or were registered but did not enter any data for the period reported on in this analysis.

Trust / health board	Hospital
England	
Alder Hey Children's NHS Foundation Trust	Alder Hey Children's Hospital
Barts Health NHS Trust	The Royal London Hospital
Blackpool Teaching Hospitals NHS Foundation Trust	Victoria hospital
East and North Hertfordshire NHS Trust	Lister Hospital
East Cheshire NHS Trust	Macclesfield District General Hospital
East Suffolk and North Essex NHS Foundation Trust	Colchester General Hospital
East Suffolk and North Essex NHS Foundation Trust	The Ipswich Hospital
East Sussex Healthcare NHS Trust	Eastbourne District General Hospital
Gloucestershire Hospitals NHS Foundation Trust	Gloucestershire Royal Hospital
London North West Healthcare NHS Trust	Northwick Park Hospital
Medway NHS Foundation Trust	Medway Maritime Hospital
Norfolk and Norwich University Hospitals NHS Foundation Trust	Norfolk and Norwich Hospital
Oxford University Hospitals NHS Foundation Trust	Horton General Hospital
Oxford University Hospitals NHS Foundation Trust	John Radcliffe Hospital
Pennine Acute Hospitals NHS Trust	Royal Oldham Hospital
Royal Free London NHS Foundation Trust	Barnet Hospital
Royal Free London NHS Foundation Trust	Royal Free Hospital
Shrewsbury and Telford Hospital NHS Trust	Princess Royal Hospital, Telford
South Tyneside & Sunderland NHS Foundation Trust	Sunderland Royal Hospital
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	Great North Children's Hospital
The Queen Elizabeth Hospital, King's Lynn, NHS Foundation Trust	The Queen Elizabeth Hospital
University Hospitals Birmingham NHS Foundation Trust	Birmingham Heartlands Hospital
University Hospitals Birmingham NHS Foundation Trust	Good Hope Hospital
University Hospitals Bristol NHS Foundation Trust	Bristol Royal Hospital for Children
University Hospitals of Leicester NHS Trust	Leicester Royal Infirmary
York Teaching Hospital NHS Foundation Trust	Scarborough General Hospital
Scotland	
NHS Ayreshire & Arran	University Crosshouse Hospital
NHS Dumfries & Galloway	Dumfries & Galloway Royal Infirmary
NHS Forth Valley	Forth Valley Royal Hospital

NHS Grampian	Royal Aberdeen Children's Hospital
NHS Grampian	Dr Gray's Hospital
NHS Greater Glasgow & Clyde	Royal Alexandra Hospital (Paisley)
NHS Highland	Raigmore Hospital
NHS Lothian	St John's Hospital at Howden
NHS Lanarkshire Wishaw General Hospital	Wishaw General Hospital
Wales	
Aneurin Bevan University Local Health Board	Royal Gwent Hospital
Betsi Cadwaladr University Local Health Board	Glan Clwyd Hospital
Betsi Cadwaladr University Local Health Board	Wrexham Maelor Hospital
Cardiff & Vale University Local Health Board	University Hospital of Wales

Appendix A – Methodology

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Methodology of the audit creation and setup

A national asthma audit was recommended in the 2014 National Review of Asthma Deaths report following the learnings from the confidential enquiry.[4] Subsequently, the Asthma Audit Development Project (AADP)[iv] was commissioned between February 2017 and February 2018 to carry out the groundwork required to set up a national audit of asthma care in adult and paediatric secondary care services, as well as primary care. This specifically involved the development of national audit datasets, including the precursor to the current children and young people's asthma audit dataset.

The NACAP, which was commissioned from 1 March 2018, launched the children and young people's asthma audit in June 2019. This is the first report for this workstream and presents the structure and resourcing of services between 2 December 2019 and 13 March 2020. The short report, presenting key findings and recommendations, can be found at **www.rcplondon.ac.uk/nacap-cyp-asthma-2019/20**. A quality improvement slide set and patient report is also provided.

All hospitals in England, Scotland and Wales (n=181) that admit children and young people with asthma attacks were eligible to participate in the organisational audit. Only hospitals registered to the CYP clinical audit could take part, as completion of the organisational audit took place via the NACAP audit web tool, where patient data is inputted for the clinical audits.

A total of 162 (90%) hospitals registered for the audit and were therefore able to participate. 119 (66%) hospitals provided a full organisational audit record. A further 23 (13%) provided a partially complete organisational audit record but were not included in the final analysis. A full list of partially and non-participating hospitals is provided in **Section 8.2.**

Recruitment

The recruitment process for this audit started in June 2018 using the following channels:

- Communication with hospitals in England and Wales.
- Direct communications to health board chief executives / medical directors as well as local respiratory network leads in Scotland.
- Partner and stakeholder channels (such as the BTS's e-bulletin, and the Association of Respiratory Nurse Specialists' newsletter).
- NACAP launch information packs and direct letters sent director to trust/health board chief executives in England, Scotland and Wales.
- NACAP twitter and newsletter.
- Direct letters to chief executives and medical directors.

The reasons provided to participate in the audits were as follows:

- The audit is part of the National Clinical Audit Patient Outcomes Programme (NCAPOP), NHS

[iv] For more information about the AADP and the development of the initial CYP asthma audit dataset visit: **http://www.rcplondon.ac.uk/projects/asthma-audit-development-project**

contracts state that trusts must participate in audits that are part of this programme.
- The audit is included in the NHS Wales clinical audit and outcome review plan **(www.wales.nhs.uk/governance-emanual/clinical-governance)**.
- The Care Quality Commission's (CQC's) future use of clinical audit metrics in its hospital inspections in England.
- The alignment of the audit to National Institute for Health and Care Excellence (NICE) guidance.
- The fact the audit/s would prove to be a useful tool for facilitating local improvement.

A two-step registration process was followed:

1. All hospitals were required to complete a registration form, providing the contact details and job title of a 'clinical lead' as well as a 'clinical audit lead'. Web tool accounts were set up for these contacts by the NACAP team.
2. Hospitals in England and Wales were also required to forward a letter directly to their Caldicott Guardian. The letter provided an overview of the audit and the legal approvals in place to collect patient-identifiable data without consent. Caldicott Guardians were required to populate, sign and return a form to confirm approval in order for eligible hospitals in their trust / health board to take part. Only after both the registration form *and* Caldicott Guardian form were completed did the audit team at the RCP consider the hospital as fully registered and approve hospital access to the audit web tool.
    a. In Scotland, Caldicott Guardian approval was not required for individual hospitals / health boards as the Public Benefit and Privacy Panel for Health approval is deemed to be the ultimate information governance authorisation (precluding the need for any others). Therefore, teams were asked to forward a letter to their Caldicott Guardian for information purposes only.

The contacts provided within the hospital registration form were registered in the web tool as having one of two roles: 'lead clinician' or 'data inputter'. The former were able to approve the creation of new users for that hospital following the launch of the audit, as well as ensure that new users were suitable from an information governance perspective. The latter were able to create account requests for new users which required approval by the lead clinician.

The NACAP team chased the registration and Caldicott Guardian forms up to, and post launch of the audit.

Audit question development and pilot

The audit dataset was developed during the Asthma Audit Development Project (AADP)[5] and further streamlined by the NACAP team and clinical lead, in consultation with the NACAP asthma advisory group. Following review and incorporation of questions relevant to CYP secondary care services by the NACAP team, the dataset was circulated to all members of the NACAP asthma advisory group for comment. Amendments to the dataset were made following return of feedback from the advisory groups before the dataset went out for public consultation.

The public consultation of the organisational audit dataset took place in July 2019. All registered CYP audit hospital web tool contacts were notified of the consultation and encouraged to review and

provide feedback on the dataset. On close of the consultation, the dataset was further refined, amended and finalised.

The final dataset was sent to Crown Informatics, who host the NACAP web tool, to develop an online organisational audit pro forma where the data could be entered by hospital teams and extracted by the NACAP team for analysis.

Data entry

Hospitals were required to enter their hospital-level information via the audit programme's bespoke web tool, created by Crown Informatics Ltd (available at **www.nacap.org.uk**). Guidance documents to support participation in the audit, such as the dataset with help notes, audit technical guidance and FAQs were available to download from both the web tool and the CYP resources webpages on the RCP website **www.rcplondon.ac.uk/nacap-cyp-asthma-resources.**

Data entry to the audit was regularly reviewed by the NACAP team. Reminders about the audit data entry deadline, tailored to hospitals with different completion level rates, were sent to registered teams to support completion of the organisational audit dataset. The NACAP team also sent bespoke emails to hospitals to highlight which specific questions remained blank within their dataset. Participating hospitals were also able to contact the NACAP helpdesk via email or phone directly, which operates 9am–5pm every working day, with any queries about the organisational audit.

Analysis methodology

Deadline and data transfer

The data entry deadline for completion of the organisational audit dataset was 6pm on 13 March 2020. Thereafter, the data were extracted by the NACAP team at the RCP and sent directly to Imperial College London for analysis.

The audit also applied for externally available admissions data from NHS Digital (for England-only data) and NHS Wales Informatics Service (NWIS) (for Wales-only data):

- How many paediatric medical emergencies were admitted to each hospital in the 2019/20 financial year?
- How many paediatric respiratory-coded emergencies were admitted to each hospital in the 2019/20 financial year?
- How many paediatric asthma-coded emergencies were admitted to each hospital in the 2019/20 financial year?

Once received, the externally sourced data were sent to Imperial College to complete the audit analysis. Scottish admissions data could not be obtained in time for the production of this report.

Data cleaning

These data were analysed at Imperial College London using Stata 16. Data checking and cleaning occurred as follows:

- Variable names were converted to names that would be compatible with Stata.
- Non-ASCII characters were removed from strings.

- Hospitals that did not submit complete data were removed from the dataset.
- Hospitals were linked with country information so that data could be stratified by country.
- Variables that had no clear purpose were removed.
- Denominators were corrected for the multiple-choice binary variables where there should not have been a response yet one was recorded.

Main analysis

- Missing data was excluded from analysis.
- Non-integer values were rounded to one decimal place.
- Externally sourced data were used to answer the following queries presented within the report:
    - National average number of paediatric medical emergency admissions in the 2019/20 financial year per medical bed.
    - National average number of paediatric respiratory-coded admissions in the 2019/20 financial year per respiratory bed.
    - National average number of CYP asthma-coded emergency admissions in the 2019/20 financial year per 1,000 CYP medical emergency admissions.
    - National average proportion of emergency paediatric asthma-coded respiratory admissions discharged, or died, on dedicated respiratory wards in the 2019/20 financial year.
    - National average number of HDU beds per 10,000 paediatric medical emergency admissions.
    - National average number of ICU beds per 10,000 paediatric medical emergency admissions.

Benchmarking analysis

- Please see **section 8** for benchmarking analysis methodology.

Appendix B: BTS/SIGN Management of Asthma Guidelines (2019)

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	Management of asthma
3.3.4	**Diagnosis**
	In adults and children with an intermediate probability of asthma and normal spirometry results, undertake challenge tests and/or measurement of FeNO to identify eosinophilic inflammation.
6.2.3	**Smoking**
	People with asthma and parents/carers of children with asthma should be advised about the dangers of smoking and second-hand tobacco smoke exposure and should be offered appropriate support to stop smoking.
6.2.9	**Weight reduction in overweight and obese patients with asthma**
	Weight-loss interventions (including dietary and exercise-based programmes) should be considered for overweight and obese adults and children with asthma to improve asthma control.
9.7.2	**Pulse oximetry**
	Consider intensive inpatient treatment of children with SpO2 <92% in air after bronchodilator treatment.
10.1	**Defining and assessing difficult asthma**
	Patients with difficult asthma should be systematically evaluated, including: confirmation of the diagnosis of asthma and identification of the mechanism of persisting symptoms and assessment of adherence to therapy. The assessment should be facilitated through dedicated multidisciplinary difficult asthma service, by a team experienced in the assessment and management of difficult asthma
11.11.3	**Transition to adult services**
	In the initial period after transition to adult services in secondary care adolescents are best seen by one consultant in to build their confidence and encourage attendance.
11.11.4	**Preparation for transition**
	Transition should be seen as a process and not just the event of transfer to adult services. It should begin early, be planned and involve the young person and be both age and developmentally appropriate. > Young people should be given the opportunity to be seen without their parents/carers. > Transition services must address the needs of parents/carers whose role in their child's life is evolving at this time. > Transition services must be multidisciplinary and multiagency. Optimal care requires a co-operative working relationship between adult and paediatric services, particularly where the young person has complex needs with multiple specialty involvement. > Co-ordination of transitional care is critical. There should be an identified coordinator who supports the young person until he or she is settled within the adult system. > Young people should be encouraged to take part in transition/support programmes and/or put in contact with other appropriate youth support groups. > The involvement of adult physicians prior to transfer supports attendance and adherence to treatment. > Transition services must undergo continued evaluation.
11.12.1	**Patient education and self-management**

	Design of individual or group education sessions delivered by healthcare professionals should address the needs of adolescents with asthma.

Appendix C: NICE 2013 guidelines: Asthma: diagnosis, management and chronic mangement, Smoking: acute, maternity and mental health services and Smoking: supporting people to stop

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NG80	Asthma: diagnosis, monitoring and chronic management
	1.3.3
	Consider a FeNO test in children and young people (aged 5-16) if there is diagnostic uncertainty after initial assessment and they have either: normal spirometry or obstructive spirometry with a negative bronchodilator reversibility (BDR) test.

PH48	Smoking: acute maternity and mental health services
	Recommendation 5
	Provide information and advice for carers, family, other household members and hospital visitors.

QS43	Smoking: supporting people to stop
	Quality statement 2
	People who smoke are offered a referral to an evidence-based smoking cessation service.

Appendix D: Royal of Physicians (RCP), Why asthma kills: National Review of Asthma Deaths (NRAD)

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	Organisation of NHS services
	Recommendation 1
	Every hospital and general practice should have a designated, named clinical lead for asthma services, responsible for formal training in the management of acute asthma.
	Recommendation 2
	Patients with asthma must be referred to a specialist asthma service if they have required more than two courses of systemic corticosteroids, oral or injected, in the previous 12 months or require management using British Thoracic Society (BTS) stepwise treatment 4 or 5 to achieve control.
	Patient factors and perception of risk
	Recommendation 2
	A history of smoking and/or exposure to second-hand smoke should be documented in the medical records of people with asthma. Current smokers should be offered referral to a smoking cessation service.

References

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1 British Thoracic Society (BTS) / Scottish Intercollegiate Guidelines Network (SIGN). *SIGN 158: British guideline on the management of asthma – A national clinical guideline.* [Revised edition published July 2019]. **www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/** [Accessed September 2020].

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