OP102 CONCORDANCE BETWEEN HOSPITAL DISCHARGE DATA, ELECTRONIC HEALTH RECORDS AND REGISTER BOOKS FOR DIAGNOSIS OF MISCARRIAGE IN A TERTIARY MATERNITY HOSPITAL: A RETROSPECTIVE LINKED DATA STUDY

[1,2]ISCLSan Lazaro Campillo*, [1,2]SM Meaney, [3]MH Harrington, [4]AMV Verling, [2]PC Corcoran, [1,5]KOD O'Donogue. [1]Pregnancy Loss Research Group, Department of Obstetrics and Gynaecology, University College Cork, Cork, Ireland; [2]National Perinatal Epidemiology Centre (NPEC), Department of Obstetrics and, University College Cork, Cork, Ireland; [3]Hospital In-Patient Enquiry (HIPE), Cork University Hospital (CUH), Cork, Ireland; [4]Department of Obstetrics and Gynaecology, Cork University Maternity Hospital (CUMH), Cork, Ireland; [5]The Irish Centre for Fetal and Neonatal Translational Research (INFANT), University College Cork, Cork, Ireland

Background Miscarriage is one of the most common complications in early pregnancy loss; however, its prevalence varies depending on the type of miscarriage investigated, and the type of measurement used for collecting data. Research assessing the validity of the outcome of a diagnosis of miscarriage at hospital settings is sparse in Ireland. Therefore, the aim of this study was to determine agreement between hospital discharges for the diagnosis of miscarriage between three data sources from January to June 2017 in Ireland.

Methods This retrospective chart review study compared agreement of diagnosis of miscarriage among inpatient admissions between the electronic health records (EHR), the Hospital Inpatient-Enquiry (HIPE), and register books at Cork University Maternity Hospital (CUMH). Also, we compared classification of type of miscarriage at the time of admissions including: incomplete, complete, late and missed miscarriage. Other types of early pregnancy loss (i.e. ectopic and molar pregnancy) were reviewed. After excluding duplicates or missing data, 294 diagnoses of miscarriage were identified in 357 EHR records, 295 in 366 EHR records, and 224 in 260 register books records. Kappa (k), sensitivity, specificity, positive and negative predictive value (PPV & NPV) were calculated to assess level of agreement between the three data sources.

Results Using EHR as a gold standard, HIPE had a sensitivity of 98.3%, specificity of 87.5%, PPV of 96.2%, NPV of 93.9%, with a very good strength of agreement (k=0.88; p-value <0.001). Using EHR as a gold standard, register books had a sensitivity of 97.3%, specificity of 77.2%, PPV of 95.1%, NPV of 85.0 with a good strength level of agreement (k=0.77; p-value <0.001). Approximately, 60% of diagnosis of miscarriage were classified as incomplete miscarriage by the HER and HIPE (n=245 and n=235 respectively) compared to only 3.1% by the register books (n=12). Almost 40% of admissions of miscarriage were classified as missed miscarriages by the registered books. According to HIPE and register books, there were approximately 28% (n=28) late miscarriages, compared to 11% (n=42) identified by EHR.

Conclusion Our findings indicate that HIPE and EHR are reliable and valid databases for monitoring and reporting prevalence of miscarriage in Ireland. However, discrepancy was found when comparing type of admissions of miscarriages. There is a need to standardised classification of type of miscarriages between data registers in Ireland. This is essential to identify the most efficient type of treatment according to the type of miscarriage among women who miscarry.

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OP103 UNDERSTANDING SOCIAL INEQUALITIES IN CHILD MORTALITY: A POPULATION-BASED STUDY IN DENMARK AND WALES

[1]ETC Lai, [2]R Griffiths, [2]A Akbari, [3]SK Urhoj, [3]AMN Andersen, [1]DC Taylor-Robinson*. [1]Department of Public Health and Policy, University of Liverpool, Liverpool, UK; [2]Farr Institute, Swansea University, Swansea, UK; [3]Section of Epidemiology, University of Copenhagen, Copenhagen, Denmark

Background Children growing up in disadvantaged socioeconomic circumstances (SECs) have a higher risk of death. In this study, we aimed to examine whether perinatal factors mediate the relationship between SECs and child mortality.

Methods We conducted national registry linkage studies in two countries, using data for 592,001 births in Denmark (from 2000 to 2014) and 646,303 births in Wales (from 2000 to 2016). Deaths up to age 15 years in Denmark and up to 16.5 years in Wales were identified using death registry data, whilst birth weight and gestational age were obtained using medical birth register data. SECs at child's birth were measured using maternal education in Denmark, which was identified from the Integrated Database for Labour Market Research; whilst in Wales, SECs were assessed based on quintiles of Welsh Index of Multiple Deprivation (WIMD), which was obtained for the mother's postcode from the Welsh Demographics Service Dataset. We built two Cox proportional hazard survival analysis models to estimate the effect of SECs on children mortality and mediation by the perinatal factors: model 1 is the baseline model adjusted for sex and year of birth, model 2 additionally adjusted for birth weight and gestational age. As a sensitivity analysis, we tested whether the effect of SECs on child mortality changes over time, i.e. we assessed the interaction term between SEC measures and birth year.

Results We identified 2,664 deaths in Denmark and 2,987 deaths in Wales. In both countries, lower SECs was associated with a higher risk of child mortality [Denmark: Hazard ratio (HR) 2.78; 95% confidence interval (CI): 1.04 to 7.43 (comparing maternal education with lower secondary or lower and those with university degree); Wales: HR: 1.92; 95%CI: 1.56 to 2.36 (comparing whose mothers from most deprived quintile and those from least deprived quintile)]. After adjustment for perinatal factors, the associations were attenuated (Denmark: HR: 1.65, 95%CI: 0.62 to 4.41; Wales: HR: 1.66, 95%CI: 1.35 to 2.05). Sensitivity analysis did not show the effect of SECs on child mortality changes over time.

Discussion Using data from over 1 million children across two countries, we showed that a substantial proportion of social inequality of child mortality could be explained by perinatal factors. Policies to reduce child mortality in both countries should therefore focus on improving maternal health before and during pregnancy, especially those under socioeconomic