

Addressing the Most Critical Challenges in COPD: An Expert Review of Emotional, Economic, and Evidence-Based Perspectives

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Abstract: Chronic obstructive pulmonary disease (COPD) is a progressive, non-communicable respiratory disease characterized by frequent symptoms, including dyspnea, cough, and sputum production. It affects approximately 10.6% of the global population. It is the third cause of death worldwide and it is projected to impact 592 million globally by 2050. Risk factors, including smoking, air pollution, genetics and infections, can influence disease progression and impact patients' daily lives, causing symptoms such as shortness of breath, fatigue and cough, along with other comorbidities, such as cardiovascular diseases or anxiety. Additionally, COPD imposes a significant economic burden on the health system and patients themselves. Despite being a preventable and treatable disease, the patient journey is marked by multiple challenges, including emotional, economic, and evidence-based barriers that delay diagnosis, hinder treatment and worsen the disease's impact, due to misconceptions, stigma, limited access to diagnostic resources, and inconsistent treatment practices. In this expert review, we propose a framework for discussion about COPD from an emotional, economic and evidence-based perspective, and recommend calls to action to address these challenges, with the aim of reducing the global economic, patient and social burden of COPD.

Plain Language Summary: Chronic Obstructive Pulmonary Disease (COPD) is a progressive, non-communicable respiratory disease associated with symptoms such as dyspnea, cough, and sputum production, which has a significant impact on patients' quality of life. Currently, it is the third leading cause of death globally and it affects approximately 10.6% of the global population. Despite its severity, COPD is not a priority for healthcare systems and is less prioritized compared to other chronic diseases.

For this review, we examined existing literature and data on COPD impact on patients and healthcare systems to identify challenges in diagnosis, treatment, and long-term monitoring and propose calls to action to make COPD a priority for policymakers. With this aim, we proposed a framework to describe challenges from an emotional, economic, and evidence-based perspective and propose calls to action addressing the most critical challenges of COPD along the patient journey, such as raising awareness, improving diagnostic practices, and ensuring access to effective treatments.

We encourage policymakers to increase public health education, enhance healthcare provider training, and strengthen advocacy efforts to achieve earlier diagnosis, better treatment adherence, and improved quality of life for people with COPD.

Keywords: COPD, patient, emotional perspective, economics, evidence-based, expert review

Introduction

Chronic obstructive pulmonary disease (COPD) is a progressive, non-communicable respiratory condition characterized by frequent symptoms, including dyspnea, cough, and sputum production, which significantly impact patients' quality of life.^{1,2} It affects around 10.6% of the global population — 480 million cases — and is expected to affect 592 million by 2050.³ As the third leading cause of death worldwide, it claims 3 million lives annually, and this number continues to

grow.^{4,5} The increase in prevalence and progression is strongly influenced by a combination of risk factors, including smoking, air pollution, genetics, occupational hazards and infections,⁶ and socio-economic, cultural and environmental determinants (eg age, gender, educational status, smoking status, and country income level).⁷

Approximately 80% of patients experience daily symptoms, such as shortness of breath, cough, sputum production, and fatigue.^{8,9} COPD is often accompanied by comorbidities such as cardiovascular disease, diabetes, and anxiety.^{10,11} All of these factors have a significant impact on patients' quality of life, daily activities, sleep, and emotional and social well-being.^{8,9}

Despite COPD placing a significant social and economic burden on impacted individuals and their communities,^{12,13} it is a largely preventable and treatable disease that remains mostly unknown and under-prioritized.^{14,15} Therefore, a greater recognition of the disease and how it impacts patients and healthcare systems is needed to address COPD's unmet needs.

This review comes at a pivotal moment in the global policy landscape. In 2025, the World Health Organization (WHO) adopted a resolution urging Member States to adopt an integrated approach to lung health—placing chronic obstructive pulmonary disease (COPD) on equal footing with other high-burden respiratory diseases such as asthma, tuberculosis, and lung cancer. The resolution emphasizes that COPD is not only a leading cause of death, but also one of the most stigmatized and under-prioritized conditions globally, especially in low- and middle-income countries. The WHO called for stronger action on key social determinants—such as indoor and outdoor air pollution, occupational exposures, and poor housing—and underscored that stigma and underdiagnosis are major barriers to care.¹⁶ This renewed global attention adds urgency and legitimacy to addressing COPD through a comprehensive, structured lens such as initiatives and frameworks that incorporate emotional, economic, and evidence-based considerations.

While several reviews have highlighted the emotional, economic, and clinical impact of COPD, these factors were only examined in a siloed manner. The impact on patient quality of life has been well documented in the literature, as seen in the review by Hurst et al,¹⁷ which described the humanistic burden of COPD as well as the evidence regarding disease's epidemiology, risk factors, disease progression, prognosis, and comorbidities associated with COPD. The systematic review by Hurst,¹⁸ et al analyzed the risk factors and predictors of moderate-to-severe exacerbations, and the literature review by Rycroft et al,¹⁹ which quantified the burden of COPD, including its incidence, prevalence, and mortality in several countries. Additionally, Pham et al²⁰ conducted a systematic review on the economic burden of the disease, highlighting COPD's financial impact on patients and society.

However, to the best of our knowledge, there is no review or article addressing the challenges of COPD from a holistic perspective that considers available emotional, economic, and evidence-based aspects. Therefore, we propose a framework for discussing COPD, which has been used in this review article to highlight the challenges and their impact on patient quality of life and society. Our aim is to propose calls to action to address challenges occurring at the four key steps of the patient journey—pre-diagnosis, diagnosis, treatment, and long-term monitoring.

The 3Es Framework

For this review, we have focused on the emotional, economic and evidence-based perspective of COPD, as recommended by other experts when discussing COPD.²¹ We have defined a framework that describes the challenges and their implications from these three perspectives to develop calls to action addressing the most critical aspects of COPD. This framework was co-developed with multiple patient organizations that include COPD as one of their agenda objectives, including COPD Foundation, European Federation of Allergy and Airways Diseases Patients' Associations, Expert Patient in Respiratory Care, Global Allergy & Airways Patient Platform, National Association of Patients RESPIRAMO INSIEME-APS, Spanish Association of COPD Patients and Caregivers, during in-person working sessions. The outcome of those sessions was the development of a digital solution called the "COPD Patient Care Map"²² which highlights COPD challenges, advocacy messaging and efforts to address those challenges, and provides a compelling basis for policymakers to implement meaningful changes for the COPD community.

The COPD Patient Care Map analyzes each phase of the patient's journey from the perspective of the three fundamental pillars, referred to as the "3E's":

Emotional: COPD's impact on the quality of life of both patients and caregivers. This includes the effects of the disease on social, psychological, and physical domains.

Economic: COPD's financial impact, considering both individual and societal economic costs. Societal costs include those of the healthcare system, such as hospitalizations, medications, and visits. Individual costs refer to those affecting the patient's financial situation, such as productivity loss in the workplace due to absenteeism, reduction in performance, or early retirement. This category will also include costs for the family and caregiver.

Evidence-based: Disease understanding through epidemiological data (eg, prevalence, age, and gender distribution), risk factors, age of onset, disease progression, prognosis, or comorbidities. This category will also include clinical evidence, national plans and guidelines, as well as inferred evidence from the other two categories.

Challenges, Implications, and Calls to Action in COPD Management

Pre-Diagnosis

Emotional: Many people living with COPD remain unaware of the significance of their symptoms, or that something could be done about them, failing to recognize early signs such as chronic cough, dyspnea, and sputum production.^{23–25} The intermittent and usually initially mild nature of these symptoms often leads patients to perceive them as a normal consequence of ageing or past smoking, leading to underestimating and minimizing COPD symptoms, delaying medical attention.^{23–27} Before receiving their diagnosis, patients generally feel negative emotions,⁹ and the fear of a positive COPD diagnosis coupled with lack of awareness of the importance of early intervention leads many patients to underreport symptoms; stigmatization may also hinder patient reporting due to the perception that it is a consequence of unhealthy behaviors, preventing people with COPD from seeking medical care.^{26,28}

Evidence-based: The use of case-finding methods focused on prevalent risk factors in a particular locality (eg, tobacco smoking or low air quality) could reduce the prevalence of underdiagnosed patients living with COPD. However, these strategies are not often used by healthcare professionals (HCPs), limiting the identification of at-risk populations.^{23,26} Some innovative techniques in genetics, omics, and network analysis have significantly improved the understanding of COPD heterogeneity, enabling the segmentation of patients with distinct pathobiological profiles. As larger datasets, additional technologies, and innovative analytical approaches continue to emerge, there will be even more effective means by which to identify high-risk individuals.²⁹

Economic: Nonetheless, delayed diagnosis remains a critical barrier, limiting access to early treatment and allowing the disease to progress to more severe stages. Patients with undiagnosed or poorly managed COPD experience an increased risk of morbidity, reduced quality of life, and higher healthcare costs.^{27,30} For example, a large real-world study in Sweden (ARCTIC) demonstrated that patients with late COPD diagnosis incurred €3000 more in direct costs over two years compared to those diagnosed early, largely due to higher rates of hospitalizations, primary care visits, and respiratory drug use.²⁷

Calls to Action

To address the challenges associated with COPD detection and its potential implications, summarized in [Figure 1](#), we recommend a comprehensive approach. First, we must raise awareness of COPD symptoms by developing public health education programs to help patients recognize symptoms earlier and encourage them to seek medical advice sooner. Second, healthcare systems must optimize and boost the use of available case-finding methods, adapting them to the specific context of healthcare facilities in addition to the development of innovative tools, such as precision medicine, to provide HCPs in primary and secondary care with more reliable tools for identifying individuals at high risk of COPD. Third, patient and caregiver campaigns should be launched to raise awareness about COPD and its multiple risk factors, with a particular focus on tobacco cessation, avoiding smoking initiation, and raising awareness of occupational and other environmental exposures, such as the campaign launched by the Global Initiative for Chronic Obstructive Lung Disease (GOLD) “It’s never too late, and never too early for COPD diagnosis and treatment”.³¹ Finally, COPD must be recognized as a public health priority by national healthcare plans, to raise awareness among policymakers and healthcare decision-makers, through global initiatives such the “Speak Up for COPD” campaign, which empowers patients to voice

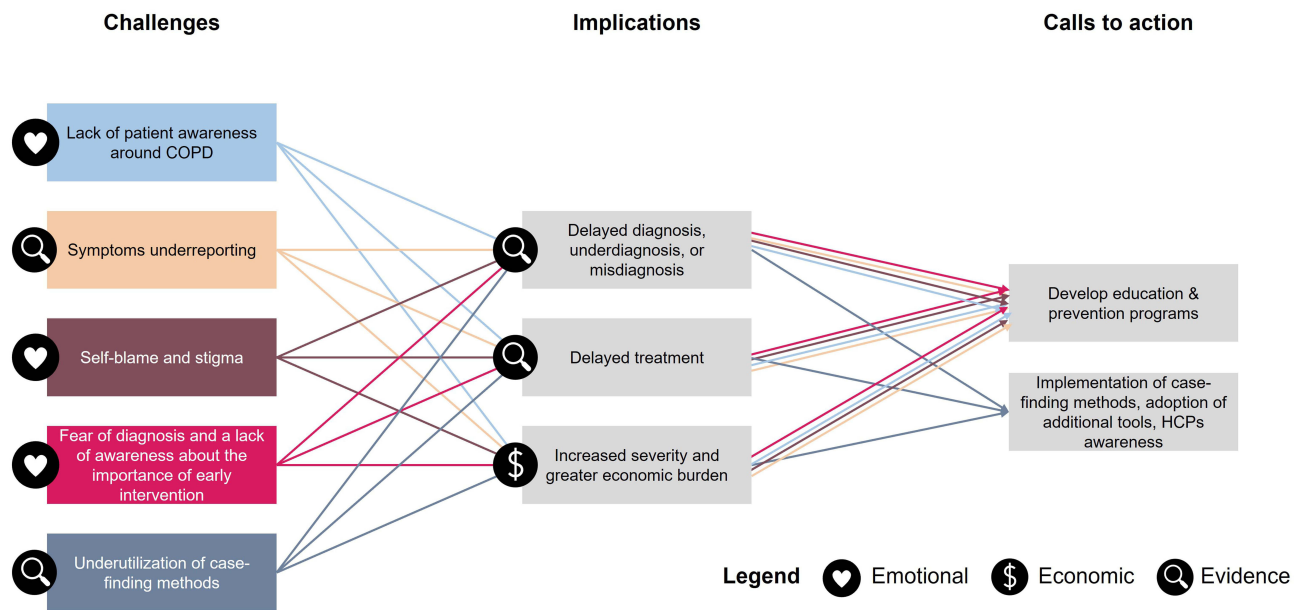


Figure 1 Summary and connection among COPD challenges, implications, and call to actions for the pre-diagnosis stage, as well as their categorization under the 3E's framework.

their experiences and encourage policymakers to take meaningful action,³² or “Raising the bar for better standards of care for COPD”,³³ which promotes improved, patient-centered approaches to COPD care.

Diagnosis

Emotional: Underdiagnosis may also be influenced by the fact that HCPs often focus on current symptoms rather than on the disease’s progression over time, due to the limited recognition of COPD’s impact in their patients, and the lack of use of spirometry in primary care. This might be caused by limited access, insufficient training, and skepticism about the value of spirometry, in addition to physician shortages, inadequate consultation time per patient, restricted access to specialists, and inconsistent guideline dissemination and implementation across primary and specialist care.²⁵

Evidence-based: As mentioned in the previous section, early diagnosis is crucial for curtailing disease progression. However, although best-practice recommendations for the evidence-based diagnosis of COPD have been developed and disseminated, they have not been consistently adopted worldwide. Over the past decade, there has been little measurable progress in implementing these practices at scale.^{34,35} Therefore, COPD is still underrecognized by both patients and HCPs, especially in primary care. Limited understanding of the full impact of early treatment initiation on patient outcomes and disease progression also may be contributing to COPD being a lower priority for diagnosis compared to other chronic conditions, such as cardiovascular diseases or diabetes.^{25,36} With that said, COPD is not only underdiagnosed but also misdiagnosed due to the overlapping of symptoms such as cough and breathlessness with other conditions such as asthma, viral infections, and common comorbidities such as heart disease or lung cancer, leading to confusion.²⁵ As a result, patients often receive delayed or inappropriate treatment, increasing the risk of exacerbations and comorbidities, raising healthcare costs, and worsening patient quality of life.²⁶

Economic: During the diagnosis phase of the COPD patient journey, the economic impact can be substantial due to frequent misdiagnoses and delayed identification of the disease. Misdiagnosis often leads to the use of costly and potentially inappropriate medications, which not only fail to address the actual cause of symptoms but may also expose patients to unnecessary side effects without therapeutic benefit. This misdirection in treatment represents a missed opportunity to correctly diagnose and manage the underlying condition. Additionally, there is a well-established link between disease progression and rising healthcare costs, meaning that delays in accurate diagnosis contribute to increased financial burdens. Late diagnosis of COPD is particularly associated with a higher incidence of exacerbations, chest

infections, and comorbidities, all of which further escalate healthcare utilization and costs compared to cases where the disease is identified and managed earlier.^{26,27}

Calls to Action

To address the challenges associated with COPD detection and its potential implications, summarized in Figure 2, we recommend enhancing HCPs' awareness of COPD, particularly in primary care settings, as well as providing training and greater access to spirometry, which would enable them to perform and interpret diagnoses more effectively. At the healthcare system level, it is crucial to develop pathways that ensure individualized diagnostic testing to identify high-risk patients and facilitate referrals to specialists.

Treatment

Emotional: Many patients find it difficult to recognize exacerbations and understand when and how they need to seek medical care. Given the fluctuating nature of COPD symptoms, it is often challenging to distinguish between a typical bad day and a true worsening of their condition, leading to underreporting of exacerbations and delays in treatment.^{25,37–40} With exacerbations being a leading driver of both healthcare expenditures and lung function decline, inadequate management of exacerbations has significant implications for both patients and the healthcare system, raising preventable hospital admission and readmission rates and mortality, particularly in the absence of care transition protocols and follow-up reassessments to prevent future exacerbations.^{39–42} Furthermore, delayed or inappropriate treatment has been linked to shorter intervals between exacerbations and incomplete symptom recovery, highlighting the importance of early medical intervention.⁴³ These challenges often result in patients perceiving their treatment as ineffective, leading to a lack of trust in HCPs and the healthcare system, impacting adherence to COPD treatment and management regimens and complicating disease management and patient outcomes.^{9,25,28,41,44} Additionally, people with COPD frequently feel that their concerns are not being addressed, which can lead to feelings of isolation and frustration. They often suffer from anxiety and depression that, if left untreated, can significantly worsen health outcomes, further lower treatment adherence, increase the risk of mortality, lead to more frequent hospitalizations, and reduce overall quality of life.^{44,45}

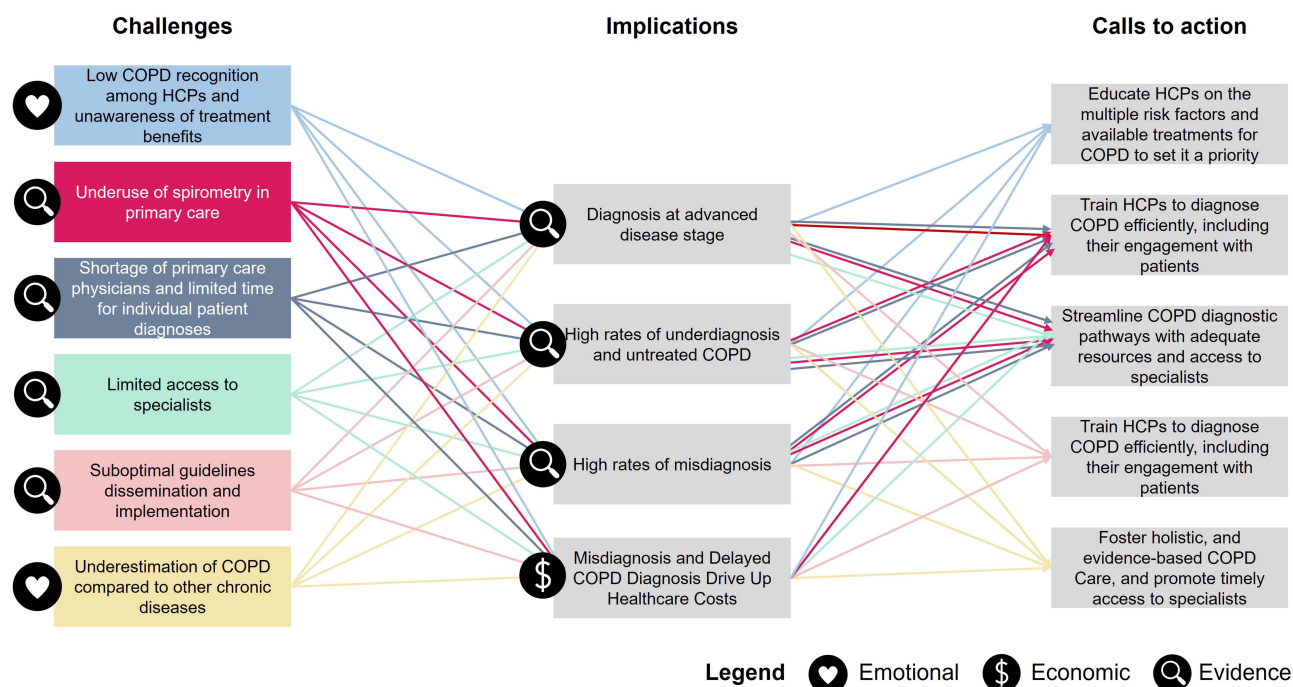


Figure 2 Summary and connection among COPD challenges, implications, and call to actions for the diagnosis stage, as well as their categorization under the 3E's framework.

Evidence-based: Several factors contribute to suboptimal outcomes in COPD, including lack of awareness of the disease and treatment options among patients and HCPs, inconsistent adherence to COPD guidelines by healthcare providers, limited access to treatment options, and difficulties in obtaining specialist care.³⁶ Underreporting of both daily symptoms and exacerbations can be attributed to the fact that patients living with COPD often do not receive enough education or access to resources to understand their disease and its progression, including causes, severity, treatment strategies, overall health impact, and comorbidities. Although extensive educational materials are available in multiple languages, including COPD action and management plans, device demonstration videos, and comprehensive treatment information, these resources are not optimally used.²⁵ Additionally, although the GOLD strategy is widely recognized, and countries such as the United States, Germany, and China have developed additional country-specific guidelines,^{46–49} the dissemination and implementation of these remain suboptimal. This is especially true in primary care, where approximately 80% of COPD management takes place.^{26,36,41} Several barriers hinder ideal use of pharmacological treatments, including the lack of awareness of the full array of inhaler and nebulizer treatment options and inadequate patient support, training, and regular assessment of proper device technique, particularly among elderly patients.²⁵ Non-pharmacological supports, such as smoking cessation programs, pulmonary rehabilitation, exercise therapy, dietary counselling, and mental health support, are frequently underutilized or neglected. Access to these services is often limited by healthcare system constraints, such as lack of knowledge by HCPs, geographical barriers, and financial limitations.^{9,25}

Economic: From an economic perspective, COPD represents a substantial economic burden to healthcare systems. Direct costs, including medical visits, treatments, and hospitalizations due to exacerbations surpass those of many other chronic diseases, with hospitalizations resulting from exacerbations accounting for the largest costs.³⁹ The frequency of exacerbations directly influences healthcare expenses, as they not only increase the risk of future exacerbations, but also lead to a steady increase in healthcare expenses.⁵⁰ Data from the United States show that, compared to patients with infrequent or no exacerbations, patients with frequent exacerbations incur 22% and 55% higher direct costs, respectively.⁵⁰ In Europe, the direct annual costs of COPD range from €1963 to €10,701 per patient, and exacerbations are the main cost driver. Hospitalization costs also vary significantly, ranging from €1316 for mild COPD to €8472 for severe cases.¹²

Calls to Action

As summarized in [Figure 3](#), it is essential to emphasize that COPD is a manageable condition made so through both pharmacological and non-pharmacological treatments. HCPs, especially those in primary care, should provide to patients and caregivers clear information about the disease, treatment options, and self-management strategies, including personalized action plans. This information should be revisited periodically to determine recall of the patient and family, the need to again relay certain concepts or demonstrations, and application of these strategies and tools in everyday self-management.

Both the consistent implementation of evidence-based treatment guidelines and the management of comorbidities such as anxiety and depression, are essential for effective COPD management. HCPs must also recognize the benefits of including non-pharmacological therapies and patients must actively seek out available resources or advocate for their inclusion if they are not offered.

Early recognition of exacerbations and adequate treatment are important to prevent worsening symptoms. Clear discharge protocols and specialized post-acute care, which should include regular follow-up and reassessment of COPD management and comorbidities, have been shown to improve patient outcomes.⁵¹

Long-Term Monitoring

Emotional: Living with COPD can lead to a persistent sense of isolation and lack of control among patients and caregivers, particularly when long-term disease progression is not proactively managed. The absence of structured follow-up exacerbates this burden, especially when support networks or mental health services are unavailable.^{36,39,52,53} Caregivers also experience emotional strain due to the unpredictability of the disease and the lack of guidance, which can contribute to burnout.^{54,55}

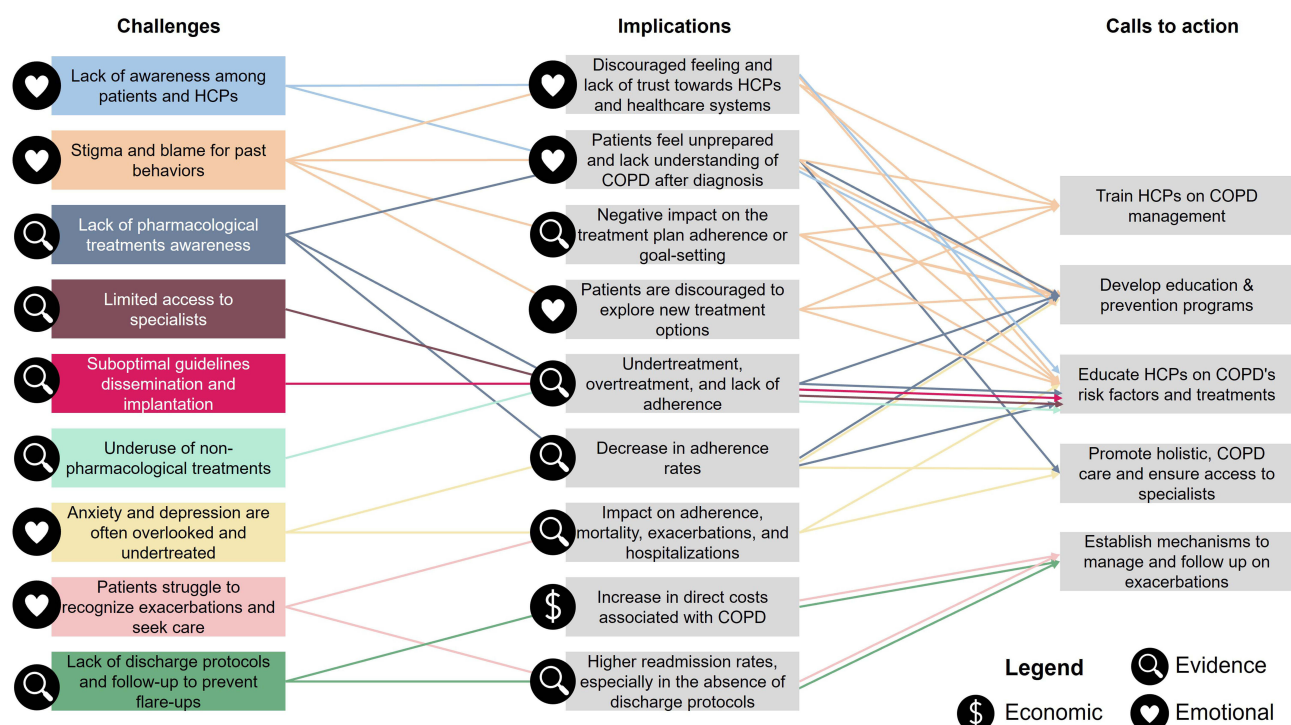


Figure 3 Summary and connection among COPD challenges, implications, and call to actions for the treatment stage, as well as their categorization under the 3E's framework.

Evidence-based: While early diagnosis and treatment initiation are essential, long-term monitoring is equally critical to ensure effective disease management. However, many healthcare systems lack structured pathways to track disease evolution, comorbidity progression, and exacerbation frequency.^{36,39} Digital health tools hold promise for supporting long-term management and post-exacerbation recovery, but their adoption remains limited—especially in settings where they could deliver the most value.^{36,41} Moreover, the lack of routine mental health assessments limits the system's ability to address patient well-being holistically.^{45,56} Most recently, the GOLD 2025 report has emphasized the importance of integrating comorbidity management, including mental health, into COPD care planning.⁵⁷

Economic: Inadequate long-term monitoring leads to greater economic burden through avoidable hospitalizations, exacerbation-related complications, and reduced productivity among patients and caregivers.^{12,13} When structured reviews and early interventions are lacking, indirect costs—such as absenteeism, early retirement, and caregiver economic strain—rise significantly. These indirect costs are estimated to account for 60–80% of the total societal burden of COPD.^{13,58–60}

Calls to Action

As summarized in Figure 4, to improve long-term COPD management, global recommendations suggest it is essential that all patients receive at least one annual COPD review, in addition to other scheduled medical visits. For those with severe COPD, the review should be performed at 2-week to 1-month intervals.⁵⁵ These assessments must be conducted by a multidisciplinary team, potentially including primary care and specialists focused on related comorbidities, including mental health conditions. Additionally, HCPs should educate patients on the benefits of preventing, recognizing, and promptly reporting worsening symptoms, provide tools to support this practice, and regularly engage in shared decision-making regarding goals and next steps.

Mental health assessment and palliative care programs should be considered from early stages, addressing the patient's psychological well-being to improve overall quality of life, as well as that of informal caregivers, as it has a direct impact on patients' outcomes.

Finally, access to specialists must be guaranteed throughout the whole process to facilitate early referral and disease management.

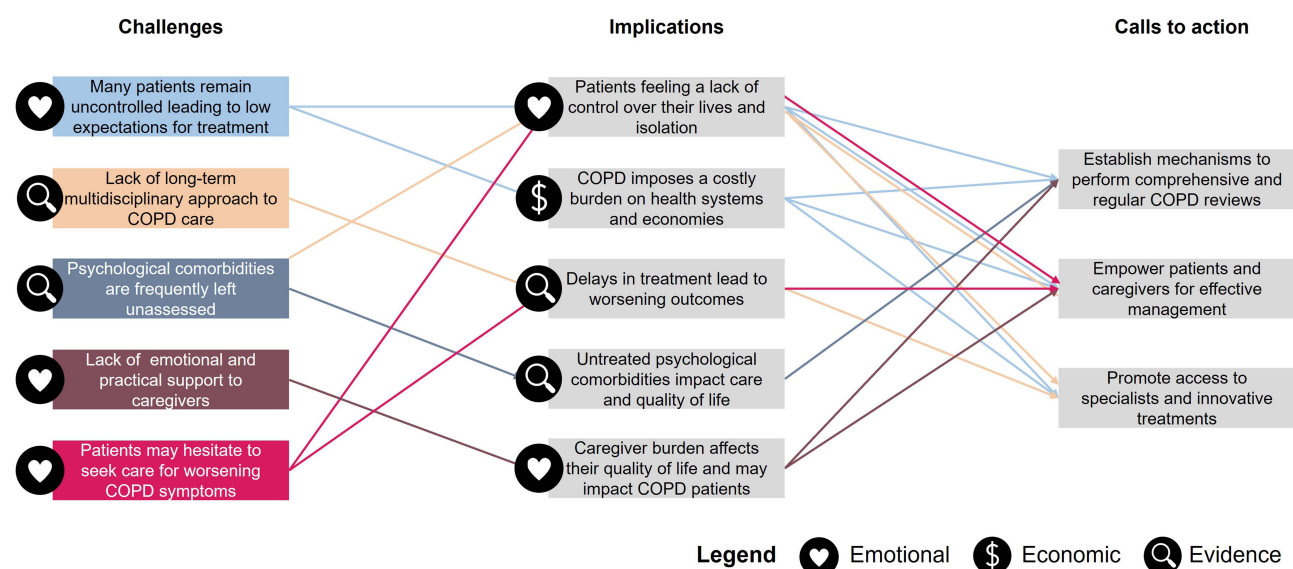


Figure 4 Summary and connection among COPD challenges, implications, and call to actions for the long-term monitoring stage, as well as their categorization under the 3Es framework.

Conclusion

In this expert review, some calls to action have been highlighted to address challenges identified along the patient journey, such as raising awareness, improving diagnostic practices, and facilitating access to innovative and personalized treatments for people living with COPD. Despite the clear global social and economic burden of this disease, it is not considered a public health priority and receives insufficient attention and funding from policymakers. The increasing prevalence of COPD, along with aging populations and risk factors such as air pollution and occupational hazards, illustrate some of many unmet needs. Addressing these could alleviate the human and economic burden of the disease.

Emotional perspective: COPD is an escalating global health problem, placing significant emotional burden on both patients and society. The patient journey, from pre-diagnosis to long-term management, is marked by a variety of challenges that delay diagnosis, hinder treatment, and worsen the disease's progression, including lack of COPD understanding, misconceptions, stigma, limited access to diagnostic resources, inconsistent treatment practices, and comorbidities that complicate the diagnostic and treatment picture. In addition, COPD is associated with comorbidities, such as cardiovascular diseases and anxiety, which have a significant impact on mental health. As a result, patients often feel frustrated, isolated, and they lose trust in the healthcare system.

Evidence-based perspective: COPD is a non-communicable disease in which progression can be slowed, but not always stopped. It affects approximately 10.6% of the global population and is the third leading cause of death worldwide. Despite being preventable and treatable, with well-established risk factors, COPD remains under-recognized and under-prioritized globally. The evidence highlights several key areas for improve patient care, such as raising awareness, enhancing diagnostic procedures, ensuring healthcare provider and patient adherence to global recommendations and facilitating access to specialists and innovative treatments.

Economic perspective: The economic burden of COPD is substantial, associated with high direct healthcare costs due to hospitalizations and the frequency of exacerbations. Indirect costs, such as loss of productivity, are even higher. Despite these significant economic costs, COPD remains underfunded and is not prioritized by public health.

Further work is necessary to address COPD comprehensively, considering COPD as a whole and viewing it as a global public health issue that affects not only individual patients but also society and healthcare systems. With this review we encourage the scientific community, and patient advocates to adopt the 3Es Framework to provide structure to their research and professional conversations with patients, caregivers, family members, health systems decisionmakers, policy makers, and other stakeholders who define the COPD landscape.

The increasing prevalence of COPD—fueled by aging populations, worsening air quality, and occupational exposures—underscores the need for immediate, systemic action. In line with the 2025 WHO resolution on integrated lung health, COPD is now formally recognized as a critical noncommunicable disease that must be addressed through cross-sectoral collaboration, universal health coverage reforms, and multisectoral policy development. This reinforces the importance of embedding emotional, economic, and evidence-based perspectives in COPD strategy design. Failure to act not only threatens public health outcomes but also risks widening existing health inequalities. By adopting the 3Es framework, we align clinical and advocacy efforts with global policy direction—bringing clarity, cohesion, and urgency to the fight against one of the world’s deadliest and most neglected chronic diseases.

Abbreviations

COPD, Chronic Obstructive Pulmonary Disease; HCPs, Healthcare Professionals; GOLD, Global Initiative for Chronic Obstructive Lung Disease.

Ethics Approval and Informed Consent

Ethical approval was not required for this study, as it does not involve human participants or sensitive data.

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Author Contributions

All authors contributed equally to the review, including the literature review, providing opinions and calls to action, taking part in the drafting and critical revision of the article; approving the final version to be published; agreeing on the journal to which the article has been submitted; and agreeing to be accountable for all aspects of the work.

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