

New S-Elixhauser comorbidity score may not be more advantageous for predicting in-hospital and long-term mortality

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A cohort study from Johns Hopkins Bloomberg School of Public Health has found that the newly developed summary Elixhauser (S-Elixhauser) comorbidity score is well calibrated and internally validated to predict in-hospital, 30-day, and 1-year mortality but its advantage over the existing Agency for Healthcare Research and Quality (AHRQ) Elixhauser and Charlson summary scores is unclear. The report is published in *Annals of Internal Medicine*.

Summary comorbidity scores, such as the Charlson comorbidity index and the Elixhauser comorbidity index, can both describe comorbidity burden in [observational studies](#) and be used for prognosis. The set of Elixhauser comorbidity indicators was developed in 1998 but has undergone modifications, including the addition of weighted scores and expanded comorbidity codes. AHRQ also derived and evaluated the model fit of a summary Elixhauser score, based on weighting the individual comorbidities, to predict in-hospital mortality and 30-day all-cause re-admissions in hospitalized adults. However, the performance of the summary score has not previously been evaluated for predicting longer-term mortality outcomes, nor has it been validated for use in older adults.

Researchers studied data from Medicare beneficiaries hospitalized in 2018, including those discharged with diagnoses of heart failure, [chronic obstructive pulmonary disease](#), or diabetes. The authors derived [weights](#) to calculate the S-Elixhauser comorbidity score for in-hospital, 30-day, and one-year mortality. The score was then internally validated and calibrated for short- and long-term mortality outcomes among all older

adults and those who were hospitalized for the three specified diagnoses. The authors also performed an external validation of Charlson and AHRQ Elixhauser comorbidity scores in predicting mortality among [older adults](#). According to the authors, the internally validated S-Elixhauser discrimination measures were minimally better than the externally validated measures from the other scores, a difference that they expect to diminish or disappear when there is external validation of S-Elixhauser.

More information: Hemalkumar B. Mehta et al, Development and Validation of the Summary Elixhauser Comorbidity Score for Use With ICD-10-CM–Coded Data Among Older Adults, *Annals of Internal Medicine* (2022). [DOI: 10.7326/M21-4204](https://doi.org/10.7326/M21-4204)

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