Abstract

Associations between patient demographic and health characteristics, healthcare systems and processes, and MET review within 48 hours of admission to a teaching hospital

[1]Josh Allen,[2]Liliana Orellana,[3]Daryl Jones,[4]Julie Considine,[5]Judy Currey

[1]Faculty of Health, Deakin University, Australia
[2]Faculty of Health, Biostatistics Unit, Deakin University, Australia
[3]Intensive Care Unit, Austin Health, Australia
[4]Centre for Quality and Patient Safety Research - Eastern Health Partnership, Deakin University, Australia
[5]Centre for Quality and Patient Safety Research, Deakin University, Australia

Objectives:

Patients reviewed by the Medical Emergency Team (MET) are at increased risk of in-hospital death. Identifying patients at risk of deterioration may improve outcomes. This study aimed to identify patient demographic, medical characteristics and healthcare systems and processes at the time of admission to hospital that were associated with MET review within 48 hours (MET-48hrs) of admission.

Methods:

A single-site, year-long, retrospective cohort comprising patients admitted for at least 24 hours, using routinely collected hospital data which was available for all patient admissions. A three-stage modelling approach was used to identify baseline factors associated with MET-48hrs.

Results:

The study included 15,695 patients with mean age 62.1 years (SD 19.6). A total of 4.3% of patients received a MET review within 48 hours of admission. Baseline variables independently associated with MET-48hrs in a fully adjusted logistic model included age of 80 years or more (OR=1.37); 3 or more previous emergency admissions (OR=1.59); Charlson Comorbidity Index 1 or 2 (OR=1.47), or 3 or more (OR=1.99); history of alcohol-related behaviour concerns (OR=2.04), Chronic heart failure (OR=1.48); chronic obstructive pulmonary disease (OR=1.35); admission for colorectal (OR= 2.66) or upper gastro-intestinal (OR=1.94) surgery, respiratory or tracheostomy (OR=2.24); immunology and infections (OR=1.90); emergency admission (OR=1.36); admission at night (OR=1.74) or admission in summer (OR=1.41).

Conclusions:

This is the first study to demonstrate the potential to predict clinical deterioration using data that is routinely collected and readily accessible at the time of admission to hospital. Patient medical characteristics and healthcare systems and processes are each important predictors of MET review.