

Study finds higher risks for babies born at the weekend

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Credit: Photo by Chris Meyer, Indiana University

Babies born in English NHS hospitals at the weekend have a slightly greater risk of death within the first seven days, compared with those born during the week, finds a study in *The BMJ* today.

The results also suggest increases in the rates of other complications for both mothers admitted and babies born at weekends.

The researchers estimate that around 770 newborn deaths and 470 maternal infections per year above what might be expected if performance was consistent across women admitted, and babies born, on different days of the week.

Previous studies have identified a higher risk of death in patients admitted to hospital on weekends (compared with weekdays) across a range of conditions - a phenomenon termed the "weekend effect." But studies on whether obstetric outcomes are associated with day of delivery have given conflicting results.

So researchers at Imperial College London set out to investigate the association between day of delivery and measures of quality and safety of maternity services, particularly comparing weekend with weekday performance.

They analysed details of deliveries in English NHS public services from 1 April 2010 to 31 March 2012 from the Hospital Episode Statistics (HES) database. Primary measures were [perinatal mortality](#) (stillbirth or death within the first seven days), infections, emergency re-admissions, and injuries.

Several factors were taken into account, including a mother's age and ethnic group, socioeconomic deprivation, previous caesarean section, and existing conditions such as diabetes or [high blood pressure](#). Staffing levels were also investigated.

The team found that performance across four of the seven measures was significantly worse for women admitted, and babies born, at weekends.

In particular, the perinatal mortality rate was 7.3 per 1,000 babies delivered at weekends, 0.9 per 1,000 higher than for weekdays.

No consistent association between outcomes and staffing was identified, although trusts that complied with recommended levels of consultant presence had a slightly lower perineal tear rate than non-compliant services.

They estimate that 770 more perinatal deaths per year, from the annual total of 4,500 deaths among 675,000 births, occurred above what we would expect if mortality was always the same as for babies delivered on Tuesday, the midweek reference day.

They also found 470 maternal infections above what would be expected from performance seen for women admitted on the reference day.

The authors stress that this is an observational study so no definitive conclusions can be drawn about cause and effect, and say several factors not accounted for may have influenced the findings.

Nevertheless, they say their study represents the most comprehensive assessment of its type of the "weekend effect" in obstetric care, and they suggest that further work is needed "to understand what organisational factors might influence the weekend effect and to investigate centres that have reduced the disparities in access and outcome in out of hours care."

In an accompanying editorial, US obstetrics experts, Jonathan Snowden and Aaron Caughey, say the weekend effect in obstetrics fits within the broad concept of "capacity strain" in healthcare systems - the process by which performance of a clinical unit can deteriorate above a certain threshold of patient volume, complexity, or both.

More research is needed in obstetrics to explore capacity strain and identify effective strategies to safeguard maternal and infant outcomes during such vulnerable times, they write.

However, they point out that weekend delivery "is an inevitable part of everyday practice" and call for solutions "to determine what explains the apparent protective effect of weekday delivery and how to extend these benefits to women who deliver at the weekend, and their [babies](#)."

More information: Association between day of delivery and obstetric outcomes: observational study,
www.bmj.com/cgi/doi/10.1136/bmj.h5774

Editorial: Is there a weekend effect in obstetrics?
www.bmj.com/cgi/doi/10.1136/bmj.h6192

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