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Margaret McCartney: The zombie statistic behind the push for seven day working

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Apparently, if you are admitted to hospital at the weekend you are 16% more likely to die. This was featured on Radio 4's *News Quiz*, indicating that it's passed into the realm of the "zombie statistic"—namely, completely spurious but widely accepted as fact.

It started with a 2012 paper in the *Journal of the Royal Society of Medicine*.¹ The BBC then reported that patients were "more likely to die" if admitted at weekends.² The *Guardian* said, "Those admitted on a Sunday have a 16% higher risk of dying within a month than those admitted on a Wednesday . . . a 'significant increased risk.'"³

The study, a retrospective observational study of admissions in England during 2009-10, followed up patients for 30 days after admission and included adjustment for diagnosis and comorbidities.¹ Full data were available for 14 217 640 admissions and 187 337 deaths.⁴ That's a 1.32% absolute risk of death in the 30 days after admission; a 16% difference in this absolute risk is tiny. How certain can we be that the adjustments for morbidities, for example, were accurate? Not very.

Studies of this design can identify association, not causation. To assume that mortality rates should not vary with the day of admission is to assume no differences in the kinds of reasons patients are admitted on different days. For example, if palliative care community services are not running at normal levels, are people admitted to hospital at the weekend to die?

Less prominent in the media was the same researchers' finding of the same pattern in the United States, where working patterns differ from those in the United Kingdom. But the same researchers also found that people admitted to a UK hospital on a weekend were the least likely to die there on a weekend. The meaning of these associations is unclear: how patients end up in hospital on different days has yet to be properly described, let alone understood.

Yet the 16% statistic is being used to push government policy for seven day working in the NHS. Consultants, just like GPs, already work weekends. Fewer of them are present, because the routine weekday work is absent. Analyses of staffing at the weekend have been of poor quality.⁴ Full seven day working

would mean doing more routine work at weekends—which, with no more staff, would mean that fewer doctors were available in the week.

We do know that dedicated consultant time with continuity is associated with better outcomes.⁵ But put the policy brakes on: the NHS should run on fair use and high quality evidence. Shifting routine work to the weekend because of uncertain data may waste resources and do harm. Meanwhile, seriously ill people are now scared to be admitted to hospital at the weekend, and some ask to be admitted on a Monday instead.

Competing interests: I have read and understood the BMJ policy on declaration of interests and declare the following interests: I'm an NHS GP partner, with income partly dependent on Quality and Outcomes Framework points. I'm a part time undergraduate tutor at the University of Glasgow. I've written two books and earn from broadcast and written freelance journalism. I'm an unpaid patron of Healthwatch. I make a monthly donation to Keep Our NHS Public. I'm a member of Medact. I'm occasionally paid for time, travel, and accommodation to give talks or have locum fees paid to allow me to give talks but never for any drug or public relations company. I was elected to the national council of the Royal College of General Practitioners in 2013 and am chair of its standing group on overdiagnosis. I have invested a small amount of money in a social enterprise, Who Made Your Pants?

Provenance and peer review: Commissioned; not externally peer reviewed.

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- 5 Royal College of Physicians. An evaluation of consultant input into acute hospital admissions in England. 2012. www.rcplondon.ac.uk/sites/default/files/an-evaluation-of-consultant-input-into-acute-medical-admissions-management-in-england-2012.pdf.

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