



Costly comorbidities of COPD: the ignored side of the coin?

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Comorbidities more costly than COPD itself: multimorbidity requires change in healthcare practice and financing! <http://ow.ly/2fSU30cAGTI>

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Correct, the alliteration in this editorial's title is not a co-incidence! Ironically, COPD and comorbidity both start with two identical letters and previously in this journal it has even been suggested *twice* that COPD could also stand for "COMorbidity with Pulmonary Disease" [1, 2]. However, after having been the only notorious couple for a long time, from now on they will have to face some fierce competition from a new rising kid on the "co"-block: costs.

In the past decade, it has become increasingly clear that chronic obstructive pulmonary disease (COPD) and its comorbidities are almost inseparable, like Blackbeard and his crew of Caribbean pirates, or Hippolyta and her Amazons. Several underlying biological mechanisms and clinical explanations have been suggested to explain this co-existence of multiple diseases besides COPD, including the role of shared risk factors (*e.g.* tobacco, lifestyle, genetics), chronic systemic inflammation, hypoxia and oxidative stress [3, 4]. It is therefore no surprise that holistic treatment approaches have been widely advocated with a key role for general practitioners and geriatricians [3, 5]. Yet, COPD guidelines lagged somewhat behind, with the Global Initiative for Chronic Obstructive Lung Disease (GOLD) providing more explicit guidance on managing some individual comorbidities from 2011 onwards [6]. Even in the latest version [7], it is merely recommended to treat comorbidities as there is no COPD, with no guidance provided on how to organise multimorbidity care. Moreover, most COPD treatment evidence still comes from restricted and controlled COPD trials without significant comorbidity [7]. Real-life data consistently reveal that it is highly relevant to take comorbidities into account from a clinical perspective. Indeed, several previous studies showed their impact on mortality [8, 9], exacerbations [10] and hospitalisations [11]. Far less attention has however been paid to the health economic, system and policy implications of the comorbidities of COPD.

In this issue of the *European Respiratory Journal*, the study of CHEN *et al.* [12] highlights the substantial financial burden of comorbidity when taking COPD as index disease. In short, Canadian administrative data (1996–2012) from >250 000 people were used to compare healthcare utilisation and related costs for 16 disease categories in patients with and without COPD. It was found that the excess costs in patients with COPD amounted to €3668 per person-year of which only one quarter were attributable to COPD, 51% to comorbidities and 23% could not be allocated to a specific condition. Most costly comorbidities

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were circulatory diseases, other respiratory diseases, digestive disorders and psychiatric disorders. Are these new findings? Not really. Generally, these results are largely in line with previous work on this issue [13–15] and the comorbidities that are explicitly mentioned in GOLD [7]. This study is however the first that compares the impact of an extensive list of comorbidities to a non-COPD population and uses up to 15 years of follow-up. On the other hand, some noteworthy limitations of the study include the lack of data on COPD severity (e.g. lung function, patient-reported outcomes) and smoke exposure, and that diagnoses were based on claims only. These are all limitations common to administrative data [13], where it remains important to realise that claims data can be prone to under- and overreporting and misdiagnoses [16]. Although being an important part of the economic impact of COPD [17], indirect costs (such as work productivity, or relatives and caretakers care) were not taken into account. Lastly, when interpreting this Canadian study, we should be aware that the transferability of economic costs to other populations relate to differences in local risk factor distributions, healthcare practice, accessibility and other country-specific factors, such as health insurance coverage and reimbursement rules [18].

Despite these limitations, the study of CHEN *et al.* [12] could be of particular value for health economics and policy. A systematic review of recent cost-effectiveness analyses of new pharmacological COPD treatments already recognised the lack of inclusion of comorbidities in current economic evaluations and recommends inclusion in future analyses [19]. To support these future studies, CHEN *et al.* [12] provide very useful data. The inclusion of comorbidity costs seems thereby of particular relevance for interventions with expected extra-pulmonary effects such as those that focus on economic evaluations of pulmonary rehabilitation, smoking cessation, indoor and outdoor air pollution prevention or enhancing medication adherence [20, 21]. Consequently, trials that assess the effectiveness of these interventions need to include not only a broad heterogeneous population, but also a wider range of outcomes.

Looking beyond health economics, on a wider scope, the general messages from COPD comorbidity studies published over the past few years is clear: comorbidities are frequent, have substantial clinical and economic impact and require a holistic treatment approach. When extrapolating the term “comorbidity” to “all multimorbid patients (including those with COPD)” and taking into account the ageing world population, the issue becomes even more relevant. With multimorbidity defined as the presence of at least two long-term morbidities, about one quarter of the total population suffers from multimorbidity, with profound increases with age, but with absolute numbers higher in the under 65 age group [5]. Of note, multimorbidity is usually associated with increased hospitalisation risk, polypharmacy and non-adherence [22]. New National Institute For Health and Clinical Excellence guidelines and recent reviews provide some very useful guidance on the ideal contents of multimorbidity care “beyond the lungs” [23, 24], yet implementation in daily practice will be extremely challenging given the current organisation of care [25]. In my view, but also called for by others [26], some radical changes are first needed in the way that we look at study outcomes and value, practice and organise (respiratory) medicine, and finance our healthcare systems. Theoretically, the required shift from a single disease oriented approach towards a person centred generalist approach is a *sine qua non* condition. Hereby, we could think of investments in e-health, self-management and monitoring, larger multidisciplinary primary care teams of general practitioners, nurses, pharmacists and physiotherapists, longer primary care consultations, smaller practices, specialists working (or being consulted) in primary care or generalists working in secondary care. In practice, however, health systems are not fully equipped to deal with this shift and there remain numerous obstacles and questions that need to be answered: How do we make sure our staff is sufficiently skilled for managing multimorbidity? How do we identify “at risk” groups that are most likely to benefit? In systems mostly based on fee-for-service, codings and suitable reimbursement for chronic disease management are generally lacking. If bundled payments or population based fees do exist, this may stimulate integrated care, but who will coordinate this care? How do we evaluate economic benefits? All important issues that we are not going to solve as a respiratory community alone, but fundamental issues that should be a top priority for policy makers, healthcare funders and healthcare professionals alike.

Realising that multimorbidity is the norm and not the exception, there is an urgent need for integrated working, organising and financing at all levels of care. From a clinical perspective it has been emphasised over and over again to treat the patient and not the disease. Now, also from a health economic and system point of view, the time has come to flip the coin.

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