Studies investigate the meaning of 'multimorbidity' and how much it costs us

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Two new studies analyze the concept and costs of multimorbidity. Credit: stevepb, Pixabay (CC0, creativecommons.org/publicdomain/zero/1.0/)

The prevalence of multimorbidity, the co-occurrence of two or more chronic conditions, varies depending on exactly how it is defined. And

the health care costs associated with many disease combinations cost more together than the sum of each individual disease. Those are the conclusions of two new studies, published April 4 in the open access journal *PLOS Medicine*, that broadly analyze the concept and costs of multimorbidity.

Multimorbidity is increasing in prevalence due to improved survival from chronic diseases and population aging, and now poses major challenges to health care systems worldwide. The rise in health care spending in many developed countries and the prevalence of multimorbidity are interlinked but the relationship is not well understood.

In the first study, Clare MacRae of the University of Edinburgh, Scotland, and colleagues analyzed English primary care data on nearly 1.2 million people registered with 149 general medical practices. Using nine published lists of medical conditions, they showed that varying the individual conditions considered to contribute to multimorbidity leads to large differences when calculating multimorbidity prevalence.

The prevalence of multimorbidity when only the two commonest conditions were considered was 4.6%, rising to 29.5% considering the 10 commonest, 35.2% considering the 20 commonest, and 40.5% when considering all 80 conditions. Across the whole population, 52 of the 80 possible conditions are/would be required to reach a multimorbidity prevalence of >99%. This varies according to age. However, in older populations, it was possible to consider fewer conditions (29 conditions for people over age 80), and in younger people, more conditions must be included (71 conditions for people under age 10) to reach accurate measurements of multimorbidity.

"There is a need for standardization when measuring multimorbidity prevalence so that results across studies are comparable and population

subgroups are accurately represented," the authors say.

In the second study, Angela Chang of the University of Southern Denmark, Copenhagen, and colleagues used data from private health insurance claims of more than 16 million unique enrollees ages 18 to 64 in the United States. Including 63 chronic conditions, the team found that 56.2% of the study population had at least two chronic conditions.

When they looked at every possible two- or three-disease combinations, they discovered that 60.1% of disease combinations had super-additive spending, with the combination spending greater than the sum of the individual diseases. The diseases with both the highest cost per case and the highest contribution to multimorbidity spending were chronic kidney disease, liver cirrhosis, ischemic heart disease and inflammatory bowel disease.

"In the midst of surging health spending globally, and especially in the United States, pinpointing high-prevalence, high-spending conditions and super-additive disease combinations could help policymakers design interventions to improve treatment effectiveness and reduce spending," the authors say.

Together, the papers underscore the need for innovative methods to study the prevalence and costs of multimorbidity. More work is needed to replicate and generalize estimates of multimorbidity prevalence and spending using standardized methods for these calculations to help inform policymakers and better direct resources for its management and prevention.

More information: C. MacRae et al, The impact of varying the number and selection of conditions on estimated multimorbidity prevalence: A cross-sectional study using a large, primary care population dataset. *PLOS Medicine* (2023). DOI:

10.1371/journal.pmed.1004208

A Y Chang et al, Estimating health spending associated with chronic multimorbidity in 2018: An observational study among adults in the United States, *PLOS Medicine* (2023). DOI: 10.1371/journal.pmed.1004205