Academic Health Science Network
North East and North Cumbria

NHS
North East Quality Observatory Service

Asthma care in the North East and North Cumbria (NENC)

May 2023

Undertaken by:

North East Quality Observatory Service (NEQOS)

On behalf of:

AHSN NENC

BetterKnowledgeBetterCareBetterOutcomes

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Summary of asthma care for children and young people in the NENC

This summary shows metrics relevant to children and/or young people (CYP). Gaps in the numbering in the tables below represent metrics relevant only to adults which appear in the next summary. Metric details are in Appendix 3.

Note: The coloured box shown next to the NENC value shows comparison with the England value. Red and green are used for metrics where there is a clear definition of whether a high value is good or bad. Light and dark blue are used where this is not clear, or where more caution should be applied. A key is shown at the end of each page.

Prevalence of asthma

ID	Metric name	NENC value		England value	Association with deprivation
1	Prevalence of asthma[1]	7.23%		6.47%	No clear association nationally or in NENC: likely to reflect variations in case-finding for QOF

Risk factors

ID	Metric name	NENC value		England value	Association with deprivation
3	Young people smoking prevalence	4% (North East)	-	3%	Not available
4	Smoking prevalence in pregnancy	12.4%		8.9%	National evidence confirms clear gradient and higher rates in more deprived areas.
6	Child obesity: Reception	11.4%		10.1%	Clear gradient: worse in more deprived areas.
7	Child obesity: Year 6	26.2%		23.4%	

Key:

- Significantly worse than England
- Significantly better than England
- Not significantly different from England
- Significantly higher than England
- Significantly lower than England

[1] Of all children, young people and adults aged 6+

ID	Metric name	NENC value		England value	Association with deprivation
9	Physically inactive children and young people	31.3% (North East)	-	30.1%	Nationally, those from low affluence families were least likely to be active.
13	Flu uptake: Pregnant women	35.6%		34.7%	Not available
15	Not received annual review (AST007): choice or non-response[2]	9.66%		9.54%	No clear association with deprivation
16	Patients collected <6 prescriptions for preventer medication[3]	48.9%		53.2%	Clear gradient: higher in more affluent areas.
17	'September surge' in hospital admissions	2.0x	-	1.8x	

Environmental factors

ID	Metric name	NENC value	England value	Association with deprivation
18	Air pollution: Concentration fine particulate matter ($PM_{2.5}$): target <5µg/m^3	5.3µg/m^3 (North East)	7.5µg/m^3	Nationally, schools in areas with high $PM_{2.5}$ tended to be more ethnically diverse and claimed more free school meals. (CMO, 2022)
20	Non-decent housing	13.4% (North East)	15.0%	
21	Energy efficient homes	48.6% (North East)	46.1%	

Key:

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- Significantly better than England
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- Significantly lower than England

[2] Of all children, young people and adults on QOF asthma register

[3] Of all patients (any age) who had received any prescription items for steroid inhalers including ICS LABA products. Note that this relates to all patients receiving any prescription items for steroid inhalers including ICS LABA products, and is not restricted to prescribing for the treatment of asthma specifically.

Early detection and accurate diagnosis

ID	Metric name	NENC value	England value	Association with deprivation
22a	Hospitals[4] with access to diagnostic tools: Spirometry and FeNO	4 of 7 hospitals	82 of 130 hospitals	
22b	Hospitals[4] with a respiratory nurse specialist	5 of 7 hospitals	65 of 130 hospitals	
22c	Hospitals[4] with a designated clinical lead for CYP with asthma	2 of 7 hospitals	112 of 130 hospitals	
24	Patients[2] diagnosed using objective tests (AST006)	26.18%	21.63%	No clear association
25	Patients[2] not diagnosed using objective tests: services unavailable	10.89%	10.35%	No clear association

Optimal management and personalised care

ID	Metric name	NENC value	England value	Association with deprivation
26	Patients[2] who had an asthma review that included a written PAAP (AST007)	60.41%	58.93%	No clear association
27	Cases where a PAAP was issued or reviewed as part of discharge planning	1 of 9 hospitals better than national average; 1 worse. NENC ranges from 10% to 92%	38%	

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[4] Included in NACAP's snapshot audit of secondary care asthma services for children and young people.

Referral and system communication

ID	Metric name	NENC value	England value
28	Hospitals[4] with transition service for CYP to adult asthma services	3 of 7 hospitals	84 of 130

Medicines optimisation

ID	Metric name	NENC value		England value	Association with deprivation
31	Low carbon SABA inhalers	8.1%		6.7%	-
32	Low carbon preventer inhalers	53.4%		44.8%	-
33	3 + ICS prescriptions[2]	66.1%		62.5%	Clear, small, gradient: worse in more affluent areas.
34	High dose ICSs[5]	22.6%		21.0%	No clear association
35	6+ SABA inhaler prescriptions[2] (from primary care data)	24.3%		19.2%	Clear gradient: worse in more deprived areas.
36	6+ SABA inhaler prescriptions[6] (from prescribing data)	30.2%		23.8%	Clear gradient in NENC: higher in more deprived areas.

Outcomes for those with asthma

ID	Metric name	NENC value		England value	Trend
38	Emergency hospital admissions for asthma: CYP	172.3 (North East)		131.5	Gradually increasing up to 2016/17 then a gradual decline (as well as a sharp decline in 2020/21 as a result of the Covid-19 pandemic).

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[5] Of all ICS items prescribed to patients of all ages. Note that this relates to all prescriptions for ICS items, and is not restricted to prescribing for the treatment of asthma specifically.
[6] Of patients of all ages who had been prescribed a preventer inhaler but not an antimuscarinic.

Summary of asthma care for adults in the NENC

This summary shows metrics relevant to adults. Gaps in the numbering in the tables below represent metrics relevant only to children and young people which appear in the previous summary. Metric details are in Appendix 3.

Note: The coloured box shown next to the NENC value shows comparison with the England value. Red and green are used for metrics where there is a clear definition of whether a high value is good or bad. Light and dark blue are used where this is not clear, or where more caution should be applied. A key is shown at the end of each page.

Prevalence of asthma

ID	Metric name	NENC value		England value	Association with deprivation
1	Prevalence of asthma[1]	7.3%		6.47%	No clear association nationally or in NENC: likely to reflect variations in case-finding for QOF

Risk factors

ID	Metric name	NENC value		England value	Association with deprivation
2	Adult smoking prevalence	14.8% (North East)		13.0%	Not available
4	Smoking prevalence in pregnancy	12.4%		8.9%	National evidence confirms clear gradient and higher rates in more deprived areas.
5	Adult obesity	13.07%		9.72%	Clear gradient nationally: worse in more deprived areas. Similar, less clear in NENC.
8	Lack of exercise: adults	25.6% (North East)		23.4%	Routine/ semi-routine workers and long-term unemployed least likely to be active.
10	Flu uptake: 65+	82.3%		79.4%	Not available
11	Flu uptake: Under 65 at risk	51.8%		48.6%	Not available
12	Flu uptake: 50 to 64 at risk	65.1%		61.9%	Not available
13	Flu uptake: Pregnant women	35.6%		34.7%	Not available

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ID	Metric name	NENC value		England value	Association with deprivation
14	PPV estimated uptake	73.3% (C& NE STP)		70.6%	Not available
15	Not received annual review (AST007): choice or non-response[2]	9.66%		9.54%	No clear association with deprivation
16	Patients collected <6 prescriptions for preventer medication[3]	48.9%		53.2%	Clear gradient: higher in more affluent areas.

Environmental factors

ID	Metric name	NENC value	England value	Association with deprivation
18	Air pollution: Concentration fine particulate matter ($PM_{2.5}$): target <5µg/m^3	5.3µg/m^3 (North East)	7.5µg/m^3	Nationally, areas of high deprivation frequently have higher levels of traffic or industrial activities. (CMO, 2022)
19	Occupational asthma: at risk	3.1%	2.8%	
20	Non-decent housing	13.4% (North East)	15.0%	
21	Energy efficient homes	48.6% (North East)	46.1%	

Early detection and accurate diagnosis

ID	Metric name	NENC value		England value	Association with deprivation
23	Hospitals with designated clinical leads for both asthma and COPD	7 of 9 hospitals		119 of 146 hospitals	
24	Patients[2] diagnosed using objective tests (AST006)	26.18%		21.63%	No clear association
25	Patients[2] not diagnosed using objective tests: services unavailable	10.89%		10.35%	No clear association

Key:

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- Significantly lower than England

Optimal management and personalised care

ID	Metric name	NENC value	England value	Association with deprivation
26	Patients[2] who had an asthma review that included a written PAAP (AST007)	60.41%	58.93%	No clear association

Referral and system communication

ID	Metric name	NENC value	England value
29	BTS discharge bundle provided on discharge following admission for asthma	1 of 11 hospitals better than national average; 3 worse. NENC ranges from 0% to 72%	46%
30	Hospitals that provide access to a severe asthma service	9 of 9 hospitals	134 of 146

Medicines optimisation

ID	Metric name	NENC value	England value	Association with deprivation
31	Low carbon SABA inhalers	8.1%	6.7%	-
32	Low carbon preventer inhalers	53.4%	44.8%	-
33	3 + ICS prescriptions[2]	66.1%	62.5%	Clear, small, gradient: worse in more affluent areas.
34	High dose ICSs[5]	22.6%	21.0%	No clear association
35	6+ SABA inhaler prescriptions[2] (from primary care data)	24.3%	19.2%	Clear gradient: worse in more deprived areas.
36	6+ SABA inhaler prescriptions[6] (from prescribing data)	30.2%	23.8%	Clear gradient in NENC: higher in more deprived areas.

Key:

- Significantly worse than England
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Outcomes for those with asthma

ID	Metric name	NENC value		England value	Trend
37	Emergency hospital admissions for asthma: adults	62.1	-	44.4	Gradually increasing up to 2019/20 then a sharp decline as a result of the Covid-19 pandemic
39	Asthma mortality	1.74 (North East)	-	1.96	Fluctuating; suggestion of a peak in 2017.

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Summary of asthma care in NENC local authorities

			County Durham	Darlington	Gateshead	Hartlepool	Middlesbrough	Newcastle upon Tyne	North Tyneside	Northumber-land	Redcar and Cleveland	South Tyneside	Stockton-on-Tees	Sunderland	Allerdale	Carlisle	Copeland	Eden	NENC or NE
Prevalence	1		7.6%	7.1%	6.6%	7.1%	7.1%	6.6%	7.5%	8.1%	7.1%	7.1%	7.1%	6.7%	7.4%	7.4%	7.4%	7.4%	7.2%
Risk factors	2		16.2%	10.6%	14.1%	17.3%	17.9%	15.6%	15.3%	11.8%	13.3%	16.3%	12.5%	15.2%	15.5%	14.7%	17.8%	8.2%	14.8%
	4		13.9%	13.3%	10.9%	13.3%	13.3%	10.9%	9.9%	10.9%	13.3%	16.2%	13.3%	13.6%	10.1%	10.1%	10.1%	10.1%	12.4%
	5		14.3%	12.9%	12.1%	12.9%	12.9%	12.1%	13.9%	13.3%	12.9%	13.3%	12.9%	13.5%	11.6%	11.6%	11.6%	11.6%	13.1%
	6		11.2%	10.5%	12.3%	14.1%	12.9%	12.5%	10.6%	9.2%	10.6%	10.5%	10.9%	12.5%	13.3%	11.8%	11.8%	9.3%	11.4%
	7		25.5%	25.1%	27.5%	28.2%	30.4%	28%	24.7%	21.8%	26.8%	28.4%	26.3%	29.7%	25.5%	21.1%	26.5%	15.1%	26.2%
	8		26.7%	27.6%	24.7%	36.7%	31.6%	24.6%	21.2%	21.4%	28%	27.5%	23.1%	26%	20.9%	23.3%	19.1%	16.2%	25.6%
	9		31.7%	34.0%			35.0%	33.5%	28.8%	30.1%		29.5%	27.4%	26.9%	35.0%	29.7%	20.3%		31.3%
	10		83.4%	81.7%	81.7%	79%	77.9%	80.3%	83.1%	85.3%	84.2%	79.4%	82%	80.4%	83.8%	83.8%	83.8%	83.8%	82.3%
	11		53.8%	49.1%	52%	46.7%	41.4%	47.8%	53.4%	59.3%	52.1%	50.1%	50.4%	48.8%	57.1%	57.1%	57.1%	57.1%	51.8%
	12		67%	62.9%	63.5%	59%	56%	62.1%	66.2%	71.4%	65.6%	62.6%	64.1%	62.2%	70%	70%	70%	70%	65.1%
	13		36.4%	35.2%	37.9%	41.5%	25.4%	32.6%	42%	37.4%	35.4%	33%	37.4%	32.3%	38%	38%	38%	38%	35.6%
	14		72.8%	72.4%	76.2%	72.4%	72.4%	76.2%	72.2%	74.8%	72.4%	74.9%	72.4%	73.8%	70.6%	70.6%	70.6%	70.6%	73.3%
	15		10.5%	11.2%	10.5%	11.2%	11.2%	10.5%	5.3%	6.1%	11.2%	3.4%	11.2%	17.1%	7.9%	7.9%	7.9%	7.9%	9.7%
	16		48%	48.2%	50.4%	48.2%	48.2%	50.4%	52.6%	51.6%	48.2%	45.9%	48.2%	45.4%	48.9%	48.9%	48.9%	48.9%	48.9%
	17		1.9 x	3.7 x	3 x	0x	3.7 x	1.6 x	1.5 x	1.4 x	*	*	*	2.5 x	*	3.2 x	*	*	2.0x
Environmental factors	18		5	5.4	5.5	5.4	5.8	5.6	5.6	4.6	5.4	5.6	5.6	5.5	4	4.4	4.2	4.3	5.3
	19		3.9%	3.4%	3.1%	3.6%	2.4%	1.7%	2.5%	2.5%	2.9%	3.4%	3%	4.2%	3.2%	4.5%	2.1%	2.6%	3.1%
Early detection and accurate diagnosis	22	(a)																	
		(b)																	
		(c)																	
	23																		
	24		19.5%	25.7%	34%	25.7%	25.7%	34%	24.4%	26%	25.7%	19.2%	25.7%	28.2%	30.1%	30.1%	30.1%	30.1%	26.2%
	25		12.7%	17.2%	5.3%	17.2%	17.2%	5.3%	19.4%	10.4%	17.2%	3.2%	17.2%	7.5%	2.4%	2.4%	2.4%	2.4%	10.9%
Management	26		60.2%	64.1%	63.3%	64.1%	64.1%	63.3%	59.7%	57%	64.1%	49.8%	64.1%	67.4%	53.9%	53.9%	53.9%	53.9%	60.4%
	27		18%	25%		21%	67%	45%		10%	67%	18%	21%	18%	64%	92%	64%	92%	
Referral & system comm-unication	28																		
	29		28%	32%	34%	0%	45%	0%	0%	72%	45%	9%	0%	19%	67%	67%	67%	67%	
	30																		
Medicines optimisation	31		7.4%	7.1%	10.4%	7.1%	7.1%	10.4%	12.2%	10%	7.1%	3.7%	7.1%	6.9%	7.5%	7.5%	7.5%	7.5%	8.1%
	32		50.3%	52.1%	60.6%	52.1%	52.1%	60.6%	62%	58.4%	52.1%	46.4%	52.1%	47.5%	49.6%	49.6%	49.6%	49.6%	53.4%
	33		66.5%	67.9%	63.2%	67.9%	67.9%	63.2%	61.3%	64.9%	67.9%	65%	67.9%	68.4%	69.1%	69.1%	69.1%	69.1%	66.1%
	34		23.8%	22.9%	27.2%	22.9%	22.9%	27.2%	26.8%	23.5%	22.9%	15.4%	22.9%	19.1%	16.9%	16.9%	16.9%	16.9%	22.6%
	35		26%	23.3%	25.5%	23.3%	23.3%	25.5%	18.5%	20.5%	23.3%	31.6%	23.3%	28.3%	23.5%	23.5%	23.5%	23.5%	24.3%
	36		31.7%	27.1%	33.8%	27.1%	27.1%	33.8%	25.5%	25.6%	27.1%	35.8%	27.1%	35.9%	29.3%	29.3%	29.3%	29.3%	30.2%
Outcomes	38		185.7	170.4	172.8	71.9	185.3	138.1	193.5	226.9	192.3	128.2	110.4	193.2	167.8	167.8	167.8	167.8	172.3
	39		2.59					3.8	2.25		1.93	2		1.94					1.74

Colours show comparison with NENC or North East value, or with another appropriate benchmark or target: please see Appendix 3 for details.

1. Background

Porsbjerg and Melén[7] describe asthma as one of the most common chronic non-communicable diseases worldwide. They state that although most patients can attain good asthma control, undertreatment is still common. Their seminar paper[7] provides a clinically focused overview of asthma, including its diagnosis and management in children and in adults.

NHS England and NHS Improvement's ambition as described in National Bundle of Care for Children and Young People with Asthma: Phase one is to reduce avoidable harm to children and young people from asthma and improve their quality of life. The bundle describes how this will be achieved by taking a whole system approach to asthma management that includes addressing environmental triggers, a comprehensive education programme, promoting personalised care, effective preventative medicine and improved accuracy of diagnosis.

The RightCare Asthma Toolkit, published in September 2022, support systems to understand priorities in asthma care and provides advice and guidance for commissioners, service providers and clinicians on how to commission and provide the best system-wide care for adults, young people and children living with asthma. The actions it recommends are aligned with the commitments set out in the NHS Long Term Plan for respiratory disease and will contribute to reducing overall unwarranted variation.

The Toolkit describes eight system improvement priorities, and the actions that can be taken for each to improve asthma care and reduce unwarranted variation:

- Risk factors that can exacerbate asthma
- Environmental factors
- Early detection and accurate diagnosis
- Optimal management and personalised care
- Referral and system communication
- Medicines optimisation
- Supporting specific groups of patients
- Experience of care

[7] Porsbjerg C, Melén E, Lehtimäki L, Shaw D. Asthma. Lancet. 2023 Mar 11;401(10379):858-873. doi: 10.1016/S0140-6736(22)02125-0. Epub 2023 Jan 19. PMID: 36682372.

The Toolkit includes support for children and young people in its priority on specific patient groups, noting that asthma is common in children, but that for most children its symptoms can be controlled with the right treatment.

NHS England's approach to addressing inequalities in adult health is through Core20PLUS5, which defines a target population cohort and identifies five focus clinical areas requiring accelerated improvement. Core20PLUS5 for children and young people identifies asthma as one of its five focus areas, specifically aiming to address over reliance on reliever medications; and decreasing the number of asthma attacks.

2. Purpose

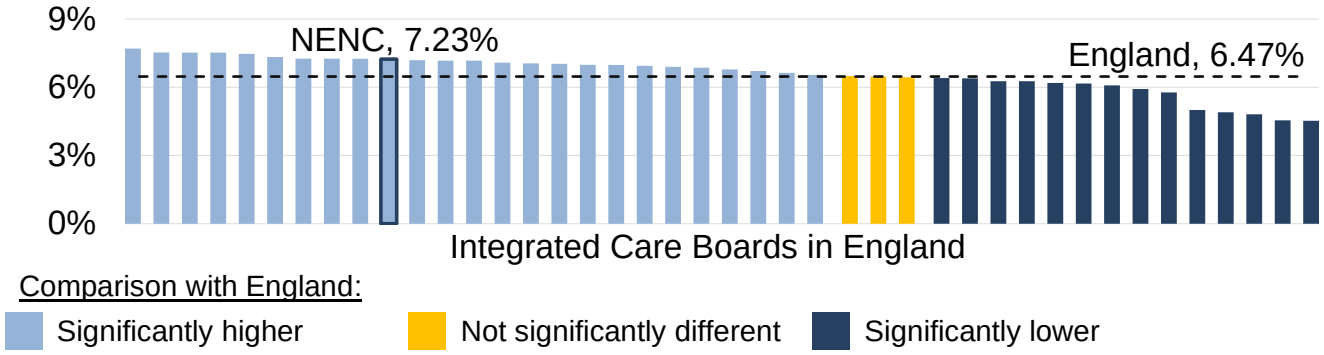
The purpose of this report is to provide a summary of asthma care in the NENC, for children and young people, and for adults. Using the priorities outlined in the NHS RightCare Toolkit, it describes the risk factors for asthma, the quality of care delivered to those with asthma, and outcomes. The report presents data from a range of sources, and compare the NENC to the national average, where appropriate. Inequalities relating to deprivation and to ethnicity are explored.

Many metrics presented are not disaggregated by age and are therefore only available for all ages. However, metrics and information specific to children and young people are presented wherever possible.

3. Prevalence of asthma

In 2021/22 there were almost 215,000 patients in the NENC aged 6 years and over on a primary care asthma register, suggesting a prevalence of 7.23% for the NENC. This is higher than the national prevalence of 6.47%. See Metric 1 in Appendix 3 for more detail about this metric.

Figure 1: Asthma prevalence across integrated care boards (ICBs) in England, 2021/22



Source: Quality and Outcomes Framework (QOF), NHS Digital.

The numbers of people with asthma in each NENC sub-ICB locality are shown in Table 1. While Northumberland has the highest prevalence in the NENC, as a result of the relative population sizes, over one in five of all those on the QOF asthma register in the NENC lives in the Tees Valley.

Table 1: Asthma prevalence across sub-ICB localities in NENC, 2021/22

Sub-ICB locality	Patients on Asthma Registers	Prevalence (%)
Northumberland	25,450	8.09%
South Tyneside	10,661	7.13%
Sunderland	18,246	6.75%
North Cumbria	22,969	7.37%
Newcastle Gateshead	33,598	6.60%
Tees Valley	48,015	7.12%
County Durham	40,099	7.56%
North Tyneside	15,912	7.54%
NENC total	**214,950**	**7.23%**

Source: Quality and Outcomes Framework (QOF), NHS Digital. See Metric 1 in Appendix 3 for more information.

When considering inequalities:

- The overall prevalence of asthma in the NENC's deep end practices is 6.9%. This is significantly higher than the national average but significantly lower than the overall prevalence of NENC of 7.2%.
- The overall prevalence of asthma in the NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or 'Other' ethnicities is 6.5%. This is significantly lower than the overall prevalence of NENC of 7.2%.
- There seems little association between deprivation (of the GP practice) and the prevalence of asthma, either at a national level or within the NENC. Since it is known that respiratory diseases such as asthma and the risk factors for asthma (see section 4) are connected with deprivation, this may suggest one, or a combination of, the following factors:
  - Inequalities in diagnosis.
  - Inequalities in severity.
  - Inequalities in data recording.
  - Limitations in the assumption that the deprivation of the practice's surrounding area represents the deprivation of the areas in which its patients live.

If present, these factors will also negatively affect the accuracy of the findings above relating to ethnicity and to the deep end practices.

4. Risk factors that can exacerbate asthma

4.1. Smoking

> "Smoking and breathing in other people's smoke can trigger asthma symptoms or even cause an asthma attack. There is strong evidence that expert support from a stop smoking advisor combined with one or more stop smoking aids is the most effective quitting method."

RightCare Asthma Toolkit, 2022. NHS England.

4.1.1. Prevalence of smoking

See Metrics 2, 3 and 4 in Appendix 3 for details of the data sources used to describe the prevalence of smoking.

In 2021, 14.8% of adults in the North East region were current smokers, compared to 13.0% for England overall. In the same period, the prevalence of smoking in the districts of North Cumbria ranged from 8.2% in Eden (which is the local authority with the lowest rates in NENC) to 17.8% in Copeland. The highest rates in NENC are in Middlesbrough, where 17.9% of adults were current smokers.

Considering inequalities, in the North East region in 2021:

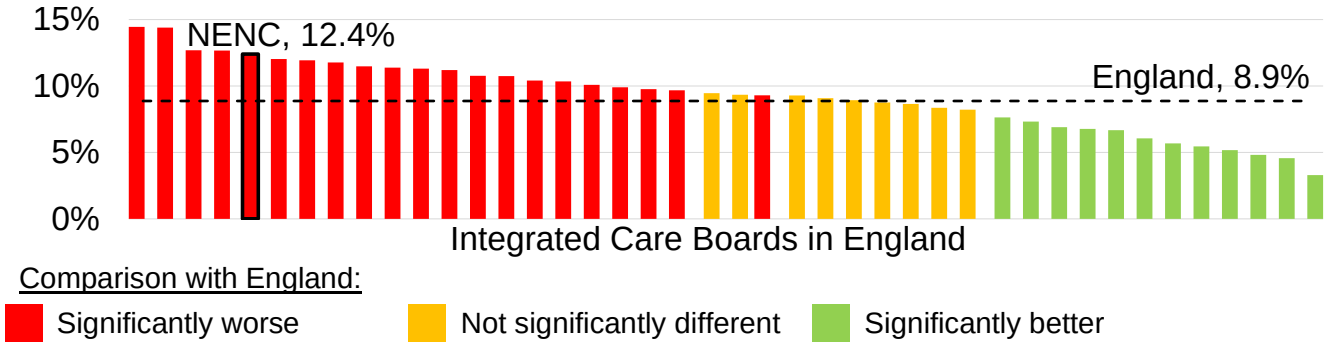
- There were higher rates of smoking in men (15.5%) compared with women (14.0%).
- When considering housing tenure, smoking rates were higher in those who rent than in those who own their home. This pattern of the association of smoking with housing tenure is similar to the national picture.

In 2021, 4% of young people aged 11 to 15 years in the North East and 3% in England were current smokers. For children and young people with asthma in the NENC, 73.9% had a recent record in primary care of either personal smoking status or exposure to second-hand smoke[8], higher than the England average of 72.1%.

Between 1 April to 31 December 2022, 12.4% of pregnant women in the NENC self-reported that they were smokers at delivery, as shown in Figure 2.

[8] AST008: The percentage of patients with asthma on the register aged 19 years or under, in whom there is a record of either personal smoking status or exposure to second-hand smoke in the preceding 12 months. Quality and Outcomes Framework (QOF), NHS Digital.

Figure 2: Smoking in pregnancy across ICBs in England, 1 April to 31 December 2022



Source: Statistics on Women's Smoking Status at Time of Delivery: England, NHS Digital.

For sub-ICB locations in NENC, smoking at delivery ranges from 9.9% in North Tyneside to 16.2% in South Tyneside.

4.1.2. Stopping smoking

Statistics on NHS Stop Smoking Services are reported quarterly by NHS England, and the latest data relate to April to June 2022. They suggest that 48.4% of smokers who accessed NHS support to quit smoking in the North East region successfully quit (self-reported). For England as a whole, 53.5% of smokers successfully quit. In the North East, as nationally, more men successfully quit than women (52.7% of male smokers in the North East successfully quit, compared with 45.3% of female smokers). Only 36.0% of pregnant smokers who accessed NHS support to quit smoking in the North East region successfully quit (self-reported). For England as a whole, 43.9% of pregnant smokers successfully quit.

4.2. Obesity and lack of exercise

> "Supporting people with asthma to undertake physical activity and, if appropriate, to lose weight will help to improve respiratory and asthma symptoms."

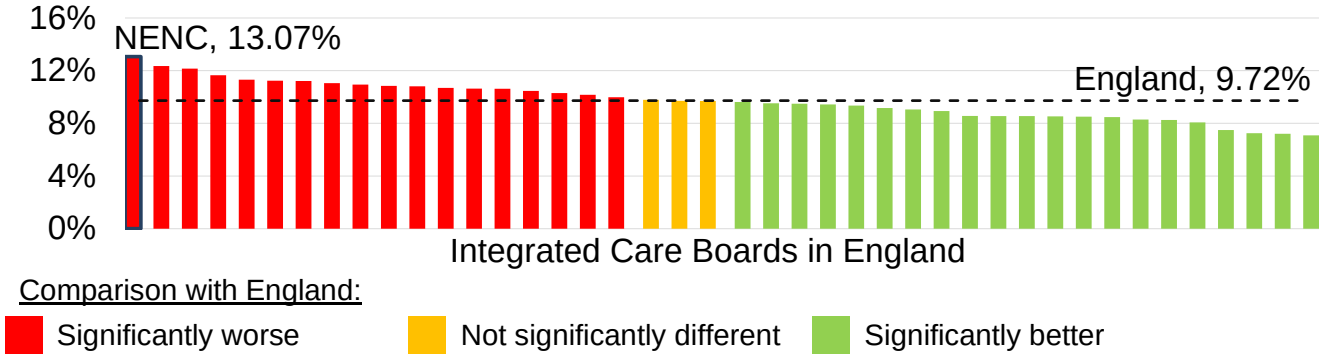
RightCare Asthma Toolkit, 2022. NHS England.

4.2.1. Prevalence of adult obesity

See Metric 5 in Appendix 3 for details of the data sources used to describe the prevalence of adult obesity.

In 2021/22 over one third of a million adult patients in the NENC were on a practice obesity register, suggesting a prevalence of 13.07% for the NENC. This is higher than the national prevalence of 9.72% and the highest of all ICBs in England.

Figure 3: Adult obesity prevalence across integrated care boards (ICBs) in England, 2021/22



Source: Quality and Outcomes Framework (QOF), NHS Digital.

When considering inequalities:

- The overall prevalence of obesity in the NENC deep end practices is 14.53%. This is significantly higher than the national average of 9.72% and significantly higher than the NENC average of 13.07%.
- The overall prevalence of obesity in the NENC practices located in lower-layer super output areas with 10% or more of the population of Black, Asian, Mixed or 'Other' ethnicities is 11.77%. This is significantly higher than the national average of 9.72% but significantly lower than the NENC average of 13.07%.
- The prevalence of adult obesity follows a clear social gradient nationally, with the NENC showing a similar although less pronounced pattern.

4.2.2. Prevalence of child obesity in the NENC

See Metrics 6 and 7 in Appendix 3 for details of the data sources used to describe the prevalence of child obesity.

In the 2021/22 academic year, 11.4% of those ages 4 to 5 years and 26.2% of those aged 10 to 11 years were living with obesity (including severe obesity) in the NENC. Both values for NENC are significantly higher than the national averages. The North East region has the highest prevalence of obesity.

Hartlepool, Middlesbrough, Sunderland and Newcastle all had high rates of child obesity within the NENC, although because of relative population sizes, over one in six of all children living with obesity in the NENC lived in the County Durham local authority.

As each child's weight is measured at two time points (Reception year and in year 6), it is possible to describe changes in the weight status of children between the first and final years of primary school. In the North East region:

- 77.1% of those who were a healthy weight in Reception in 2013/14 were also a healthy weight in Year 6 in 2019/20, significantly lower than the England average of 78.8%.
- 9.3% of those who were classed as obese (not including severely obese) in Reception in 2013/14 had achieved a healthy weight in Year 6 in 2019/20, which is significantly lower than the England average of 11.4%.
- 21.5% of those who were obese (not including severely obese) in Reception had managed to reduce their weight to be classed as overweight in Year 6, similar to the England average of 20.0%.
- 69.8% of those living with obesity and 92.5% of those classed as living with severe obesity in Reception continued to be living with obesity or severe obesity in Year 6.

There is a clear association between deprivation and child obesity, nationally and in the NENC (see Appendix 2).

4.2.3. Lack of exercise in adults

See Metric 8 in Appendix 3 for details of the data source used to describe lack of exercise in adults.

25.6% of adults in the North East region were inactive in November 2020 to 2021 (i.e. achieved less than 30 minutes of activity a week), higher than 23.4% for England as a whole. As a region, the North East has the highest rates of adult inactivity in England. Across local authorities in the NENC, adult inactivity ranged from 16.2% in Eden to 36.7% in Hartlepool.

The Active Lives Adult Survey November 2020-21 Report notes the following national findings relating to inequalities:

- Being active is less common in people with disabilities or a long-term health condition than in those without.
- Activity levels generally decrease with age, with the sharpest decrease at age 75+.
- There is a link to socio-economic status: those in routine/ semi-routine jobs and those who are long-term unemployed or have never worked are the least likely to be active.

4.2.4. Lack of exercise in children and young people

See Metric 9 in Appendix 3 for details of the data source used to describe lack of exercise in children and young people.

31.3% of children and young people in the North East region were less active in academic year 2021-22 (i.e. achieved less than 30 minutes of activity a day), compared with 30.1% for England as a whole. Across local authorities in the NENC, child and young people inactivity ranged from 20.3% in Copeland to 35.0% in Allerdale and Middlesbrough. Please note data for Eden, Gateshead, Hartlepool and Redcar and Cleveland is not available.

The Active Lives Children and Young People Survey Academic year 2021-22 Report notes the following national findings relating to inequalities:

- Activity levels in children and young people with disabilities or a long-term health condition are the same as for those without.
- Boys are more likely to be active than girls.
- Those from low affluence families were least likely to be active.

4.3. Low uptake of the flu and pneumonia vaccine

> "People living with asthma are more likely to develop potentially serious complications from influenza and pneumonia. Therefore encouraging the uptake of the flu and pneumonia vaccinations is an important strategy, especially in light of COVID-19, to minimise such complications.

RightCare Asthma Toolkit, 2022. NHS England.

As described in UKHSA guidance, the flu vaccination is offered to people who are at greater risk of developing serious complications if they catch flu. The recommended groups who should have the pneumococcal vaccination include babies, adults aged 65 or over, children and adults with certain long-term health conditions, which includes those with a long-term respiratory disease and adults at occupational risk. The vaccine is not given annually; most adults only require the vaccine as a one-off, or every five years.

4.3.1. Seasonal influenza vaccine uptake

See Metrics 10 to 13 in Appendix 3 for details of the data source used to describe flu uptake.

The latest data for influenza vaccine uptake relate to 1 September 2022 to 31 January 2023 and are provisional. The aim of the flu programme for 2022 to 2023 is to achieve at least the uptake levels of 2021 to 2022 for each cohort (and ideally exceed them).

As of 31 January:

- 82.3% of those aged 65 and over
- 51.8% of those under 65 in an at risk group
- 65.1% of those aged 50 to 64 years in an at risk group and

- 35.6% of pregnant women

had been vaccinated in the NENC.

Achievement for each cohort is higher than the England average, but lower than the equivalent figure at the same time last year for Cumbria and North East STP.

Uptake in those aged 65 and over in the NENC ranges from 77.9% in Middlesbrough to 85.3% in Northumberland.

4.3.2. Pneumococcal immunisation vaccine coverage

See Metric 14 in Appendix 3 for details of the data source used to describe PPV estimated uptake.

In Cumbria and North East STP in 2020/21, 73.3% of those aged 65 and over were estimated to have ever received the Pneumococcal polysaccharide vaccine (PPV) vaccine, compared with 70.6% nationally. 1.3% declined the vaccine, compared with 1.0% nationally.

Coverage estimates range from 70.6% in North Cumbria to 76.2% in Newcastle Gateshead. Only 0.6% refused or declined the vaccine in North Cumbria, compared with 1.5% in County Durham and in North Tyneside.

PPV vaccine coverage estimates for at-risk groups were only published at regional level. For the North East and Yorkshire region, 58.3% of those with chronic respiratory disease had ever received the PPV vaccine, compared with 56.0% nationally.

4.4. Non-adherence or compliance with treatment

> "It is important to support people with asthma to undertake their treatment appropriately and correctly in order to manage their condition optimally. Utilising shared decision making methods can support better treatment adherence."

RightCare Asthma Toolkit, 2022. NHS England.

4.4.1. Non-attendance at asthma reviews

QOF indicator AST007 is defined as:

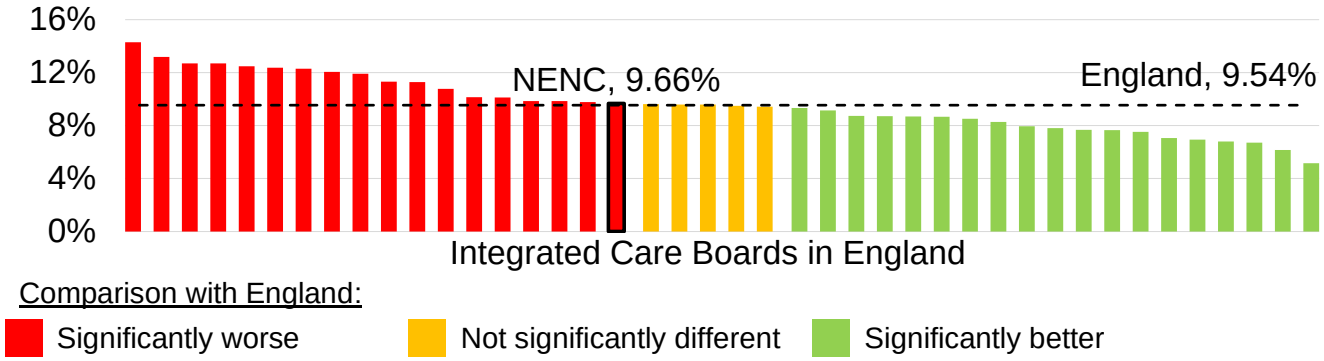
"The percentage of patients with asthma on the register, who have had an asthma review in the preceding 12 months that includes an assessment of asthma control using a validated asthma control questionnaire, a recording of the number of exacerbations, an assessment of inhaler technique and a written personalised action plan."

Individual patients may be removed from QOF indicators on a case-by-case basis, through personalised care adjustments (PCAs). PCA reporting rates reflect the percentage of patients who are not included when determining QOF achievement at indicator level.

PCAs can be applied to patients for several specified reasons and are usually the result of a patient or a GP decision at a personal level. In the case of AST007, individual patients can be exempted through PCAs reflecting their choice not to receive the review, or their failure to respond to invitations. See Metric 15 in Appendix 3 for more details.

9.66% of patients were exempted from AST007 for these reasons in the NENC, as shown in Figure 4. This is significantly higher than the England average of 9.54%.

Figure 4: Patients exempted through PCA from QOF indicator AST007 as a result of patient choice or failure to respond to invitations across ICBs in England, 2021/22



Source: Quality and Outcomes Framework (QOF), NHS Digital.

The proportion of patients who were excluded from AST007 for these reasons ranged from 3.37% in South Tyneside to 17.12% in Sunderland.

When considering inequalities:

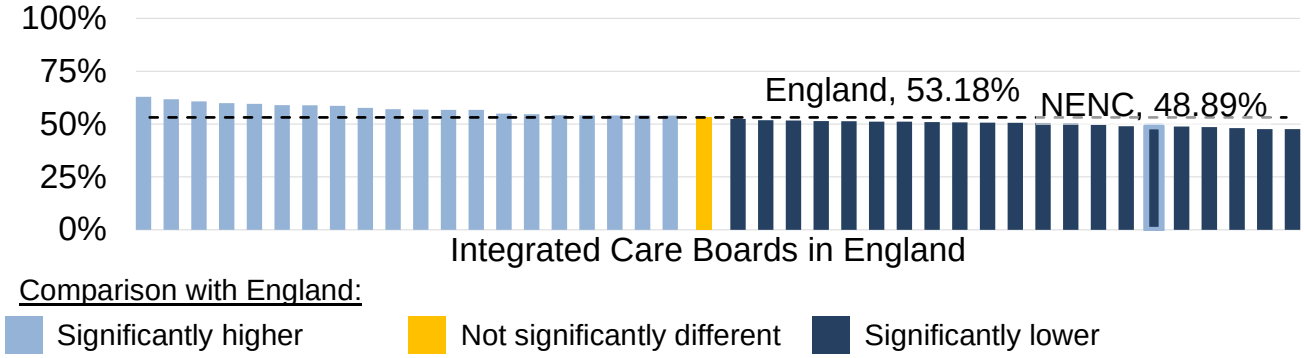
- The proportion of patients who were exempted from AST007 as a result of one of the three PCAs described above in the NENC deep end practices is 11.35%. This is significantly higher than the national average and higher than the NENC average of 9.66%. However, the overall association between deprivation and the proportion of patients who were exempted from AST007 as a result of one of the three PCAs is variable with no clear pattern, both nationally and in the NENC (see Appendix 2).
- The proportion of patients who were exempted from AST007 as a result of one of the three PCAs described above in the NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or 'Other' ethnicities is 8.71%. This is lower than the NENC average of 9.66%.

4.4.2. Under-use of preventer medication

See Metric 16 in Appendix 3 for details of the data source used to describe under-use of preventer medication.

Steroid-containing inhalers are used as maintenance therapy for COPD and asthma and are most effective when taken regularly. In December 2022 48.89% of all patients in the NENC had collected five or fewer prescriptions for preventer medication in the preceding 12 months, which is lower than the England average of 53.18%. It is important to note that this relates to all patients receiving any prescription items for steroid inhalers including ICS LABA products, and is not restricted to prescribing for the treatment of asthma specifically.

Figure 5: Patients who received 5 or fewer steroid inhalers including ICS LABA products, across ICBs in England, December 2022



Source: Respiratory dashboard, ePACT2, NHS Business Services Authority

Across the NENC, 45.44% of patients in Sunderland had received 5 or fewer steroid inhalers including ICS LABA products in December 2022, compared with 52.59% of those in North Tyneside.

When considering inequalities:

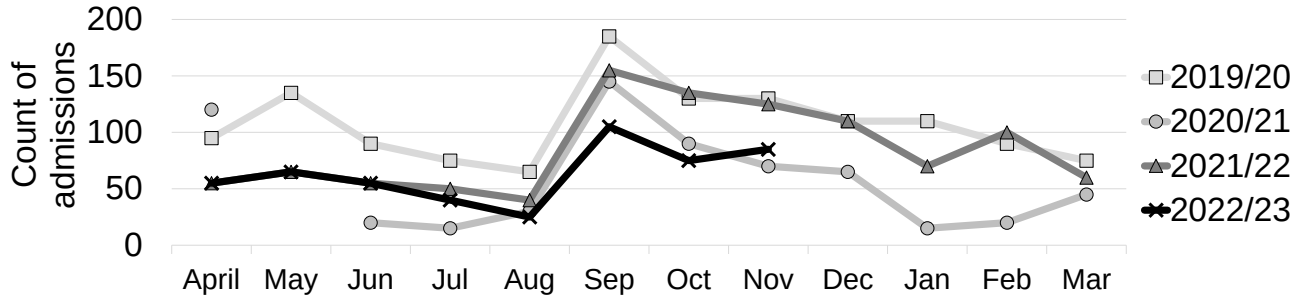
- 45.49% of patients receiving any prescription items for steroid inhalers including ICS LABA products in NENC deep end practices received 5 or fewer prescriptions in 12 months. This is significantly lower than the NENC average of 48.89% and the national average of 53.18%.
- 48.39% of patients in the NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or ‘Other’ ethnicities received 5 or fewer prescriptions in 12 months. This is similar to the NENC average of 48.89%.
- There is a suggestion that patients in more affluent areas in the NENC are more likely to have received 5 or fewer prescriptions in the 12 month period.

4.4.3. ‘September surge’ for school-aged children in the NENC

As described by the Black Country ICB, there is a well-known ‘surge’ in emergency admissions to hospital for children and young people in September, and one of the contributing factors may be children getting out of the habit of using their inhalers during the summer break. See Metric 17 in Appendix 3 for details of the data source used to describe the September surge.

Figure 6 shows the number of admissions, by month, for asthma for children and young people in the NENC. There is clear evidence of the ‘September surge’, with twice as many for asthma for children and young people in the NENC in September 2021 when compared with the average for the rest of the 2021/22 year. For England as a whole, the September surge is 1.8 times the average for the rest of the year.

Figure 6: Emergency hospital admissions of children and young people aged under 19 years with primary diagnosis of either J45: Asthma or J46: Status asthmaticus, NENC



Source: Hospital Episode Statistics (HES) datasets are accessed via the Data Access Environment, and re-used with the permission of NHS Digital. Copyright © 2023, NHS Digital. All rights reserved. The 2022/23 HES data is classed as provisional.

When considering the ‘September surge’ by age, although the overall number of admissions are generally higher in children aged 5 to 9 years (in primary school) the ‘September surge’ is greatest in those aged 10 to 14 years, who are mostly in secondary schools.

In 2021/22, the ‘September surge’ within the NENC was highest in Middlesbrough and in Darlington local authorities, both with admissions in September that were 3.7 times as high as the average for the rest of the year.

5. Environmental factors

5.1. Outdoor air pollution in NENC places

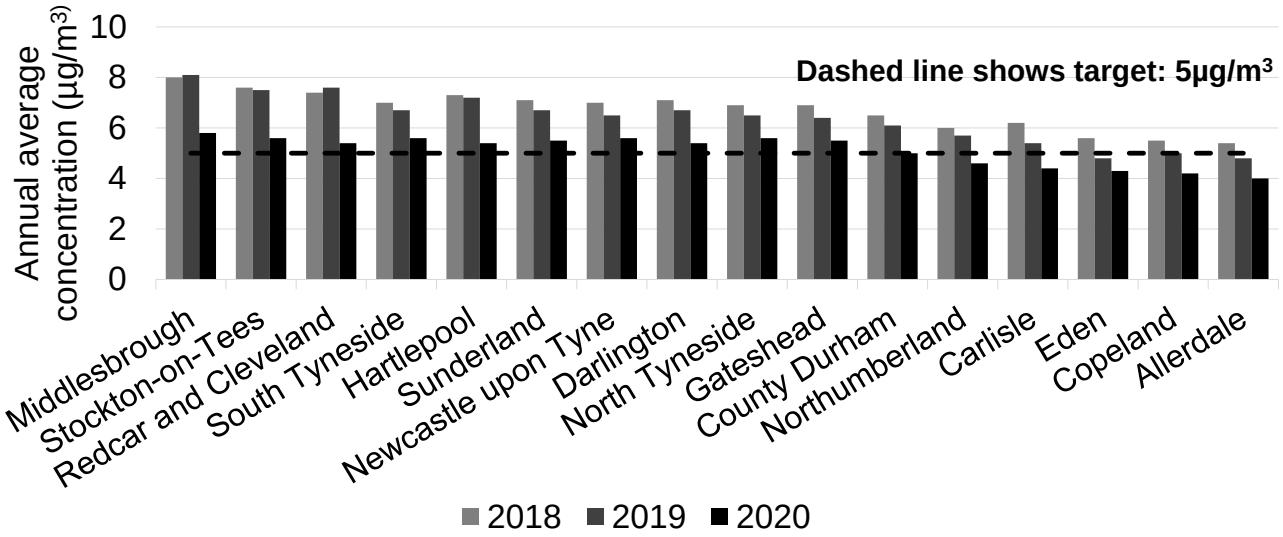
> "When levels of air pollutants rise, adults and children with lung conditions are at increased risk of becoming ill and needing treatment. The risk is particularly high in inner-urban areas where just under two thirds of people with asthma say that poor air quality makes their asthma worse. Providing advice to children, young people and adults at routine health appointments will support self-management, improve their awareness of how to protect themselves when outdoor air quality is poor and prevent their condition escalating."

RightCare Asthma Toolkit, 2022. NHS England.

The Chief Medical Officer's annual report 2022 focused on air pollution, noting that air pollution is associated with exacerbations of asthma in children and adults.

The government target for annual average concentrations of fine particulate matter ($PM_{2.5}$) is 5µg/m^3 (reduced from 10µg/m^3 in 2021) and only five local authorities in NENC were below that level in 2020 (the four in North Cumbria, as well as Northumberland), as shown in Figure 7. Please note caution is needed when considering apparent trends over time. See Metric 18 in Appendix 3 for details of the data source used to describe outdoor air pollution.

Figure 7: Annual concentration of fine particulate matter at an area level, adjusted to account for population exposure, local authorities in NENC.



Source: DEFRA & Air Quality and Public Health - UK Health Security Agency, accessed via the Inhale - INteractive Health Atlas of Lung conditions in England tool, Office for Health Improvement and Disparities

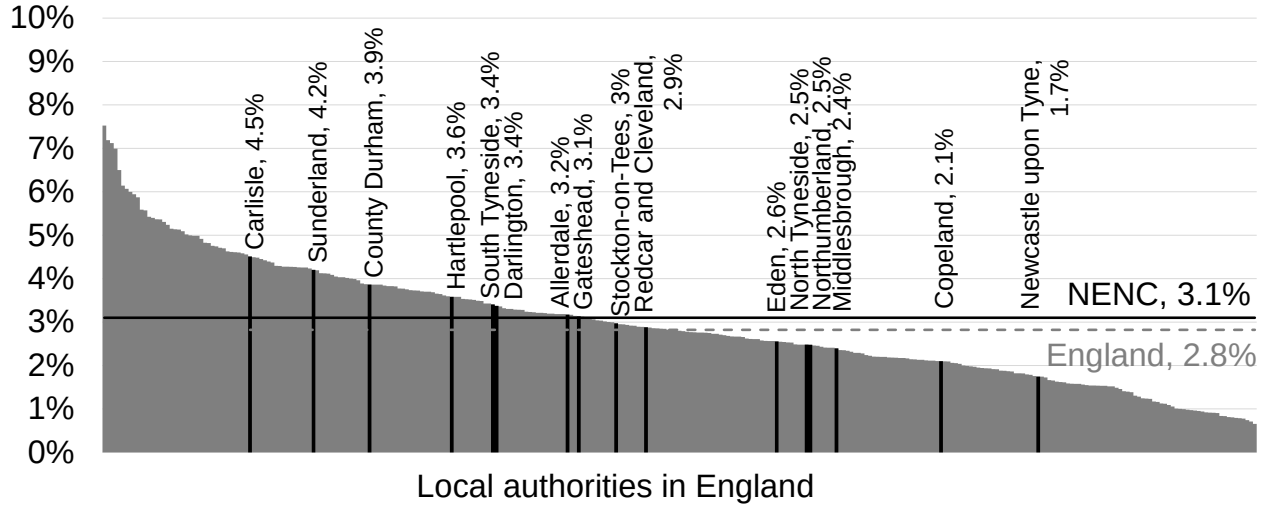
5.2. Occupational exposure

> "Exposure to substances such as dust, chemicals, fumes and animal fur through the workplace may lead to some adults developing asthma. For those that do go on to develop asthma, the length of time it takes to display symptoms is variable due to how long it takes the immune system to become sensitive to workplace triggers. However, once a person is sensitive to occupational substances, asthma symptoms are likely to be triggered every time they come into contact with it."

RightCare Asthma Toolkit, 2022. NHS England.

Figure 8 shows an estimate of the proportion of the population in each local authority who work in industries within the manufacturing sector which are associated with a relatively high risk of exposure to the substances triggering asthma, with NENC local authorities labelled. See Metric 19 in Appendix 3 for details of the data source used to describe risk of occupational exposure.

Figure 8: Proportion of the population working in industries with the highest estimated rates of occupational asthma, 2021 (week before the 2021 Census)



Source: Estimated rates of occupation asthma by industry from THORR05, Health and Safety Executive. Usual residents in employment, by industry from Census 2021 Dataset TS060, Office for National Statistics.

5.3. Cold or poor quality housing

> "Poor or substandard housing, for example where damp and mould is present, can have an impact on respiratory health. Furthermore there is sufficient global evidence demonstrating that occupants of damp and mouldy buildings are at increased risks of respiratory problems including exacerbation of asthma. Therefore it is important for systems to support people with asthma living in such conditions appropriately."

RightCare Asthma Toolkit, 2022. NHS England.

See Metrics 20 and 21 in Appendix 3 for details of the data source used to describe housing quality in this sub-section.

13.4% of the households surveyed through the English Housing Survey 2020-21 in the North East region were non-decent[9] in 2020, compared with 15.0% nationally. This varied by tenure, with 28.2% of privately rented households classed as non-decent. The equivalent figure nationally was 22.8%.

In the North East, 48.6% of homes energy efficiency ratings of A to C, compared with 46.1% nationally. The Regional Housing Trends fact sheet notes that "Regions with the most energy efficient homes also had fewer non-decent and damp homes".

[9] A 'decent' home is one that: meets the statutory minimum standard for housing; is in a reasonable state of repair; has reasonably modern facilities and services and provides a reasonable degree of thermal comfort.

6. Early detection and accurate diagnosis

6.1. Know your population

> "By knowing your asthma population and furthermore patients with uncontrolled and severe asthma, services can be better planned and commissioned to support this group of people. There should also be a focus on those from more deprived communities and from BAME groups where asthma prevalence tends to be higher, as well as those who may have low levels of health literacy or have difficulty in accessing services."

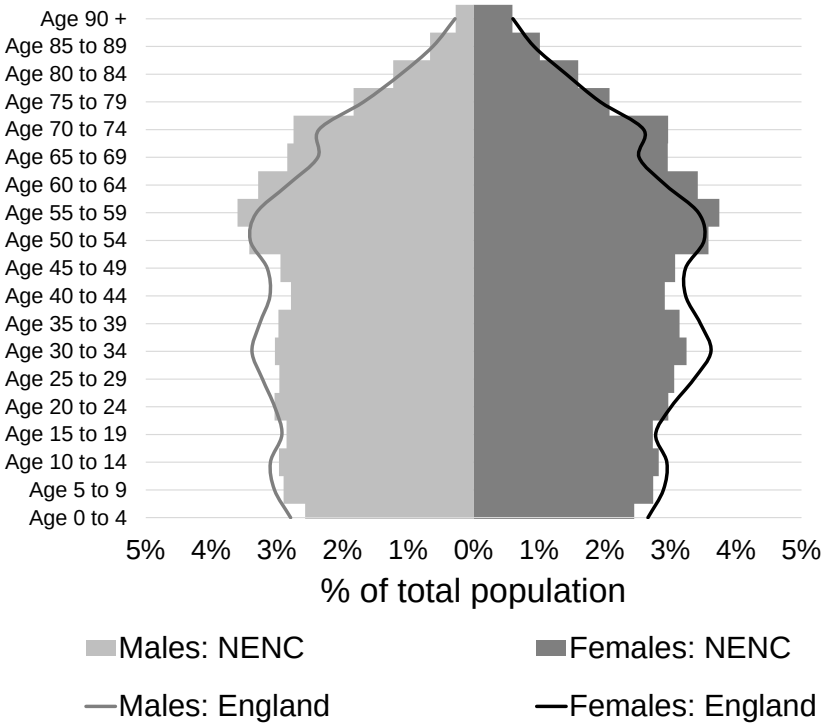
RightCare Asthma Toolkit, 2022. NHS England.

No available data sources enable further exploration of the characteristics of those on the asthma registers. However, the characteristics of the population of NENC as a whole is explored in this section.

6.1.1. Age distribution

In comparison with the national age profile, the NENC has proportionately fewer residents aged 25 to 49, and more aged 55 to 79, as shown in Figure 9.

Figure 9: NENC population pyramid, Census 2021 populations



Source: Census 2021 dataset, TS009 - Sex by single year of age statistics. Nomis - Official Labour Market Statistics.

6.1.2. Deprivation

Analysis of the Census 2021 population at lower layer super output area, ONS, shows:

- In NENC, 32% of the population live in the nationally most deprived areas (quintile); nationally this is 20%.
- Children in NENC are even more likely to live in more deprived areas: 40% of children aged 0 to 4 years and over 35% of those aged 5 to 17 years live in the nationally most deprived quintile.
- In Middlesbrough, which is the 5th most deprived local authority nationally and the most deprived in the NENC, over 60% of all children and young people (and almost 70% of young adults in their early twenties) live in the nationally most deprived quintile.

6.1.3. Ethnicity

From the 2021 Census, the ethnicity of residents of NENC was as follows:

- 93.6% were White
- 3.4% were Asian
- 1.2% were Mixed
- 0.9% were Black
- 0.9% classified their ethnicity as 'Other'

Asthma UK's report: On the edge: How inequality affects people with asthma describes "a notable difference in asthma incidence by ethnic group. There are significantly higher rates of incidence in black and minority ethnic (BAME) groups in England and Wales…People from BAME groups born outside the UK had a lower incidence than those born in the UK, suggesting that second and third generation descendants of South Asian and Afro-Caribbean migrants are a group experiencing high rates of asthma incidence". It also found variation in access to basic care for asthma based on ethnicity.

6.2. Follow diagnostic guidelines

"Asthma can be misdiagnosed, which means that people with untreated asthma are at risk of an asthma attack, and people who do not have asthma receive unnecessary drugs. Following both the NICE Quality Standard on undertaking objective tests to aid diagnosis and the QOF AST006 requirements for diagnosis, will help to optimise the accurate diagnosis of asthma and distinguish it from a diagnosis of other conditions, such as COPD."

RightCare Asthma Toolkit, 2022. NHS England.

The NICE Quality Standard states 'People aged 5 years and over with suspected asthma have objective tests to support diagnosis.', and suggests structural measures covering the following are used to assess the quality of care or service provision:

- Local arrangements or referral pathways to asthma diagnostic hubs
- Local arrangements to ensure that healthcare professionals are trained and competent to carry out and interpret objective tests to support diagnosis of asthma.
- Local processes to ensure that the basis for a diagnosis of asthma is documented.

6.2.1. Quality of care or service provision

The NACAP child and young person asthma organisational audit suggests the following for the seven participating hospitals in the NENC:

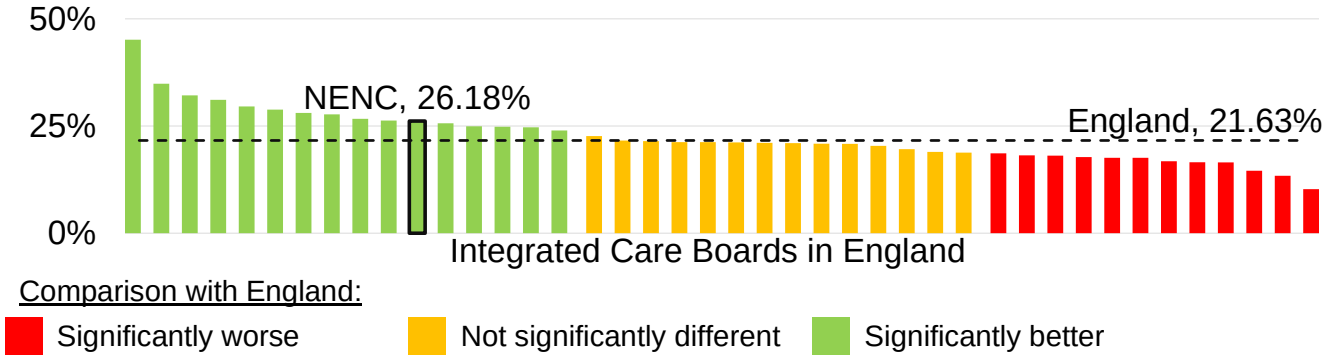
- Four have access to diagnostic tools: spirometry and fractional exhaled nitric oxide.
- Five have a respiratory nurse specialist trained in the care of children and young people with asthma.
- Two have a designated clinical lead for children and young people with asthma.
- Only two hospitals (University Hospital of North Tees and James Cook University Hospital) met all three of those KPIs relevant to diagnosis.

NACAP's snapshot audit of adult asthma and COPD secondary care services suggests that of the nine participating hospitals in the NENC, seven have designated clinical leads in place for both asthma and COPD. See Metrics 22 (a) to (c) and 23 in Appendix 3 for more details.

6.2.2. Objective tests to confirm asthma diagnosis

QOF indicator AST006 aims to incentivise the use of objective tests to confirm asthma diagnosis. It has three available PCAs (see section 4.4.1 for more information on PCAs) relating to unavailability of asthma diagnostic services. In 2021/22 26.18% of asthma patients in the NENC had been diagnosed using objective tests, in accordance with AST006. This is higher than the national rate of 21.63%. See Metrics 24 and 25 in Appendix 3.

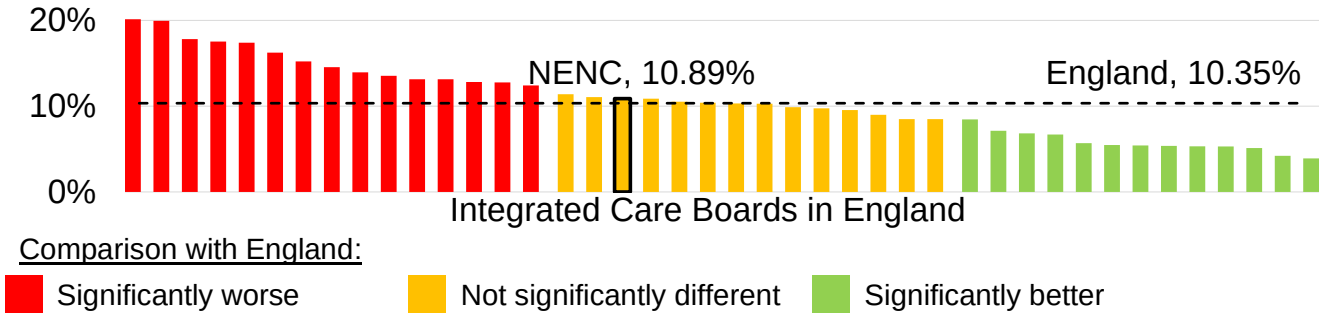
Figure 10: AST006 achievement across integrated care boards (ICBs) in England, 2021/22



Source: Quality and Outcomes Framework (QOF), NHS Digital.

As shown in Figure 11, 10.89% of asthma patients in NENC who had been newly diagnosed in the preceding 12 months were exempted from AST006 because of unavailability of asthma diagnostic services, similar to the England value of 10.35%.

Figure 11: Patients exempted through PCA from QOF indicator AST006 as a result of unavailability of asthma diagnostic services across ICBs in England, 2021/22



Source: Quality and Outcomes Framework (QOF), NHS Digital.

Achievement on AST006 ranges from 19.21% in South Tyneside sub-ICB locality to 34.03% in Newcastle Gateshead. The proportion of patients excluded as a result of unavailability of asthma diagnostic services ranges from 2.40% in North Cumbria to 19.35% in North Tyneside.

When considering inequalities:

- Overall achievement for AST006 in the NENC deep end practices is 28.29%, significantly higher than the national average and similar to the NENC average of 26.18%. Less than one per cent of patients in these practices were exempted from QOF AST006 as a result of unavailability of diagnostic services.
- Overall achievement for AST006 in the NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or 'Other' ethnicities is 25.67%. This is similar to the NENC average of 26.18%. Less than one per cent of patients in these practices were exempted from QOF AST006 as a result of unavailability of diagnostic services.
- There is little association between deprivation (of the GP practice) and the achievement or PCA rate of QOF indicator AST006.

6.3. Use of primary care diagnostic hub

"Where available, and as per NICE recommendation 1.3.1, use spirometry and FeNO testing (for over 5 years of age) at asthma diagnostic hubs to provide the most accurate diagnosis of asthma or to rule out asthma (and instead diagnose COPD where appropriate). This should be undertaken by trained and experienced clinicians (see PCRS Fit to Care for guidance on skills, knowledge and training required). This is to avoid misdiagnosis and inappropriate treatment for other causes of breathlessness, and unnecessary side- effects from medication that is not required or appropriate."

RightCare Asthma Toolkit, 2022. NHS England.

No information on the use of primary care diagnostic hubs is available for the NENC.

7. Optimal management and personalised care

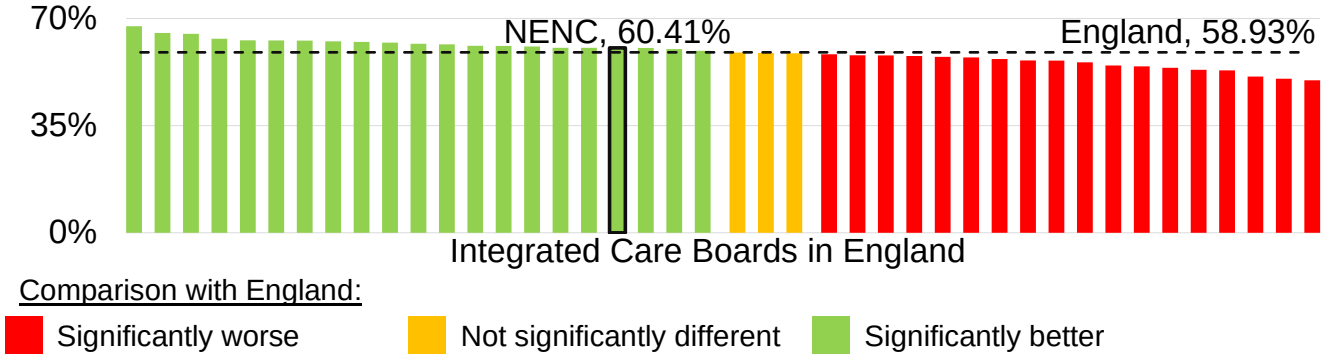
- Involving people with asthma (including their families and carers) in developing a written personalised action plan can help them to respond to changes in their symptoms. It also enables them to self-manage their asthma and reduce the risk of serious asthma attacks and hospital admission. Regular reviews of the action plan, either face to face or in a virtual setting, with a healthcare professional can help to prevent complications arising.
- People who recognise that they have a key role in self-managing their condition (and have the skills and confidence to do so) experience better health outcomes. Yet the ability of people to successfully self-care and stay well at home can vary considerably from person to person. People with long term conditions and their carers need to be better supported to manage their own condition(s).
- Where appropriate, digital tools can be an important way of supporting patients to better self-manage their condition through improved adherence to medications and understanding potential triggers to exacerbations.
- Directing people to where they can access additional support services, including face to face groups, online or digital.
- Asthma patients should receive a review every 12 months with their GP (and after every exacerbation). Proactive structured reviews, rather than opportunistic or unscheduled reviews, are associated with reduced exacerbation rate and fewer days lost from normal activity. The review should incorporate the three Royal College of Physicians (RCP) questions in line with current QOF guidance, exacerbation frequency (both as a measure of asthma control) as well as information relating to what to do in an emergency or the adverse effects relating to the overuse of OCS or SABA.

RightCare Asthma Toolkit, 2022. NHS England.

In addition to the recommendations above, NICE has recently (20 April 2023) published technology appraisal guidance TA880: Tezepelumab for treating severe asthma in adults and children aged 12 and over.

QOF indicator AST007 incentivises the use of written personalised asthma plans (PAAPs) in routine asthma reviews. In 2021/22, 60.41% of asthma patients in the NENC had had an asthma review in the preceding 12 months that included a written personalised action plan, in accordance with AST007, as shown in Figure 12. This is higher than the national prevalence of 58.93%. See Metric 26 in Appendix 3 for more details.

Figure 12: AST007 achievement across integrated care boards (ICBs) in England, 2021/22



Source: Quality and Outcomes Framework (QOF), NHS Digital.

Achievement for AST007 ranges from 49.79% in South Tyneside to 67.39% in Sunderland.

NACAP's clinical audit of secondary care asthma services for children and young people suggests the proportion of cases where a PAAP was issued or reviewed as part of discharge planning (See Metric 27 in Appendix 3 for more details) ranges from 10% in Northumbria Specialist Emergency Care Hospital to 92% in Cumberland Infirmary.

When considering inequalities:

- Overall achievement for AST007 in the NENC deep end practices is 63.37%. This is significantly higher than the national average of 58.93% and significantly higher than the NENC average of 60.41%.
- Overall achievement for AST007 in the NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or ‘Other’ ethnicities is 60.42% (statistically similar to the overall NENC achievement). This is significantly higher than the national average of 58.93%.
- There is no clear association between deprivation (of the GP practice) and the achievement on AST007.

8. Referral and system communication

8.1. Transition between paediatric and adult NHS asthma services

> Transition to adult services is important for all adolescents with asthma, irrespective of the severity of their condition. This…should be made easier by it being planned in advance, involving the person and with good communication and co-ordination across services.

RightCare Asthma Toolkit, 2022. NHS England.

Three hospitals in the NENC (University Hospital of North Tees, James Cook University Hospital and Darlington Memorial Hospital) have a transition service for children and young people to adult asthma services. See Metric 28 in Appendix 3.

8.2. Communication between emergency department and primary care

> There should be good communication systems in place to inform GPs of patients who are treated in A&E or in urgent care centres for an asthma attack. This will help GPs to review these patients in line with the NICE Quality Statement 4 - 'People who receive treatment in an emergency care setting for an asthma attack are followed up by their general practice within two working days of discharge'.

RightCare Asthma Toolkit, 2022. NHS England.

The proportion of cases where key elements of the British Thoracic Society (BTS) discharge bundle is provided as part of discharge ranges from 0% in University Hospital of North Tees and the Royal Victoria Infirmary to 72% in Northumbria Specialist Emergency Care Hospital. See Metric 29 in Appendix 3.

8.3. Referral for specialist assessment for difficult/severe asthma

> A small number of patients with suspected severe asthma (or those with difficult asthma due to poor asthma control) will need to be referred to secondary care and on to tertiary severe asthma centres, where they will have access to biologic drugs... Referral should be in line with NICE Statement 5 'People with suspected severe asthma are referred to a specialist multidisciplinary severe asthma service' and the NHS England Specialised Commissioning Services Specifications for Severe Asthma (adult) & Specialised Allergy Services (all ages).

RightCare Asthma Toolkit, 2022 (summarised). NHS England.

All participating hospitals refer people with severe asthma to a specialist multidisciplinary severe asthma service. See Metric 30 in Appendix 3.

9. Medicines optimisation

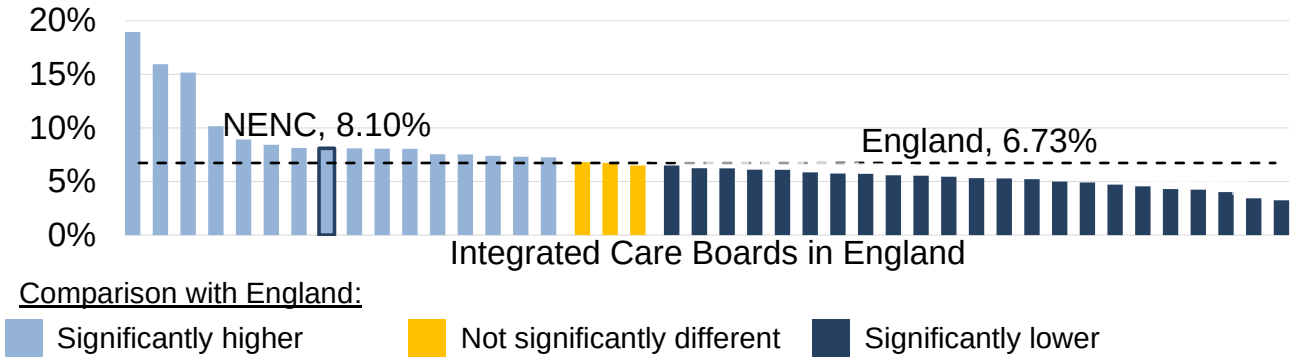
- The NHS Long Term Plan has commitments to address climate change with a specific recommendation to reduce the use of short acting bronchodilator inhalers and a move to dry powder inhalers, where clinically appropriate, which use significantly less fluorinated gases than traditional metered dose inhalers.
- Patients should be given a clear explanation of the reasons why they are given a particular asthma treatment and HCPs should also ensure that patients are using their inhalers correctly at every opportunity.
- The UK Inhaler Group (UKIG) has developed standards and competencies for those prescribing inhaled medications: Inhaler Standards and Competency Document (2017).
- Patients may need support to help them make the most effective use of their medicines. This support may take the form of further information and discussion, or involve practical changes to the type of medicine or the regimen. Any interventions to support adherence should be considered on a case-by-case basis.

RightCare Asthma Toolkit, 2022 (summarised). NHS England.

9.1. Prescribing of low carbon inhalers

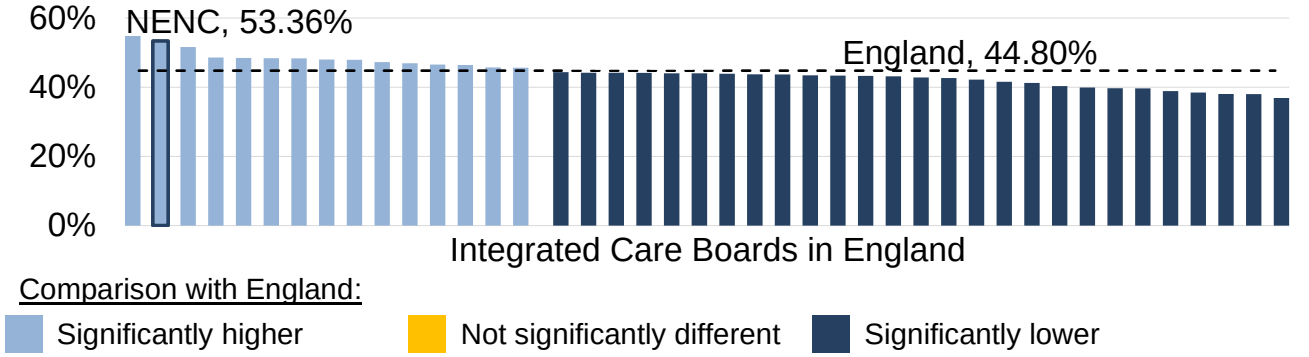
NHS England's Improving health outcomes for respiratory patients while reducing carbon emissions aim suggests patients over the age of 12 can be supported to consider using lower carbon inhalers, where clinically appropriate. This creates an opportunity to improve patient outcomes while reducing harmful carbon emissions, as well as supporting improved patient choice. The proportion of low carbon inhalers prescribed is shown below in Figure 13 (SABA inhalers) and Figure 14 (preventer inhalers). See Metrics 31 and 32 in Appendix 3 for more details.

Figure 13: Low carbon SABA inhalers as a proportion of all SABA inhaler prescribing



Source: Carbon impact dashboard, ePACT2, NHS Business Services Authority

Figure 14: Low carbon preventer inhalers as a proportion of all preventer inhaler prescribing



Source: Carbon impact dashboard, ePACT2, NHS Business Services Authority

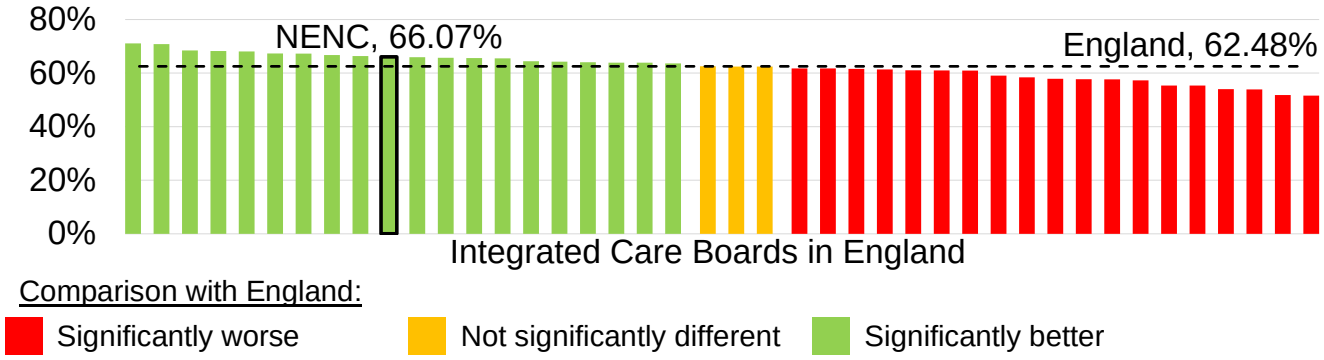
Low carbon inhalers as a proportion of all inhaler prescribing ranges from 3.69% of SABA inhalers and 46.40% of preventer inhalers in South Tyneside to 12.15% of SABA inhalers and 62.02% of preventer inhalers in North Tyneside.

9.2. Appropriate use of inhaled corticosteroids

Inhaled corticosteroids (ICS) are the most effective and first choice preventer drug for adults and older children with asthma. However, prescribing rates remain low in England. Regular use improves symptoms and reduces reliance on short acting beta agonists (SABA), exacerbations and mortality. PCN DES indicator NCD105 recognises PCNs for an increase in the percentage of patients regularly prescribed an inhaled corticosteroid.

On 31 January 2023 66.07% of patients in the NENC on the QOF Asthma Register had received three or more inhaled corticosteroid (ICS, inclusive of ICS/LABA) prescriptions over the preceding 12 months. This is higher than the national average of 62.48%. The achievement for indicator ND105 is shown in Figure 15. See Metric 33 in Appendix 3 for more details.

Figure 15: NCD105 achievement across integrated care boards (ICBs) in England, April 2022 to January 2023

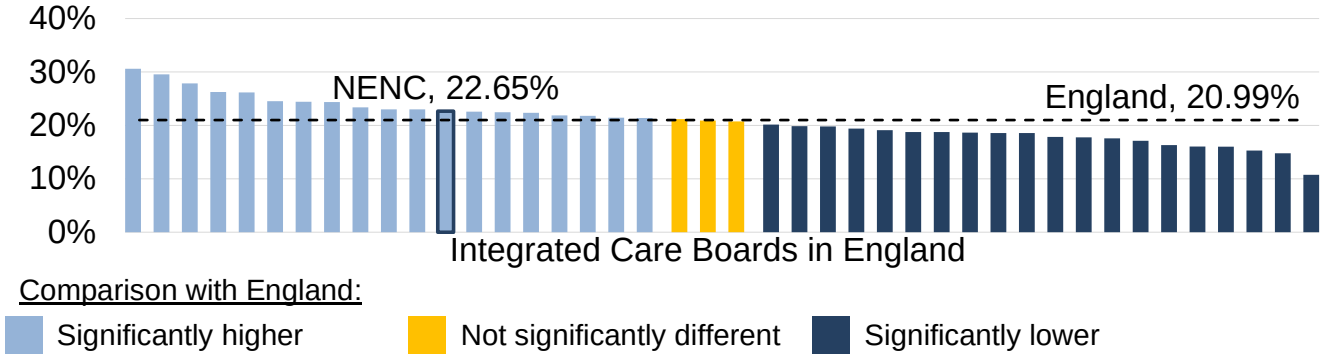


Source: Network Contract DES (MI) statistics, NHS Digital

NCD105 achievement across sub-ICB localities in NENC ranges from 61.27% in North Tyneside to 69.09% in North Cumbria.

The risk of systemic side effects from ICS is greater when higher doses are used, and often patients can be 'stepped-down' again if clinically appropriate. In December 2022, 22.65% of all ICS items prescribed in the NENC were classed as high dose, which is higher than the England average of 20.99% (Figure 16). See Metric 34 in Appendix 3 for more details.

Figure 16: ICS items prescribed that were classed as high dose across integrated care boards (ICBs) in England, December 2022



Source: Respiratory dashboard, ePACT2, NHS Business Services Authority

The proportion of all ICS items prescribed that were classed as high dose ranges from 15.44% in South Tyneside to 27.15% in Newcastle Gateshead.

When considering inequalities in appropriate use of inhaled corticosteroids:

- 68.06% patients in the NENC deep end practices on the QOF Asthma Register had received three or more inhaled corticosteroid (ICS, inclusive of ICS/LABA) prescriptions over the preceding 12 months. This is significantly higher than the NENC average of 66.07% and the national average of 62.48%. 24.12% of all ICS items prescribed in NENC deep end practices were classed as high dose. This is significantly higher than the NENC average of 22.65% and the national average of 20.99%. Please note that this relates to all prescribing of ICS items and is not restricted to prescribing for asthma specifically.
- 65.13% patients in the NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or 'Other' ethnicities on the QOF Asthma Register had received three or more inhaled corticosteroid (ICS, inclusive of ICS/LABA) prescriptions over the preceding 12 months. This is significantly lower than the NENC average of 66.07% but higher than the national average of 62.48%.

  23.04% of all ICS items prescribed for patients in the in the NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or 'Other' ethnicities were classed as high dose. This is significantly higher than the NENC average of 22.65% and the national average of 20.99%.
- There is a small association when considering achievement in NCD105 with deprivation, with a greater proportion of patients in the more deprived deciles having received three or more inhaled corticosteroid (ICS, inclusive of ICS/LABA) prescriptions over the preceding 12 months. However, there is no association between the proportion of high-dose ICS items and deprivation.

9.3. Appropriate use of short acting beta agonists

Overuse of short acting beta agonists (SABA) in asthma is higher in the UK than in other European countries and is associated with an increased risk of exacerbations and mortality.

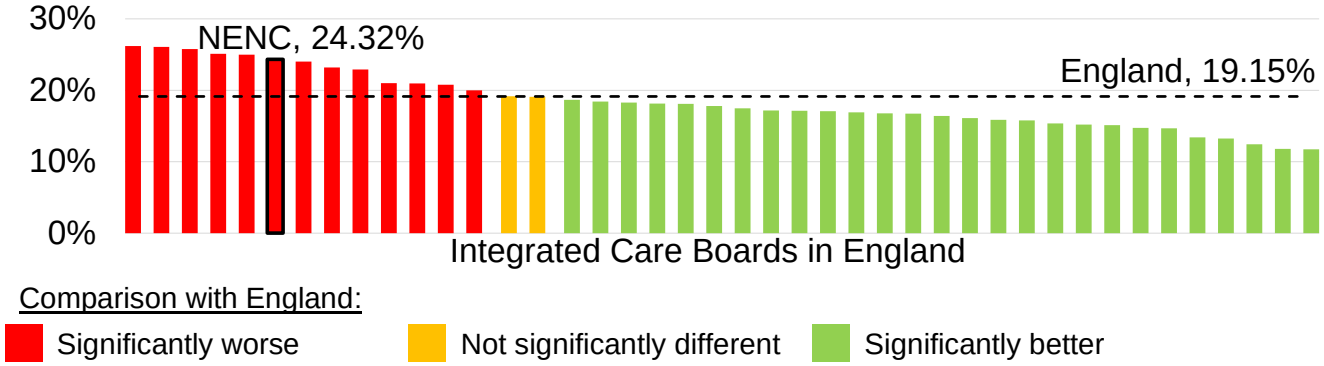
Two similar metrics are presented in this sub-section to explore potential overuse of SABA. The first (see Metric 35 in Appendix 3 for more details) from the PCN DES (where it has the identifier NCD106) is based on primary care records and recognises PCNs for a reduction in the percentage of asthma patients receiving six or more SABA prescriptions per year.

The second is from the prescribing data made available through the Respiratory dashboard, and is based on the group of patients who have been prescribed a preventer inhaler (but not an antimuscarinic) in the preceding 12 months. The metric (see Metric 36 in Appendix 3) shows the proportion of those individuals who were prescribed 6 or more SABA inhalers in the preceding 12 month. While the two different methods and data sources means the

values of the two metrics are not the same, the patterns shown for the NENC are similar, and the two metrics appear consistent with one another.

On 31 January 2023, 24.32% of patients in the NENC on the QOF Asthma Register had received 6 or more Short Acting Beta-2 Agonist (SABA) inhaler prescriptions over the preceding 12 months. This is higher than the national average of 19.15%.

Figure 17: NCD106 achievement across integrated care boards (ICBs) in England, April 2022 to January 2023

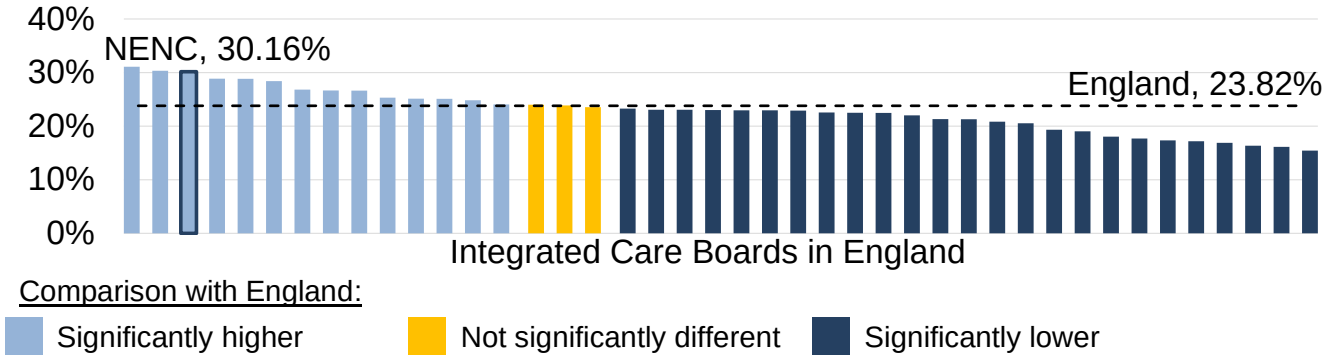


Source: Network Contract DES (MI) statistics, NHS Digital

NCD106 achievement across sub-ICB localities in NENC between April 2022 to January 2023 ranges from 18.46% in North Tyneside to 31.65% in South Tyneside.

In December 2022 30.16% of individuals in NENC who had been prescribed a preventer inhaler but not an antimuscarinic were prescribed 6 or more SABA inhalers in the 12 month period, which is higher than the England average of 23.82%.

Figure 18: Patients prescribed 6 or more SABA inhalers across integrated care boards (ICBs) in England, December 2022



Source: Respiratory dashboard, ePACT2, NHS Business Services Authority

The proportion of patients prescribed a preventer inhaler but not an antimuscarinic who had been prescribed 6 or more SABA inhalers in the 12 month period ranges from 25.47% in North Tyneside to 35.86% in Sunderland.

When considering inequalities in appropriate use of short acting beta agonists:

- The percentage of patients on the QOF asthma register in NENC deep end practices who received 6 or more Short Acting Beta-2 Agonist (SABA) inhaler prescriptions over the previous 12 months was 33.76%. This is significantly higher than the NENC average of 24.32% and the national average of 19.15%. In comparison, from the prescribing data, 39.50% of individuals who had been prescribed a preventer inhaler but not an antimuscarinic in NENC deep end practices[10] had been prescribed 6 or more SABA inhalers in the 12 month period, again significantly higher than the NENC average (30.16%) and the national average (23.82%).
- The percentage of patients in the NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or 'Other' ethnicities who received 6 or more Short Acting Beta-2 Agonist (SABA) inhaler prescriptions over the preceding 12 months was 26.52%. This is significantly higher than the NENC average of 24.32% and the national average of 19.15%. In comparison, from the prescribing data, 33.66% of individuals who had been prescribed a preventer inhaler but not an antimuscarinic in the NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or 'Other' ethnicities had been prescribed 6 or more SABA inhalers in the 12 month period, also significantly higher than the NENC average of 30.16% and the national average of 23.82%.
- There is a clear association between the proportion of patients having received 6 or more Short Acting Beta-2 Agonist (SABA) inhaler prescriptions and deprivation, with a greater proportion of patients in the more deprived deciles having received 6 or more Short Acting Beta-2 Agonist (SABA) inhaler prescriptions over the preceding 12 months. A similar clear association is shown for the percentage of individuals who received 6 or more Short Acting Beta-2 Agonist (SABA) inhaler prescriptions, from prescribing data.

[10] Based on 37 of the 38 deep end practices in the NENC.

10. Supporting specific patient groups

The RightCare Toolkit references the following specific patient groups:

- Children and young people
- People with learning disabilities
- People with mental ill-health
- Pregnant women

Information for children and young people is presented in this report wherever possible, and there are a small number of metrics presented specifically for pregnant women in the risk factors section. No nationally reported information relating to asthma care for patients with learning disabilities or mental illness is available. An analysis of inequalities for these patient groups would require a bespoke, local data collection.

11. Experience of care

Asthma UK's annual asthma survey 2020 received over 12,000 responses. It presented the following conclusions nationally:

- Basic asthma care levels had dropped for the first time in the eight years of the survey. An estimated 3.53 million people with asthma did not receive basic asthma care.
- Keeping control of asthma was a persistent challenge, with 2.17 million estimated to have uncontrolled asthma in the UK. This was especially acute for younger people and for those on lower incomes.
- Asthma care had partially adapted to be conducted remotely. People with asthma still valued face-to-face appointments for their annual reviews.

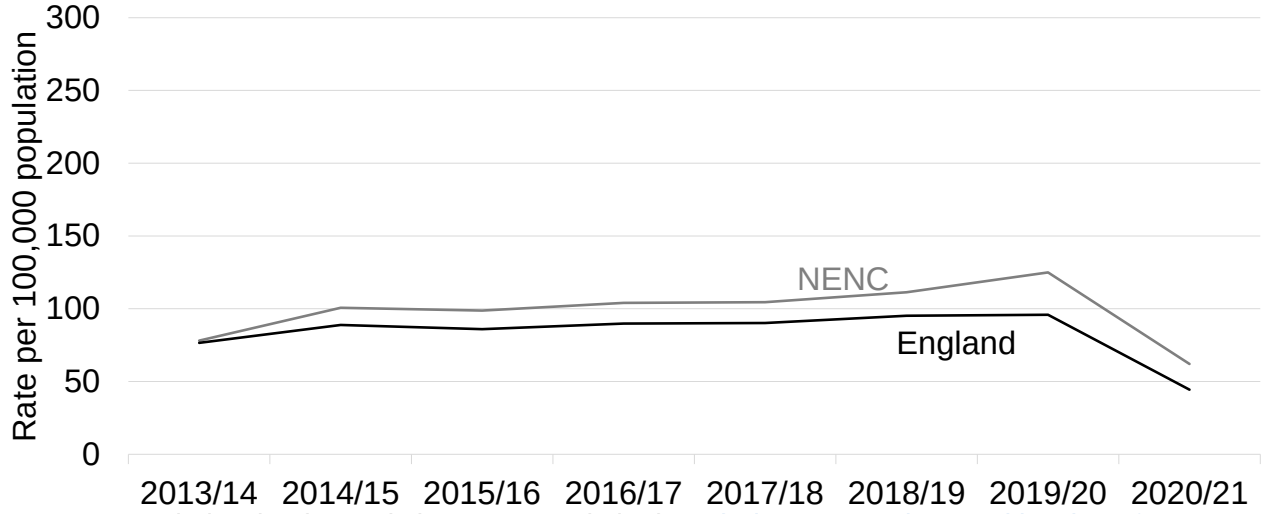
12. Outcomes for those with asthma

12.1. Emergency hospital admissions

The national guidelines for the management of asthma state that people with asthma should not need emergency treatment if appropriate routine care is given. Analysis of hospital admissions may help to identify areas where diagnosis and monitoring of asthma in primary care could be improved.

A comparison of emergency hospital admissions for asthma in NENC with England over recent years for adults is shown in Figure 19, and for children and young people is shown in Figure 20. See Metrics 37 and 38 in Appendix 3 for more details.

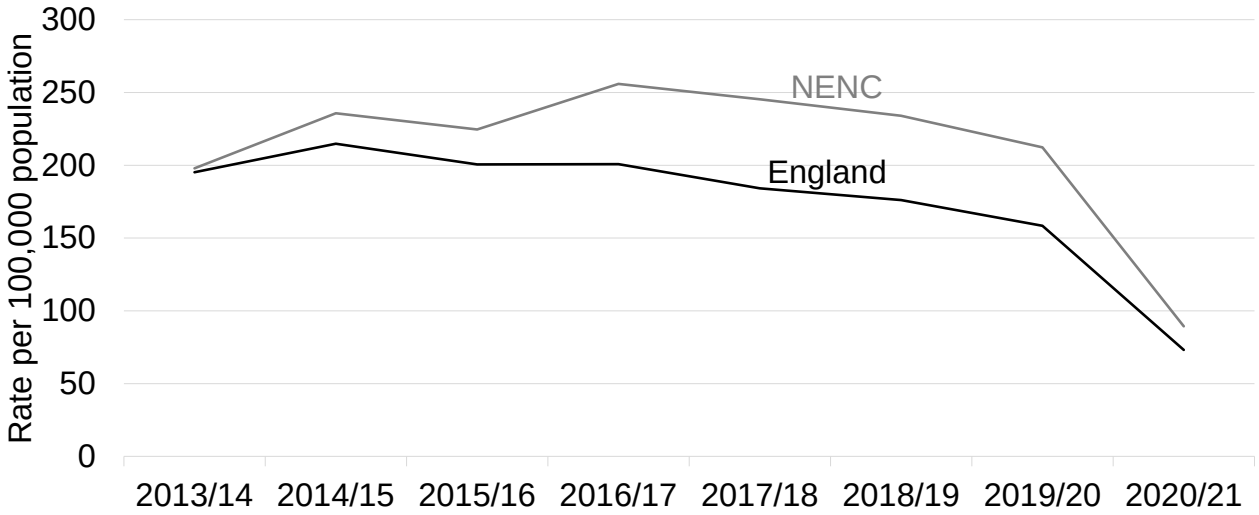
Figure 19: Emergency hospital admissions for asthma in adults (aged 19+), NENC



Source: Hospital Episode Statistics, accessed via the Inhale - INteractive Health Atlas of Lung conditions in England tool, Office for Health Improvement and Disparities.

Note: Values for CCGs in NENC were aggregated to create a crude rate for NENC.

Figure 20: Emergency hospital admissions for asthma in children and young people (<19), NENC



Source: Hospital Episode Statistics, accessed via the Inhale - INteractive Health Atlas of Lung conditions in England tool, Office for Health Improvement and Disparities
Note: Values for CCGs in NENC were aggregated to create a crude rate for NENC.

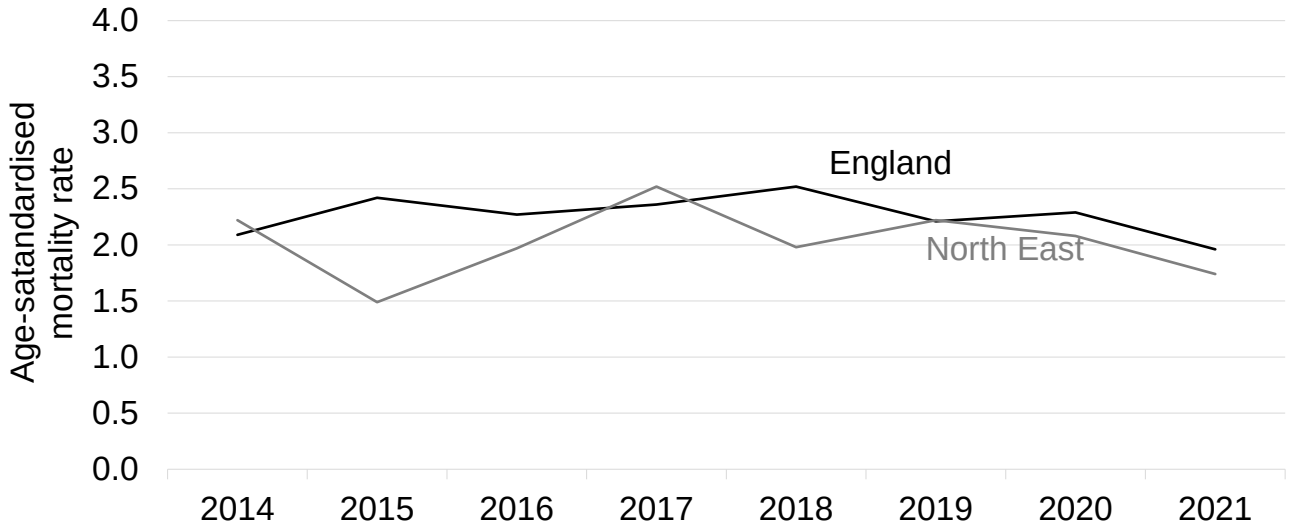
Admissions in 2021/22 are only available for upper-tier local authorities and are not shown on Figure 20. They range from 71.9 per 100,000 population in Hartlepool to 226.9 per 100,000 population in Northumberland. The rate of admissions for Cumbria is 167.8 per 100,000 population; admission rates for the four Cumbria districts are not available.

12.2. Mortality

Why asthma still kills was the National Review of Asthma Deaths' first national investigation of asthma deaths in the UK and the largest study worldwide to date. The primary aim was to understand the circumstances surrounding asthma deaths in order to identify avoidable factors and make recommendations to improve care and reduce the number of deaths.

A comparison of mortality in the North East region with England over recent years is shown in Figure 21. See Metric 39 in Appendix 3 for more details.

Figure 21: Age-standardised mortality rate with Asthma as cause of death, North East region



Source: Life events dataset, mortality statistics. Nomis - Official Labour Market Statistics.

Considering mortality rates for districts (based on residence at time of death) in NENC shows that Newcastle upon Tyne has the highest rates for many recent years, including the most recent.

13. Recommendations and other resources

- The RightCare Asthma Toolkit provides a set of key actions supported by current guidance, evidence and best practice examples. A self-assessment questionnaire is available to assist local systems and services to reflect on their current service provision and to identify where there are opportunities to improve across the pathway.
- Asthma: diagnosis, monitoring and chronic asthma management NICE guideline [NG80] includes a resource for adoption support for asthma diagnosis: insights from the NHS. It provides practical information and advice on implementing the guideline's recommendations on diagnosis, suggesting a phased approach to putting the guideline into practice.
- The guideline also includes a range of other tools and resources to support putting the guidance into practice.
- Asthma + Lung UK provides information, tools and resources for healthcare professionals.
- Exploration of the data provided in this report may suggest further detailed analysis is required for specific areas at a more local level, in order to plan interventions.

Academic Health Science Network
North East and North Cumbria

NHS
North East Quality Observatory Service

Appendix 1: RightCare Asthma Toolkit on a page

System Improvement Priorities

1. Risk factors that can exacerbate asthma

1.1 Smoking
1.2 Obesity and lack of exercise
1.3 Low uptake of the flu and pneumonia vaccine
1.4 Non adherance/compliance with treatment

2. Environmental factors for consideration

2.1 Air pollution (outdoor)
2.2 Climate change
2.3 Occupational exposure
2.4 Cold or poor quality housing

3. Early detection and accurate diagnosis

3.1 Know your population
3.2 Follow diagnostic guidelines according to age group
3.3 Use of primary care diagnostic hub and overseen by specialists

4. Optimal management and personalised care

4.1 Use of asthma action plan
4.2 Use of patient activation strategies
4.3 Supported self-management using digital tools where appropriate
4.4 Accessing alternative asthma support in the community

5. Referral and system communication

5.1 Improved dialogue and transition between paediatric and adult NHS asthma services
5.2 Communication between emergency department and primary care
5.3 Referral for specialist assessment for difficult/ severe asthma

6. Medicines optimisation

6.1 Optmised inhaler choice
6.2 Optimal inhaler technique
6.3 Medication adherance

7. Supporting specific patient groups

7.1 Suport for children and young people
7.2 Support for people with learning disabilities
7.3 Support for people with mental ill-health
7.4 Support in pregnancy

8. Experience of care

8.1 Improving the experience of care for people living with asthma and their family/ carers

System enablers

Self-assessment questionnaire

Better*Knowledge***Better***Care***Better***Outcomes*

Appendix 2: Association of asthma care metrics with deprivation: charts

Metric 1: Asthma prevalence by practice deprivation national decile, 2021/22

Source: Quality and Outcomes Framework (QOF), NHS Digital.

Metric 5: Adult obesity prevalence by practice deprivation national decile, 2021/22

Source: Quality and Outcomes Framework (QOF), NHS Digital.

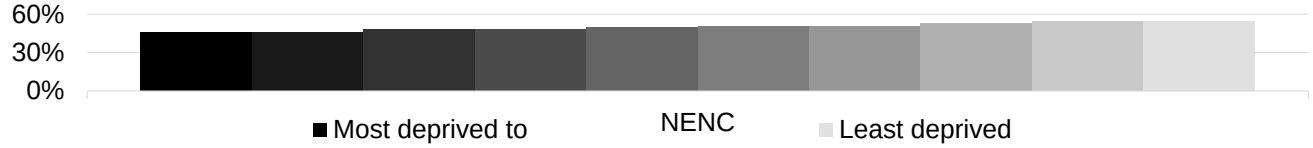
Metric 7: Child obesity prevalence at age 10 to 11 years by MSOA deprivation national decile, 2019/20 to 2021/22

Source: National Child Measurement Programme, accessed via the Local Health - Small Area Public Health Data Profiles, Office for Health Improvement and Disparities. IMD 2019 deprivation scores for MSOAs, published by mySociety.

Metric 15: Patients exempted through PCA from QOF indicator AST007 as a result of patient choice or failure to respond to invitations by practice deprivation national decile, 2021/22

Source: Quality and Outcomes Framework (QOF), NHS Digital.

Metric 16: Patients who received 5 or fewer steroid inhalers including ICS LABA products, by practice deprivation national decile, December 2022



Source: Respiratory dashboard, ePACT2, NHS Business Services Authority

Metric 24: AST006 achievement by practice deprivation national decile, 2021/22

Source: Quality and Outcomes Framework (QOF), NHS Digital.

Metric 25: Patients exempted through PCA from QOF indicator AST006 as a result of unavailability of diagnostic services by practice deprivation national decile, 2021/22

Source: Quality and Outcomes Framework (QOF), NHS Digital.

Metric 26: AST007 achievement by practice deprivation national decile, 2021/22

Source: Quality and Outcomes Framework (QOF), NHS Digital.

Metric 33: NCD105 achievement by practice deprivation national decile, April 2022 to January 2023

Source: Network Contract DES (MI) statistics, NHS Digital

Metric 34: Proportion of ICS items prescribed that were high-dose by practice deprivation national decile, December 2022

Source: Respiratory dashboard, ePACT2, NHS Business Services Authority

Metric 35: NCD106 achievement by practice deprivation national decile, April 2022 to January 2023

Source: Network Contract DES (MI) statistics, NHS Digital

Metric 36: Proportion of patients who received 6 or more Short Acting Beta-2 Agonist (SABA) inhaler prescriptions by practice deprivation national decile, December 2022

Source: Respiratory dashboard, ePACT2, NHS Business Services Authority

Appendix 3: Metric definitions and notes

Metric ID: 1	Prevalence of asthma	2021/22
Definition	Patients on GP asthma disease registers as a proportion of all patients aged 6+ registered.	
Data source	Quality and Outcomes Framework statistics	

Mappings

Local authority	Sub-ICB locality
County Durham	County Durham
Darlington	Tees Valley
Gateshead	Newcastle Gateshead
Hartlepool	Tees Valley
Middlesbrough	Tees Valley
Newcastle upon Tyne	Newcastle Gateshead
North Tyneside	North Tyneside
Northumberland	Northumberland
Redcar and Cleveland	Tees Valley
South Tyneside	South Tyneside
Stockton-on-Tees	Tees Valley
Sunderland	Sunderland
Allerdale	North Cumbria
Carlisle	North Cumbria
Copeland	North Cumbria
Eden	North Cumbria

Summary for local authorities: relevance of coloured rating

Significantly higher than NENC | Not significantly different | Significantly lower than NENC

Metric ID: 2	Adult smoking prevalence	2021
Definition	Smoking prevalence in adults (18+) - current smokers	
Data source	Annual Population Survey, accessed via the Public Health Outcomes Framework.	

Summary for local authorities: relevance of coloured rating

Significantly worse than NE | Not significantly different | Significantly better than NE

Metric ID: 3	Young people smoking prevalence	2021
Definition	Young people aged 11 to 15 years who were current smokers	
Data source	Smoking, Drinking and Drug Use among Young People in England, 2021	

Summary for local authorities: N/A

Metric ID: 4	Smoking prevalence in pregnancy	1 April to 30 September 2022
Definition	Pregnant women self-reporting that they are smokers	
Data source	Statistics on smoking in pregnancy, NHS Digital	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC / Not significantly different / Significantly better than NENC		

Metric ID: 5	Adult obesity	2021/22
Definition	Patients on GP obesity disease registers as a proportion of all patients aged 18+ registered.	
Data source	Quality and Outcomes Framework statistics	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC / Not significantly different / Significantly better than NENC		

Metric ID: 6	Child obesity: Reception	2021/22
Definition	Pupils aged 4 to 5 years living with obesity (including severe obesity)	
Data source	National Child Measurement Programme, accessed via the Public Health Outcomes Framework	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC / Not significantly different / Significantly better than NENC		

Metric ID: 7	Child obesity: Year 6	2021/22
Definition	Pupils aged 10 to 11 years living with obesity (including severe obesity)	
Data source	National Child Measurement Programme, accessed via the Public Health Outcomes Framework	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC / Not significantly different / Significantly better than NENC		

Metric ID: 8	Physically inactive adults	November 2020 to 2021
Definition	The number of respondents to the Active Lives Adult Survey aged 19 and over, with valid responses to questions on physical activity, doing less than 30 moderate intensity equivalent (MIE) minutes physical activity per week in bouts of 10 minutes or more in the previous 28 days expressed as a percentage of the total number of respondents aged 19 and over.	
Data source	Public Health Outcomes Framework, Office for Health Improvement and Disparities	
Summary for local authorities: relevance of coloured rating Significantly worse than NE / Not significantly different / Significantly better than NE		

Metric ID: 9	**Physically inactive children and young people**	Academic year 2021-22
Definition	Children and young people who do less than an average of 30 minutes of activity (of at least moderate intensity) a day	
Data source	Children And Young People Activity Data (Ages 5-16), Sport England	
Summary for local authorities: relevance of coloured rating Highest areas in NENC Middle areas in NENC Lowest areas in NENC		

Metric ID: 10	**Flu uptake: 65+**	1 September 2022 to 31 January 2023
Definition	Seasonal flu vaccine uptake in those aged 65+. Data are provisional.	
Metric ID: 11	**Flu uptake: Under 65 at risk**	1 September 2022 to 31 January 2023
Definition	Seasonal flu vaccine uptake in those aged under 65 and classed as at risk. Data are provisional.	
Metric ID: 12	**Flu uptake: 50 to 64 at risk**	1 September 2022 to 31 January 2023
Definition	Seasonal flu vaccine uptake in those aged 50 to 64 and classed as at risk. Data are provisional.	
Metric ID: 13	**Flu uptake: Pregnant women**	1 September 2022 to 31 January 2023
Definition	Seasonal flu vaccine uptake in pregnant women. Data are provisional.	
Data source	Vaccine uptake guidance and the latest coverage data, UKHSA	
Mappings	Published local authority data are used for the North East local authorities. For the four North Cumbria districts, the single value for the North Cumbria sub-ICB locality is used.	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC Not significantly different Significantly better than NENC		

Metric ID: 14	**PPV estimated uptake**	1 April 2020 to 31 March 2021
Definition	Pneumococcal polysaccharide vaccine (PPV) vaccine coverage estimates for those aged 65 and over. Data are provisional.	
Data source	Vaccine uptake guidance and the latest coverage data, UKHSA	
Mappings	As for metric (1), although data are published for CCGs rather than sub-ICBLs.	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC Not significantly different Significantly better than NENC		

Metric ID: 15	Not received annual review (AST007): choice or non-response	2021/22
Definition	Patients exempted from QOF indicator AST007 (see metric 26) as a result of one or more of the following PCAs: • Patients who have not responded to at least two asthma care review invitations, made at least 7 days apart • Patient chose not to receive asthma monitoring • Patient chose not to receive asthma quality indicator care	
Data source	Quality and Outcomes Framework statistics	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC · Not significantly different · Significantly better than NENC		

Metric ID: 16	Patients collected <6 prescriptions for preventer medication	December 2022
Definition	Patients who received 5 or fewer steroid inhalers including ICS LABA products in the preceding 12 months	
Data source	Respiratory dashboard, ePACT2, NHS Business Services Authority	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly higher than NENC · Not significantly different · Significantly lower than NENC		

Metric ID: 17	'September surge' in hospital admissions	2021/22
Definition	Comparison of the average admissions per day (count) in September with the average admissions per day in the other 11 months of the financial year combined.	
Data source	Hospital Episode Statistics (HES) datasets are accessed via the Data Access Environment, and re-used with the permission of NHS Digital. Copyright © 2023, NHS Digital. All rights reserved.	
Summary for local authorities: Magnitude of September surge shown; NENC average is 2.0		

Metric ID: 18	Air pollution: Concentration fine particulate matter	2020
Definition	Annual concentration of fine particulate matter ($PM_{2.5}$) at area level	
Data source	DEFRA & Air Quality and Public Health - UK Health Security Agency, accessed via the Inhale - INteractive Health Atlas of Lung conditions in England tool, Office for Health Improvement and Disparities	
Summary for local authorities: relevance of coloured rating Higher than WHO target · At WHO target (5µg/m^3) · Lower than WHO target		

Metric ID: 19	Occupational asthma: at risk	2021 (week before the 2021 Census)
Definition	Proportion of the population working in industries with the highest estimated rates of occupational asthma	
Data source	• Manufacturing selected as the industry with relatively high risk of occupational exposure using Health and Safety Executive's estimated rates of occupational asthma (THORR05) • Residents in employment by industry from Census 2021 estimates that classify usual residents aged 16 years and over in employment, by industry, Office for National Statistics	
Summary for local authorities: relevance of coloured rating Highest four areas in NENC Middle areas in NENC Lowest five areas in NENC		

Metric ID: 20	Non-decent housing	2020
Definition	Proportion of houses that were classed as 'non-decent'. A 'decent' home is one that: • Meets the statutory minimum standard for housing • Is in a reasonable state of repair • Has reasonably modern facilities and services • Provides a reasonable degree of thermal comfort	
Data source	English Housing Survey 2020-21, Department for Levelling Up, Housing and Communities	
Summary for local authorities: N/A		

Metric ID: 21	Energy efficient homes	2020
Definition	Proportion of homes with energy efficiency rating A to C	
Data source	English Housing Survey 2020-21, Department for Levelling Up, Housing and Communities	
Summary for local authorities: N/A		

Metric ID: 22a	**KPI: Hospitals with access to diagnostic tools: Spirometry and FeNO**	2021
Metric ID: 22b	**KPI: Respiratory nurse specialist trained in the care of children and young people with asthma**	
Metric ID: 22c	**KPI: Designated clinical lead for children and young people with asthma**	
Data source	Children & young people asthma reports, National Asthma and COPD Audit Programme	

Mappings used

Local authority	**Hospitals participating in audit**
County Durham	University Hospital of North Durham
Darlington	Darlington Memorial Hospital
Gateshead	
Hartlepool	University Hospital of North Tees
Middlesbrough	James Cook University Hospital
Newcastle upon Tyne	
North Tyneside	
Northumberland	Northumbria Specialist Emergency Care Hospital
Redcar and Cleveland	James Cook University Hospital
South Tyneside	
Stockton-on-Tees	University Hospital of North Tees
Sunderland	
Allerdale	Cumberland Infirmary and West Cumberland Infirmary
Carlisle	
Copeland	
Eden	

Summary for local authorities: relevance of coloured rating

Hospital does not meet KPI | Hospital meets KPI

Metric ID: 23	KPI: Hospitals with designated clinical leads for both asthma and COPD	2021
Data source	Adult asthma reports, National Asthma and COPD Audit Programme	

Mappings

Local authority	Hospitals participating in audit
County Durham	University Hospital of North Durham
Darlington	Darlington Memorial Hospital
Gateshead	Queen Elizabeth Hospital, Gateshead
Hartlepool	University Hospital of North Tees
Middlesbrough	James Cook University Hospital
Newcastle upon Tyne	Royal Victoria Infirmary
North Tyneside	Royal Victoria Infirmary
Northumberland	Northumbria Specialist Emergency Care Hospital
Redcar and Cleveland	James Cook University Hospital
South Tyneside	Sunderland Royal Hospital
Stockton-on-Tees	University Hospital of North Tees
Sunderland	Sunderland Royal Hospital
Allerdale	Cumberland Infirmary
Carlisle	
Copeland	
Eden	

Summary for local authorities: relevance of coloured rating

Hospital does not meet KPI | Hospital meets KPI

Metric ID: 24	Patients diagnosed using objective tests (AST006)	2021/22
Definition	The percentage of patients with a diagnosis of asthma on or after 1 April 2021 with either: 1. A record of spirometry and one other objective test (FeNO or reversibility or variability) between 3 months before and 6 months after diagnosis; or 2. If newly registered in the preceding 12 months with a diagnosis of asthma recorded on or after 1 April 2021 but no record of objective tests being performed at the date of registration, with a record of spirometry and one other objective test (FeNO or reversibility or variability) recorded within 6 months of registration This metric reflects achievement net of PCAs.	
Data source	Quality and Outcomes Framework statistics	
Mappings	As for metric (1)	

Summary for local authorities: relevance of coloured rating

Significantly worse than NENC | Not significantly different | Significantly better than NENC

Metric ID: 25	**Patients not diagnosed using objective tests (AST006): services unavailable**	2021/22
Definition	Patients exempted from QOF indicator AST006 (see metric 24) as a result of one or more of the following PCAs: • Asthma service unavailable in the 6 months after asthma diagnosis or in the 6 months following registration for patients newly diagnosed in 12 months up to and including the period end date. • FeNO service unavailable in the 6 months after asthma diagnosis or in the 6 months following registration for patients newly diagnosed in 12 months up to and including the period end date. • Spirometry service unavailable in the 6 months after asthma diagnosis or in the 6 months following registration for patients newly diagnosed in 12 months up to and including the period end date.	
Data source	Quality and Outcomes Framework statistics	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC Not significantly different Significantly better than NENC		

Metric ID: 26	**Patients who had an asthma review that included a written PAAP (AST007)**	2021/22
Definition	The percentage of patients with asthma on the register, who have had an asthma review in the 12 months that includes an assessment of asthma control using a validated asthma control questionnaire, a recording of the number of exacerbations, an assessment of inhaler technique and a written personalised action plan. This metric reflects achievement net of PCAs.	
Data source	Quality and Outcomes Framework statistics	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC Not significantly different Significantly better than NENC		

Metric ID: 27	PAAP issued/reviewed as part of discharge planning	April 2021 to March 2022
Definition	Proportion of cases where a PAAP was reviewed or issued as part of the child's discharge bundle, as well as inhaler technique check and a follow-up appointment requested.	
Data source	Children & young people asthma reports, National Asthma and COPD Audit Programme	

Mappings

Local authority	Hospitals participating in audit
County Durham	University Hospital of North Durham
Darlington	Darlington Memorial Hospital
Gateshead	
Hartlepool	University Hospital of North Tees
Middlesbrough	James Cook University Hospital
Newcastle upon Tyne	Great North Children's Hospital
North Tyneside	
Northumberland	Northumbria Specialist Emergency Care Hospital
Redcar and Cleveland	James Cook University Hospital
South Tyneside	Sunderland Royal Hospital
Stockton-on-Tees	University Hospital of North Tees
Sunderland	Sunderland Royal Hospital
Allerdale	West Cumberland Infirmary
Carlisle	Cumberland Infirmary
Copeland	West Cumberland Infirmary
Eden	Cumberland Infirmary

Summary for local authorities: relevance of coloured rating

Hospital within lower quartile | Hospital within interquartile range | Hospital within upper quartile

Metric ID: 28	KPI: Hospitals with transition service for CYP to adult asthma services	2021
Data source	Children & young people asthma reports, National Asthma and COPD Audit Programme	
Mappings	As for metrics (22a)-(22c)	

Summary for local authorities: relevance of coloured rating

Hospital does not meet KPI | Hospital meets KPI

Metric ID: 29	BTS discharge bundle provided on discharge following admission for asthma	April 2021 to March 2022
Definition	Proportion of cases where key elements of British Thoracic Society (BTS) discharge bundle provided as part of discharge	
Data source	Adult asthma reports, National Asthma and COPD Audit Programme	

Mappings

Local authority	Hospitals participating in audit
County Durham	University Hospital of North Durham
Darlington	Darlington Memorial Hospital
Gateshead	Queen Elizabeth Hospital, Gateshead
Hartlepool	University Hospital of North Tees
Middlesbrough	James Cook University Hospital
Newcastle upon Tyne	Royal Victoria Infirmary
North Tyneside	Royal Victoria Infirmary
Northumberland	Northumbria Specialist Emergency Care Hospital
Redcar and Cleveland	James Cook University Hospital
South Tyneside	South Tyneside District Hospital
Stockton-on-Tees	University Hospital of North Tees
Sunderland	Sunderland Royal Hospital
Allerdale	Cumberland Infirmary
Carlisle	
Copeland	
Eden	

Summary for local authorities: relevance of coloured rating

Hospital within lower quartile | Hospital within interquartile | Hospital within upper quartile

Metric ID: 30	KPI: Hospitals that provide access to a severe asthma service	2021
Data source	Adult asthma reports, National Asthma and COPD Audit Programme	
Mappings	As for metric (23)	

Summary for local authorities: relevance of coloured rating

Hospital does not meet KPI | Hospital meets KPI

Metric ID: 31	Low carbon SABA inhalers	December 2022
Definition	Low carbon SABA inhalers as a proportion of all SABA inhaler prescribing	
Data source	Carbon impact dashboard, ePACT2, NHS Business Services Authority	
Mappings	As for metric (1)	

Summary for local authorities: relevance of coloured rating

Significantly higher than NENC | Not significantly different | Significantly lower than NENC

Metric ID: 32	Low carbon preventer inhalers	December 2022
Definition	Low carbon preventer inhalers as a proportion of all preventer inhaler prescribing	
Data source	Carbon impact dashboard, ePACT2, NHS Business Services Authority	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly higher than NENC / Not significantly different / Significantly lower than NENC		

Metric ID: 33	3 + ICS prescriptions (NCD105)	April 2022 to January 2023
Definition	Patients on the QOF Asthma Register who had received three or more inhaled corticosteroid (inclusive of ICS/LABA) prescriptions over the preceding 12 months	
Data source	Network Contract DES (MI) statistics, NHS Digital	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC / Not significantly different / Significantly better than NENC		

Metric ID: 34	High dose ICSs	December 2022
Definition	Proportion of all ICS items prescribed that were classed as high dose	
Data source	Respiratory dashboard, ePACT2, NHS Business Services Authority	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly higher than NENC / Not significantly different / Significantly lower than NENC		

Metric ID: 35	6+ SABA inhaler prescriptions (from primary care data) (NCD106)	April 2022 to January 2023
Definition	Patients on the QOF Asthma Register had received 6 or more Short Acting Beta-2 Agonist inhaler prescriptions over the preceding 12 months	
Data source	Network Contract DES (MI) statistics, NHS Digital	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly worse than NENC / Not significantly different / Significantly better than NENC		

Metric ID: 36	**6+ SABA inhaler prescriptions (from prescribing data)**	December 2022
Definition	Proportion of patients who had been prescribed a preventer inhaler but not an antimuscarinic who were prescribed 6 or more SABA inhalers in the 12 month period	
Data source	Respiratory dashboard, ePACT2, NHS Business Services Authority	
Mappings	As for metric (1)	
Summary for local authorities: relevance of coloured rating Significantly higher than NENC · Not significantly different · Significantly lower than NENC		

Metric ID: 37	**Emergency hospital admissions for asthma: adults**	Latest: 2020/21
Definition	Emergency admissions to hospital in persons (aged 19 years and over) where the primary diagnosis is asthma (ICD-10 codes J45, J46). Directly age standardised rate per 100,000 population (standardised to the European standard population).	
Data source	Inhale - INteractive Health Atlas of Lung conditions in England tool, Office for Health Improvement and Disparities	
Summary for local authorities: N/A		

Metric ID: 38	**Emergency hospital admissions for asthma: CYP**	2021/22
Definition	Emergency admissions to hospital in persons (aged under 19 years) where the primary diagnosis is asthma (ICD-10 codes J45, J46). Crude rate per 100,000 population.	
Data source	Child and Maternal Health Profiles, Office for Health Improvement and Disparities	
Summary for local authorities: relevance of coloured rating Significantly worse than NE · Not significantly different · Significantly better than NE		

Metric ID: 39	**Asthma mortality**	2021
Definition	Age-standardised mortality rate with Asthma as cause of death	
Data source	Life events dataset, mortality statistics. Nomis - Official Labour Market Statistics	
Summary for local authorities: Age-standardised mortality rate shown where available		

Appendix 4: Data sources and data quality

Quality and Outcomes Framework (QOF)

The objective of the QOF is to improve patient care by rewarding practices for the quality of care they provide, based on several indicators across a range of key areas of clinical care and public health. Participation in QOF is voluntary, though participation rates are very high, with coverage of 97.5% in 2021/22. QOF data is published annually, approximately six months after the end of each financial year. More information about the QOF data for 2021/22, including a data quality annex can be found in the QOF official statistics.

Epact2 dashboards

ePACT2 gives authorised users access to prescription data, down to single prescription level. Data is available 6 weeks after the dispensing month. The metrics in this report were drawn from the Respiratory dashboard and the Respiratory – Carbon Impact dashboard, which aims to highlight the variation in prescribing of respiratory medicines across England. Further details, including information on data quality can be found in the Respiratory dashboard specification and the Respiratory – Carbon Impact dashboard specification.

Hospital Episode Statistics (HES)

Hospital Episode Statistics (HES) contains details about hospital admissions, outpatient appointments and A and E attendances at NHS hospitals in England. Each HES record contains a wide range of information about an individual patient admitted to an NHS hospital, including clinical information about diagnoses and operations, patient information, such as age group, gender and ethnicity, administrative information, such as dates and methods of admission and discharge and geographical information such as where patients are treated and the area where they live.

More information about the HES data for 2021/22, including a data quality statement can be found in the HES national statistics.

National Asthma and COPD Audit Programme (NACAP)

- The NACAP Child and young person asthma organisational audit 2021: Benchmarked key indicator report presents data from NACAP's snapshot audit of secondary care asthma services for children and young people. It highlights national and hospital level performance against five key performance indicators (KPIs) for respiratory service organisation and structure. Data collection took place between 4 October 2021 and 5

November 2021 across England and Wales. The audit collected information on the resourcing, structure and organisation of services relevant to the care of children and young people with asthma who were admitted to hospital. Within the NENC, Sunderland Royal Hospital did not participate in the audit.

- The NACAP Adult asthma and COPD organisational audit 2021: Benchmarked key indicator report presents data from NACAP's snapshot audit of adult asthma and COPD secondary care services. Data collection took place between 6 September 2021 and 8 October 2021 across England and Wales. The report presents data on hospital-level performance against KPIs for respiratory service organisation and structure. Within the NENC, West Cumberland Infirmary, the Friarage Hospital and South Tyneside District Hospital did not participate in the audit.
- The NACAP Children and young person asthma clinical audit 2022: Benchmarked key indicator report presents data from NACAP's clinical audit of secondary care asthma services for children and young people. It highlights hospital performance against five KPIs for respiratory care, and the data were drawn from children and young people admitted to acute hospital services with a primary diagnosis of asthma attack and discharged between April 2021 and March 2022.
- The NACAP Adult asthma clinical audit 2022: benchmarked key indicator report presents data from NACAP's snapshot audit of adult asthma and COPD secondary care services. It highlights hospital performance against five KPIs for respiratory care, and the data were drawn from adults admitted to acute hospital services with a primary diagnosis of asthma attack and discharged between April 2021 and March 2022.

Network Contract DES statistics, reporting indicators within the Investment and Impact Fund (IIF)

The IIF supports primary care networks (PCNs) to deliver high quality care to their population, as well as supporting the delivery of priority objectives articulated in the NHS Long Term Plan. The IIF is a financial incentive scheme, focussing on rewarding high quality care in areas where PCNs can contribute significantly towards

- Improving health and saving lives (e.g. through increased diagnosis of hypertension)
- Improving the quality of care for people with multiple morbidities (e.g. through delivering Structured Medication Reviews and increasing the number of asthma patients who are regularly prescribed inhaled corticosteroids)
- Helping to make the NHS more sustainable.

More information about the IIF.

Appendix 5: Methods for presenting metrics by inequality factors

Where the source data allows, inequalities relevant to each metric are presented in this report.

Deprivation

Metrics which have a published numerator and denominator at either GP practice or a small area level have been used to present indicators in ten deprivation 'deciles', as shown in Appendix 2. This used the English indices of deprivation 2019 to assign a deprivation score to each GP practice, or each small area in England. These were then ranked by deprivation score and divided into the ten deciles. The numerators and denominators for the practices or areas in each decile were then summed, and the metric calculated for the decile as a whole.

'Deep end' practices

The 'deep end' practices are those in the most socioeconomically deprived areas of the North East and North Cumbria. For the purposes of this report, the 38 practices which formed the deep end network in September 2022 were used. The numerators and denominators for those 38 practices were then summed, and the metric calculated for the group as a whole.

Ethnicity: NENC practices with relatively high proportions of minority ethnic groups

The ethnicities of those registered at GP practices is not made available, and therefore as a compromise, the proportion of the population in the area surrounding each NENC practice was assessed to determine a group of practices with a relatively high proportion of those from minority ethnic groups. This is therefore making the assumption that the ethnicities of those registered at a practice is similar to the ethnicities of nearby residents. This assumption is likely to prove more or less accurate for practices with certain characteristics, for example urban or rural practices or practices in student towns and the metrics reported at this level should therefore be interpreted with caution.

Analysis using the ethnicities from the 2021 Census identified 74 NENC practices located in LSOAs with 10% or more of the population of Black, Asian, Mixed or 'Other' ethnicities. The numerators and denominators for those 74 practices were then summed, and the metric calculated for the group as a whole.