



Queensland
Government

Thirty day in-hospital mortality and the 'weekend effect'

Melissa Clarke¹, Rachael Wills², Rayleen Bowman³, Paul Zimmerman^{1,3}, Kwun Fong^{1,3}, Michael Coory^{2,4}, Ian Yang^{1,3}

¹School of Medicine, The University of Queensland

²Health Statistics Centre, Queensland Health

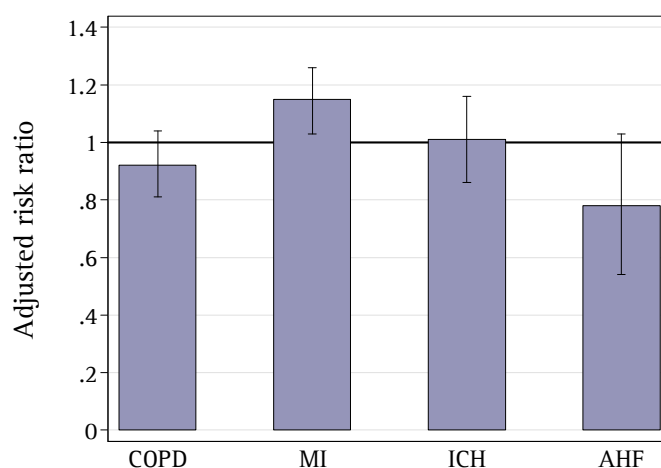
³Department of Thoracic Medicine, The Prince Charles Hospital

⁴School of Population Health, The University of Queensland

The day to day burden of disease, and demand on health services, is presumably consistent. However, patients admitted to hospital on the weekend sometimes have worse outcomes than patients admitted on a weekday; a phenomenon known as the 'weekend effect'¹.

This study² examined whether there was a 'weekend effect' on 30 day in-hospital mortality for patients admitted to a Queensland public hospital through an emergency department with a principal diagnosis of chronic obstructive pulmonary disease (COPD), myocardial infarction (MI), intracerebral haemorrhage (ICH) or acute hip fracture (AHF). Adjustment was made for several socio-demographic variables and comorbidities.

Figure 1. Adjusted relative risk (weekend vs. weekday) of 30 day in-hospital mortality for patients admitted through a public hospital emergency department, Queensland, 2002/03 to 2006/07



For ICH or COPD patients there was no evidence of a weekend effect but for MI patients the risk of death was increased by 15% for patients admitted on weekends compared with patients admitted on a weekday. Patients admitted on a weekend for AHF were 22% less likely to die within 30 days compared with their weekday counterparts, although this difference did not achieve statistical significance due to the small number of weekend patients with this outcome (56 over 5 years).

Overseas studies suggest that the observed 'weekend effect' for MI may be due to reduced invasive procedures on the weekend, whereas AHF patients may have improved outcomes because less elective surgery is performed on weekends, resulting in greater availability of operating theatres^{1,3-4}.

References

1. Cram P, Hillis SL, Barnett M, Rosenthal GE. Effects of weekend admission and hospital teaching status on in-hospital mortality. *Am J Med* 2004;117(3):151-7
2. Clarke MS, Wills R-A, Bowman RV, et al. Exploratory study of the 'weekend effect' for acute medical admissions to public hospitals in Queensland, Australia. *Int Med J*. Accepted, in press, doi: 10.1111/j.1445-5994.2009.02067.x. Published online Oct 2009.
3. Bell CM, Redelmeier DA. Mortality among patients admitted to hospitals on weekends as compared with weekdays. *N Engl J Med* 2001;345(9):663-8
4. Kostis WJ, Demissie K, Marcella SW, et al. Weekend versus Weekday Admission and Mortality from Myocardial Infarction. *N Engl J Med* 2007;356(11):1099-1110