New tool to predict early death or hospital readmission

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A new tool can help physicians predict the likelihood of death or readmission to hospital for patients within 30 days of discharge from hospital, according to a new study in *CMAJ* (*Canadian Medical Association Journal*).

The tool, called the LACE index, was developed by researchers at the Ottawa Hospital Research Institute, Institute for Clinical Evaluation Sciences, University of Toronto, University of Ottawa and University of Calgary. It was developed to help quantify the risk of early death or unplanned readmission after discharge from hospital to the community and can be useful in focusing post-discharge support on patients at highest risk of poor outcomes.

"We have derived and validated an easy-to-use index that is moderately discriminative and very accurate for predicting the risk of early death or unplanned readmission after discharge from hospital to the community," write Dr. Carl Van Walraven, Ottawa Hospital Research Institute and coauthors.

The study followed 4812 patients admitted to 11 Ontario hospitals between October 2002 and July 2006. The participants were middle-aged, almost 95% were independent in daily living routines and most were free of comorbidities. None of the participants were residents of nursing homes. The most common reasons for hospitalization were acute coronary syndromes, cancer diagnoses and complications and heart failure.

During the first 30 days after discharge from hospital, 8% (385) patients died or were urgently readmitted. Of this number, 9.4% (36) died and 90.4% (349) had unplanned readmissions.

Key factors associated with these events were length of stay ("L"), acuity of admission ("A"), patient comorbidity ("C") and number of visits to the emergency room ("E"). Called the LACE index for easy recall, the index has a potential score of 0 to 19. While easy to use, the system will be difficult to memorize and will need a computational aid.

"We believe that the LACE index can be used by clinicians, researchers and administrators to predict the risk of early death or unplanned readmission of cognitively intact medical or surgical patients after discharge from the hospital to the community," they conclude. Further research is needed to determine if identifying the risk of poor death or readmissions changes patient care or outcomes.

More information: www.cmaj.ca/cgi/doi/10.1503/cmaj.091117

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