Background Previous studies have suggested that in-utero exposure to infection is associated with an increased risk of childhood seizures, but there is a lack of evidence regarding in-utero exposure to influenza. The objective of this study was to investigate whether in-utero exposure to the H1N1 pandemic, influenza infection, or vaccination is associated with a higher risk of childhood seizures.

Methods Registry-based study including all children born in Norway between 01/10/2009 and 31/12/2015 (n=254,347). Data were linked from sources including the Medical Birth Registry, the Norwegian Immunisation Register, the primary care reimbursement system, and the Norwegian Patient Registry. We investigated three exposures: 1) in-utero exposure to the H1N1 pandemic (≥1 pregnancy day during the main H1N1 pandemic wave), 2) in-utero exposure to maternal influenza infection (diagnosis of influenza-like illness in primary care, and/or laboratory confirmed H1N1 infection), and 3) in-utero exposure to H1N1 vaccination. We used Cox Proportional Hazards modelling to compare the incidence of seizures (any seizure, febrile seizure, epilepsy) according to exposure status from birth until 31/12/2015. Hazard ratios were adjusted for parity, maternal age, multiplicity, sex and maternal smoking.

Results 24.4% (62,032) children were exposed in-utero to the H1N1 pandemic, of whom 3.7% (2,299) were exposed in-utero to maternal influenza. Among 77,671 children with ≥1 in-utero day during the vaccination period, 34.9% (n=27,138) were exposed in-utero to the H1N1 vaccination. The risk of febrile seizures was slightly increased after in-utero exposure to the pandemic (aHR 1.06, 95% CI 1.00–1.12), but there was no evidence of an increased risk of epilepsy (aHR 1.08, 95% CI 0.93–1.26). There was no evidence of an overall association between in-utero exposure to maternal H1N1 infection and childhood seizures (febrile seizures aHR 1.17, 95% CI 0.92–1.49; epilepsy aHR 0.93, 95% CI 0.50–1.75). However, when stratified by trimester of exposure we observed a 40% increased risk of febrile seizures after infection during the second trimester (aHR 1.42, 95% CI 1.02–1.99). In-utero exposure to vaccination was not associated with an increased risk of childhood seizures.

Discussion This large study benefits from virtually no loss to follow-up and mandatory vaccination reporting. The limitations include our inability to validate outcome data, and the under-reporting of influenza infection. Our finding of no increased risk consequent to in-utero exposure to H1N1 vaccination supports the safety of vaccination in pregnancy. Although we found no overall evidence that in-utero exposure to maternal H1N1 infection was associated with febrile seizures, a small increased risk of febrile seizures after second trimester exposure warrants further investigation.

Health inequalities 1

OP05 WHICH AGES AND CAUSES OF DEATH EXPLAIN THE WIDENING LIFESPAN VARIATION GAP IN SCOTLAND? A POPULATION BASED STUDY USING ROUTINE DATA

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Background Scotland’s relative lifespan variation ranking within Western Europe deteriorated after 1980. It is not clear how Scotland’s national lifespan variation trend is associated with socioeconomic inequalities in age and cause of death. We calculate lifespan variation for deprivation quintiles over a thirty year period. We apply stepwise decomposition by age and cause of death to better understand the changing nature of mortality inequalities.

Methods Census population estimates and mortality records from 1981–2011, were matched with the Carstairs score, an...