

# Variations in mortality across the week following emergency admission to hospital: linked retrospective observational analyses of hospital episode data in England, 2004/5 to 2013/14

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## Plain English summary

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## Plain English summary

Patients admitted to hospital outside normal working hours, when staffing levels are lower and some services are not available, suffer higher complication and mortality rates than patients admitted when the hospital is fully operational. This 'weekend effect' relates to the time at which patients are admitted, not when they die.

The weekend effect is well described but poorly understood. It is not clear if it is caused by poorer availability and quality of services during out-of-hours periods or because patients admitted to hospital at these times are sicker. It is also not known if changes to the way the NHS provides services over the week could reduce or eliminate the effect.

We explored the causes of higher mortality rates during out-of-hours periods and estimated whether moving to a 7-day service would be a cost-effective way to address the problem. We found that:

- The estimated cost of implementing 7-day services nationally exceeds the maximum amount that the National Institute for Health and Care Excellence recommends should be spent on eliminating the weekend effect.
- Patients admitted to hospital outside normal hours are more likely to die.
- Hospitals admit fewer patients at night and at weekends, and these patients tend to be sicker.
- After taking account of how sick patients are, risk of death is no higher for patients admitted outside normal hours, with the exception of Sunday daytime.
- Having more and better-qualified nursing staff on duty in one acute stroke unit examined in the study was associated with improved outcomes for patients, but was not associated with increased long-term survival.

In addressing variations in patient outcomes across the week, we recommend that the NHS focuses on those service changes for which there is robust evidence of patient benefit.

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