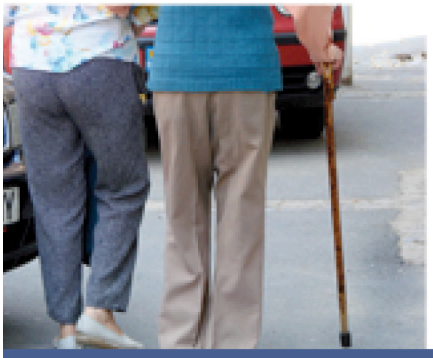
HRB Centre for Primary Care Research
Research Briefs

Predicting hospital admission

Risk scores to predict hospital admission and readmission following discharge



HRB Centre for Primary Care Research

Researchers at the HRB Centre for Primary Care Research have conducted two studies regarding the use of risk scores to predict emergency hospital admission and readmission to hospital following discharge.

Dr Emma Wallace led a systematic review of the Probability of repeated admission (Pra) score in predicting emergency hospital admission in the next year in older community dwelling adults. The Pra score was developed in the United States in 1993 and is a self-report questionnaire comprising of eight questions relating to age; gender; presence of specified chronic diseases; healthcare utilisation and hospital admission in the preceding 12 months; self rated health and the availability of an informal caregiver. The Pra yields a possible score of between 0 and 1 with a score of ≥0.5 indicative of 'high risk' equating to a 50% likelihood of hospital admission in the next year.

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In this review which included nine validation studies, incorporating 8,843 older people, we found that the Pra score performs well in predicting hospital admission in older people categorised as 'high risk' by the score. However its low pooled sensitivity indicates that it is not a reliable way of excluding hospital admission for those categorised as low risk by the score. The Pra score has both clinical and healthcare policy value in terms of targeting older people at higher risk who may benefit from community based interventions to reduce their risk of emergency admission. However, since its development, there have been few large scale validation studies and only two studies outside North America so further research is needed in different populations to assess the generalisability of this risk score.

A second systematic review led by Dr Grainne Cousins of 6 studies examining the predictive ability of the Triage Risk Stratification Tool (TRST) in identifying older adults at risk of adverse outcomes (return to emergency department and hospitalisation) within 1 and 4 months following discharge from the Emergency Department.

The TRST score was developed in the United States in 2003, and is made up of five items (history or evidence of cognitive impairment; difficulty walking, transferring or recent falls; five or more medications; emergency department use in the previous 30 days or hospitalisation in the previous 90 days and a registered nurse's concern). The TRST score yields a possible score of between 0 and 5 with a score of ≥2 indicating the individual is at 'high risk' of an adverse outcome.
This review combined results from 6 studies and involved 3,233 older adults. The results of the review indicated that the TRST is of limited clinical utility in identifying older adults at risk of adverse outcomes following discharge from the emergency deparment. This risk stratification tool should not be used in isolation to predict adverse events following dischagre from the Emergency department.

The articles can be viewed at:

[1] Wallace E, Hinchey T, Dimitrov BD, Bennett K, Fahey T and Smith SM. A systematic review of the Probability of Repeated Admission score in community dwelling adults. JAGS 2013 61:357-364..
(www.ncbi.nlm.nih.gov/pubmed/23496324)

[2] Cousins G, Bennett K, Dillon G, Smith SM, Galvin R. 2013. Predicting adverse outcomes in older patients discharged from the Emergency Department: A systematic review and meta-analysis of the Triage Risk Stratification Tool (TRST). European Journal of Emergency Medicine 2013 Mar 18.
(www.ncbi.nlm.nih.gov/pubmed/23510897)

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