

## Maternal health and mortality

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**Tuesday 2 September, 4.45pm**

**Longitudinal trends in the health needs of mothers: A national data linkage study in Wales and England**  
**Lucy Griffiths - Swansea University, Grace Bailey - Swansea University, Alyce Raybould - University College London, Katie Harron - University College London**

**Introduction:** Millions of children in the UK face early adversity, with many requiring welfare support. Linked administrative data offers a powerful tool for understanding the needs of these children and their families, capturing detailed information on their use of social care, health, and other public services. This study uses such data to estimate maternal psychosocial risk factors known to be associated with likelihood of experiencing adverse outcomes like needing additional local authority support.

**Methods:** This study used data from the SAIL Databank (Wales) and the ECHILD database (England), both of which contain anonymised, linkable population-level health, social and demographic data. We created a cohort of mothers who had a live birth between April 2002 and March 2020, and longitudinal secondary care health records. Validated code lists identified mental health conditions and substance use in the year prior to birth.

**Preliminary results:** The cohorts for Wales and England included 438,640 and around 10 million live births, respectively. In Wales, hospital diagnoses of maternal anxiety and depression steadily increased over time, from <1% and 1%, respectively in earlier years to 6% for both by 2020. In England, severe mental illness diagnoses also increased over the period. Further analyses are on-going.

**Conclusion:** These trends indicate growing psychosocial adversities experienced by families and highlight the need for targeted support or early intervention. Ongoing analysis will provide further insight to inform national policy and improve service provisioning.

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**Cost of Birth: Examining Out-Of-Pocket Expenditure in Maternity Care and Policy Implications in India**  
**Sai S. Joshi - University of Southampton**

This study examines the trends and determinants of out-of-pocket expenditure (OOPE) for maternity care in India, focusing on disparities between urban and rural populations and assessing the impact of government interventions like the Janani Suraksha Yojana (JSY). Using nationally representative data from the Indian Demographic Health Survey, this analysis includes 282,956 women aged 15–49 years who delivered in public health facilities between 2011 and 2020. Medical and non-medical OOPE were inflation-adjusted to 2020–2021 values using Consumer Price Index data. Quantile regression models stratified by urban and rural residence were employed, accounting for complex survey design and sample weights. Preliminary results indicate that while institutional deliveries have increased across wealth quintiles over time, substantial financial burdens remain, particularly among the urban poor. Non-medical OOPE, including transportation and informal costs, has risen steadily, and is notably higher among wealthier groups, but is still burdensome for disadvantaged populations. JSY has helped reduce medical OOPE for rural women but has had limited success in alleviating costs for urban poor women, whose expenses remain elevated even after incentives. Caesarean deliveries continue to incur the highest OOPE, despite JSY support. These findings highlight persistent inequities in OOPE in maternity care and suggest that current policies, while beneficial in rural areas, inadequately address the challenges faced by urban poor women. The study calls for a recalibration of maternal health policies to cover both direct and indirect costs across different geographies, advancing equitable access to affordable maternity care in India.

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## **The hidden toll of violent deaths during pregnancy and the postpartum period in Mexico**

**Ursula Gazeley - University of Oxford, Maria Gargiulo - LSHTM, Anushé Hassan - LSHTM, Hallie Eilerts-Spinelli - Johns Hopkins University, Alexis Palfreyman - UCL, Itzel Yaneth - El Colegio de México**

### **Background**

The true scale of pregnancy and postpartum deaths from violence remains poorly understood - even in countries like Mexico, that face persistent challenges with interpersonal and community-level violence. Violent deaths include self-inflicted violence (such as suicide and accidents), externally perpetrated violence (such as homicide and manslaughter), and violent deaths with undetermined intent.

### **Methods**

We used data on all deaths of pregnant and postpartum women, up to 11 months following the end of pregnancy, regardless of birth outcome, from the implementation of ICD-10 onwards (1998–2023) in Mexico. We compared the burden of deaths from violence with maternal causes, categorised by ICD-Maternal Mortality (ICD-MM) grouping and late maternal deaths occurring beyond 42 days postpartum.

### **Findings**

Between 1998 and 2023, official statistics recorded 31,530 pregnancy related deaths in Mexico, of which 24,504 were attributed to maternal causes. Among all pregnancy-related deaths, 1691 were due to violence: 1032 from external violence, 513 self-inflicted, and 146 had undetermined intent. Deaths from violence surpassed the total number of maternal deaths from pregnancy related infection (n=767), and were of a similar magnitude to deaths from abortive outcome (n=2043). The leading form of external violence was firearm related death (n=552), while hanging/strangulation (n=379) was most common among self inflicted deaths, followed by self poisoning (n=97). Violent deaths have increased since 2010.

### **Interpretation**

Violence is a significant and rising cause of pregnancy-related mortality in Mexico, yet current definitions and surveillance systems fail to capture its full impact. Deaths from external violence are excluded from the ICD definition of maternal death, and self-inflicted cases are missed without an obstetric code. These gaps obscure the true burden of violence during pregnancy and postpartum. Our findings highlight an urgent need to adapt maternal health frameworks to include violence prevention and improve classification and monitoring practices.

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