Background The National Review of Asthma Deaths (NRAD) published in 2014 concluded that 46% of asthma deaths were avoidable had appropriate guidelines been followed. >50% of patients had attended A&E on ≥ 2 occasions in the 12 months preceding their death. An electronic Paediatric Emergency Department Asthma Assessment Tool (PEDAAT) was developed in 2016, using NRAD Standards, to identify high risk children with asthma and direct them to a dedicated Asthma Care Pathway. This aimed to empower parents with asthma management through education and prevent future adverse outcomes. In 2019, PEDAAT was refined to a mandatory 'Concise PEDAAT' to identify children fulfilling ≥ 1 of the 4 key Secondary Care follow-up criteria in the preceding 12 months:

- ≥ 2 courses of oral steroids
- ≥ 2 paediatric A&E attendances
- ≥ 12 salbutamol inhalers
- ≥ 1 inpatient stay

Objectives

1. To determine Concise PEDAAT completion rates
2. To calculate PEDAAT nurse-led clinic attendance rates
3. To determine compliance with PEDAAT clinic safety measures:
 - Assessment of asthma control
 - Spirometry (>5 years)
 - Asthma education/discussion of personalised asthma action plan (www.beatasthma.co.uk)
 - Inhaler technique check
 - Parental smoking cessation advice
 - Identification of children requiring referral to consultant-led paediatric respiratory clinic
4. To obtain parental feedback regarding their PEDAAT clinic experience
5. To determine change in health seeking behaviours in the 12 months pre versus post PEDAAT clinic review

Methods Children 4–17 years of age, attending paediatric A&E over a 6-month period (01/06/19–31/11/19) with a Manchester Triage Code of asthma or wheeze were identified. Concise PEDAAT completion rate, PEDAAT clinic attendance rate and compliance with safety measures were calculated.

Change in acute hospital episodes was calculated for 247 patients, comparing 12 months pre with 12 months post PEDAAT clinic intervention (01/01/18–30/05/19).

Parents completed a feedback questionnaire regarding their clinic experience.

Results Concise PEDAAT was completed for 100% ($n=34$) of cases with 100% of safety measures achieved in the 90% of patients who attended clinic.

For the 247 children attending PEDAAT clinic, a 62% reduction in A&E attendances, 50% reduction in CSSAU (Children's Short Stay Assessment Unit) stay and 71% reduction in unplanned inpatient admissions as observed over 2 consecutive 12 month periods.

Parent PEDAAT clinic feedback:

- 26(100%): education useful
- 26(100%): would recommend the clinic to friends/family
- 23(89%): more confident in managing their child's asthma

Conclusions

- Concise PEDAAT is effective in identifying high risk children with asthma who require secondary care follow-up.

- PEDAAT clinic attendance rate is high (90%) and delivers patient-focused care.
- PEDAAT linked to an Asthma Care Pathway is associated with excellent parent feedback.
- PEDAAT clinic intervention is associated with an observed decrease in acute hospital episodes with the potential for significant NHS cost savings.
- A future cost-benefit economic analysis is recommended.

British Association of General Paediatrics

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COPPER AND COBALT CONTENT, MORPHOLOGICAL AND STRUCTURAL FEATURES OF HAIR OF CHILDREN BORN WITH LOW BIRTH WEIGHT

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Background Body weight at birth is a powerful predictor of infant growth and development. Low birth weight (BMI) at birth is one of the most serious health problems in both developing and developed countries. About 20 million low birth weight (<2500 g) children are born worldwide each year. MMT is an important indicator for monitoring the health of preterm infants (<37 weeks gestation). There are many causes of premature birth, one of which is dysmicroelementosis.

Objectives Study of the content of cobalt and copper, as well as morphological features in the hair of children born with MMT at 32–36 weeks of gestation.

Methods The material (hair) was taken from 10 children who were born prematurely with MMT at 32–36 weeks of gestation (group I) on the first day of life. The comparison group consisted of healthy infants born at gestational age > 37 weeks (group II). The method of scanning electron microscopy was used to determine morphological and structural features. The content of cobalt and copper was investigated using the method of atomic absorption spectrophotometry on a spectrophotometer C-115M1.

Results The average copper and hair content of children born with MMT at 32–36 weeks of gestation was 22.13 ± 1.08 $\mu\text{g/g}$, which is 1.2 times less than in the comparison group (26.92 ± 0.88 $\mu\text{g/g}$; $p < 0.05$).

Regarding the indicators of cobalt content in group I, they were 0.015 ± 0.0032 $\mu\text{g/g}$, which is 2.3 times less than in the comparison group (0.034 ± 0.0023 $\mu\text{g/g}$; $p < 0.05$).

When studying the hair of children in group I noted their concave shape, with jagged edges. The horny scales of the cuticle were thin and wide and stretched across the width of the hair. Minor surface defects were noted. The cuticle pattern was poorly visualized in places. Examination of hair samples of children of group II at the ultramicroscopic level showed a uniformly smooth, shiny surface. The hair had a regular cylindrical shape, a ribbon-shaped cuticle, the pattern of which was clearly visualized due to the orderly arrangement of the horny scales. The edges of the hair are smooth, without jags. The average hair diameter of children in group I (32.5 ± 1.75 μm) was 1.25 times smaller than in group II (40.7 ± 0.59 μm ; $p < 0.05$).

Conclusions Thus, there is a deficiency of copper and cobalt in the hair of children born with MMT at 32–36 weeks of

gestation. The diameter of the hair in these children is smaller than in those born on time. That is, structural and morphological immaturity of hair, deficiency of nutrients involved in its formation may be one of the factors of premature birth.

Association of Paediatric Emergency Medicine

538 ABSTRACT WITHDRAWN

Paediatric Mental Health Association

539 REACHING OUT TO CHILDREN AND YOUNG PEOPLE ABOUT MENTAL HEALTH IN THE COVID-19 PANDEMIC

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Background Since the start of the Covid-19 pandemic the mental health of children and young people across the country has been affected. The ongoing uncertainty during the pandemic has made normality a thing of the past. The burden of this has created an escalation of worsening mental health diagnoses and created a new population with new mental health issues.

Children's mental health week is celebrated every year in the hospital. This year, given the pandemic restrictions, new ways of raising awareness of children's mental health was sought with using social media outlets.

Objectives To create content on the hospital trust social media pages that would engage children and young people in children's mental health week.

To use social media to showcase the mental health teams that work in the hospital and the mental health organisations who work in the city who are frequently signposted to from the hospital mental health teams.

Methods Children's mental health week runs over seven days and we created content for each day. Firstly, we obtained photos of each mental health team in the hospital and a blurb to introduce themselves and what their job entailed. Secondly, we asked various organisations who are based in our city, whose work revolves around children's mental health, to provide the same information. Thirdly, and most importantly, we asked the hospital youth involvement group to create questions to ask all the teams involved as we wanted to showcase the voice of the young person in this week. The week also focused on allowing the children and young people who were in patients in the hospital to share their talents and express themselves in ways they manage their mental health.

Results The performance for each post on each day was analysed and compared to other posts that had happened after this week. Each different post for each day gained a high number of likes, shares and comments. Although one of the comparative posts gained more likes and reactions compared to our week, the post shares were considerable

higher for our week overall and the Facebook reach was also higher.

The advantage of using social media in this way also highlighted the week to other outlets and the city online paper featured our story on their social media pages.

Conclusions It was clear that the subject of children's mental health is an area which still requires highlighting. The comments we received about the content during the week has prompted us to continue with this style, to raise awareness of children's mental health. The advantages of using social media on this subject enabled us to reach a larger number of young people and their families and carers. The trust social media pages have a large number of followers and to be able to reach so many people on such an important subject made a larger impact than the previous years.

British Association of Perinatal Medicine and Neonatal Society

540 THE INCIDENCE OF METABOLIC BONE DISEASE OF PREMATURITY (MBDP) IN A HIGH-RISK POPULATION

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Background MBDP describes inadequate mineralisation of bones in the premature infant. There are no consensus diagnostic criteria, however most neonatal units use biochemical markers to screen babies at risk of MBDP.

Maximal placental transfer of minerals occurs from 28 weeks gestation and requires adequate placental blood flow. It follows that infants born before 28 weeks or with evidence of placental insufficiency are at high risk of MBDP. The reported incidence is 23–60% of babies born weighing less than 1500 grams. The diagnosis carries significant morbidity including a risk of pathological fractures, respiratory difficulties due to excessive chest wall compliance and poor linear growth through childhood.

Objectives We undertook a review of data across two neonatal intensive care units with the following objectives: i) to report the incidence of MBDP defined by biochemical markers on routine blood testing of high risk infants ii) to report the incidence of MBDP and related fractures as documented in the BadgerNet database

Methods Infants born at less than 30 weeks or with birth weight less than 1500 grams admitted between 01/01/2015 and 31/12/2019 were identified using the Vermont Oxford Network (VON) and BadgerNet databases. Blood biochemistry results were obtained for the duration of their admission. Biochemical MBDP was defined as alkaline phosphatase (ALP) >500IU/L and either phosphate <1.8mmol/L or corrected calcium <2.2 mmol/L (values taken from Tinnion RJ, Embleton ND. *Arch Dis Child Educ Pract Ed* 2012; 97: 157–163).

Infants with a documented diagnosis of MBDP or related fracture were identified with a search of the BadgerNet database using the terms 'Metabolic Bone Disease – Osteopenia' and 'Fracture'.