7. Focus group feedback was positive that it also improved confidence.

Conclusions Discussion:

1. Important ECG parameter interpretation and documentation could be improved by implementing a checklist.
2. ECGs recorded with appropriate indications in 100% could suggest ECGs are not recorded enough. The checklist may also serve as a prompt to remind staff of the reasons to get a paediatric ECG.
3. Most abnormal and some normal ECGs get discussed with senior clinician. It may be that the checklist empowers junior staff to conduct a comprehensive evaluation prior to escalation to senior or cardiologist.
4. As with any checklist, thoroughness must be balanced against how user-friendly it is. A detailed comprehensive form may not get used because it takes too long. We believe we have struck the correct balance to assist clinicians in interpretation.

British Society of Paediatric Endocrinology and Diabetes

764

ETHNIC AND SEASONAL VARIATION IN BLOODSPOT VITAMIN D AT BIRTH

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Background Vitamin D deficiency in infancy can have devastating health consequences such as hypocalcaemic seizures and dilated cardiomyopathy. It is therefore imperative to ensure adherence to national antenatal and infant supplementation policies. The effectiveness of antenatal supplementation in preventing newborn vitamin D deficiency in the UK has not been studied to date. Measuring 25 hydroxyvitamin D (25OHD) on dried blood spots (DBS) has recently emerged as a reliable method to assess population vitamin D status.

Objectives To determine the prevalence of vitamin D deficiency on DBS obtained at newborn blood spot screening (NBS) and thereby test the efficacy of the UK antenatal supplementation programme in an increasingly ethnically diverse population. To evaluate the seasonal and ethnic variation in neonatal plasma 25OHD and its determinants.

Methods 3000 random DBS samples at a single regional newborn screening laboratory (52° N) over two one-week periods, one in winter (February 2019) and one in summer (August 2019), were collected. Data was collected from NBS cards on

birth weight, gestational age, maternal age, ethnicity, and post code which was replaced with index of multiple deprivation (IMD). 25OHD concentrations were measured on 6 mm sub-punch from DBS using quantitative liquid chromatography tandem mass spectrometry adjusted to equivalent plasma values. 25OHD variation with season was assessed using Mann-Whitney U test and ethnic groups compared using Kruskal-Wallis test. Linear regression was used to assess the determinants of 25OHD concentrations.

Results 25OHD measurements were available in 2999 (1580 males) subjects [1499 winter-born and 1500 summer-born]. The majority were white British (59.1%) and born at term (mean $\pm$ SD gestational age of 38.8 ± 1.8 weeks) with a mean ($\pm$ SD) birth weight of 3306 ($\pm$ 565) grams. The overall prevalence of vitamin D deficiency [25OHD < 30 nmol/L (12 μ g/L)] was 35.7% (n = 1070) and insufficiency [30–50 nmol/L (12–20 μ g/L)] 33.7% (n = 1010). The median (IQR) 25OHD concentration was significantly lower in the winter-born compared to summer-born [29.1 (19.8, 40.6) vs 49.2 (34.3, 64.8) nmol/L respectively; p < 0.001]. Across both seasons, when compared to white British babies (41.6 nmol/L), the median 25OHD concentrations were significantly lower in babies of black (30.3 nmol/L; p < 0.001), Asian (31.3 nmol/L; p < 0.001), any other mixed (32.9 nmol/L; p < 0.001), mixed white and black (33.7 nmol/L; p < 0.05) and any other white (37.7 nmol/L; p < 0.05) ethnicity. The proportion of deficiency was also higher in babies of Asian (48%), black (47%) and mixed ethnicity (38–44%) compared to any other white (34%) or white British (30%) ethnicity.

Conclusions The current UK antenatal supplementation programme fails to protect newborns from vitamin D deficiency, especially those from minority ethnic groups. Nearly 70% of all newborns and 85% of winter-borns had 25OHD concentrations below 50 nmol/L (20 μ g/L). Almost 50% of babies of Black or Asian origin were deficient at birth. Our findings call for an immediate review of the delivery of antenatal and infant vitamin D supplementation programmes and implementation of food fortification in the long term.

Quality Improvement and Patient Safety

765

WETFLAG-HDU: HOW A SIMPLE QI PROJECT CAN HAVE HIGH IMPACT

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Background Paediatric emergencies in inpatient settings can be more challenging to clinical teams than anticipated emergencies in emergency departments (EDs) or intensive care units (ICUs). In unanticipated emergencies, rapid correct calculations and good team communication are crucial. This can be a challenge as emergency drugs and defibrillation are not used commonly within inpatient practice. Use of a clinical aid memoire for medication doses has been shown to decrease the risk of errors for bolus medication significantly (G Larose et al., 2017). The WETFLAG ('Weight, Energy, Tube size, Fluid, Lorazepam, Adrenaline and Glucose') mnemonic is an aid to emergency calculations, used extensively in EDs and ICUs worldwide and taught as part of the EPALS course.