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Editorial

Defining a care pathway for patients with multimorbidity or frailty

Multimorbidity and frailty are highly prevalent and emerging conditions [1–5]. Contrary to patients' and primary care providers' perceptions [6], multimorbidity does not necessarily imply the onset of frailty. However, both these conditions are determined by a wide and dynamic spectrum of potential causes [5,7,8] and they share several common aspects. For example, chronic diseases represent a key component of the frailty vicious cycle [9], and both conditions are associated with increased risk of negative outcomes for the individual as well as higher healthcare costs for public health [4,5]. Patients presenting with these complex conditions often have special and unmet clinical needs, requiring an adaptation of traditional care organization and services.

In a recent issue of the European Journal of Internal Medicine, two articles highlight the enhanced consumption of healthcare resources by persons with multimorbidity and/or frailty, and the importance of the frailty status in the risk prediction of acutely ill patients. Hopman et al. analyzed a large, Dutch primary care database (including more than 50,000 persons) to measure the healthcare costs of multimorbidity [10]. Persons affected by multiple diseases had a slightly higher consumption of healthcare resources and used more medications compared with those with one single chronic disease. For example, on average, multimorbid patients visited primary care facilities eight times a year, whereas those with one chronic disease attended these services five times a year. However, healthcare utilization considerably differed across groups of multimorbid patients. Over half of multimorbid patients actually had a relatively low consumption of healthcare resources. Less than 10% had a heavy use, especially women and persons with more advanced age or lower income, and those living alone or in small households. Specific diseases such as chronic obstructive pulmonary disease, diabetes, and chronic heart failure were also related to higher healthcare utilization among multimorbid patients.

The second paper focused on frailty in persons with acute illnesses. Romero-Ortuno et al. examined the association between frailty and 30-day mortality in persons with non-elective acute illnesses in the UK National Health Service [11]. The severity of the acute illness was directly associated with mortality risk in persons with severe frailty at hospital admission. Indeed, the assessment of frailty status in addition to the severity of the acute illness improved the prediction of mortality in this group of patients. Thus, the paper highlights the importance of assessing the severity of the acute illness (as already routinely done in clinical practice) in combination with frailty for a better risk stratification.

Due to the relevant burden in terms of negative outcomes and high expenditure of multimorbidity and/or frailty, the definition of new care pathways for these increasingly prevalent conditions is needed. Although novel approaches have been proposed for single chronic diseases [12,13], adapted pathways for multimorbid and frail persons are specifically necessary because these individuals still present special and heterogeneous needs requiring personalized interventions.

The table outlines the key points for developing possible care pathways for persons with multimorbidity or frailty. It is organized around three steps: 1) screening for multimorbidity and frailty; 2) validation of the screening results and stratification of risks, and; 3) implementation of a consequent intervention plan (Fig. 1).

At first contact with medical services, patients should be screened for multimorbidity and frailty. The use of validated tools that are not time-consuming is crucial in this process. Numerous scales for screening frailty and multimorbidity, validated in different languages and settings, can be used for this aim. Such screening should be conducted by General Practitioners (GP) or other trained healthcare professionals, taking advantage of every contact the older person may have with public health services (including, for example, vaccination campaigns). In the case of the Romero-Ortuno et al.'s study, such screening procedure was applied and showed benefits in the acute care setting.

The positive results of the screening should then be confirmed by the physician responsible for the health of the individual, such as the General Practitioner. He/she may judge if the condition of risk is pre-existent and already adequately managed or whether the clinical picture requires additional in-depth analyses and evaluation. At this stage, identification of potential short- and long-term risks by the use of risk stratification tools might be necessary in order to identify target groups that can benefit from integrated care programs [14]. This risk stratification procedure might not be necessary for patients diagnosed with frailty, which is a condition of increased vulnerability and risk of negative health outcomes, but is certainly relevant for those with multimorbidity. Indeed, the *World Report on Health and Ageing* by the World Health Organization underlines that the consequences of multimorbidity cannot be arithmetically determined based on the number of clinical conditions the person presents [15]. In fact, the relationship between the number of diseases and the health status degradation follows an exponential rather than linear pattern.

After the GP clinically validates the screening results, a consequent and coherent intervention should be adopted or implemented, taking into account the clinical, as well as non-clinical, unmet needs of the person. Multimorbid and/or frail patients may require services that are not frequently considered part of the clinical routine (e.g., support at home for activities of daily living, transportation, community care) but are crucial for the success of clinical interventions in this population. Interventions and treatments should be adopted possibly following models of care of chronic diseases [12,13] or multimorbidity [16]. The current challenge is to put in place a gold standard model of care which 1) comprehensively takes into account the different clinical and non-clinical needs of such a heterogeneous population, and 2) may, at the same time, be acceptable/feasible across the diverse care systems across Europe.

There are currently a number of ongoing European studies focusing on multimorbidity and frailty that may potentially contribute to

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	First contact	Clinical assessment	Intervention
Definition	Screening for multimorbidity and frailty	Clinical assessment	Care of frailty or multimorbidity
How	Diseases count and frailty screening	Clinical judgement and risk stratification tools (for those with multimorbidity)	Multimorbidity care model or chronic care model
Who	GP or trained healthcare professional	GP	Clinical practice
When	Every contact the person may have with public health services	Once multimorbidity or frailty are identified	Once screened positively and the GP has certified the complexity of unmet clinical and non clinical needs

Fig. 1. Possible care pathway for patients with multimorbidity and/or frailty. GP = General Practitioner.

advancing this field. The SUNFRAIL project [17] aims to improve the identification, prevention, and management of frailty and multimorbidity in community-dwelling elders in six European Union countries. A specific goal of SUNFRAIL is to design an integrated model for preventing and managing frailty and multimorbidity by also developing the required ad hoc instruments supporting related clinical tasks. The Joint Action on Chronic Diseases and Promoting Healthy Ageing across the Life Cycle (JA-CHRODIS) is a project funded by the European Commission, which focuses on identifying and validating good practice on chronic diseases. It includes 71 partners from 26 European countries. One specific aim of the JA-CHRODIS project is the development of common guidance and methodologies for care pathways for multimorbid patients [7]. Some of the preliminary results of this project have provided methods for improving the identification of older persons with multimorbidity and increased need of care services [7]. More recently, a Joint Action on frailty (ADVANTAGE), involving institutions from more than 20 EU member states, has been funded by the EU Health Programme 2014–2020 [2]. The main aim of ADVANTAGE is to identify core components of frailty and its management, in order to ultimately promote modifications in the organization and implementation of care in health and social systems. Moreover, ADVANTAGE seeks to provide models of care that may allow each member state to face the challenge of frailty within a common framework while tailoring the activities in respect of its own context and public health system.

All these projects, in addition to other similar studies in the domain, should provide important results for contributing to the knowledge around identifying, treating, and managing the growing population of multimorbid and frail persons in Europe.

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