

Intergrowth (IG) 21st project proposed alternative curves derived from multinational healthy preterm infants based on the hypothesis that normal VPT growth differs from term infants. We used these two approaches to investigate EUGR prevalence in a multinational sample of European VPT infants. **Methods** Data come from the EPICE (Effective Perinatal Intensive Care in Europe) project, an area-based study of infants born at less than 32 weeks' gestation in 2011/12 in 19 regions from 11 European countries. We included 6,471 infants discharged home before 50 weeks PMA. EUGR was defined as weight at discharge for PMA and sex <10th percentile using Fenton and IG references. We compared the prevalence of EUGR by selected neonatal characteristics and country of birth, using X2 tests. We used generalized linear regression models with a Poisson distribution and robust standard errors to estimate adjusted risk ratios (aRR).

Results The prevalence of EUGR using Fenton's references was 43.9% for boys and 45.2% for girls (NS) compared to 33.6% for boys and 25.5% for girls for IG ($p < 0.01$). Prevalence of EUGR by country ranged from 24.7% in Sweden to 60.1% in Portugal for Fenton and from 14.0% in Sweden to 43.7% in Portugal for IG. Lower gestational age at birth, being small for gestational age at birth and having a severe neonatal morbidity were risk factors for being EUGR, regardless of the reference. Boys were more growth restricted than girls when using IG, but not Fenton. Adjusting for case-mix did not reduce variability between regions: the aRR for EUGR for Portuguese compared to Swedish VPT infants was 2.5 (95% confidence interval (CI): 2.0–3.1) for Fenton and 3.3 (95% CI: 2.6–4.6) for IG.

Conclusion Accurately identifying infants with sub-optimal growth is important for clinical care and for research on the etiology and consequences of EUGR. The difference in EUGR prevalence linked to choice of reference as well as the large variations between countries suggest that references should be validated in their target populations before adoption.

RF14 **CHANGES IN TRAJECTORIES FOR BLOOD PRESSURE AMONG CHINESE CHILDREN AND ADOLESCENTS: EVIDENCE FROM CHINA HEALTH AND NUTRITION SURVEY 1991–2011**

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Background High blood pressure (BP) in adults is an important risk factor for cardiovascular disease (CVD) development and mortality. Childhood BP is not affected by antihypertension treatment, tracks into adulthood and is associated with early target organ disease. Previous reviews reported the varied trend of childhood BP between and within countries. Little is known whether BP trajectories during childhood have changed over time in developing countries with rapid economic development like China. As BP is strongly associated with body-size, we investigated whether BP trajectories have changed among Chinese children and adolescents and estimated the role of BMI and height trends to explain the change in BP trajectories during the past 2 decades.

Methods China Health and Nutrition Survey (CHNS), a mixed longitudinal household survey with eight waves from 1991 to 2011, was used to create four birth cohorts (children aged 7–17y, born in 1981–85, 1986–90, 1991–95, 1996–2000,

$N \sim 16000$). Within each gender group, mixed effects cubic growth models were applied to estimate child-to-adolescent trajectories for systolic and diastolic BP (SBP and DBP) with and without adjustment for BMI and height by gender- and age-standardised z-scores. Between-cohort differences were examined by testing the interactions of each cohort with age terms.

Results Trajectories for SBP increased across cohorts: those for later-born cohorts tended to lay above early-born cohorts in both genders. After the adjustment of height and BMI, the differences in mean SBP reduced. The reduction was more evident in adolescence (vs childhood) and with adjustment for height (vs for BMI) trajectories.

For example, the difference between the last (born in 1996–2000) and first (born in 1981–85) cohorts was 1.90 mmHg (95% CI: 0.54–3.26) for boys and 2.58 mmHg (95% CI: 1.18–3.98) for girls at 7y, and there was no difference at 16y after adjustments. Similar patterns were seen for DBP.

Conclusion Our study is the first to investigate the change in BP trajectories during childhood in China. Later-born Chinese children and adolescents are characterized by higher BP than the earlier generations at the same age. This BP trend during recent decades was partly explained by more rapid growth in height and BMI in later-born children. Future study should exam other potential risk factors on BP trend in Chinese children.

RF15 **NATIONAL DATA OPT OUT PROGRAMME: CONSEQUENCES FOR MATERNAL AND CHILD HEALTH RESEARCH IN ENGLAND**

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Background The National Data Opt Out Programme was implemented in 2018 to enable users of the English NHS to electronically opt out of sharing their patient information for purposes other than their direct care. It has been reported that opt outs may affect the reliability of data used to evaluate services and conduct public health research; however, biases arising from opt outs have not previously been quantified. The aim of this study was to describe the extent to which rates of birth and maternity outcomes at Clinical Commissioning Group (CCG) level may be biased by patient opt outs.

Methods We selected one common and one rare maternity/birth outcome: the rate of deliveries with caesarean sections and rate of births with very low birth weight. Average 2016 rates (per total number of deliveries/births) for both childbirth indicators are published online by Public Health England. The percentage of total patients that have opted out as at 31 December 2018, by CCG, is publically available through NHS Digital. We simulated outcome rates across each CCG had opt outs not been applied to the data.

Results As at December 2018, the median CCG opt out rate across England was 2.4%, ranging from a minimum of 0.3% to a maximum of 10.1%. The average published proportion of deliveries with caesarean section was 27.3% (95% CI 25.6, 29.1) and births with very low birth weight 1.18% (95% CI 0.84, 1.67). For the caesarean section indicator, our simulation produced an average minimum value of 26.6% and a