Background Down syndrome (DS) is one of the commonest chromosomal abnormalities, overall prevalence 10/10 000 live births. Down Syndrome Medical Surveillance guidelines (DSMIG) are designed for optimal care for this group of children.

Objectives We audited our clinical practice in line with the guidelines. We also looked at the prevalence of co-morbidities and other important issues in this group in order to develop a locally agreed revised guideline.

Methods Children with DS were identified from Electronic records. Study period: January 2018-January 2019. Last two clinic letters (or one if new) were reviewed. Audit components: surveillance of cardiac disease, thyroid disorders, hearing, vision, cervical spine, growth, sleep, coeliac screen. We also looked at the prevalence of co-morbidities, educational placement and acute paediatric input.

Results 54 children were identified. Surveillance of *Cardiac*: Echocardiogram 100%, CVS examination in clinic: 55%. Prevalence of cardiac disorders: 44%; *Thyroid*: 100% of children < 2 years old vs 89% in > 2 years. 33% had thyroid disorders; *Hearing*: 100%, prevalence of hearing impairment: 33%; *Vision*: <4 years: 100%, > 4 years: 90%, prevalence of visual impairment: 81%; *Cervical spine*: 31% had evidence of discussion of warning signs; *Growth*: 88% had documented height and weight, 65% were plotted in the DS growth charts. 29% were documented underweight or overweight; *Sleep*: 70% had documented sleep history, 24% had confirmed obstructive sleep apnoea; *Gastrointestinal*: 63% had coeliac screen, 1 had a confirmed diagnosis. 11% had congenital GI anomalies; *Neurodevelopmental*: ADHD (n=1), ASD (n=4), Tic disorder (n=1). *Educational placement*: School aged children n=80%, 67% at special school.

Conclusions In addition to improving our own practice with the DSMIG, we made additional recommendations on surveillance of sleep: complete sleep questionnaire at 3–4 years of age; coeliac screen as per BSPGHAN recommendation; hip X rays if not weight bearing by 2 years of age.

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USING THE COVID-19 PANDEMIC AS A LEARNING TOOL TO SHAPE PAEDIATRIC OUTPATIENT CONSULTATIONS

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Background The declaration of a nationwide COVID-19 lockdown resulted in rapid adaptations to the NHS, including Paediatric outpatient consultations. At short notice, many Trusts converted outpatient consultations from traditional face-to-face to telephone consultations. General Practitioners have been using this method of assessment, with the backing of the British Medical Association, as a safe and acceptable practice for many years.

Objectives To establish whether changes to the Paediatric Outpatient Department during the COVID-19 pandemic can be implemented long term to improve the efficiency of the service.

Methods In our Trust, a team of two registrars and one senior house officer, with guidance from a General Paediatric

Consultant, was assigned to conduct telephone consultations for all new patients booked into General Paediatric clinics between the 24/03/2020 to 31/05/2020. Most patients had been referred and appointments booked pre-COVID, but urgent outpatient referrals were also seen.

Parents/carers were called at least 3 times on 3 different occasions over at least 2 days. If they did not answer the child was listed as 'was not brought'. Calls were made between 9am to 5pm Monday to Friday.

Any patient assessed as needing urgent medical attention was seen immediately to the Paediatric Emergency Department. Semi-urgent patients screened as having possible Covid-19 symptoms (by clinical screening questions) were seen in Paediatric Emergency Department, otherwise they were seen face-to-face in a COVID-negative (by clinical screening) outpatient area within 48 hours.

Results

During this period:

- 262 new patients had new General Paediatric Clinic appointments.
- 235 (90%) were successfully contacted.
- 27 (10%) of patients 'were not brought'. These 27 patients were excluded from on-going analysis. Over the same time period in 2019 there was a new patient 'was not brought' rate of 55 (16%).

Following one telephone consultation, 105 (45%) contacted patients could be discharged from the clinic with parental agreement. Of these 27 (11%) patients had a complaint which had resolved by the time of the appointment and 19 (8%) patients had already been seen by a private consultant or other NHS consultant. Thus 46 (20%) of the contacted patients did not need their General Paediatric appointment.

Only 7 (3%) patients needed urgent face-to face-review of which 4 were urgent 2-week wait referrals by the GP. 155 (66%) patients needed no investigations.

Conclusions The NHS is going through uncharted times. This provides opportunities to adapt and evolve services and improve efficiency of care for our patients, their families, and healthcare staff. The data above highlights that almost half of the new General Paediatric outpatients could be successfully discharged from clinic after one telephone consultation. During a time of significant anxiety and uncertainty families were able to avoid in-person hospital contact. A similar system when we return to normality could lead to fewer absences from school and less time off work for parents. Our experience suggests that initial telephone consultations with new General Paediatric patients may be an efficient way to make first patient contact.

British Paediatric Respiratory Society

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A PAEDIATRIC EMERGENCY DEPARTMENT ASTHMA ASSESSMENT TOOL TO IDENTIFY HIGH RISK CHILDREN IN ACCORDANCE WITH THE NATIONAL REVIEW OF ASTHMA DEATHS GUIDELINES

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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