

Addressing a system failure to diagnose COPD and Asthma

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In order to provide high quality guideline based care for asthma or COPD we must first establish the correct diagnosis. The National Asthma and COPD Audit Programme (NACAP) has highlighted a significant issue across England, Scotland and Wales that potentially undermines care for many people with airways disease.

The clinical diagnosis of COPD requires confirmation with quality assured spirometry performed following administration of a bronchodilator. It should demonstrate airflow obstruction defined as a ratio of the forced expiratory volume in 1 second (FEV1) over the forced vital capacity (FVC) of < 0.7.^{1,2} [NICE QS & Guide 2016] The national audit demonstrates that for the >275,000 episodes of acute COPD admissions entered, less than half have a record of spirometry, from current or past hospital records, available to the team treating the exacerbation of COPD. In 14% of cases, where a spirometry result is available, that result is inconsistent with the diagnosis, but the patient is still treated for and discharged with a COPD label.³ [COPD clinical report 2020] At 90 days post discharge 12% of audited patients have died, half from a non-COPD cause, and 47% readmitted, 53% with a non-COPD diagnosis and many still without a record of spirometry.⁴ [COPD outcomes report 2020]. Pulmonary rehabilitation for COPD patients, is an evidence based intervention heavily promoted in the NHS Long Term Plan. Only 50% of the 12,000 cases of enrolled 'COPD' patients in the most recent reporting have a record of spirometry to confirm the diagnosis at referral.⁵ [PR clinical report 2020]

For asthma acute admissions the issue is even more complex. For children under the age of 5 there is no guideline specification for a diagnostic test of asthma. Within NACAP 15,000 cases were entered into the audit more than double those recorded in the corresponding hospital episode statistics where coding had defined such cases as wheeze or viral bronchitis. For older children and young people (CYP) the situation is not much better with less than 1 in 5 having any peak expiratory flow (PEF) measurement made during the course of their admission.⁶ [CYP clinical report 2021] In adult asthma there is also disagreement regarding diagnostic criteria which should be confirmed by empiric testing according to NICE guidance but which is fundamentally a clinical diagnosis within BTS/SIGN guidelines. Both recommend PEF testing to assess severity of an attack at hospital admission and to guide management. In the sample of 37,000 cases from 173 hospitals

entered in NACAP only 28% had a PEF recorded as part of an initial assessment (in the first hour) and 15% had no PEF recorded at any time during their admission.⁷ [AA report clinical]

It may be argued that the lack of secondary care diagnostic data for these patients is because primary care now holds the diagnosis for airflow obstruction. The 2020 Welsh primary care audit of 226 practices including nearly 50,000 'diagnosed' asthma and COPD patients challenges this assumption. Of COPD patients diagnosed within the last 2 years, only 44% had a code recorded for a spirometry test and only 11.5% the gold standard post bronchodilator test with an obstructed ratio. [Primary Care 2020] The 2018 Welsh primary care audit showed that around 25% of spirometric ratios coded as 'confirming a diagnosis of COPD' had a ratio incompatible with that diagnosis. [Fisk 2018] For those on asthma registers the picture is a little better with 76% newly diagnosed adult patients having a confirmatory test of some kind recorded, PEF, Spirometry, or exhaled Nitric Oxide, whilst amongst those aged 6-18 years this falls to 67%. [Primary care 2020] The clinical accuracy of a diagnosis of COPD compared to one confirmed by spirometry is known to lie between 60 and 75%. [Jones 2008 Stoloff 2011 Casas 2016 Wu 2017] We would not accept that under half of acute admissions with myocardial infarction were treated on clinical suspicion without diagnostic testing, or that a fifth of patients with diabetes be managed without reference to an HBA1C level . We would be dismayed if half of cardiac and diabetic patients were managed in primary care as long term conditions without any confirmatory laboratory diagnostic testing, yet we do for respiratory patients.

The reasons for poor diagnosis of airways obstruction are multiple and complex ranging from lack of access to testing to diagnostic confusion amongst clinicians and poor implementation of guideline evidence. Rather than rehearse these in detail we suggest four practical improvement recommendations to colleagues:

1. Lead clinicians in each Trust should have responsibility for ensuring diagnostic accuracy is maintained. Working in collaboration with clinical coders, diagnosis is correctly entered into the discharge summary shared with community and primary care teams and with the patient and their carers. Collecting data via NACAP provides an obvious source to measure adherence.
2. Diagnostic data should be made available across health care interfaces through electronic records and should also be actively sought and recorded in clinical notes across primary secondary and community records. If necessary phoning up a GP surgery or physiology laboratory for a result.
3. Primary care clinicians should use diagnostic templates and search tools for their electronic records to ensure that diagnoses have been confirmed by appropriate objective tests, and where these are not compatible with the presumptive diagnosis, an alternative one be sought.
4. For cases of wheeze, cough and breathlessness, particularly, but not only in CYP, a presumptive diagnosis of asthma should be made, but with an understanding that over time that may be withdrawn or confirmed by a combination of clinical course and objective testing.

This is a call to action across the secondary, community, and primary care clinical pathway where integrated care requires us all to take responsibility to establish the correct diagnosis at the earliest opportunity.

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