

Weekend and public holiday admissions increased the risk of hospital deaths by up to 41 percent

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Patients treated by Welsh (UK) hospitals for upper gastrointestinal (GI) bleeding were 41% more likely die if they were admitted on a public holiday and 13% more likely if it was at the weekend, according to research in the January issue of *Alimentary Pharmacology and Therapeutics*.

Researchers who analysed the records of 22,299 people admitted a total of 24,421 times between 1999 and 2007 also found that admissions, but not [death rates](#), were significantly influenced by [social deprivation](#).

"The higher death rates for weekend and public holiday admissions could not be explained by differences in the patients admitted and may be down to reduced staffing levels or delays in investigative procedures such as endoscopy" says study lead Dr Stephen Roberts from the School of Medicine at the University of Swansea, UK.

[Upper gastrointestinal bleeding](#), which can be caused by conditions such as [peptic ulcers](#) and gastritis - an inflammation of the stomach lining often caused by alcohol - results in approximately 25,000 [hospital admissions](#) a year across the UK. The highest rates reported are in Scotland, with the lowest rates often in southern England.

Key findings of the study, carried out with the Department of Public Health at the University of Oxford, include:

Incidence

- The overall incidence of upper GI bleeding was 134 per 100,000 of the population, with a higher incidence in males than female (153 versus 117). Incidence rates increased sharply with age, from 52 per 100,000 in people aged 18 to 24 to 774 for those aged 85 plus.
- People living in the most socially deprived areas of Wales were twice as likely to be admitted for GI bleeding as people living in the least socially deprived areas.
- However, those local authority areas with the highest incidence of bleeding often had the lowest death rates. This could be explained by case mix differences, variations in hospital admission thresholds for less severe cases and less effective out-of-hours services provided by family doctors in some areas.

Admission

Patients admitted on Fridays and Saturdays were significantly less likely to receive endoscopy than those admitted on other days and those that did receive this investigative procedure faced a longer, median wait of three days. Rates of endoscopy on the day of admission were lower on Saturdays and Sundays.

- Patients admitted at the weekends and on public holidays tended to be significantly younger than those admitted during the week. They had shorter lengths of stay – indicating less severe bleeds – but similar levels of other health issues.

Deaths

Over the whole study period, 10% of people died within 30 days of being admitted to hospital, ranging from 0.2% of people aged from 18 to 24 to 20.9% of those aged 85 plus.

- Death rates fell significantly during the period studied, from 11.4% in 1999/2000 to 8.6% in 2006/7.
- When the death rates were adjusted for differences in age and gender, they were 13% higher at weekends and 41% higher on public holidays. The difference remained significant even when the researchers adjusted them to take into account other major illnesses such as cancer, diabetes, heart disease and organ failure.
- The researchers found no difference in death rates at weekends and public holidays between hospitals that did and did not have a formal out-of-hours endoscopy service. However, this finding is inconclusive as informal services are provided on an ad hoc basis in many other hospitals.

Dr Roberts says there are a number of possible explanations for increased deaths at weekends and on public holidays. These could include reduced staffing levels that may lead to:

- less thorough assessment
- lack of specialist or senior consultant cover
- lower levels of multi-disciplinary team care

- poor communication at handover and
- possible delays in investigations such as endoscopy.

"It is very clear from our research that further studies are needed to understand why death rates are much higher at weekends and on public holidays than during the week" concludes Dr Roberts.

Professor Jon Rhodes, President of the British Society of Gastroenterology and an associate editor of the Journal, comments: "The publication of this paper is very timely because the BSG has been co-drafting a report prompted by concerns raised by the National Patient Safety Agency about deaths from GI bleeding. This will suggest that smaller hospitals form networks to provide seven-day endoscopy cover.

The Welsh study shows, however, that this alone may not be sufficient and our society is also pushing hard to promote seven-day consultant cover in hospitals for the major acute specialties, including gastroenterology."

Fellow associate editor Dr Brian Fennerty, President of the American Society for Gastrointestinal Endoscopy, adds: "Sick patients do not always conform to an 8am to 5pm, Monday to Friday work schedule and physicians and facilities caring for patients need to be able to provide the same level of care 24 hours a day, seven days a week for acutely ill individuals. These data implicate our current health care systems as being inadequate for managing acute GI hemorrhage outside of normal hours and call for an analysis as to why the process of care breaks down and what needs to be done to fix it."

Provided by Wiley

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