Royal College of Physicians

National Respiratory Audit Programme (NRAP)

Wales primary care clinical audit report 2023–25

Publication year: 2026

In association with:

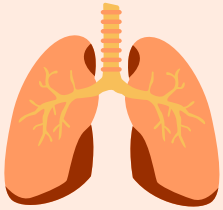
Commissioned by:

Contents

Report at a glance

COPD

During 2023–25



Patients diagnosed with COPD in the last 2 years who have a post-bronchodilator spirometry code available in the last 2 years

23.5%

Patients with COPD who are breathless (MRC score 3–5) and have been referred to pulmonary rehabilitation in the last 3 years

16.4%

Patients with COPD **who did not have a record of their smoking status** in the last 15 months

29.6%

Patients with COPD **who did not have a record of their vaping status** in the last 15 months

98.1%

Adult asthma

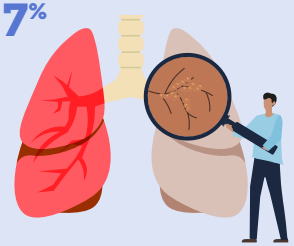
During 2023–25

Adults diagnosed with asthma who have a record of at least one objective measurement* in the last 2 years

62.1%

Adults with asthma who had a personalised asthma action plan (PAAP) in the last 15 months

28.7%

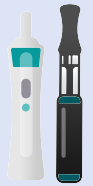


Adults with asthma **who did not have a record of their smoking status** in the last 15 months

35.5%

Adults with asthma **who did not have a record of their vaping status** in the last 15 months

98.2%



CYP asthma

During 2023–25

Children and young people (CYP) diagnosed with asthma who have a record of at least one objective measurement* in the last 2 years

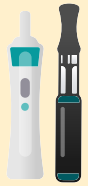
47.4%

CYP (aged 14–18 years) with asthma **who did not have a record of their smoking status** in the last 15 months

65.4%

CYP with asthma who had a personalised asthma action plan (PAAP) in the last 15 months

24.0%



CYP (aged 14–18 years) with asthma **who did not have a record of their vaping status** in the last 15 months

98.6%

*One objective measurement includes spirometry, peak flow with greater than one reading, or evidence of peak flow diary or recorded FeNO

How to use this report

1. Scope and data collection

This report presents results from an analysis of asthma and chronic obstructive pulmonary disease (COPD) primary care data in Wales from the Welsh primary care audit component of the National Respiratory Audit Programme (NRAP). Data were obtained from 371 general practices in Wales in August 2025 and captured activity between 1 August 2023 – 31 July 2025. Patient activity in this cohort is defined using validated codes – the code list for all variables defined in this report is available here.

The audit builds upon the learning from previous primary care reports. Contributing to the overarching healthcare improvement objectives of NRAP, this report aims to empower stakeholders to use audit data to facilitate improvements in the quality of care for people diagnosed with asthma and COPD.

2. Report structure

This report consolidates the key findings and national recommendations emerging from the 2023–25 Welsh primary care audit. It builds upon the metrics previously presented in the 2021–23 audit, offering comparative cohort analysis and contextual narrative to highlight the relevance of these indicators to healthcare service delivery and improvement.

The recommendations outlined in the 2021–23 Welsh primary care audit report remain applicable and should continue to guide healthcare improvement efforts.

In addition, the report outlines strategic recommendations directed towards Welsh local health boards (LHBs), NHS Wales Performance and Improvement, the Strategic Clinical Network for Respiratory Disease, and key national stakeholders including The Institute of Clinical Science and Technology (ICST). These recommendations are intended to support coordinated action and drive system-wide enhancements in respiratory care across Wales.

3. Data interpretation

In total, 100% of Welsh general practices participated in this audit. Due to the general medical services contract, participation in audit is now mandatory for GP services in Wales. Younger children aged 1–5 are not included in the primary care audit.

A separate data analysis and methodology report, and the national and LHB level results are available here. Participating practices can view individualised practice-level results via the Data Health and Care Wales (DHCW) primary care information portal. These reports will include benchmarking against national and health board results to support practices in improving the quality of patient care.

4. Digital apps for patients with COPD and asthma

Within this report, digital apps entitled COPDHub and AsthmaHub are highlighted, and their use for patients within primary care in Wales is encouraged. HealthHub is run through a partnership between NHS Wales and The Institute of Clinical Science and Technology (ICST). Their goal is to support people with the self-management of a range of medical conditions including COPD and asthma.

The apps are developed for and are used by NHS Wales healthcare professionals. They have been tested and modified with patient testers who have helped to continually improve the apps to ensure they are beneficial. The use of the apps is specific to Wales and does not apply to other devolved nations within the UK. More information can be found here.

Demographics table	COPD		Adult asthma		Children and young people asthma	
	n	%	n	%	n	%
All Wales	96,457	–	212,094	–	31,942	–
Sex						
Male	47,001	48.7	87,862	41.4	18,182	56.9
Female	49,453	51.3	124,219	58.6	13,758	43.1
Age						
Median	71	–	55	–	12	–
Lower quartile	63	–	39	–	9	–
Upper quartile	78	–	68	–	15	–
Index of Multiple Deprivation (IMD) quintile						
1	13,324	13.8	21,324	10.1	4,161	13.0
2	12,286	12.7	22,086	10.4	3,787	11.9
3	11,620	12.0	21,340	10.1	3,227	10.1
4	10,708	11.1	21,316	10.1	3,289	10.3
5	9,604	10.0	21,228	10.0	3,010	9.4
6	10,147	10.5	21,903	10.3	3,077	9.6
7	8,910	9.2	21,884	10.3	2,951	9.2
8	7,916	8.2	20,372	9.6	2,818	8.8
9	6,812	7.1	20,239	9.5	2,683	8.4
10	5,049	5.2	20,176	9.5	2,887	9.0
Not recorded	81	0.1	226	0.1	52	0.2
Ethnicity						
Asian, Asian British, Asian Welsh	204	0.2	1,888	0.9	362	1.2
Black, Black British, Black Welsh, Caribbean or African	77	0.0	602	0.3	135	0.4
Mixed or Multiple	110	0.0	696	0.3	230	0.8
White	36,368	37.7	80,761	38.1	11,215	35.1
Other ethnic group	12,250	12.7	27,729	13.0	4,609	14.5
Not recorded	47,448	49.2	100,418	47.3	15,391	48.2

Analysis of key performance metrics and updated data

Ensure timely, accurate diagnosis of asthma and COPD

Key standards

- **Welsh government:** Quality statement for respiratory disease.
- **NICE 2023 QS10 (QS1):** People aged over 35 years who present with a risk factor and one or more symptoms of COPD have post-bronchodilator spirometry.
- **NICE 2018 QS25 (QS1):** People aged 5 years and over with suspected asthma have objective tests to support diagnosis.
- **NICE 2024 NG245 1.2:** Objective tests for diagnosing asthma in adults, young people and children aged 5–16 with a history suggestive of asthma.

Data summary

COPD

Patients diagnosed with COPD in the last 2 years who have a post-bronchodilator spirometry code available in the last 2 years

23.5% 2023–25 **21.4%** 2021–23

AA

Adults diagnosed with asthma who have a record of at least one objective measurement* in the last 2 years

62.1% 2023–25 **54.4%** 2021–23

CYP

Children and young people (CYP) diagnosed with asthma who have a record of at least one objective measurement* in the last 2 years

47.4% 2023–25 **39.8%** 2021–23

Why is this important to healthcare services?

There has been an improvement in the proportion of patients with COPD receiving spirometry and patients with asthma undergoing objective assessments, however performance still falls short of the previously established targets. Specifically, the ongoing goal for at least 70% of patients with COPD to have undergone quality-assured post-bronchodilator spirometry to confirm airflow obstruction, and for 70% of individuals diagnosed with asthma within the past 2 years to have at least one documented objective measurement, are a long way from being met and should remain a key focus. Every person aged 35 or older with risk factors for COPD should have access to quality-assured spirometry at diagnosis, and for those with suspected asthma, access to objective testing should be provided at diagnosis. Support is needed for clinicians to have the education and access to diagnostic tests and interpretation of the results. Accurate coding using SNOMED CT codes should underpin this, ensuring data are reliable and treatment pathways are triggered.

In primary care, conditions such as diabetes, hypertension and high cholesterol are often diagnosed when patients are asymptomatic. Respiratory disease can be marked by daily breathlessness, cough, wheeze and fatigue – symptoms that profoundly affect quality of life and drive repeated GP consultations and hospital attendances. Yet, diagnosis is often delayed, missed or made without the necessary tests despite this burden. Asthma + Lung UK has recently highlighted that almost one in four people wait 5 years or more for a diagnosis of COPD in the NHS.[2] Studies show that over two-thirds of patients with COPD are diagnosed late, often after preventable exacerbations and emergency admissions.[3] Conversely, misdiagnosis of asthma without objective testing exposes people to inappropriate, sometimes harmful treatments.[4] Primary care staff should be given agency to ask about symptoms, investigate promptly, and code consistently.

*One objective measurement includes spirometry, peak flow with greater than one reading, or evidence of peak flow diary or recorded FeNO

Promote the use of personalised asthma action plans (PAAPs) and digital self-management tools

Key standards

- **Welsh government:** Quality statement for respiratory care.
- **NICE 2024 NG245 1.14.1:** Offer an asthma self-management programme, comprising a documented personalised action plan and education. In adults, they may be based on symptoms or peak expiratory flow (or both); symptom-based plans are usually preferred for children.

Data summary

Adult asthma

Adults with asthma who had a PAAP in the last 15 months

28.7%
2023–25

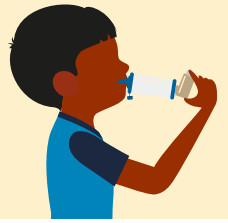
27.9%
2021–23

CYP

CYP with asthma who had a PAAP in the last 15 months

24.0%
2023–25

24.1%
2021–23



Why is this important to healthcare services?

Despite strong evidence that PAAPs improve asthma management and outcomes, there has been little progress in the past 15 months in increasing the proportion of adults and children with a PAAP. The previous target of 75% coverage by July 2025 has been significantly missed. Patients and families often know their asthma best; they live with it every day. Most of their year is spent self-managing, not in GP surgeries or A&E. Healthcare professionals need to work in partnership to support patients to self-manage by ensuring that they are all provided with PAAPs along with clear, practical instructions: how to monitor daily symptoms, when to escalate treatment and what to do in an emergency. Tailored PAAPs reduce exacerbations, unscheduled care and improve quality of life, ensuring patients feel in control rather than at the mercy of their condition.[11]

Digital therapeutics offer the potential to support self-management in asthma – for example, NHS Wales AsthmaHub and AsthmaHub for Parents apps[12] have over 32,000 downloads, as well as adoption across 100% of GP practices. Users consistently recommend them, reporting improved condition management and reduced reliance on emergency services. Published outcomes from the Welsh cohort show a 50% reduction in unscheduled GP visits for flare-ups, a 73% reduction in hospital admissions during winter months, and a 53% reduction in emergency prednisolone use.[13] Clinicians are also seeing the value of the patient-generated data these apps provide. However, approved apps are underutilised and the healthcare system needs to improve the delivery of PAAPs and the implementation of apps to support self-management. Integrating data from digital therapeutics into GP systems is crucial for building a richer dataset that enhances patient self-management and provides clearer insights into their management practices.

Increase referral and access to pulmonary rehabilitation (PR)

Key standards

- **Welsh government:** Quality statement for respiratory care.
- **NICE 2019 NG115, [1.2.80]:** Make PR available to all appropriate people with COPD, including those who have had a recent hospitalisation for an acute exacerbation.
- **NICE 2019 NG115, [1.2.81]:** Offer PR to all people who view themselves as functionally disabled by COPD (usually MRC grade 3 and above).
- **NICE 2023 QS10 quality statement 4:** People with stable chronic obstructive pulmonary disease (COPD) and a score of 3 or above on the Medical Research Council (MRC) dyspnoea scale are referred to a pulmonary rehabilitation programme.
- **BTS clinical statement 2023:** PR should be offered to symptomatic individuals with chronic respiratory disease including COPD, asthma, bronchiectasis and interstitial lung disease (ILD).[18]

Data summary

COPD

Patients with COPD who are breathless (MRC score 3–5) and have been referred to pulmonary rehabilitation in the last 3 years

16.4%
2023–25

13.9%
2021–23

Why is this important to healthcare services?

The effectiveness of PR is widely accepted,[18] however the data in this report indicate that it remains underutilised for patients with COPD in Wales. The target of increased PR referral for appropriate COPD patients to 70% has been significantly missed and many eligible patients miss out on this life-changing programme due to low referral rates.

Contributing factors include limited awareness of PR's benefits, gaps in service information, time constraints during consultations, and incorrect assumptions about patient readiness or eligibility. These barriers result in low participation, preventable hospital admissions and avoidable exacerbations.[14]

Implementing PR enhances exercise tolerance, psychological wellbeing, independence, and overall quality of life. It reduces exacerbations and hospital admissions by giving agency to patients to manage their condition through structured education and peer support. When delivered following an acute exacerbation, PR significantly decreases hospital readmission rates, benefiting both patients and the NHS.[15]

Digital tools can be used to support access to PR.[16] The COPDHub app provides a mechanism for giving agency to patients to engage with PR, standardising coding and ensuring referrals are visible in records.

At the same time, GP's should be supported to increase their awareness for PR referral, ensuring clinicians feels confident to recommend it routinely.

PR has already been established to be a fundamental treatment for COPD patients. Driving higher patient enrolment requires a coordinated approach – embed good practice sharing across primary care, PR providers and secondary care; align processes through standardised referral systems; and leverage digital solutions to streamline access and engagement. By improving referral and resources within primary care, the monitoring of waiting times and completion rates can be viewed via the NRAP PR audit and we can ensure more people with chronic respiratory disease benefit from PR.

Improve recording of data

A significant proportion of key data fields within the NRAP primary care dataset remain incomplete or unrecorded. Notably, 51.3 % of patients did not have a recorded MRC dyspnoea scale score, while ethnicity data was not captured for 49.2 % of patients with COPD, 47.3 % of adults with asthma, and 48.2 % of children and young people (CYP) with asthma. Additionally, smoking and vaping status data show considerable gaps. This recommendation prioritises improvements in the recording of smoking and vaping data due to their critical impact on respiratory health outcomes. However, the underlying principles of this recommendation are equally applicable to other areas of incomplete data capture.

Recommendation 1

Improve recording of smoking and vaping behaviours across all age groups

By July 2027, LHBs should have embedded comprehensive data collection procedures in place in primary care to ensure that complete robust data are collected. Specifically, this should include asking every patient about their smoking and vaping status at each opportunity and having this routinely recorded. Everybody who smokes should be offered Very Brief Advice and clear support to quit, including a referral to Help Me Quit Wales, with this clearly recorded. This is essential to improving respiratory outcomes and driving Wales toward its 2030 smoke-free ambition.[5]

Key standards

- NICE NG115 1.2.2, 1.2.3, 1.2.4: Smoking cessation in COPD
- NICE NG209: Tobacco: preventing uptake, promoting quitting and treating dependence
- Welsh government: A smoke-free Wales: Our long-term tobacco control strategy

Data summary

COPD

Patients with COPD **who did not have a record of their smoking status** in the last 15 months

29.6% 2023–25

26.2% 2021–23

Patients with COPD **who did not have a record of their vaping status** in the last 15 months

98.1% 2023–25

Adult asthma

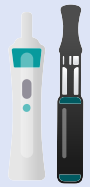
Adults with asthma **who did not have a record of their smoking status** in the last 15 months

35.5% 2023–25

33.7% 2021–23

Adults with asthma **who did not have a record of their vaping status** in the last 15 months

98.2% 2023–25



CYP

CYP (aged 14–18 years) with asthma **who did not have a record of their smoking status** in the last 15 months

65.4% 2023–25

59.2% 2021–23

CYP (aged 14–18 years) with asthma **who did not have a record of their vaping status** in the last 15 months

98.6% 2023–25

CYP (aged 14–18 years) with asthma who **did not** have a record of their second-hand smoke exposure recorded in the last 15 months

98.0% 2023–25

99.3% 2021–23

Improve recording of data

Why is this important to healthcare services?

Unfortunately, accurate recording of smoking and vaping status remains one of the weakest areas in our data. For children and young people with asthma, the gap is clear: exposure to tobacco and vaping significantly shapes outcomes,[6] yet records are incomplete or absent. Adults fare little better, with patchy documentation undermining our understanding of prevalence, risk and the effectiveness of interventions. The volume of missing data prevents us from determining whether smoking and vaping status is not being asked or simply not being recorded. Without reliable data, we risk ascertainment bias – apparent improvements may reflect better coding rather than genuine behaviour change.

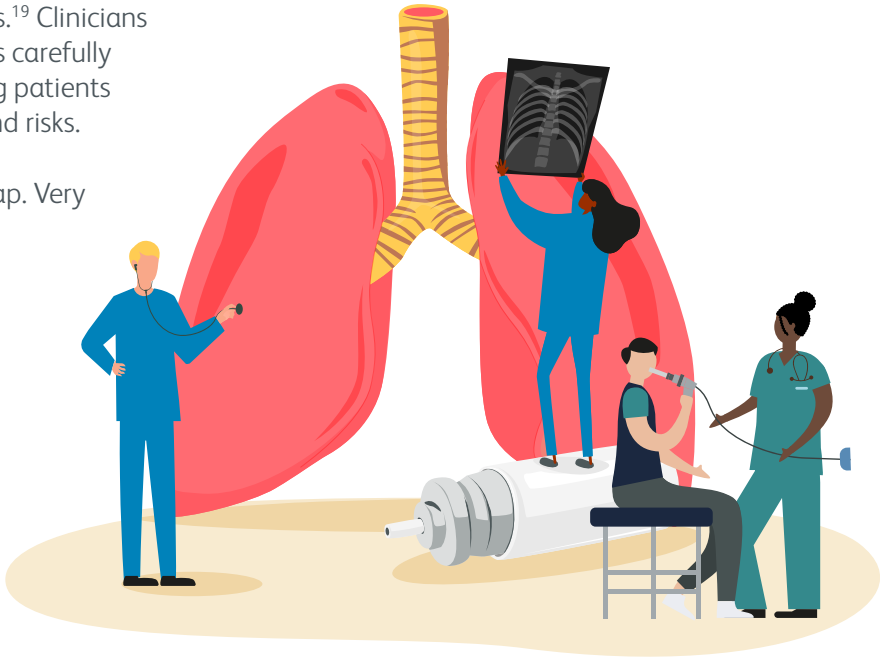
We must ensure routine capture of smoking and vaping status in every patient review, supported by system prompts and consistent use of SNOMED CT codes. This builds on previous NRAP recommendations to improve coding practices and strengthens the evidence base for both clinical care and policy.

Recent research in *BJGP Open*[7] highlights how poor-quality recording not only obscures true prevalence but also limits the reach of tobacco dependency interventions, particularly for younger patients. Importantly, emerging evidence[8] shows that when people with asthma switch from tobacco to vaping, they may experience significant improvements in symptoms and quality of life, underlining the importance of recording these behavioural changes accurately.

However, Asthma + Lung UK cautions that vaping is not risk-free: while it may be less harmful than smoking, it can still irritate the airways and worsen asthma symptoms in some individuals.[19] Clinicians should therefore record these changes carefully and provide balanced advice, ensuring patients understand both potential benefits and risks.

Referral recording is another critical gap. Very few smoking cessation referrals are coded, and self-referrals are invisible in datasets. This is reflected in the number of current smokers who have received or had a referral to a behavioural change intervention and a stop smoking drug prescribed. Practices should adopt and standardise the use of recognised referral codes to capture all advice, support and self-directed pathways. NRAP's preferred SNOMED CT code list is available here. These codes should also be embedded in patient apps.

General practice must lead this change. Every consultation is an opportunity: ASK, ADVISE, ACT.[10] By raising the standard of data capture, we can better support patients, target interventions and accelerate progress toward a smoke-free Wales.



Strengthen healthcare improvement initiatives

Although the key areas outlined in this report operate independently, the fragmented practices and isolated improvement efforts contribute to systemic issues such as poor documentation of smoking and vaping behaviours, delayed or inaccurate diagnoses, low pulmonary rehabilitation referrals, and inconsistent use of PAAPs. System-wide coordinated efforts must be established to implement best practices throughout all LHBs across Wales for meaningful change to occur.

Recommendation 2

Strengthen healthcare improvement initiatives and system collaboration

Due to this, LHBs and NHS Wales Performance and Improvement should work together to develop, strengthen and promote healthcare improvement initiatives over the next 2 years that should drive change for the key areas highlighted throughout this report. The DHCW primary care information portal should be used as a central hub for LHBs to receive up-to-date respiratory data to drive improvements. Specifically, a template for COPD and asthma yearly reviews should be implemented in primary care to ensure the fundamentals of care are being provided to patients and this is appropriately recorded within GP records.

There is evidence of increasing focus on healthcare improvement. NHS Wales Performance and Improvement and the Strategic Clinical Network for Respiratory Disease are leading a new programme that unites health board executives and ICST to create a stronger respiratory care system. The new initiative aims to integrate digital tools into clinical pathways and guidelines so that these resources become essential elements of patient care instead of supplementary options.

LHBs and practices, along with clinicians, need to join forces to establish quality improvement as a permanent part of their daily operations and consider the role of digital therapeutics in supporting the delivery of these NRAP goals.

The goal is to achieve **75% of asthma patients** receiving PAAPs with AsthmaHub app support by July 2027.

The goal is to achieve **70% of new asthma and COPD patients** receiving objective test results and quality-assured spirometry for their diagnosis by July 2027.

The standard treatment for COPD patients should include **digital or hybrid PR**, with support via the COPDHub app, to boost enrolment rates to 40% by July 2027.

Healthcare providers need to document smoking and vaping habits for all patients while making sure they **receive proper cessation guidance and referral to services** that include self-referral options by July 2027.

Methodological improvement in collecting data has meant that prescribing data are now more accurately reported, giving a clearer picture of patient care and outcomes. This provides us with a benchmark for future audits and the ability to capture more detailed data to drive quality improvement.

The success of this initiative depends on the active collaboration between NRAP, ICST, the Welsh government and LHBs. The combination of structured support, improved templates for data collection and good practice sharing between clusters and national policy alignment will create consistent results and speed up improvement efforts. We possess the chance to transform individual success stories into a nationwide healthcare revolution. A commitment to coordinated improvement is likely to produce better patient results while decreasing healthcare system demands and establishing Wales as a smoke-free nation with improved health outcomes.

The Royal College of Physicians (RCP)

The RCP plays a leading role in the delivery of high-quality patient care by setting standards of medical practice and promoting clinical excellence. The RCP provides physicians in over 30 medical specialties with education, training and support throughout their careers. As an independent charity representing 40,000 fellows and members worldwide, the RCP advises and works with government, patients, allied healthcare professionals and the public to improve health and healthcare.

Healthcare Quality Improvement Partnership (HQIP)

The National Respiratory Audit Programme (NRAP) is commissioned by the Healthcare Quality Improvement Partnership (HQIP) and funded by NHS England and the government of Wales as part of the National Clinical Audit and Patient Outcomes Programme.

National Respiratory Audit Programme (NRAP)

National Respiratory Audit Programme (NRAP) aims to improve the quality of the care, services and clinical outcomes for patients with respiratory disease across England and Wales. It does this by using data to support and train clinicians, empowering people living with respiratory disease, and their carers, and informing national and local policy. NRAP has a track record of delivery and is critical in assessing progress against national policy initiatives. To find out more about the NRAP, visit our website.

Acknowledgements

This report was produced by:

Dr Katherine Hickman, primary care clinical lead, NRAP, CQID, RCP
Jodie Henderson, project manager, NRAP, CQID, RCP
Ben Hitchman, programme coordinator, NRAP, CQID, RCP
Lara Amusan, programme manager, NRAP, CQID, RCP
Peter Van Geffen, project manager, NRAP, CQID, RCP
Rachael Hodges, deputy programme manager, NRAP, CQID, RCP
Dr Alex Adamson, data analyst, Imperial College London
Professor Jennifer Quint, data analysis lead, Imperial College London
Professor James Dodd, adult asthma clinical lead, NRAP, CQID, RCP
Professor Tom Wilkinson, senior clinical lead, NRAP, CQID, RCP
Professor Alice Turner, healthcare improvement clinical lead, NRAP, CQID, RCP
NRAP Advisory Groups
NRAP Board
NRAP patient panels

Citation for this document
Royal College of Physicians. *Wales primary care clinical audit report 2023–25*. RCP, 2026.

References

1 Yin X, Zheng Z, Dong Y *et al*. Comparison of newly diagnosed COPD patients and the non-COPD residents in Shanghai Minhang District. *Front Public Health* 2023;11.

2 Asthma + Lung UK. *Delayed diagnosis and unequal care*. www.asthmaandlung.org.uk/sites/default/files/2023-03/delayed-diagnosis-unequal-care.pdf (Accessed 16 June 2025).

3 Kostikas K, Price D, Gutzwiller F *et al*. clinical impact and healthcare resource utilization associated with early versus late COPD diagnosis in patients from UK CPRD database. *Int J Chron Obstruct Pulmon Dis* 2020;15:1729–38.

4 Josephs L, Culliford D, Johnson M, Thomas M. COPD overdiagnosis in primary care: a UK observational study of consistency of airflow obstruction. *Npj Prim Care Respir Med* 2019;29:33.

5 Welsh Government. A smoke-free Wales: Our long-term tobacco control strategy. 2022. www.gov.wales/tobacco-control-strategy-wales-html (Accessed 18 June 2025)

6 Agache I, Ricci-Cabello I, Canelo-Aybar C *et al*. The impact of exposure to tobacco smoke and e-cigarettes on asthma-related outcomes: Systematic review informing the EAACI guidelines on environmental science for allergic diseases and asthma. *Allergy* 2024.

7 Najafi E, Wasan D, Baker Y, Peters K *et al*. Perceptions and practices of UK general practitioners towards youth vaping: a questionnaire-based study. *BJGP OPEN*.

8 Solinas A, Paoletti G, Firinu D *et al*. Vaping effects on asthma: results from a web survey and clinical investigation. *Internal and Emergency Medicine* 2020;15:663–671.

9 Gotts J, Jordt S, McConnell R, Tarran, R. What are the respiratory effects of e-cigarettes? *BMJ* 2022;378.

10 Very Brief Advice. www.ncsct.co.uk/publications/category/vba-briefings (Accessed 2 December 2025).

11 Pinnock H, Noble, M, Lo D *et al*. Personalised management and supporting individuals to live with their asthma in a primary care setting. *Primary Care Respiratory Medicine*, 2023;33:577–596.

12 Self-management apps. Health Hub Wales, 2022. Nov22-survey-report-Healthhub-apps.pdf

13 The Institute of Clinical Science and Technology. national transformation of respiratory outcomes through digital therapeutics, 2025. icst.org.uk/toolkits/national-transformation-of-respiratory-outcomes-through-digital-therapeutics/ (Accessed 2 December 2025).

14 Gabriel A, Finkelstein J. assessing the barriers and facilitators to pulmonary rehabilitation referrals using the consolidated framework for implementation research (CFIR). *PubMed* 2024:172–181.

15 RCP Pulmonary Rehabilitation Services Accreditation Scheme (PRSAS). www.prsas.org (Accessed 11 April 2024).

16 Fekete M, Fazekas-Pongor V, Balazs P *et al*. Role of new digital technologies and telemedicine in pulmonary rehabilitation. *Wien Klin Wochenschr* 2021;133:1201–1207.

17 Watson J, Jordan R, Gardiner L, Adab, P, Jolly K. A systematic review of the effectiveness of interventions to promote referral, adherence, and uptake of pulmonary rehabilitation for patients with chronic obstructive pulmonary disease. *Int J Chron Obstruct Pulmon Dis* 2023;18:1637–1654.

18 Man W, Chaplin E, Daynes E *et al*. 2023. British Thoracic Society clinical statement on pulmonary rehabilitation. *Thorax* 2023;78:s2–s15.

19 Asthma + Lung UK. Vaping and e-cigarettes, 2025. www.asthmaandlung.org.uk/living-with/stop-smoking/vaping (Accessed 26 November 2025).

National Respiratory Audit Programme (NRAP)

Royal College of Physicians

11 St Andrews Place
Regent's Park
London NW1 4LE

The Spine
2 Paddington Village
Liverpool L7 3EA

Tel: +44 (0)20 3075 1526
Email: nrapinbox@rcp.ac.uk
www.rcp.ac.uk/nrap

Royal College of Physicians

National Respiratory Audit Programme (NRAP)