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

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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; I^2 , 63.25%; $N=4$), supine sleeping position (OR, 3.23; 95% CI 2.05 to 5.10; I^2 , 17.26%; $N=2$), head position preference (OR, 4.76; 95% CI 3.44 to 6.57; I^2 , 0.00%; $N=3$), vaginal mode of delivery (OR, 1.55; 95% CI 1.07 to 2.23; I^2 , 0.00%; $N=3$), and low maternal education level (OR, 1.66; 95% CI 1.17 to 2.37; I^2 , 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; I^2 , 37.08%; $N=2$), multiple pregnancy (OR, 1.97; 95% CI 0.30 to 13.15; I^2 , 87.04%; $N=2$), and cephalic presentation at delivery (OR, 0.53; 95% CI 0.10 to 2.86; I^2 , 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

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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

positive association, using quintiles for fT3, was reported for Motor Development Index (MDI; a subtest of the Bayley's Scales of Infant Development), between Q3 vs Q4 (β 0.073; p 0.043) and for Q3 vs Q5 (β value 0.086; p 0.018).

Conclusions Thus, it is possible mothers in our cohort, who largely have optimal thyroid function and iodine intakes, are able to regulate thyroid function throughout pregnancy to meet neurodevelopmental needs. However, it is likely that minor imbalances of fT3, as indicated from our quintile analysis, may impact offspring neurodevelopment. Thus, further investigation is warranted, particularly focusing on thyroid hormone fluctuation throughout pregnancy in relation to possible associations with infant neurodevelopment.

British Society of Paediatric Gastroenterology, Hepatology and Nutrition

579 RESOLUTION TIME OF LIVER ABSCESS IN CHILDREN: DO WE HAVE AN ANSWER?

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10.1136/archdischild-2021-rcpch.80

Background The residual abscess on ultrasound after clinical resolution in children creates psychological fear among parents and diagnostic dilemma among physicians. Unlike in adults, there are no studies on resolution time of liver abscess in children.

Objectives To determine the time taken for clinical and ultrasonological resolution of abscess, and estimate the frequency of unfavourable outcomes and assess the clinico-biochemical parameters that influence the occurrence of unfavourable outcomes in children.

Methods A descriptive longitudinal study was conducted in the department of Pediatrics in a tertiary care hospital in North India in which 60 children (aged 1–18 years) with clinical features of fever and pain abdomen with a liver abscess on ultrasound were followed up clinically and by serial ultrasounds till complete ultrasonological resolution. These children with liver abscess on ultrasound were admitted and treated with intravenous antibiotics after appropriate blood tests. Percutaneous needle aspiration and/or surgical drainage (pigtail insertion/laparotomy) was attempted in children not responding to the initial conservative management or those showing signs of impending rupture on ultrasound.

Results The mean $\pm$ S.D ultrasonological resolution time was 7.9 ± 3.53 weeks whereas the clinical resolution time was 10.64 ± 4.77 days. Initial conservative management failed in 21 (37.5%) children, 2 (3.6%) children were readmitted and 18 (32.4%) children had complications. There were no deaths in our study. TLC and abscess size were the two clinico-biochemical parameters associated with the occurrence of unfavourable outcomes ($p < 0.05$).

Conclusion Clinical resolution of liver abscess in children takes an average of 10 days, whereas it takes about 8 weeks for ultrasonographic changes to resolve completely.

Quality Improvement and Patient Safety

581 NO MISTAKES! ONLY LESSONS

Nilima Singh. Mid and South Essex NHS Foundation Trust

10.1136/archdischild-2021-rcpch.81

Background Departmental Datix outcomes are not regularly shared with front line staff. They miss vital learning from errors and the opportunity to be involved in improvement. Patients suffer recurrent harm.

Objectives By the end of February 2020, 100% of front line staff will be aware of the Datix Outcomes that occurred in the previous month in the Department.

Methods

Change ideas:

- Regular emails (1–2/month)
- Rotation of leadership
- Adhoc emails from Pharmacy
- Microteach, handovers, teaching programmes
- Set up equipment, format, etc.
- Visual aid e.g. poster
- Senior trainees to join in

PDSAs:

1)

P

- Meet Clinical Governance Lead in consultant office.

D

- Share Problem statement, initial data, fish bone, aim and change ideas

S

- Lead readily recognised the issue and engaged fully.

Agreed change idea email and a poster

A

- Lead discussed my project in the next clinical governance meeting and delegated the task of sharing information to Matron for more regularity.

2)

P

- Follow up with Matron in her office
- what had actually happened?

D

- Confirmed sent most recent Datix outcomes to Governance umbrella team

S

- Email still didn't reach front line staff email box.

Agreed main 1 or 2 learning outcomes to go in a poster

A

- Matron to find out reasons why. Agreed to rotate task of sharing information between leads. No change in Datix outcome awareness.

3)

P

- Meeting with Clinical Governance Lead again

D

- Email formatted in the sitting. Poster reviewed and sent. 12 staff interviewed in week 1.

S

- 0% saw poster- not signposted in email. 8/12 (66%) aware of Datix outcome. 4/12 unaware (2 newly joined GPVTS + 2 oncology)