

Neonatal and infant readmissions for late preterm and early term babies in Ontario and England: a cohort study using linked population-level healthcare data

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Background

Babies born late preterm (34–36 weeks gestation) or early term (37–38 weeks) are at increased risk of unplanned readmissions compared with full-term babies. We examined differences in neonatal and infant outcomes in England and Ontario.

Methods

Linked maternity-baby hospitalisation data were extracted from two universal healthcare systems, Ontario (n=702,565; 2005–2013) and England (n=1,165,375; 2011–2013). We modelled rates of unplanned readmissions within 30-days post-discharge of delivery, and readmissions, emergency department (ED) visits, deaths and total inpatient days within 12-months post-discharge, adjusting for neonatal, maternal and delivery factors.

Results

The median newborn length of stay was 4 and 5 days in Ontario and England respectively for late preterm babies, and 2 days in both countries for early term babies. Early neonatal readmissions were lower in Ontario: 4.8% of early term and 7.2% of late preterm babies compared with 8.3% and 11.4% respectively in England ($p < 0.05$). Within 12-months post-discharge, 9.6% of early term and 13.5% of late preterm babies were readmitted in Ontario compared with 24.0% and 30.5% in England ($p < 0.05$); total inpatient days per 100 babies were 36.5 for early term and 61.9 for late preterm (Ontario) compared with 62.7 and 107.6 (England). Infant mortality (0.1–0.4%) and ED visits (40–44%) were similar between countries.

Conclusion

Unplanned readmissions and total inpatient stay are significantly higher in England than Ontario for early term / late preterm babies, despite similar ED attendances and lengths of newborn stay. Further investigation of differences in healthcare practices between countries should evaluate access to paediatric primary care and thresholds for admission.

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