



Tailoring the approach to multimorbidity in adults with respiratory disease: the NICE guideline

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Multimorbidity is associated with a high treatment and care burden that may impact on the wellbeing of the patient <http://ow.ly/D0xM307Ttoe>

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Introduction

The National Institute for Health and Care Excellence (NICE) previously published guidelines for the management of individual diseases [1]. However, elderly patients commonly suffer from two or more chronic diseases [2].

This multimorbidity is associated with polypharmacy and adverse drug events, high treatment burden, reduced quality of life, increased hospitalisations and higher mortality [3, 4]. Treatment can become burdensome and complex for healthcare professionals and for patients with multimorbidity, as care can become uncoordinated and fragmented. Recently, NICE published its first guidance on informing patients, clinical decision-making and models of care for people with multimorbidity who would benefit from an individualised approach because of the high impact on their quality of life or functioning from their conditions or their treatments [5]. This guideline is of high interest for the respiratory society, particularly for healthcare providers treating people with chronic obstructive pulmonary disease (COPD). COPD has been recognised as a heterogeneous, multicomponent disease in which pulmonary abnormalities, as well as comorbidities and extrapulmonary manifestations, have a major impact on morbidity and mortality of individual patients [6]. The multifaceted management of COPD places a significant burden on healthcare systems, as it extends beyond the lungs and includes the challenges of a holistic and personalised approach [7]. Here, we distil the important messages from the NICE guidelines on multimorbidity, from the viewpoint of respiratory healthcare professionals and with a focus on COPD.

Defining multimorbidity

The NICE guideline starts with the definition of multimorbidity, which is most commonly defined as the co-occurrence of two or more long term conditions. While this is a convenient definition, certainly for research purposes, simple counts of conditions have important shortcomings in a clinical context (figure 1). For example, a COPD patient with modest hyperlipidaemia and mild renal failure will most probably be less affected by multimorbidity than a COPD patient with advanced heart failure and insulin-dependent

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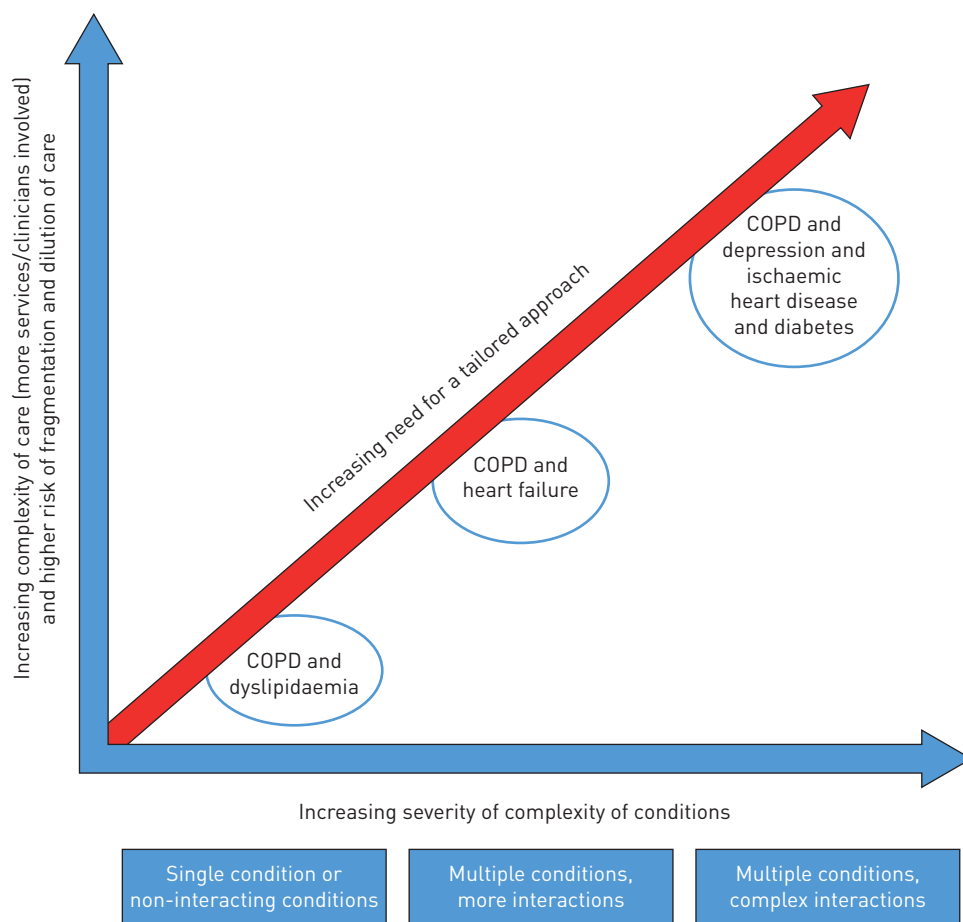


FIGURE 1 Complexity of care and complexity of condition. COPD: chronic obstructive pulmonary disease. Copyright © NGC. Reproduced with permission from the National Institute for Health and Care Excellence (NICE) guideline [5].

type 2 diabetes in terms of disease burden or healthcare organisation. NICE focuses on a pragmatic definition targeted towards “people with multiple conditions where these present significant problems to everyday functioning or where the management of their care has become burdensome to the patient and/or involves a number of services working in an uncoordinated way” [5]. From this perspective, the problems faced by patients may be due to the severity or nature of their chronic conditions, but may also relate to the fragmented organisation of healthcare or a combination thereof. In other words, multimorbidity *per se* is not the only problem. For example, whether or not the combination of COPD and heart failure is problematic, “will depend on multiple factors, including the heterogeneity and severity of both individual conditions, the intensity of healthcare contacts and the fragmentation of health care organisations.” The complex interactions between various chronic conditions obviously cannot be summarised in a simple count of conditions, even if they are weighted, as in the Charlson comorbidity index [8].

An important issue not mentioned by NICE, is that multimorbidity can only be appropriately defined and managed when all comorbidities are adequately diagnosed. It is well known that comorbidities are often undiagnosed and untreated in patients with COPD [9].

Tailored approach to multimorbidity: start with identification of people who benefit

NICE states that “the combination of complexity of conditions, complexity of treatment and complexity of care influence which individuals will benefit from a more tailored approach to care” [5]. Patients with multimorbidity are more likely to have multidrug therapies [10]. The drug treatment of patients with COPD is generally not limited to inhaler therapy. In fact, multimorbidity clusters were identified in COPD [6] and treatments for these multiple conditions may interfere with each other and may increase the risk of adverse events [11]. Adherence to guidelines for individual chronic diseases might lead to complex medication regimes in multimorbid patients with potential cumulative side-effects, interactions and poor compliance [11, 12]. Polypharmacy in people with multimorbidity is not only due to drugs meant to reduce

daily symptoms, but often also driven by multiple drugs intended to prevent future morbidity and mortality. The case for using such drugs weakens as life expectancy shortens. The NICE guideline notes that “clinicians should not blindly follow single condition guidelines recommendations for all patients because treatment decisions should always be made in the context of an individual’s circumstances.” This contrasts with the current COPD Global Initiative for Chronic Obstructive Lung Disease strategy document, recommending treatment of individual conditions without considering the co-occurrence of other conditions [13]. Accurate assessment of often not diagnosed relevant comorbidities is needed, but then again judgment of treatment strategies in the context of the individual patient needs to be done.

Importantly, we also need to consider that actual drug use in COPD is often inconsistent with COPD-specific guidelines and polypharmacy of respiratory medications is common and determined by disease severity and poorer health status, rather than evidence-based medicine [14]. Moreover, patients often do not take their inhaler medication correctly [15].

NICE rightfully emphasises that “the presence of some conditions *per se* increases the risk of problematic multimorbidity, for example a combination of dementia, depression and a chronic respiratory disease” [5]. Also personal characteristics, such as frailty, are associated with reduced resilience and tolerance of problems, such as exacerbations of COPD [16]. Similarly, social and psychological factors related to the individual patient may increase clinical complexity. Depending on the combination of conditions, care can also become increasingly fragmented. Within the NICE guideline the use-case of Parkinson is put forward, but also a patient with “only” COPD has a multi-component respiratory and systemic disease that requires multidisciplinary management and attendance of multiple appointments. NICE also recommends to “include people who express difficulty in managing their conditions and treatments, people who already require input from multiple services particularly if the addition of further services is being considered” (box 1 for a summary of the recommendation) [5].

Goals tailored approach: reduce treatment burden and optimise care: “less is more”

“An individualised management plan is central to a tailored approach in which the patient is a partner in decision making. The personal goals and priorities of the patient need to be evaluated regularly, as well as the patients attitudes and perceived benefits of prescribed treatments” (box 2 for a summary of the NICE recommendation) [5]. Not only the disease burden, but also the treatment burden needs to be evaluated. It is recommended “to discuss how the disease and the treatment/appointment scheme affect daily life activities, wellbeing, including mental health.” Healthcare professionals should “frame the clinical evidence in an accessible manner to an individual patient, considering the quality and applicability of the body of evidence.” Risks and benefits of therapies need to be personalised. An example for frail subjects with COPD is the benefit/risk ratio of the use of inhaled corticosteroids or regular use of oral corticosteroids [17, 18]. Unnecessary medications, medications without effect, or medications with high risk of adverse events should be stopped. Non-pharmacological alternatives need to be considered. Certainly in COPD, it is well-known that non-pharmacological interventions are central in the holistic, personalised management of disease [7]. NICE specifically recommends to “use a tailored approach and reduce polypharmacy in patients using 15 or more drugs, and to consider this approach in subjects with >10 drugs” [5]. Unplanned care needs to be reduced as much as possible, and alternative arrangements for follow-up need to be evaluated to reduce the number of appointments. Responsibility for care coordination needs to be assigned and communicated. We summarised the essential conditions for tailored care, based on the NICE guideline on multimorbidity in table 1 [5].

Interventions to improve care for people with multimorbidity

NICE recommends a “comprehensive assessment of older people with complex needs at the point of admission and preferably in a specialist unit for older people.” Translating this recommendation to patients with COPD, we believe that assessment at the initial evaluation of a comprehensive pulmonary rehabilitation programme fulfils the need to address the multimorbid complexity of COPD [6, 7, 19]. A structural and

BOX 1 National Institute for Health and Care Excellence (NICE) recommendation

Consider a tailored approach to care for people with multimorbidity of any age if any of the following apply

- They find it difficult to manage their treatments or day-to-day activities
- They receive care from multiple services and need care from new additional services
- They have both long-term physical and mental health conditions
- They have frailty
- They frequently seek unplanned or emergency care
- They are prescribed multiple regular medicines

BOX 2 National Institute for Health and Care Excellence (NICE) recommendation

Develop an individualised care plan**After a discussion of disease and treatment burden and the person's preferences, values and priorities, agree with the person what actions to take, which could include**

Stopping or changing medicines and non-pharmacological treatments

Prioritising healthcare appointments

Assigning responsibility for coordination of care and ensuring this is communicated to other healthcare professionals and services

Arranging a follow-up and review of decisions made; provide the person with copies of any management plan made

dedicated assessment is performed, evaluating functional exercise capacity, body composition, bone health, pulmonary function, cardiometabolic risk, mental health and evaluating patients' pharmacological treatments, in order to optimise pharmacological treatment and tailor non-pharmacological interventions. This approach reflects in our opinion the recommendations made by NICE.

Future directions

An important recommendation for further research in the NICE document is "to develop algorithms and prediction tools for patients and healthcare providers to predict reduced life expectancy in the context of multimorbidity." 34 tools were evaluated for community-dwelling and inpatient populations but it was concluded that there was a high level of uncertainty around the evidence on prediction accuracy for the different tools [5]. Not included in the evaluation of NICE is the COTE index for COPD, which was shown to improve mortality prediction in COPD by incorporating the presence of comorbidities [20]. Such a tool, probably combined with other tools like the BODE index [21], may help identify multimorbid COPD patients at risk.

Further research recommendations put forward are "the clinical and cost effectiveness of stopping preventive medicine in people who may not benefit from them, a holistic assessment in patients with high levels of multimorbidity, and alternative approaches in the organisation of care" [5]. The latter includes for example possibilities of self-management and/or telemonitoring. Self-management seems unrealistic for many multimorbid subjects, particularly those who are frail and/or have cognitive problems. Telemonitoring interventions generally show little clinical benefit and NICE concluded that "there is not sufficient clinical evidence to recommend this for people with multimorbidity." There is clearly need for research to develop and evaluate self-management interventions, and telemonitoring for multimorbid COPD patients, such as the EU-sponsored WELCOME project [22].

In our opinion, another important topic of research is to increase our understanding of the biology of clinical phenotypes of COPD characterised by specific constellations of comorbidities. This could lead to the identification of specific endotypes and endotype-directed interventions that potentially beneficially affect a disease network [7].

Conclusions

In conclusion, COPD is entangled in a network of other chronic conditions which may additionally impact on the patient and the healthcare system. Not only the single conditions, but also the treatment burden and the burden of healthcare appointments, unscheduled visits, hospitalisations, *etc.* may impact on the wellbeing and quality of life of the patient. Patients with COPD often fulfil criteria of frailty [23] and particularly need a tailored approach with an individualised care plan. Pharmacological and

TABLE 1 Essential conditions for tailored care, based on National Institute for Health and Care Excellence (NICE) guideline

Patient	Healthcare professional	General
Patient/family/carers involvement	Communication skills	Holistic assessment
Individual priorities and treatment goals	Discussion regarding the evidence	Assessment of treatment burden
	Support of decision making	Risk stratification tools
	Medication review and optimisation	Multimorbidity guidelines
	Assessment of treatment adherence	Research on multimorbidity
	Interaction between conditions and their management	Alternative care organisation
	Communication and co-ordination between care providers and services	

non-pharmacological treatments need to be carefully considered, balanced and discussed with the patient and his/her loved ones. Involvement of the patient as a partner in decision making, evaluating his goals and needs, as well as making priorities for follow-up in a coordinated way, need to be part of this management plan. Further research is warranted on clinical and cost effectiveness of such tailored approach, but this NICE guideline is an important step in the right direction.

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