International Journal of Population Data Science

Journal Website: www.ijpds.org

How do numbers of births in England and Wales vary by time of day, day of the week and place of birth? An analysis using linked administrative data

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Background

Clinical policies have aimed at increase the proportion of births occurring during working hours on weekdays in the belief that this facilitates staffing and is safer for mothers and babies. Our recent analyses of hospital births have shown that that planned caesareans are concentrated into weekday mornings. In contrast, spontaneous births after spontaneous onset of labour are more likely in the hours after midnight, peaking from 4-6am. Births after induced labours are more likely in the hours around midnight.

Main aim

To compare the timing of births of births at home and elsewhere with timing in NHS hospitals.

Method

Data from civil registration of births from 2005 to 2014 in England and Wales were linked to data recorded when newborn babies are notified to the NHS. Data about babies born in NHS maternity units were further linked to hospital data for England and for Wales. Data were analysed in the secure facilities of the Office for National Statistics' Secure Research Service. Analysis was by place of birth recorded at birth registration.

Results

Numbers of singleton births in freestanding midwifery units and at home were highest from midnight to 7am, peaking from 4am-6am. Births on non-hospital sites followed a similar pattern with a flatter peak from 4am-8am, but peaks in non-maternity hospitals tended to occur during mornings. Births in military hospitals had a sharp peak at 8am and births in private hospitals had a peak in the morning and then again in early and late afternoon.

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Conclusion

The small numbers of births in hospitals without maternity units or 'elsewhere' are unlikely to have occurred there intentionally, but the latter, along with home and midwifery unit births were more common at night. This has implications for staffing. A newly funded project will explore relative safety.