

Hospital readmission studies: Influencing factors identified

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In two studies published today in the *Journal of Hospital Medicine*, the risk factors for readmission to the hospital are examined based upon general medicine inpatients and those with at least two admissions in a six-month period. Alongside clinical factors such as having cancer, chronic diseases such as heart failure or lung disease, or being on high-risk medications, the studies identified other factors which increase the likelihood of a patient being readmitted which could help hospitalists focus in on these groups.

In the first study, Nazima Allaudeen, MD, and colleagues at the University of California San Francisco (UCSF), looked at the factors behind unplanned hospital readmission within 30 days - which occurs in nearly one in five Medicare patients in the US. The study involved patients admitted to UCSF hospitals between June 2006 and May 2008; 6,805 unique patients for a total of 10,359 admissions. 17% of admissions were readmitted within thirty days, with almost half of these (49.7%) occurring within 10 days.

Of the sociodemographic factors, African-American race and Medicaid as payer status were associated with readmission, with a 43% and 15% increased risk of readmission respectively after adjustment for other variables. Of the clinical factors, high-risk medications and six comorbidities (congestive [heart failure](#), renal disease, cancer (with and without metastasis), weight loss, and iron deficiency anemia) were associated with readmission.

The study also examined operational factors, such as weekend discharge or admission source, but none were significantly associated with readmission.

"The US spends over \$15 billion in Medicare on readmissions to hospital within 30 days and readmissions are also distressing to patients and their caregivers," said Allaudeen, now based at the

VA Palo Alto Health Care System, California. "Many healthcare systems are now making efforts to improve the transition from hospital to home or nursing facility to try to reduce preventable readmissions but they need to know which patients to focus on to have the biggest impact. Studies like ours should give practitioners direction to non-clinical factors to identify."

Recognizing the limitations in the choice of data variables available in studies using administrative data, the second smaller study used detailed clinical assessments to examine a range of readmissions risk factors in a recognized high risk patient group, those with two or more recent admissions. Dr Alison Mudge FRACP and colleagues at the Royal Brisbane and Women's Hospital, Australia, undertook detailed assessment of 142 patients aged over 50 admitted between February 2006 and February 2007 who had two or more hospitalizations in the preceding six months, studying factors such as depression, nutritional status, and functional status as well as demographic and disease variables.

After six months, 55 participants (38.7%) had had a total of 102 unplanned admissions to the hospital. As the researchers expected, the strongest predictor of readmission was the presence of a chronic disease diagnosis, but alongside this, they found that BMI had a non-linear relationship with readmission, with a higher risk in those underweight and obese; 72% and 50% of each category respectively were readmitted compared to 27% of those with normal weight and 37% of those classed as overweight. Depressive symptoms were also associated with a higher risk of readmission (47% readmitted). Age, sex, number of previous admissions, and discharge support were not significantly influential.

"Patients with multiple recent readmissions may have a unique risk factor profile, and may be a group which may particularly benefit from complex

interventions, but no previous study has specifically examined risk factors in this high risk group," said Mudge. "We sought to look specifically at health factors which we know are under-recognized in hospitals and primary care, and this showed that poor nutrition and depression are associated with higher health care use in this vulnerable subgroup.

"We hope this study might increase awareness of poor nutrition and depression as importance concurrent factors in medical illness, and encourage research into improving nutritional and depression management in medically ill patients."

Provided by Wiley

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