

Achieving earlier diagnosis of COPD

This desktop helper reviews the evidence for the benefits of earlier detection and diagnosis of COPD and provides healthcare practitioners (HCPs) with tools they can use to achieve this for the patients in their care.

WHY DOES EARLIER DIAGNOSIS MATTER?

COPD is a common global condition with considerable morbidity and mortality.¹ Underdiagnosis of COPD is a persistent problem worldwide and continues to be a major reason for the undertreatment of the condition despite the availability of effective non-pharmacotherapeutic and pharmacotherapeutic interventions.² The global prevalence of COPD is estimated to be 10.3%.² The rates of underdiagnosis in low and middle-income countries may be particularly high, with some estimates suggesting underdiagnosis rates in excess of 90%.³

Undiagnosed, symptomatic COPD is associated with an increased risk for exacerbations, pneumonia, a marked detrimental impact on quality of life (QoL), and even premature death.^{1,4-6} COPD

diagnosis usually occurs only after significant lung function has already been lost. By the time people seek help for their symptoms, their FEV₁ has often fallen to ~50% of predicted, a level at which health status is substantially reduced. In addition, other consequences of COPD such as breathlessness, depression and anxiety, often cause people to be less active and less able to cope with the disease.¹ The reasons for delayed diagnosis of COPD are numerous and complex including personal-, HCP- and system-level factors that prevent the reporting, recognition or identification of symptoms suggestive of COPD, or the availability of spirometry, essential to diagnose COPD (see the IPCRG Quick guide to spirometry at: <https://www.ipcr.org/DTH14>).² It has been considered by some practitioners and public as a self-inflicted disease if the person has smoked tobacco and this has led to stigma, self-blame and

care-seeking delays. This under appreciates the fact that tobacco use is a chronic dependency that often begins in childhood which is itself often underdiagnosed and undertreated. In addition, new scientific evidence has shown that there are many genetic and environmental factors associated with reduced lung function, that vary, accumulate, and interact over time, even before birth.^{2,7}

CAN EARLIER INTERVENTION HELP?

Earlier intervention for symptomatic COPD can result in better quality of life (QoL).¹ A wide body of research indicates that earlier diagnosis accompanied by earlier intervention delays lung function decline, reduces symptom burden and improves QoL.² To reduce the risk of exacerbations caused by respiratory infections ensure

Figure 1: Barriers to earlier diagnosis in COPD and strategies to overcome them.

Barriers

Actionable Strategies



Patient behaviours & beliefs

- Failure to recognise COPD given its slow, relentless progression
- Tendency to blame breathlessness on getting older and less active, assuming cough is normal (ie, 'smokers cough')
- Tendency to not complain about the condition (ie, 'the silence of people with COPD')
- Underemphasis on symptoms, which can cause HCPs to be less likely to consider COPD at an early stage and to be less aggressive with treatment
- Reluctance of smokers to report breathlessness for fear of being stigmatised for smoking

- Patient education
- Family/caregiver education and engagement
- Proactive case-finding of people with symptoms suggestive of COPD



Physician behaviours & beliefs

- Not considering repeated bronchial infections as an early sign of COPD
- Not considering COPD in nonsmokers
- Focusing only on comorbidities (patients with COPD often have multiple comorbidities that may be more pressing and clearer to diagnose)
- Not considering COPD in women due to gender bias (assuming asthma in females)
- Not investigating COPD earlier because smoking cessation is the main intervention for all smokers regardless of COPD status
- Tobacco dependence services and support often not offered/available

- HCP education
- Increased vigilance for symptoms suggestive of COPD (especially in older at-risk patients)



Spirometry-related issues

- Inconsistent performance of spirometry and lack of spirometry training in primary care
- Controversy over spirometry in primary care for early detection discouraging some HCPs
- Lack of funding/reimbursement for spirometry in primary care
- Lack of spirometry availability
- Delays in receiving spirometry reports when done outside of the office

- HCPs with special interest
- Microspirometers to rule out COPD
- Spirometry training
- Local level funding strategies



Logistic constraints

- Time pressures in primary care settings adversely affecting providers' capacity to manage patient proactively
- Respiratory epidemics (eg, COVID-19) creating significant obstacles to patient evaluation, and the delay or cessation of diagnostic services

- Development of clear local guidelines on how to proceed in busy practices or in respiratory epidemics

your patients receive vaccinations (i.e. influenza, COVID-19, pneumococcal and Tdap [pertussis]).² While not yet included in guidelines, evidence suggests that RSV for high risk patients like those with COPD will likely be of benefit. Treatment of tobacco dependence and supporting people to quit smoking is effective for slowing the rate of lung function decline,⁸ and the earlier a person quits smoking, the greater the impact.⁹ Factors that can promote successful quit attempts include providing the person with a firm diagnosis¹⁰ and a thorough review of the disease and the person's lung age.¹¹ For tools on treating tobacco dependence see the IPCRG Desktop Helper helping people quit tobacco (Available at: <https://www.ipcr.org/desktophelpers/desktop-helper-no-4-helping-patients-quit-tobacco-3rd-edition>) and <https://www.ipcr.org/themes/tobacco-dependence>. In populations where indoor and outdoor air pollution are also primary risk factors for COPD, it is important to be vigilant for symptoms suggestive of COPD regardless of the history of tobacco dependence or sex (disease presentation may be different in females than in male; see the IPCRG Desktop Helper on improving care for women with COPD at <https://www.ipcr.org/DTH8>).

Earlier pharmacological intervention is likewise very important for COPD management (see the IPCRG COPD Wheel at <https://www.ipcr.org/copdwheel> for guidance on personalising care for people with COPD). Treatment with long-acting bronchodilators is recommended for patients with predominant breathlessness.² Should these not be available short acting muscarinic antagonist (SAMA) or short acting beta agonists (SABA) could be the choice to start with.^{2,12} In those with relatively preserved lung function at rest, airflow limitation during exercise is associated with extensive small airway dysfunction,¹³ suggesting a possible benefit for this population as well.¹⁴ Over the past several years, recommendations have shifted towards the use of dual bronchodilation as initial therapy for symptomatic people.^{1,15} However, the extent to which this approach may be appropriate for milder, early disease requires further consideration. For patients with frequent exacerbations, consider the blood eosinophil levels – a history or 1 moderate exacerbation per year and blood eosinophils ≥ 100 to < 300 μL favours adding ICS to long-acting bronchodilators; a history of hospitalisations for exacerbations of COPD or ≥ 2 moderate exacerbations per year and blood eosinophils ≥ 300 cells/ μL strongly favours adding ICS to long-acting bronchodilators.² In both these options ICS are considered only as an add on to long acting bronchodilation therapy. If patients with COPD have concomitant asthma they should be treated like patients with asthma. Earlier diagnosis presents a significant opportunity to minimise the cumulative effects of exacerbations, which include (but

Table 1: Examples of tools for identifying people with symptoms suggestive of COPD in primary care settings who should be considered for spirometry

Tool	Comments	Web address
Canada Lung Health Test ²⁶	Simple and quick to administer; not validated. 5 questions	https://www.lungsask.ca/media/16
COPD Population Screener (COPD-PS) ²⁷	Internationally recognised and validated. Simple and quick to administer, 5 questions + age	https://www.copdfoundation.org/Screener.aspx
COPD Assessment in Primary Care To Identify Undiagnosed Respiratory Disease Risk (CAPTURE) ²⁸	Validated and includes measurement of PEF. Good discriminatory capacity in LMIC settings. ²⁸ Low sensitivity for detecting clinically significant COPD in a US primary care population. ²⁹	https://www.researchgate.net/figure/The-CaPTUre-COPD-assessment-in-primary-care-to-identify-undiagnosed-respiratory-disease_fig1_325741206
COPD in LMICs (COLA) ³⁰	Validated and good discriminatory capacity in LMIC settings; ²⁸ can be used alongside PEF ³¹	https://www.dovepress.com/a-novel-case-finding-instrument-for-chronic-obstructive-pulmonary-dise-peer-reviewed-fulltext-article-COPD

LMIC, low- and middle-income countries; PEF, peak expiratory flow.

are not limited to) loss of lung function, recurrent exacerbations, diminished QoL, CV complications and effects of systemic steroid use.

COPD management is multifaceted and requires close collaboration and communication between the person with COPD, their family/caregivers and their healthcare providers (HCPs). Along with providing earlier diagnosis, improving outcomes requires that people with COPD and their families/caregivers understand their condition and be able to take part in shared decisions about treatment goals. Discussing five basic questions about COPD will help this process: What is it called? Why do I have it? What will happen next? What can we do about it? How do my choices affect my future? (see the IPCRG COPD Wheel at <https://www.ipcr.org/copdwheel>). Encourage supported self-management by providing your patients and their families/caregivers with adequate education and the chance to discuss practical steps they can take to manage their condition, including managing their breathlessness and reducing sedentary behaviour.¹⁶ See the IPCRG Desktop Helper on integrating a supportive and palliative approach from diagnosis to end of life for people with COPD (Available at: <https://www.ipcr.org/DTH3>) and the IPCRG COPD Magazine (Available at: <https://www.ipcr.org/resources/search-resources/copd-magazine-breathe-well-move-more-live-better-pdf-edition> and <https://www.ipcr.org/DTH10>) for further guidance.

WHAT ARE THE BARRIERS TO MAKING THE DIAGNOSIS EARLIER?

The evidence to support the benefits of earlier diagnosis and intervention for people with COPD is well established.¹⁷

However, there are many barriers to achieving earlier diagnosis (Figure 1). By recognising these barriers, we can take the first steps towards overcoming them.

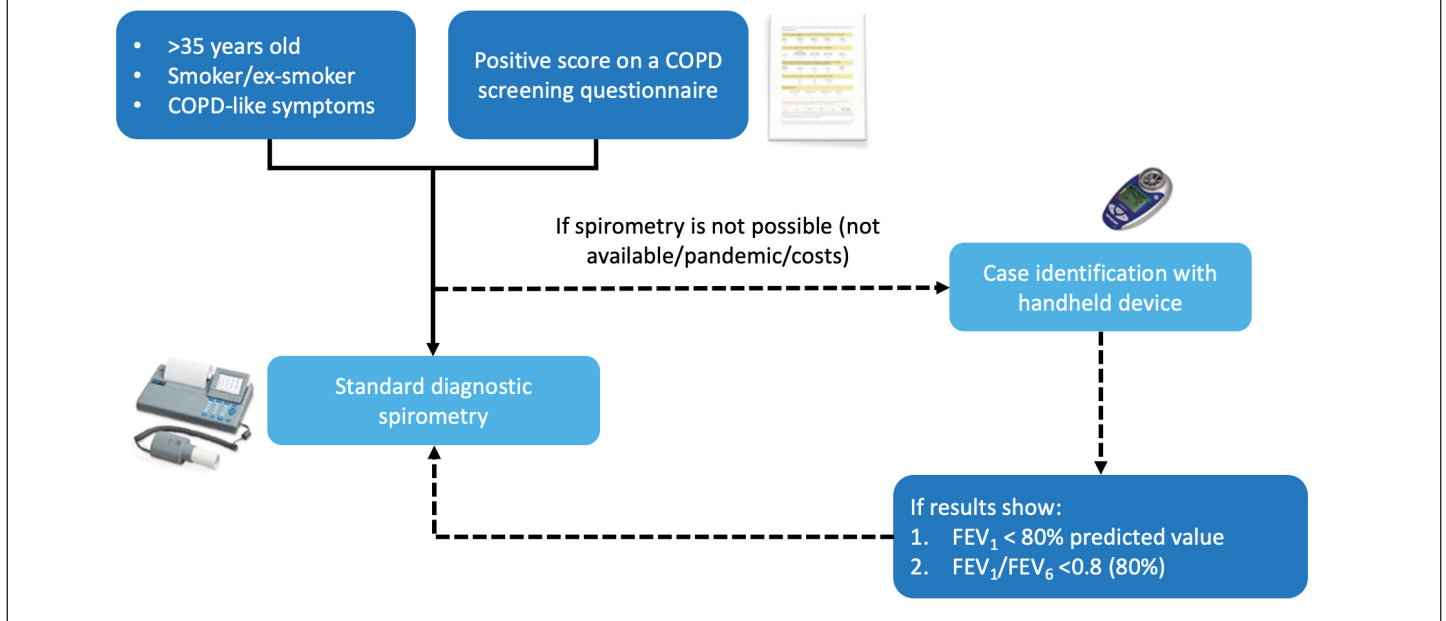
HOW DO WE ACHIEVE EARLIER DIAGNOSIS?

There are a number of strategies that can be used to encourage earlier diagnosis. The latest research says that emphasis should be given on the need that clinical histories in patients with suspected COPD should investigate early life events and that spirometry should be used much more widely as a global health marker. Promoting better understanding and awareness among HCPs and people in the community about an increasingly important disease is the cornerstone of effecting a global change in attitude.

Spirometry is mandatory for the diagnosis of COPD (See the IPCRG Quick guide to spirometry at: <https://www.ipcr.org/DTH14>).² However, identifying people for whom spirometry should be undertaken is challenging. People may not report COPD symptoms, may fail to perceive them as a problem and/or can feel embarrassed about reporting them given the stigma frequently associated with tobacco dependence.^{18,19} Be vigilant for COPD in people presenting with suggestive respiratory symptoms, especially those with a past or current smoking history as well as those with exposure to indoor (cooking/heating using solid fuels) and outdoor air pollution including occupational exposure.

Clinical tools centred on key questions for people with symptoms suggestive of COPD have been developed (Table 1). Recent studies suggest these tools are most appropriately used in combination with objective measures of airflow obstruction (PEF or spirometry).²⁰⁻²² A negative result

Figure 2: Algorithm for the identification and diagnosis of people with symptomatic COPD.



makes a diagnosis of COPD less likely. Used in combination with a thorough medical history review for evidence consistent with prior COPD exacerbations (which can sometimes be easily overlooked),²³ can help determine whether diagnostic spirometry is indicated. In a population setting, the distribution of questionnaires through the media (both traditional and social) can encourage people to check themselves for symptoms. If warranted, people can then visit their primary HCP for further evaluation.

The IPCRG recommends that all those ≥ 35 years old with a history of tobacco dependence be evaluated for their risk of developing COPD (Figure 2). The use of micro spirometers when diagnostic spirometry is not available has shown to be helpful to rule out COPD in people with high COPD suspicion by case-finding criteria,²⁴ but is not diagnostic by itself. A micro spirometer is a cheap (less than 100 euros) hand-held, portable device that uses the FEV_1/FEV_6 ratio to identify individuals with reduced lung function for further evaluation for COPD; a value < 0.8 warrants referral for diagnostic spirometry.²⁵ The test is quick to complete and does not require bronchodilation.

Be mindful of the potential for missing cases of COPD when evaluating younger people. Evidence of obstruction in these individuals can be due to significant childhood exposures (e.g. biomass fuels) or may signal the presence of $\alpha 1$ -antitrypsin deficiency (AATD).² Consideration of COPD can lead to a diagnosis for these individuals given the potentially significant benefits of earlier interventions, identification of at-risk family members, genetic counselling, and consideration for earlier pharmacotherapy. Flag people with symptoms suggestive of COPD and exposure-related risk for developing COPD but no evidence of airflow obstruction for future monitoring and follow-up.

SUMMARY

Earlier diagnosis of people with COPD allows for earlier initiation of effective interventions and disease management to minimise symptoms and improve QoL. HCPs should apply an active case-

finding approach for people with an exposure risk (tobacco smoke, indoor and outdoor air pollution) and symptoms of COPD and offer diagnostic spirometry (see the IPCRG Desktop Helper quick guide to spirometry; available at <https://www.ipcr.org/DTH14>) where available. Making the diagnosis earlier will enable earlier initiation of interventions to help prevent exacerbations, preserve lung function, improve QoL and decrease mortality.

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- Provide practical guidance and support for clinicians working in primary care on different aspects of the diagnosis and management of respiratory diseases.
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