standard paediatric head injury proforma, with an under 1 year old section, was introduced. This printed instead of patient notes. Local education and electronic prompts on the ED clinical system also occurred.

**Results** There were 1240 infants <1 year with head/facial injury over the study period, 245 were selected with 238 analysed (7 discounted as not head/facial injury). From 2017–2021 SFT documentation increased from baseline median 0% to >80%, with a statistical change in practice after introduction of the proforma. SIF submission increased from baseline median 60% to >80%, with a statistical shift in practice from October 2017. It is unclear what caused this shift in practice but national case awareness including child X & U may have impacted. Clerical issues identified in the original QIP led to SIFs not reaching the Safeguarding team (SIF scanned into notes only and not discussed) thus impacting on achieving a higher percentage of SIF submissions. Despite raising awareness in 2018–19 with our clerical staff, this issue remains and may not be correctable until a planned fully electronic system is introduced. Some infants had no SIF reflecting staff non-compliance with local policy suggesting on-going education and feedback is required.

**Conclusions** Introduction of a standardised head injury proforma and electronic prompt has created a sustained and embedded practice within our PED of adequate SFT documentation. SIF submission is high and improved further, but a combination of clerical issues and policy non-compliance has currently limited further improvement. Continuous staff education, training and feedback is required to sustain high compliance levels.

**British Paediatric Neurology Association**

**576 A SYSTEMATIC REVIEW AND META-ANALYSIS OF THE EVIDENCE FOR ASSOCIATION OF POTENTIAL RISK FACTORS WITH DEFORMATIONAL PLAGIOCEPHALY**

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**Background** A number of potential risk factors may change the odds for developing deformational plagiocephaly. Understanding the evidence for the association of potential risk factors will improve the diagnosis and management of deformational plagiocephaly.

**Objectives** The aim of this study was to conduct a systematic review and meta-analysis to assess the evidence for association between potential risk factors and deformational plagiocephaly.

**Methods** The study was conducted in accordance with PRISMA guidelines (PROSPERO identifier: CRD42020204979). PubMed and Web of Science were searched (21 August 2010 through to 21 August 2020) for observational studies which assessed risk factors for deformational plagiocephaly. Main outcomes were any risk factors which alter odds for the development of deformational plagiocephaly. When feasible, pooled meta-analytic estimates were provided using fixed- or random-effects models.

**Results** A total of 17 studies met the inclusion criteria. Meta-analysis demonstrated evidence of association between specific risk factors and deformational plagiocephaly, including male gender (OR, 1.66; 95% confidence interval (CI) 1.13 to 2.43; I2, 63.25%; N=4), supine sleeping position (OR, 3.23; 95% CI 2.05 to 5.10; I2, 17.26%; N=2), head position preference (OR, 4.76; 95% CI 3.44 to 6.57; I2, 0.00%; N=3), vaginal mode of delivery (OR, 1.55; 95% CI 1.07 to 2.23; I2, 0.00%; N=3), and low maternal education level (OR, 1.66; 95% CI 1.17 to 2.37; I2, 0.00%; N=2). Evidence of no association was found for small for gestational age (SGA) (OR, 1.74; 95% CI 0.91 to 3.31; I2, 37.08%; N=2), multiple pregnancy (OR, 1.97; 95% CI 0.30 to 13.15; I2, 87.04%; N=2), and cephalic presentation at delivery (OR, 0.53; 95% CI 0.10 to 2.86; I2, 88.61%; N=2).

**Conclusions** Risk factors associated with the development of deformational plagiocephaly include male gender, sleeping supine, head position preference, vaginal delivery, and lower maternal education. Risk factors with evidence of no association include SGA, multiple pregnancy, and cephalic presentation. These findings may assist in the development of guidelines for improving the diagnosis and management of deformational plagiocephaly.

**International Child Health Group**

**578 ASSOCIATIONS BETWEEN MATERNAL THYROID FUNCTION IN PREGNANCY & CHILD NEURODEVELOPMENTAL OUTCOMES AT 20 MONTHS IN THE SEYCHELLES CHILD DEVELOPMENT STUDY NC2**

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**Background** Maternal thyroid hormones facilitate optimal foetal neurodevelopment, however the exact role of the thyroid hormones on specific cognitive outcomes is unknown.

**Objectives** This study aimed to investigate associations between maternal thyroid function and neurodevelopmental outcomes at 20 months in the Seychelles Child Development Study (SCDS, n=1535).

**Methods** Maternal free thyroid hormones (fT3, fT4 and fTSH) were assessed at 28 weeks gestation with a range of child cognitive outcomes analysed at 20 months. Dietary iodine intake was analysed for a subset of women through a Food Frequency Questionnaire (FFQ) (n=422), with a median iodine intake of 233μg/d, slightly below the recommended iodine intake for pregnancy as advised by the WHO (>250μg/d). Linear regression analysis was used to test associations between serum concentrations of fT3, fT4 and fTSH and child cognitive outcomes. Thyroid hormones were analysed both as continuous data and also categorised as quintiles. 95% of mothers had optimal thyroid function based on their TSH concentrations.

**Results** Results show that maternal fT3, fT4 and TSH were not significantly associated with any cognitive outcomes at 20 months in this high fish-eating population. However, a