

Multimorbidity—a defining challenge for health systems



Multimorbidity has emerged as one of the greatest challenges facing health services, both presently and in coming decades. Surveillance data on chronic diseases in Scotland, UK, estimate around one in four of their adult population to have two or more long-term conditions.¹ By 2035, approximately 17% of the UK population is projected to have four or more chronic conditions, which is almost double the current prevalence (9.8%).² Hypertension (prevalence 18.2%), depression or anxiety (10.3%), and chronic pain (10.1%) are among the leading contributors to the increasing prevalence of multimorbidity,³ demonstrating the breadth, heterogeneity, and interlinked nature of physical and mental health conditions. This crisis is partly driven by the ageing of the global population; the Office for National Statistics predict that the proportion of the population older than 75 years will almost double to 13.1% over the next 20 years, therein having major social care implications because of the risk of functional decline⁴ and loss of independence with older age. Multimorbidity is, however, not confined to the older population, with 35% of people aged 55–64 years and 55% of people aged 65–74 years having multimorbidity.³ Alongside age, relative deprivation is the other leading determinant of multimorbidity:¹ those with the lowest wealth have a 47% higher chance of multimorbidity and a 90% higher chance of having multimorbidity with 10 or more functional limitations,⁵ compared with the most affluent.

Prevention and treatment services should reflect the population driving the demand, and proactively future-proof the health system for impending demands. This approach would require a shift from a single disease focus and the vertical integration of science disciplines from bench to bedside, to a person-centred approach, so that morbidity gains match that of longevity; a health, rather than simply illness, approach to the prevention and care of patients is warranted to protect and promote maintenance of good health.

Momentum has increased in recognising multimorbidity as a key challenge, but urgent applied health research is required to develop and implement evidence-informed policies. Three priorities could accelerate the generation of clinically relevant and implementable evidence. Firstly, patients with multimorbidity should be more thoroughly integrated into clinical trials,

which they have traditionally been excluded from.⁶ Secondly, the bidirectionality of mental and physical health, with one in three patients with multimorbidity having a coexisting mental health condition,⁷ means that patterns and trajectories of multimorbidity in patients with mental health conditions should be a key focus, to inform the aspirational triple integration of physical and mental health, primary and secondary care, and health and social care within health-care systems. Thirdly, the lived experience of the patient, their family, and economic impact are often overlooked aspects of necessary research. Patients with multimorbidity tend to have less continuity of care than patients with a single condition,⁸ and thus such research endeavours could allow a redesigning of chronic disease control services, both improving health outcomes and patient experience.

Multimorbidity, as currently quantified and defined, might be too simplistic to guide the aetiological and effectiveness research that is needed to improve clinical care and policy. Existing disease surveillance systems have not been used optimally to understand multimorbidity and its effects, or to guide effective action. Rather than simply a quantity of conditions as currently defined, multimorbidity should be considered as a non-random series of predictable clusters.⁹ Recent advances in data science are helping to uncover the linkages among the clusters and their correlations, and provide the prospect of an unparalleled opportunity to capture multimorbidity across the entire system of health and social care in ways not possible before.

To advance prevention and treatment research on multimorbidity, we propose three multimorbidity metrics that, by identifying the composition and driving conditions in individuals, might provide opportunities to identify and implement meaningful interventions across the life course. Firstly, determining the age of onset, clustering, and sequence of diseases according to modifiable risk factors holds promise, as a way of effectively targeting prevention services to those at highest risk of disease.¹⁰ Secondly, clustering of conditions and health events according to the driving chronic disease and its trajectory would allow for holistic prevention measures and early identification of complications; for example, patients with diabetes

are at increased risk of a wide range of vascular and non-vascular conditions, as well as broadly associated health events affecting morbidity. Finally, early evidence suggests that targeting individuals with functional limitations¹⁰ to elucidate key drivers, or inhibitors to functional independence, is likely to be particularly promising for identifying the most effective and cost-effective interventions.

Effectively tackling multimorbidity will require interventions at multiple levels: both at the individual and population levels, and interwoven into health-care, public health, and social-care policies. This effort should include robust and timely surveillance that provides reliable estimates of the scale and cost of multimorbidity to health services, and a repositioning and prioritisation within commissioners that puts the compression of morbidity and maintaining the health of patients central to all policies. Multimorbidity is a consequence of the success of clinicians and the health system over the past decades; we must now urgently evolve to effectively tackle this new challenge, to ensure future generations can live healthy and equitable lives.

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