Oral Presentation 1
General Paediatrics

PRESCRIPTION OF ANTI-REFLUX MEDICATIONS IN INFANTS: A DRUG UTILISATION STUDY

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Background: Anti-reflux medications are commonly prescribed in daily paediatric practice. While these medications have a good evidence base for use in acid reflux in older children (2-16 year olds), a Cochrane review of their use in infants (aged <one year)suggested no benefit and international guidelines recommend against their use in routine practice in this age group (1-3). Despite this they continue to be prescribed in this age group. Reasons for this demonstrated in preexisting literature include increasingly limited clinician time with parents, ascribing physiological crying/behaviors to pathological GORD and parental perception of normal infant "possetting". Additionally large retrospective studies have suggested there may be an association with infection, allergy and fractures (4-6).

Aim & Objectives: Our aims were to describe the trends in anti-reflux medications (proton-pump inhibitors (PPIs), H2 antagonists, alginate and sulcrafate preparations) prescription in infants in Ireland

Methods/Intervention: General medical service (medical card/GMS) eligible prescriptions for anti-reflux medications in infants were examined over a 10 year period (2009-2018). The study population, infants (under 1 year old) who are eligible for a medical card, represented between between 13% and 21% of the whole population in that age category depending on year.

Results/Findings: Prescriptions of anti-reflux medications in the eligible population of infants increased three fold (from 137/10,000 to 449/10,000) over the study period. While there was some plateauing of prescriptions as a proportion of total infant population over the period from 2015-2018.

Conclusions: Anti-reflux medications are increasingly prescribed in the infants despite best evidence suggesting a lack of efficacy in this age group.
Careful consideration should be given to prescribing these medication in infants given their lack of efficacy and associated possible risks.

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CONCURRENT VALIDITY AND COMPARATIVE PREDICTIVE ABILITY OF THE AGES AND STAGES QUESTIONNAIRE AND THE BAYLEY SCALES OF INFANT DEVELOPMENT.

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Aims: Early detection of cognitive disability is difficult, and reliant on surrogate measurements of developmental progression. We aimed to assess the domain specific, concurrent validity, and the predictive ability of both the Ages and Stages Questionnaire (ASQ-3) and the Bayley Scales of Infant Development (BSID-III) to predict cognitive outcome at school age.
Methods: Within a large observational birth cohort study, a nested cohort of children were assessed using both the ASQ-3 and BSID-III at 24 months, and again at 5 years using the Kaufmann brief IQ test.
Results: At 24 months 278 children were assessed; mean(SD) BW 3445(506)grammes, M:F ratio=52:48. The ASQ-3 had reasonable predictive ability (sensitivity:specificity;AUROC) of same domain delay for motor (50%:76.89%;0.634, p = 0.007) and language (23%:100%;0.614, p=0.017) skills at two years, but poor ability to predict cognitive delay on the BSID-III (17.2%/98.8%;0.580, p=0.158). 204/278 children returned at 5 years. ASQ-3 domains of language and cognition were weakly correlated with verbal (R2 0.021, p-value 0.039) and non verbal IQ respectively (R2 0.022, p-value 0.035). BSID-III domains of language and cognition showed better correlation with verbal and nonverbal IQ (R2, p-value=0.189, <0.001 and 0.117, <0.001 respectively). For both assessments, the ability to predict non-verbal IQ<1SD below population mean at 5 years was poor (ASQ-3; sensitivity 0%, specificity 98.5%), (BSID-III; sensitivity 20%, specificity 93%).
Conclusions: The cognitive scales of the ASQ-3 had poor sensitivity in detecting an abnormal BSID-III cognitive score at 24 months. Both the ASQ-3 and the BSID-III have poor ability to predict cognitive delay at school age.

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Oral Presentation 3
General Paediatrics

BORN INTO DIRECT PROVISION: OUTCOMES OF INFANTS BORN TO ASYLUM SEEKERS AND KEY POINTS FOR PAEDIATRICIANS

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Aims: Asylum seekers in Ireland are accommodated in the Direct Provision (DP) system, one strongly criticised in recent years [1]. There is international evidence to suggest that asylum seekers have worse pregnancy and neonatal outcomes [2]. Our aim was to review the neonatal outcomes of liveborn infants in a tertiary neonatal unit, to mothers living in DP.

Methods:This was a retrospective review (November 2017 - February 2020). Infants were identified by a discharge address to one of three known DP centres. Ethical approval was obtained. The outcomes were compared to hospital data from 2018 [3].

Results: 81 infants were identified. 97% of their mothers had a booking visit (median gestation 30+4 weeks) but only 42% had a documented complete anomaly scan. 20% of mothers had positive serology (13-fold higher than the hospital incidence). There were no difference in the mode of delivery or induction rates. However, only 18% had a documented support person in labour.
12% of infants were born preterm and 25% were admitted to NICU (v 13%, $p<0.01$). Two infants died (2%). There were significantly lower rates of exclusive breast feeding at discharge (23% v 45 %, $p<0.01$) and only 87% had a hemoglobinopathy screen performed. 69% were followed up in the outpatient clinic. Interpreters were used in 20% of cases, but not at each visit and there was some evidence of miscommunication.

Conclusion:
Paediatricians caring for infants of asylum seekers must ensure adequate communication at all times, have increased vigilance for undiagnosed congenital anomalies and confirm all required screening is performed (including hemoglobinopathy screening). Maternal serology must be reviewed, particularly if unavailable at the time of delivery, to ensure that postnatal treatment is commenced promptly when required. Postnatal follow-up should only be carried out in hospital when clinically indicated, to avoid unnecessary financial and logistical burdens to these families.

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Oral Presentation 4
General Paediatrics

EXPLORING PARENTAL EXPERIENCES OF A VIRTUAL NEURO-DISABILITY PAEDIATRIC OUTPATIENT SERVICE, IN THE CONTEXT OF A GLOBAL PANDEMIC

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Introduction

The coronavirus pandemic (COVID 19), which emerged in Ireland in early 2020, resulted in dramatic changes and challenges in both society and healthcare practices. Healthcare services had to quickly adapt to provide outpatient care by virtual means in order to reduce patient contact. We endeavoured to establish the experiences of families of children attending the neuro-disability service after a transition to virtual telephone clinic appointments during the pandemic.

Methods

Anonymous questionnaires were sent to all parents of children registered in virtual neuro-disability clinics over a ten-week period (April-June 2020). Questionnaires explored parental experiences with previous clinic appointments, current virtual clinic practice and future preferences. Both qualitative and quantitative data was collected and analysed using descriptive methods.

Results

70 parents were invited to participate. There was a 43% response rate to the questionnaire (n=30).

Parents reported a very high level of satisfaction (8.2/10) with previous face-to-face clinic appointments. There was a similarly high level of satisfaction (8.2/10) with the recent switch to virtual clinics. 97% felt they received adequate time during the virtual consultation and 90% felt they were contacted at an appropriate time of day. 86% of respondents felt their concerns were managed well and received adequate information.

Main areas of feedback included waiting room facilities, appointment scheduling, virtual call scheduling and familiarisation of clinical background prior to consultation.

Overall, 77% of parents highlighted a future preference for a combined service of both virtual and face-to-face appointments.

Discussion

While virtual clinics cannot replace the holistic approach gained from face-to-face consultations, we identified their benefits in terms of convenience and accessibility for our vulnerable population and their families. Moving forward, developing an integrated approach using both modalities, may be a novel way to potentiate satisfaction with the clinic experience and adapt to meet the needs of our patients.

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THE IMPACT OF COVID-19 ON PRESENTATIONS OF EATING DISORDERS TO AN ACUTE HOSPITAL AT CHI TEMPLE ST

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Aims
This study compared the presentations of patients with eating disorders, the majority with Anorexia Nervosa, during the COVID related lockdown to the same time period between 2016-2020. A secondary aim of the study was to compare the overall trend of patients admitted with an eating disorder over the five-year period.
Methods
A retrospective review of all patients admitted to CHI Temple Street with a diagnosis of Eating Disorder during the period of March to September for each year between 2016 and 2020 was performed. Patients were compared by age, gender and % median BMI at the time of presentation.
Results
There was a 25% increase in patient presentations of Eating Disorders in 2020 compared to 2019 with an overall 1400% increase in patient presentations between 2016 and 2020. The lowest % median BMI seen in 2020 was 67.9%, compared to 79.2% in 2019. 40% of patients presenting in 2020 were male. This is compared to 25% in 2019, 0 in 2018, 17% in 2017 and 0 in 2016. The age at presentation was similar ranging between 11.4-14.45 across the five years.
Conclusions
There has been a large increase in the number of patients admitted to CHI Temple Street from the time period from 2016 to 2020. There has been a significant increase in the number of males presenting with anorexia nervosa. During the COVID lockdown, there was a marked increase in patient presentations with a more severe disease phenotype. This increase is in the context of reduced emergency department presentations. This data has been replicated in other major paediatric centres.(1) Further studies are required to determine the aetiology of this increase and the impact COVID will have on anorexia nervosa prevalence among paediatric patients

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Oral Presentation 6
General Paediatrics

AN EXPLORATION OF FEEDING ATTITUDES, BEHAVIOUR AND PAST MEDICAL HISTORY IN THOSE AT RISK FROM ARFID.

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Background: ARFID (Avoidant/Restrictive Food Intake Disorder), is a condition characterised by eating or feeding disturbance manifest by persistent failure to meet appropriate nutritional/energy needs (Jacqueline Zimmerman MS, April 2017). It is associated with significant morbidity and mortality and patient and parental distress (Jacqueline Zimmerman MS, April 2017). The distinction between ARFID and other eating disorders is typically made on the basis of accompanying weight loss, behavioural or emotional problems and/or nutritional deficit (Dasha Nicholls, 2014)

To date, the demographics and past medical history of those deemed at risk from ARFID by medical staff has not been assessed in the Irish context. The "Behavioural Pediatrics Feeding Assessment – Behaviour Section" (BPFAS) is a well validated tool used worldwide to establish background information regarding feeding behaviour and parental attitudes (W Crist, 2001) (Dasha Nicholls, 2014)

Method: A chart review was conducted on 70 patients attending the paediatric and dietetic departments at CHI at Tallaght deemed at highest risk of nutritional deficiencies due to their restricted diet. The full cohort of those deemed at greatest risk were evaluated.

Aim:
i) To evaluate the prevalence of ARFID symptoms among the population of high risk paediatric patients identified by medical staff and referred to the Paediatric Dietetic service, CHI at Tallaght University Hospital
ii) To review the medical history of paediatric patients referred to for assessment of possible ARFID, including concurrent neurodevelopmental diagnoses (e.g. Autism Spectrum Disorder) and vitamin and mineral deficiencies.
iii) To review results of BPFAS at time of referral and three months post dietetic intervention

Results and Conclusion: Paediatric patients diagnosed with neurodevelopmental conditions including ASD are at an increased risk of ARFID and should be managed proactively with this in mind. Reassuringly, very few patients were diagnosed with nutritional deficiencies – possibly due to early initiation of a multivitamins by dietetic colleagues.
Results from BPFAS demonstrated high levels of parental anxiety related to feeding, which improved post dietetic intervention.

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Oral Presentation 7
General Paediatrics

ADHERENCE TO THE HFNC GUIDELINES IN THE MANAGEMENT OF PATIENTS WITH ACUTE RESPIRATORY FAILURE IN CHI AT TEMPLE STREET.

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Aim:
This audit compared current hospital use of HFNC, with local guidelines during the peak season of acute respiratory disorders.
Methods:
Prospective study, of children admitted to CHI at Temple Street requiring HFNC for treatment of acute respiratory failure (ARF) over a consecutive 2 week period in December 2019. Children admitted directly to PICU or neonatal HDU were excluded.
Results:
During the two week study period, 23 patients met the inclusion criteria. 91% (n=21) of patients had a diagnosis of acute bronchiolitis, 9% (n=2) had a diagnosis of pneumonia. The median (Q1, Q3) age was 3.7 (1.8, 6.9) months, and weight was 6 (4.5, 8.6) kg.
All patients required a flow of 2L/min/kg; 52% (n=12) on commencement and 48% (n=11) as an escalation.
Discontinuation of therapy was not in adherence with the guideline in 82.6% (n=19) of patients with flow rates weaned below initial settings before discontinuation. HFNC failed in 5 patients with bronchiolitis after a mean (SD) duration of 37 (16) hours, resulting in admission to PICU and escalation to CPAP (n=2) or BIPAP (n=3). Excluding failed cases, the median (Q1, Q3) duration of HFNC was 3.7 (2.1, 5.3) days. There were no significant complications recorded related to HFNC (e.g. nasal trauma, pneumothorax).
Conclusion:
HFNC is an established treatment for ARF in bronchiolitis with increasing use in other conditions. Our study showed weaning of HFNC to inappropriately low flow rates and a prolonged duration of HFNC in comparison with recently published data[(1,2)] . This may result in downsides including cost, interruption to feeding, and prolonged hospital stay. Clinical practice guidelines should be based on recent evidence, and should provide clear indications for commencement of HFNC and guidance on discontinuation. Measurement of numbers of patients receiving HFNC, outcomes, and duration of therapy are helpful to ensure appropriate use.

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PROVIDING HIGH CLASS CARE IN THE HIGH DEPENDENCY UNIT

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Aims
To establish and collate a robust collection of the characteristics of paediatric high dependency unit (HDU) admissions with a view to appropriate infrastructure, service and workforce planning in light of the new model of care for paediatric critical care.

Methods
All patients from birth to 16 years of age admitted to HDU were retrospectively reviewed during a cumulative ten-year period between 1st January 2009 to 31st of December 2019 in Tallaght CHI. There was retrospective verification of the data with complete case ascertainment. Age, diagnosis, length of stay, admitting consultant and discharge destination were documented.

Results
A total of 2557 patient contacts met the criteria for inclusion. Median age was 5 years old. Median length of stay was 2 days. Speciality Consultant admissions were assessed as follows, Paediatrics, Surgical, ENT, Other. Respiratory, ENT and endocrine diagnosis accounted for the most common reason to be admitted to HDU. 4% of HDU admission were subsequently transferred to a tertiary paediatric critical care unit

Conclusion
There is currently an unknown volume of HDU care being delivered across a variety of settings and locations with no measured outcomes or activity levels available. Considerable inequity exists across Ireland for patients who require HDU. Children could be cared for locally that may receive intensive care in another hospital. Transfers are linked with complexity, risk and may not be in the patients benefit.

Our priority is to report HDU activity data through service specification and help achieve standardisation of HDC nationally. Our results suggest HDU plays an important role in critical care. There is currently no ring fenced funding for HDU activity delivered outside of PICU. This is a disincentive for hospitals and clinicians to undertake risky HDU activity. With provision of staff and resources in line with national standards we could achieve efficient and effective care.

Oral Presentation Number 9
General Paediatrics

A REVIEW OF MEDICATION ERRORS IN THE RESUSCITATION BAYS OF A PAEDIATRIC EMERGENCY DEPARTMENT

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Aims: To identify medication error rate in critically unwell patients (Irish Children's Triage System (ICTS) category 1 or 2) in the emergency department (ED) resuscitation bays. A medication error was defined as any preventable event that may cause or lead to inappropriate medication use or patient harm.

Methods: In August 2020, a retrospective review of medical records to identify prescribed medications and associated errors. Errors were graded using the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) index[1]. Patients without full clinical record availability were excluded from medication error analysis.

Results: 111 patients with mean age of 5.5 (SD 5.7) years. 33% under 1 year. 65% were admitted. 7 to Intensive care. Top ICD-10 diagnostic group was Injury and poisoning at 27%. Weight range 2.3 – 79.4 kg. Top 2 admitting specialities were paediatrics and cardiology. 88 of 111 patients met inclusion criteria for mediation error analysis. Most common drugs were analgesics/sedatives followed by IV fluids, antibiotics and antiepileptics. 50/88 patients had one or more medication orders. The total medication orders was 167. The average orders per patient receiving medications was 3.3.

The total number of prescribing and administration discrepancies was 207. 29% of prescribing discrepancies were classed as prescribing errors (rate of 17% per order). The most common discrepancies were incomplete prescriptions, alterations and dose errors. Administration discrepancies largely involved incomplete documentation. The most common error was administration of an incorrect dose. No patient harm was identified.

Conclusions:
A total medication error rate of 123% existed in the care of critically unwell patients (ICTS) managed in the ED resuscitation bays. A wide variation existed in the degree and number of medication orders and errors per patient. This study illustrates the need to develop safety measures to reduce the rate and type of medication errors within our practice.

References

1. NCC MERP Index: https://www.nccmerp.org/types-medication-errors (accessed 27th October 2020).

Word count: 300 (excluding references)

Oral Presentation Number 10
Sub-Specialty

PREDICTION MODELLING OF ADMISSIONS FROM A PAEDIATRIC EMERGENCY DEPARTMENT

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Aims:
There has been an increase in studies tackling the problem of Emergency Department (ED) overcrowding by early prediction of admissions[1-4] using available patient history, pre and post triage data. Few paediatric specific, moreover no study has been carried out in an Irish Republic hospital. The aim is to build a model to predict admissions early from an Irish paediatric ED.
Methods:
ED attendances from 2017 and 2018 were analysed. The dataset was created by extracting and joining data from three separate hospital systems using a common link. Eligibility criteria were applied. Potential predictors from the literature were assessed for inclusion. The final dataset was split into 70% training and 30% validation. Data balancing was used. The data mining method CRISP-DM[5] was used and machine learning algorithms (logistic regression, naïve bayes and gradient boosting machine) generated models that were compared. Receiver Operator Characteristics (ROC) Area Under the Curve (AUC) with Confidence Intervals (CI) evaluated model performance. Relative influence based on average decrease in mean squared error ranked the variables of importance.
Results:
The census from 2017 to 2018 was 75,676 with 72,229 (95.4%) eligible for analysis. The gradient boosting machine model produced an AUC of 0.853 [95%CI 0.846-0.859] compared to logistic regression 0.845 [95%CI 0.838-0.852] and naïve bayes 0.813 [95%CI 0.806-0.821]. The most significant predictors in the final model were presenting complaint, triage category, referral source, registration month, location type, distance, admission history and weekday.
Discussion:
This model has achieved comparable performance with previous studies for early prediction of patient admissions. Inclusion of additional predictors such as GP/prehospital interventions, medications, laboratory tests has the potential to improve prediction. This study highlights an inherent difference in predictors that are significant in models comprising of adult data versus paediatric. Furthermore, this study significantly contributes to the advancement of predictive analytics solutions in an Irish ED.

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Oral Presentation Number 11
Sub-Specialty

TUBERCULOSIS IN AN IRISH DIRECT PROVISION CENTRE: REPORT ON CONTACT TRACING FOR 90 RESIDENTS < 16 YEARS OLD

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Background:
Direct Provision (DP) in Ireland provides basic needs of food and shelter to asylum seekers while their refugee status is being processed. As of October 2018, 6,405 people were living in DP, including 1,778 children[1]. Communicable disease screening upon entry to Ireland is voluntary, with many relocated prior to completion[2,3].

Methods:
We report on contact tracing of children exposed to pulmonary tuberculosis at an Irish DP centre. Identified high-risk cases were referred to paediatric services for assessment of latent tuberculosis infection (LTBI). This included clinical assessment, initial tuberculin skin test (TST) and repeat testing at 6 weeks where indicated, quantiferon release assay (IGRA) and chest radiograph. TST defined as positive if >5mm.

Results:
Ninety children reside in the DP center; contact tracing identified 22 children aged between 11 months to 10 years who were referred for assessment. All children were asymptomatic. Majority of children (86%) were born outside Ireland, with 16/22 having previous BCG vaccination.
Initial TST testing were positive in 12 children, with average size of 12 mm (6-21mm). Seroconversion occurred in 50% of cases on repeat TST. 1 out of 14 IGRA tests performed were positive. All CXRs showed no evidence of active TB disease.
Fifteen (16.6%) paediatric DP residents were treated for LTBI with isoniazid[4]. Compliance is good, follow up is ongoing and to date treatment is well tolerated.

Conclusions:
Residence in DP places vulnerable populations at risk, especially children. Initial migrant screening at entry point is indicated in addition to limited duration spent by families with young children in this environment.

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Oral Presentation Number 12
Sub-Specialty

PAEDIATRIC COELIAC DISEASE IN CHILDREN'S HEALTH IRELAND, AT TALLAGHT: SERVICE EVALUATION

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Aims: Coeliac disease (CD) is a chronic autoimmune, inflammatory disease of the small intestine, characterised by a permanent gluten intolerance. This study aimed to evaluate the current service being provided to children diagnosed with CD in an Irish tertiary paediatric hospital; where 280 endocopies are delivered annually, by a single consultant.

Methods: Retrospective study focusing on all children (under 16-years), diagnosed with biopsy-confirmed CD, in Children's Health Ireland (CHI), at Tallaght, over a 24-month period (March 2017 - February 2019). Data was sourced from paper charts, histology and endoscopy records. Variables considered include: demography, oesophago-gastro-duodenoscopy (OGD) indication and waiting time, underlying predispositions, referral source, and follow-up. All collected data was anonymised and analysed on excel.

Results: 83 patients were diagnosed with biopsy-confirmed CD. National referrals were received; 41% (n=34/83) from general practitioners (41.2% from Dublin, 58.8% from outside Dublin) and 59% (n=49/83) from paediatricians, of which 47% were from CHI, at Tallaght. Of the 83 referrals, 4.8% (n=4/83) did not include anti-tissue transglutaminase (Anti-tTG) IgA levels and 3.6% (n=3/83) had IgA deficiency. Of the remaining, 72.4% (n=55/76) reported anti-tTG IgA levels >x10 upper limit of normal (ULN). 14.5% (n=12/83) received an OGD within the recommended 6-week period, 48.2% between 6-weeks and 6-months, 30.1% within 6-12 months, and 7.2% >12-months. 63.6% (n=28/44) of patients requiring paediatric gastroenterologist follow-up, were reviewed within the recommended 12-month period.

Conclusion: This is a single-handed consultant-delivered service with a national referral base and limited resources, as such, it is of utmost importance that these resources are utilised efficiently. This study highlights the need for consideration of repeat serology in those with anti-tTG IgA levels >x10 ULN, as, in keeping with guidelines (ESPGHAN, BSPGHAN), these patients may fulfil the criteria for 'non-biopsy' CD diagnoses. This should avoid invasive investigations, shorten OGD waiting times, expedite CD diagnoses and improve quality of patient care.

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Oral Presentation Number 13
Sub-Specialty

REVISITING DIAGNOSES OF TYPE1 DIABETES ON ALL PATIENTS ATTENDING THE PAEDIATRIC DIABETES SERVICE,UNIVERSITY HOSPITAL GALWAY;ARE WE MISSING CASES OF MODY?

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INTRODUCTION: As per the National Diabetes Guideline, auto-antibodies should be tested for all paediatric patients at presentation, to confirm a diagnosis of Type 1 Diabetes Mellitus. It is reported that up to 10% of children diagnosed with T1DM have antibody negative Type 1 Diabetes Mellitus and furthermore, it is estimated that 5-6% have Monogenic Diabetes/MODY. The heterogeneous group of monogenic diabetics are often misclassified as having Type1 or Type2 DM.
AIMS: To audit the antibody profile of all paediatric patients attending the Diabetes Service at UHG. To repeat a full antibody profile, for those patients with incomplete/no antibodies sent. To invite patients with negative antibodies and a detectable c-peptide, out of the honeymoon period, to undergo genetic testing for MODY.
METHODS: A database of all paediatric diabetes patients was created using a secure, hospital-only accessed drive and subsequently anonymised. The electronic health record of each patient was reviewed to identify if antibodies had been sent at diagnosis. Antibody results (Anti-GAD, Anti-IA2, ZnT8 Antibodies) were recorded on all patients. Patients were categorised as antibody positive, negative or incomplete. Those with a negative or incomplete profile were identified for repeat/further investigation including repeat antibodies, c-peptide or genetic testing.
RESULTS: 195 patients were included in the study. Of these, 36% (n=69) had incomplete or no antibodies sent at diagnosis. 64% (n=126) had complete antibody profiles; of these, 104 patients had positive antibodies. 22 patients had negative antibodies and have had C-peptide sent. To date, we have identified one patient with Monogenic Diabetes (INS mutation).
CONCLUSION: At diagnosis, MODY cannot be distinguished easily from Type 1 Diabetes Mellitus, based on clinical characteristics. Reviewing the antibody profile and identifying these patients is essential in guiding prognosis and appropriate treatment, as well as inheritability of the disease.

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Oral Presentation Number 14
Sub-Specialty

Emollient bathing at two months of age does not prevent atopic dermatitis

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Background
Skin barrier dysfunction precedes the development of atopic dermatitis (AD). Recent research has focused on barrier optimisation to prevent AD.

Objective
To assess the relationship between use of emollient baths at two months and development of AD by two years.

Methods
1903 infants were enrolled in the Cork BASELINE* Birth Cohort study. Parents reported personal history of atopic disease at two months. Infants were examined for signs of AD by trained healthcare professionals at six, 12, and 24 months. Variables extracted from the database related to early skincare, skin barrier function, parental history of atopy, and AD outcomes. Statistical analysis was performed to adjust for potential confounding variables.

Results
1,505 children had data on AD status available at six, 12, and 24 months. Twenty-eight per cent of children had emollient baths at two months. Prevalence of AD in infants who had emollient baths at two months was 30.9%, 28.9%, and 28.8% at six, 12, and 24 months versus 18.7%, 13.9% and 15.2% in those who did not. Adjusted for potential confounding variables, the odds of AD at any point were higher among children who had emollient baths at two months (OR (95% CI): 2.15 (1.43 to 3.24)). Increased frequency of bathing was not associated with AD. Daily emollient application at two months was also associated with presence of AD at six months (OR (95% CI): 1.36 (0.96 to 1.93)) and 12 months (OR (95% CI): 1.64 (1.12 to 2.40)).

Conclusion
Early use of emollient baths does not prevent the development of AD.

*BASELINE - Babies After Scope: Evaluating the Longitudinal Impact Using Neurological and Nutritional Endpoints

Oral Presentation Number 15
Sub-Specialty

RISING TO THE CHALLENGE: BUILDING A POP-UP ALLERGY DAY WARD AT THE HSE CARE FACILITY AT CITY WEST

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Aims: CHI Allergy relocated to HSE City West Facility to set up a short-term centre for the delivery of paediatric Oral Food Challenges. The aim was to achieve rapid rollout of an off-site service, delivering high throughput of long waiting patients while aligning with CHI policies and quality standards, international allergy guidelines and HSE/NPHET COVID social distancing standards.
Methods: Funding was received from NTPF. Consultant Paediatricians, trainees and Allergy CNSs were seconded from other duties. The Allergy team from Cork University Hospital and Portlaoise Hospital also joined. The working group engaged key stakeholders within CHI to advise on the immediate development of an offsite food challenge facility. The Dept of Anaesthetics arranged daily onsite anaesthetic cover and a resuscitation room was equipped. Standardised food challenge protocols were created. The chefs at City West Hotel provided standardised food portions.
Results: After 6wks of planning, the remote food challenge site became operational on Sep 7th, with the capacity of 27 patients/day. A total of 489 patients were scheduled. 15 were deemed unsuitable on arrival (8 with RTIs). Supervision was provided by a rotating pool of 7 Consultant Allergists/paediatricians, 12 NCHDs, 8 Allergy CNSs + support nurses and 10 Anaesthetists. 474 challenges were commenced. 465 were completed with 29% reacting. 9 were inconclusive. 25(5%) patients experienced anaphylaxis and received i/m adrenaline with 5(1%) receiving fluid bolus. No child required advanced airway intervention. The CHI allergy waiting list was reduced by 60% in only 24 days. 17% of patients had waited >3yrs.
Conclusions: Clinical integration of national allergy service providers was achieved. Effective multidsciplinary collaboration lead to rapid reduction in waiting list numbers. Safe, high quality care was delivered. The effectiveness of this offsite initiative demonstrates that when given the physical space within which to function efficiently, much can be achieved.

Oral Presentation Number 16
Sub-Specialty

PATIENT AND CAREGIVER SATISFACTION WITH NOVEL EN MASSE ORAL FOOD CHALLENGE EXPERIENCE

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Aims: Oral food challenge (OFC) is the gold standard for the diagnosis of food allergy[(1)(2).] OFC are traditionally performed in hospital as a dayward procedure with a high medical caregiver to patient ratio. This is likely to enhance communication and patient satisfaction. Despite the high incidence of adverse reactions, families generally report a positive experience[(3)] . Last month, a novel, high throughput, OFC initiative was carried out by a cross-hospital, multidisciplinary paediatric allergy team. It took place at the HSE Care facility at City West in response to the impact that SARS-CoV2 pandemic had on provision of ambulatory allergy services[(4)]. It was essential to evaluate the patient experience of this unique, "off site" alternative OFC model, compounded by COVID related distancing.
Methods: An anonymised survey was conducted of randomised cross-section of patients attending. The survey was completed by the primary caregiver of the child attending for the OFC. 178 survey responses were collected and included for analysis. The survey was designed to assess patient satisfaction across a number of parameters.
Results: 81% of respondants were highly satisfied with ease of use of a non-hospital facility. 81% of respondants reported that the site was "child friendly". Patient experience was scored as "excellent" 82.9% of the time with a further 12.35% reporting it as above average. Communication was effective with 89% of carers reporting good understanding of the results of the OFC. 94.7% of respondants reported that their questions were answered by the Allergy Team present.
Conclusions: Our results are remarkable for enhanced patient satisfaction despite a reduced medical caregiver to patient ratio. The patient's overall satisfaction was rated overwhelmingly as "excellent" despite almost 30% of patients experiencing allergic reactions. The clinical site, although not renowned hospital setting, was rated highly in our survey as an "excellent" facility.

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Oral Presentation Number 17
Medical/Education Management

THE PYJAMA SESSIONS: GAUGING SUCCESS OF TRANSITION TO ONLINE EDUCATION DURING A PANDEMIC

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Aims

The COVID-19 pandemic necessitated immediate change in patterns of working, education and lifestyle[1]. The aim of this project was to gauge success of transition to virtual learning and to identify how these changes could be factored into future planning of educational programmes.

Methods

Three weekly educational meetings in our tertiary neonatal intensive care unit were assessed over a two week period in June 2020. We compared attendance with the same time period in 2019. We carried out a questionnaire-based study of all medical, nursing and allied healthcare professionals (AHPs) participating in our educational programme. Participants were sent an overall (Lockdown) questionnaire and six additional meeting-specific questionnaires.

Results

41 staff members (100%) responded to the 'Lockdown' questionnaire (20% consultants, 58% non-consultant hospital doctors, 12% nurses, 10% AHPs). 177 attendances were recorded at 6 meetings. We received 172 individual responses to the daily questionnaire (97%).
95% (n=164) indicated the educational sessions were useful. Attendance doubled at this year's virtual sessions compared to 2019 (mean 30 versus 15 attendees per session). 83% of respondents (n=33) attended education sessions when not scheduled to work. 55% and 20% (n= 22 and 8) had attended sessions from their bedroom or bathroom respectively.
59% (n=24) had attended education sessions in their pyjamas, and 12% (n=5) had attended while naked or almost naked. Ninety-seven percent (n=38) reported anxiety about their microphone or camera being on, a feature locally described as 'Zoom Anxiety'. 88% (n=28 of 32 responses) felt that virtual education sessions were more family-friendly.

Conclusion

Implementation of the EWTD[2] and a cultural shift towards flexible working necessitates a creative approach to education. Our study showed that virtual learning increased accessibility in our cohort while remaining useful to attendees. 'Zoom anxiety' is prevalent and we suggest that healthcare workers should invest in a good pair of pyjamas.

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A SURVEY OF PARENTAL EXPERIENCE WITHIN THE NEONATAL UNIT DURING THE CORONAVIRUS PANDEMIC

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Aims
In response to the coronavirus pandemic unprecedented visiting restrictions were introduced to safeguard vital services. To assess the impact of visiting restrictions and evaluate supports that could be offered we conducted a survey of parental experiences during the coronavirus pandemic.

Method
Ethical approval was granted to perform an anonymous survey of parental experience from 22/06/2020 to 17/07/2020. Parents completed the survey on an opt in basis and 24 surveys were collected. We utilised the Depression, Anxiety, Stress Scale (DASS21) to assess maternal depression, anxiety and stress.

Results
Of parents surveyed, 71% found visiting restrictions an additional stress. Eighty-three per cent agreed that visiting restrictions were necessary to protect babies, while 87% agreed restrictions were necessary to protect staff. The survey showed that 58% felt restrictions affected their ability to bond with their baby and 71% of mothers felt restrictions impacted on their partner's ability to bond. Thirty-three per cent of breastfeeding mothers reported that restrictions affected their breastmilk supply. Seventy-nine per cent of parents reported that images of their baby sent via secure email alleviated their stress with many requesting more content throughout the day.

Conclusion
This survey highlights the considerable stress placed on parents during the pandemic. Encouragingly, the vast majority of parents understood the necessity for visiting restrictions. Similarly, the majority of survey respondents felt that they were well supported and their baby was safe. The completion of the survey has allowed us to identify resources that we can use to support parents including video technology. As we look towards the future, we must place value on parental accounts of their experiences during the first wave of the pandemic. This will assist us in formulating a comprehensive plan which safeguards services yet supports families.

Oral Presentation Number 19
Neonatal

Serum Lactate Concentrations in Infants with Neonatal Encephalopathy treated with Therapeutic Hypothermia

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Aim

This study examines the relationship between serum lactate concentrations and Neonatal Encephalopathy (NE) in a cohort of infants who received Therapeutic Hypothermia (TH).

Methods

The study group included infants treated with TH over an eight year period (January 2009-December 2016) in the NMH. For each infant the highest serum lactate concentration was recorded. In each case, the following outcome variables were included in the study; death or survival, encephalopathy, clinical grading using *Sarnat* scoring (mild, moderate, severe), *Bayley III assessment score* for cognitive, language and motor domains and MRI findings- normal or abnormal.

Results

Infants with a serum lactate >20mmol/L have a significantly higher mortality. The probability is 0.33(33%). Infants with a serum lactate 5-10mmol/L are significantly more likely to survive. No infant with a serum Lactate 5-10mmol/L died.
Cognitive: Infants with a lactate >20mmol/L are significantly more likely to have a cognitive problem ($p<0.05$). The probability is 0.5 (50%).
Language: Infants with a lactate >20mmol/L are significantly more likely to have a language problem ($p<0.001$). The probability is 0.83 (83%).
Motor: There was no relationship between the lactate and the motor outcome.
There is no statistical relationship between the serum Lactate concentrations and MRI findings.

Discussion

A serum lactate >20mmol/L was a marker for an adverse outcome. Infants with a lactate in this elevated range were significantly more likely to die.

Surviving infants with a serum lactate >20mmol/L are significantly more likely to have a cognitive or language impairment. The probability is 0.5 and 0.83 respectively.

There was no significant relationship between the serum Lactate and the MRI findings. One explanation is that some of the infants who died did not have an MRI.

In every case of birth asphyxia, the serum lactate should be part of the infant's admission and ongoing assessment.

Oral Presentation Number 20
Neonatal

A PILOT RANDOMIZED CONTROLLED TRIAL OF EARLY TARGETED PATENT DUCTUS ARTERIOSUS TREATMENT USING A RISK BASED SEVERITY SCORE (THE PDA RCT)

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Introduction
Randomised controlled trials (RCTs) of early patent ductus arteriosus (PDA) treatment have failed to establish a reduction in PDA-associated morbidities. Many trials are limited by poor physiologic categorisation of PDA severity. Our group demonstrated that a PDA severity score (PDAsc) on postnatal day 2 predicts chronic lung disease or death (CLD/Death). The objective of this study was to evaluate the feasibility of recruiting preterm infants to a randomized controlled trial of patent ductus arteriosus (PDA) treatment based on a PDA severity score (PDAsc) and to characterize challenges in obtaining consent, compliance with the protocol, and PDA closure rates.

Methods
This was a single center, randomized control pilot study of 60 infants <29 weeks' gestation with a high PDAsc (≥5.0) at 36–48 hours of age receiving either Ibuprofen or Placebo intravenously. The study protocol did not allow for additional PDA therapy within the first two weeks. We reported the rate of consent, open label treatment and PDA closure rates. The primary outcome was chronic lung disease/Death.

Results
83 families were approached for enrollment with 73 (88%) providing consent; 13 infants had a PDAsc < 5; of the remaining infants, 30 were assigned Ibuprofen and 30 received placebo. Eight infants received open label treatment in the first two weeks (12%). The overall PDA closure rate after treatment was 57% in the Intervention Group and 17% in the Control Group ($p<0.01$). There was no difference in the primary clinical outcome (odds ratio 0.8, 95% confidence interval 0.3–2.1).

Discussion
Using a PDA severity score for infant recruitment to a PDA treatment RCT is feasible. There is a high rate of consent and relatively low rate of open label PDA treatment. The overall PDA closure rate in the intervention arm was low placing the emphasis on devising more effective PDA closure strategies in future RCTs.

Oral Presentation Number 21
Neonatal

TEMPERATURE OF OUTBORN PRETERM INFANTS DURING INTER-HOSPITAL TRANSFER BY THE NATIONAL NEONATAL TRANSPORT PROGRAM (NNTP) – A PROSPECTIVE STUDY

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Background:
Newborn preterm infants requiring inter-hospital transfer after birth are at high risk of temperature instability. Normal body temperature range (36.5–37.5°C) is narrow. Maintaining normothermia decreases morbidity and mortality; and is an important key performance indicator of NNTP.

Aim: Prospectively measure temperature in newly born preterm infants during inter-hospital transfer.

Methods: This prospective study was conducted from February 2018 to August 2019. Infants born at <36+0 weeks' gestation, or birth weight <2000g, were eligible if <72 hours old at the time of transport. Infant temperature (rectal [R], axillary [A], skin [S]) was measured by NNTP teams on first assessment at referring centres (R,A,S), departure (A,S) and on arrival to receiving hospital (R,A,S).

Results: Temperature readings from 121 preterm newborns were analysed. Mean (SD) gestational age for this cohort was 30(3) weeks, and birth weight 1543g(588). Seventy-three (62%) infants were male, and 117(97%) were transferred via road ambulance. Sixty-six (54%) were mechanically ventilated during transfer, and median (IQR) duration of transfer was 85(45-120) minutes.

An abnormal rectal temperature on first assessment was recorded in 24(21%) infants [18(16%) hypothermia; 6(5%) hyperthermia]. Axillary temperature demonstrated similar outcomes [18(15%) hypothermia, 10(8%) hyperthermia] when infants were first assessed.

At departure, 23 (21%) infants had an abnormal axillary temperature [hypothermia 20(18%), hyperthermia 3(3%)]; while 28(24%) infants experienced abnormal skin temperature [24(21) hypothermia, 4(3%) hyperthermia].

Mean (SD) rectal temperature increased during transfer, from 36.8(0.6) on first assessment, to 37.1(0.5) on arrival. Accordingly, 31 (27%) infants had an abnormal rectal temperature on arrival [11(10%) hypothermia, 19(17%) hyperthermia]. Following transport hyperthermia was underrepresented by axillary temperature [8(7%) hypothermia, 10(8%) hyperthermia], and skin temperature [11(9%) hypothermia, 10(9%) hyperthermia].

Conclusion: Mean body temperature increases during transport, and may be associated with hyperthermia. Future studies should examine the role of continuous rectal temperature monitoring for preterm infants during transport.

Oral Presentation Number 22
Neonatal

VIDEO ANALYSIS OF THERMAL CARE FOR VERY PRETERM INFANTS IN THE DELIVERY ROOM

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Objective: Hypothermia is an independent risk factor for mortality in preterm infants.[1] Neonatal resuscitation guidelines now recommend waiting for at least 1 minute after birth before cord clamping (CC) in uncompromised preterm infants.[2] We aimed to observe and document the timing of warming interventions in the era of "delayed cord clamping".
Study design: We observed video room recordings of infants born <32 weeks' gestation at our hospital between September 2016 – March 2020. We estimated time of CC based on the time of arrival to the resuscitation trolley. We determined the time from birth to placement under radiant heat, application of a hat and a polyethylene bag (PB). We report the proportion of infants in whom these tasks were completed within 60 seconds from (i) birth and (ii) arrival at the resuscitation trolley. We recorded the median time to perform each task.
Results: 108 videos were suitable for analysis (median [IQR] gestational age 27 [26-29] weeks and birthweight 1007 [780-1303] grams). Seventeen (15%) infants underwent CC <60 seconds after birth. Sixty seconds after birth; Seventeen(16%) infants were under radiant heat and 12 (11%) had a hat placed. Seventeen(15%) infants were placed in a PB prior to arrival at the resuscitation trolley. Most (n= 88, 98%) of the remainder were not in a PB by 60 seconds after birth. At 60 seconds after arrival at the resuscitation trolley; 74 (70%) had a hat placed and 100 (93%) were in a PB. The median time to perform all tasks from the time of birth was greater than that recommended by the guidelines.
Conclusion Initial steps to preserve heat in newly born very preterm infants now takes more time to perform than guidelines recommend. Neonatal resuscitation guidelines should consider that an increased time to CC impacts the time to initiation of thermal care.

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Oral Presentation Number 23
Neonatal

ALTERED NUMBERS AND FUNCTION OF CIRCULATING V DELTA T CELLS IN NEONATAL ENCEPHALOPATHY IN NEW-BORNS AND AT FOLLOW-UP IN CHILDHOOD

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Background. Neonatal encephalopathy (NE) is associated with neonatal mortality and morbidities, such as cerebral palsy. Multi-organ dysfunction in NE is associated with the release of proinflammatory cytokines correlating with infiltration of leukocytes into the brain which may contribute to brain damage. We aimed to investigated lymphocyte subsets from birth to childhood in NE.

Methods. We studied neonates with NE (n=30) and school-age children post-NE (n=10) and age-matched controls (neonatal:n=17 & childhood n=23). Using flow cytometry, we examined circulating conventional and innate T lymphocytes frequencies and numbers and their ability to produce TH1, TH2, TH17 cytokines and granzyme B upon stimulation *ex vivo*.

Results. Vδ2+ γδ T cell frequencies and absolute counts were significantly higher in neonates and children with NE compared to controls. In contrast, NK cells were depleted in these patients. Vδ2 T cells and NK cells expressed significantly higher levels of the activation marker CD69 and more frequently produced IFN-γ, TNF-α, IL-17A and granzyme B upon activation with PMA with ionomycin, IL-12 with IL-15, or the Vδ2 T cell stimulatory ligand (E)-4-Hydroxy-3-methyl-but-2-enyl pyrophosphate (HMB-PP).

Conclusion. These data suggest that Vδ2 T cells and NK cells may contribute to the inflammatory brain injury in NE and in childhood post-NE. Targeting Vδ2 T cells or NK cells may have potential for the treatment of NE.

Oral Presentation Number 24
Neonatal

CORRELATION BETWEEN SLEEP QUALITY, SYSTEMIC INFLAMMATION AND ADVERSE OUTCOME IN NEONATAL ENCEPHALOPATHY

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Background:
Circadian rhythm regulates the innate immune system. Both immune dysregulation and delayed onset of sleep wake cycling (SWC) are associated with worse outcome in Neonatal Encephalopathy (NE). We hypothesised that patients with NE and delayed SWC or poorer sleep quality (SQ) would have more dysregulated immune responses and higher rates of adverse outcome. We aimed to evaluate the association of SWC and SQ with measures of systemic inflammation and outcomes in NE.

Design/Methods:
Continuous aEEG recordings were collected on all patients undergoing therapeutic hypothermia for a minimum of 72 hours. Onset of SWC and SQ assessment was applied to these recordings. Blood was collected from infants with NE in the first 2 days of life. 12 pro and anti-inflammatory cytokines were evaluated. Adverse outcome was defined as death or abnormal MRI brain. Independent t-tests and Spearman correlation coefficient were used in the statistical analysis.

Results:
Infants with NE (n=44) were recruited and divided into normal and adverse outcomes. Infants with earlier onset of SWC and better SQ had lower rates of adverse outcome. SQ provided better prognostic value and showed better interobserver agreement compared to time to SWC. Shorter time to SWC was associated with lower serum levels of pro-inflammatory cytokines EPO ($p=0.03$) and Il-8 ($p=0.03$). Better SQ was associated with lower levels of the pro-inflammatory cytokine TNFa ($p=0.02$). There were no significant relationships between time to SWC or SQ and IFNg, IL-1a, IL-1ra, IL-1b, IL-6, IL-18, TNFb and VEGF.

Conclusion:
Infants with NE and either earlier onset of SWC or better SQ had less dysregulated systemic inflammation and were at lower risk of adverse outcome. SQ during TH provided better prognostic information than time to SWC. Modulation of the circadian rhythm in patients with NE may have an immunomodulatory role and lead to improved outcomes.

Oral Presentation Number 25
Neonatal

AN AUDIT OF NEONATOLOGY SENIOR HOUSE OFFICER (SHO) ATTENDANCE AT NEWBORN DELVERIES

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Aim: To assess how many births a neonatology SHO is requested to attend, the time spent at the delivery, the indication for their attendance and the level of neonatal resuscitation required.

Methods: This was a prospective observational study during the period May-June 2016 at Cork University Hospital, a tertiary maternity centre. Individual SHOs recorded the reason for their attendance, the highest level of resuscitation required and the time spent at the delivery.

Results: Neonatology SHOs attended 212/553 (38%) births in advance of delivery, deemed by intermediate or high risk by our current institutional guidelines, over a period of 672 hours. An average of 19 minutes was spent at each delivery or 2.5 hours per day. Only 31(15%) infants required basic resuscitation with CPAP or IPPV to initiate spontaneous respirations. 4 infants (2%) required advanced resuscitation. Perinatal risk factors which were associated with higher levels of resuscitation included foetal distress (15/104) and prematurity <35 weeks (9/9). Risk factors associated with lower levels of resuscitation included assisted deliveries for failure to progress (1/23), meconium stained amniotic fluid (0/9), NICE category three emergency c-section (1/22).

Conclusion: A large proportion of a busy neonatal SHO's week is spent in attednacne of deliveries, where thankfully in most cases no intervention is required. The need for SHO advance attendance at delivery for many of the currently listed risk factors is not supported by the results of this audit. Given current practice whereby an experienced midwife, fully trained in basic resuscitation to a high standard (NRP certified), is present at all deliveries and the immediate proximate availability of the neonatology team (SHO and SpR/Registrar), indications for SHO routine pre attendance should be reviewed and refined, permitting greater efficiency in utilisation of the limited workforce.

Oral Presentation Number 26
Neonatal

ASSESSMENT OF MYOCARDIAL FUNCTION IN NEONATES CONCEIVED BY ASSISTED REPRODUCTIVE TECHNOLOGIES USING DEFORMATION IMAGING

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Background & Aims: Recent data suggest that fetuses conceived by assisted reproductive technologies (ART) undergo cardiovascular remodelling resulting in altered myocardial performance. Our aim was to assess left (LV) and right (RV) ventricular function in infants conceived by ART during the early neonatal period and compare the findings with a control group conceived spontaneously.

Methods: This was a prospective cohort study which included 25 term infants conceived by ART and 25 infants term infants conceived spontaneously. Echocardiography was performed on days 1, 2, and 3 following birth using novel echocardiography techniques including tissue Doppler imaging and speckle tracking echocardiography.

Results: ART infants were of a lower gestation (38.8 ± 1.0 vs. 39.8 ± 1.0 weeks, $p<0.01$) but similar birthweight (3.6 ± 0.6 vs. 3.7 ± 0.4 Kg, $p=0.35$). ART infants demonstrated impaired RV and LV function over the study period. On Day 1, ART infants demonstrated a higher LV Eccentricity Index (1.8 ± 0.2 vs. 1.5 ± 0.2, $p<0.01$) and a lower PAAT (61 ± 14 vs. 70 ± 10, $p=0.02$) indicating more septal flattening and increased pulmonary vascular resistance. In the ART cohort there was a significant correlation between RV-Pulmonary Artery (PA) Coupling and LV function ($r = 0.4$, $p = 0.01$) demonstrating that worse RV-PA coupling equates to worse LV function, likely due to decreased pulmonary blood flow return to the left atrium and decreased LV preload. The relationship between ART and lower LV and RV function remained significant on linear regression when controlling for gestation, maternal age, gender and mode of delivery (all $p<0.05$, model R^2 between 0.29 – 0.42, standardised β coefficient between 0.63 – 0.74).

Conclusion: Infants conceived by ART present with evidence right and left ventricular dysfunction during the early neonatal period. Those findings further reinforce the concept of myocardial remodelling in infants conceived by ART.

Oral Presentation Number 27
Neonatal

COMMUNICU: ADAPTIVE COMMUNICATION DURING COVID-19 VISITING RESTRCITIONS IN A TERTIARY NEONATAL UNIT

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Background:
During the Covid-19 pandemic, we imposed necessary visiting restrictions at our tertiary NICU to protect vulnerable babies and staff. We aimed to develop and establish a programme aimed at increasing the number of NICU Initiated Visual Communications (NIVC) between parents and babies in order to mitigate the negative effects of visiting restrictions.

Setting and inclusion criteria:
All infants admitted to the NICU at the National Maternity Hospital, Dublin over a 10 week period between March 30th and June 7th 2020 were eligible for inclusion.

Design/Methods:
Quality Improvement Project (QIP) following Plan Do Study Act (PDSA) methodology. We used NIVC as our key performance indicator. We identified and acquired the devices and software required to provide synchronous and asynchronous NIVC (smartphone, iPads, AngelEye streaming devices) using secure platforms. Parental consent was obtained to receive NIVC. We recorded NIVCs over a 5-day period in 10 randomly selected inpatients for each cycle.

Results:
At baseline, NIVC was 0%. We increased NIVCs from 0% to 100% over 4 weekly iterative PDSA cycles, sending at least 2 forms of NIVC (photo, video, streaming) to families each day of the week. NIVCs were maintained between 90-100% in weeks 5-10 despite easing of visiting restrictions.

Conclusion:

We successfully devised and implemented an adaptive NIVC programme through rapid iterative PDSA cycles to adjust to the new and evolving needs generated by the covid-19 pandemic. This initiative has had a positive impact for NICU families and is likely to outlive the Covid-19 visiting restrictions from which it originated.

Oral Presentation Number 28
Neonatal

AN AUDIT OF A TONGUE TIE ASSESSMENT CLINIC IN AN IRISH MATERNITY HOSPITAL

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Background:
In December 2018, a tongue-tie assessment clinic was commenced in an Irish tertiary neonatal centre providing frenotomies to infants with tongue-ties. 100 frenotomies were performed up to April 2020. An audit of the first 34 frenotomies was undertaken in March 2019. Subsequently, a new proforma was introduced. The aim of this re-audit was to assess the level of adherence to the clinical guidelines, improvement of infant breastfeeding and identify any complications.

Methods:
A retrospective chart review of infants who attended the TTC between March 2019 and April 2020 was performed, noting maternal and infant details, maternal pain scores and tongue-tie severity (Bristol tongue assessment tool score and frenulum type). Data was collected using Microsoft Excel.

Results:
102 infants were referred to the TTAC. 76 were eligible for frenotomy. The average age at consultation was 15 days. The average wait time from referral to frenotomy was 8 days. Maternal pain during breastfeeding, poor latch and restricted tongue mobility were the most common reasons for referral. In-house lactation consultants and neonatologists referred 67% of infants, with the remainder referred by senior nursing staff.
Maternal pain was rated from 0-10. 66% of mothers had a pain score >4. 68% of infants had a BTAT score <5. 67% of infants had a frenulum type 1 or 2. 85% of infants had minimal bleeding and none had prolonged bleeding. 67% of mothers felt that their infants fed better post-frenotomy.

Conclusion:
Documentation of maternal and infant examination improved following introduction of the new proforma. Over two-thirds reported improved breastfeeding. No complications occurred. Babies who did not undergo frenotomies received feeding advice and multidisciplinary follow-up as required. This clinic provides safe, efficient and free of charge assessment and management of babies with feeding difficulties by providing multidisciplinary input and lactation support in a tertiary maternity hospital.

Oral Presentation Number 29
General Paediatrics

VIRTUAL CLINIC EXPERIENCE DURING THE COVID-19 PANDEMIC

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Aim:
To compare the outcomes of virtual out-patient consultations during the early phase of the COVID-19 pandemic with face to face consultations prior to the pandemic.
With the escalation of the Covid-19 pandemic and attendant movement restrictions, all physical clinics were cancelled in Cavan General Hospital (CGH). From March 2020 all Paediatric clinics were conducted by telephone (virtual). There has been demonstrated benefits of virtual clinics in other studies.
Method: 655 virtual outpatients' appointments from April and May 2020 and 550 face-to-face outpatients from January and February 2020 were compared for:
1) Number of patients discharged from clinic
2) The number who did not answer on their virtual clinic day compared with non-attendances to face-to-face clinic appointment.
3) Physician satisfaction for subset of the virtual consultations.
4) A literature review on telephone consultations was conducted.
Results:
20% increase in the total number of patients booked for virtual clinic compared to face-to-face. (655 vs 550). 14% No answer during virtual clinics, 12% non-attendance at face-to-face.
25.5% discharged from virtual clinics, 24% from face-to-face. 92% of virtual consultations were deemed constructive by the physician. Of those that were not – 93% of them did not answer.
CONCLUSION:
The outcome of attendance rates and discharge rates in the two groups were similar, and the consultations were largely considered constructive. This would suggest that virtual consultations can be as useful as face to face consultations when deciding on follow up. Furthermore, clinicians were as comfortable discharging patients after a telephone consultation as after face-to-face consultations. Therefore, it was felt that virtual clinics could play an important role in the follow up of selected patients in the post COVID-19 era.

(1) Telemedicine compared with standard care in type 2 diabetes mellitus: A randomized trial in an outpatient clinic Ole W Rasmussen1, FF Lauszus2 and M Loekke1 (2) Role of structured telephone clinics in Paediatric Gastroenterology: reflections, lessons and patient feedback Hazel Duncan,1 Richard K Russell2 (3) Randomized Noninferiority Trial of Telephone Versus In-Person Genetic Counseling for Hereditary Breast and Ovarian Cancer: Marc D. Schwartz, Heiddis B. Valdimarsdottir, Beth N. Peshkin, Jeanne Mandelblatt, Rachel Nusbaum, An-Tsun Huang, Yaojen Chang, Kristi Graves, Claudine Isaacs, Marie Wood, Wendy McKinnon, Judy Garber, Shelley McCormick, Anita Y. Kinney, George Luta, Sarah Kelleher, Kara-Grace Leventhal, Patti Vegella, Angie Tong, and Lesley King (4) Virtual outpatient clinic as an alternative to an actual clinic visit after surgical discharge: a randomised controlled trial Paul Healy,1 Liam McCrone,2 Roisin Tully,2 Emer Flannery,2 Aoife Flynn,2 Caitriona Cahir,3 Mayilone Arumugasamy,1 Thomas Walsh1 (5) The quality, safety and content of telephone and face-to-face consultations: a comparative study B McKinstry,1 V Hammersley,1 C Burton,1 H Pinnock,1 R Elton,1 J Dowell,2 N Sawdon,1 D Heaney,3 G Elwyn,4 A Sheikh1 (6) Bowel clinic survey: telephone versus face-to-face consultations Nadja Cant, Specialist Registrar, Trauma and Orthopaedics, and Karen Cock, Colorectal Consultant Nurse, Colorectal Consultant Nurse, Gastrointestinal Surgery, Royal Cornwall Hospital Trust,

Oral Presentation Number 30
General Paediatrics

AN EXPLORATORY SURVEY OF PARENTAL WORK DEMANDS AND CHALLENGES TO WORKING REMOTELY WHILE THEIR CHILD IS AN INPATIENT IN HOSPITAL

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Introduction

The inpatient experience of a child can be an anxious and stressful time for parents and caregivers[1].An under recognized concept is the pressure that some parents face to continue to work and challenges to working remotely. This exploratory novel Irish study aimed to assess the prevalence of work related stress amongst parents and assess psychological, environmental and financial factors associated with the need for parents to continue to work remotely on site in hospital.

Methods:

27 anonymous 16 question paper surveys were distributed at a tertiary children's hospital and a regional hospital over a two week period to parents of children > 5 days in hospital. Both qualitative and quantitative data was collected.

Results:

The response rate overall was 78%. 15 surveys were returned in the tertiary centre, the median length of stay was 16 days (5-393) and 6 days (5-42) in the peripheral centre where 5 surveys were returned. Overall 45% of parents continued to work remotely while their child was an inpatient,75% reported feeling pressure to continue to work. 50% of parents felt under financial strain, 80% reported the need to work as being a source of distress. 90% felt hospital WIFI was inadequate to work,55% felt the noise levels within the hospital impeded remote working.

Discussion

A previous Irish study in 2019 discussed the harsh financial impact of having a sick child [2]. Our results demonstrate several insights and opinions on the challenges that some parents face regarding the need to continue to work remotely on site while supporting their child in hospital. With patient and family centred care a priority, this is a potentially neglected source of distress and with further structured supports could be accommodated to assist families during this challenging time, in particular with the transition to the new National Children's Hospital

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Oral Presentation Number 31
General Paediatrics

COVID 19: THE DISAPPEARANCE OF CHILDREN FROM THE PAEDIATRIC EMERGENCY DEPARTMENT (ED)

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Aims:
On March 12th 2020, due to COVID 19, schools and childcare centres were closed in Irealnd. The aim of this study was to determine if the pandemic influenced paediatric presentations to the University Hospital Limerick (UHL) Paediatric ED in terms of: presenting complaint, triage category, referral source and address.

Methods:
A single centre, retrospective review of presentations to the UHL Paediatric ED from April 6th-13th 2020 (lockdown) and April 7th-14th 2019.

Results:
A total of 371 patients from 2019 and 120 patients from 2020 were identified. There was a 67.7% reduction in presentations during the pandemic. The age ranged in both cohorts from 6 days to 16 years, with a median of 4 years. There was in increase in “Overdose and Poisoning” from 0.5% to 3.3% ($p<0.05$). “Facial/Eye Problems” including injuries, infection, etc. also increased ($p<0.05$). Patients triaged as “Unwell Child/Baby” decreased significantly from 24.5% to 15.8% ($p<0.05$). There was no statistical difference in “Short of Breath” or “Abdominal Pain” presentations. Changes in triage categories 1-4 was not statistically significant, however, there was a reduction in category 4 presentations from 4% to 1.7%. There were no referrals from Shannon doc, injury units or other services during lockdown ($p<0.05$). Self-referrals increased from 42.3% to 64.2%. Patient address from Limerick remained unchanged, with ~59% in 2019 and ~58% in 2020, with others from remaining counties.

Conclusion:
The decrease in presentations during the pandemic suggests that patients presenting to ED may not always need emergency care. The increase in “overdose and poisoning” presentations may suggest deterioration of mental health or accidental exposure as more time at home. The decrease in unwell children may be due to a reduction in school and creche acquired illnesses. The acuity of presentations remained similar in proportion to the attendances, with no significant difference in triage categories.

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Oral Presentation Number 32
General Paediatrics

CLINICAL PROFILE OF CHILDREN WITH MULTISYSTEM INFLAMMATORY SYNDROME (MIS-C) IN BAHRAIN

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AIM

To describe the clinical, laboratory profile and treatment outcome of children diagnosed with Multisystem Inflammatory Syndrome (MIS-C) during the Covid-19 pandemic.

METHODS

We conducted a prospective observational study of seven confirmed cases of MIS-C at our institution from June to September 2020. The clinical presentation, laboratory studies, complications and treatment response were collected.

RESULTS

Seven patients fulfilled the WHO case definition of MIS-C . Median age at presentation was 7.4 years (range 9 months to 14 years); One (14.3%) of the patients had preexisting illness. Six children (85.7%) had lab confirmation of SARS-COV-2 infection. Three patients (42.8%) were males. Six (85.7%) presented with fever, two (28.5) % had rash, two (28.5%) had conjunctival injection, one (14.3%) had mucosal changes, two (28.5%) had cardiac involvement, three (42.8%) had lymphopenia, five (71.4%) had thrombocytopenia and all seven (100%) had elevation in inflammatory markers (CRP, D-Dimer, Ferritin and IL-6).Four (57.1%) had coagulopathy, one (14.3%) had hyperacute liver failure, one (14.3%) had pancreatitis, one (14.3%) presented with mixed central and peripheral nervous system manifestations. Three patients (42.8%) required mechanical ventilation and inotropic support. Immunomodulator therapy was given to five patients (83.35) included intravenous immunoglobulin (IVIG), Aspirin and corticosteroids. Clinical and laboratory improvement were observed in all patients.

CONCLUSION

This case series of hospitalised children who met the criteria for MIS-C, encompasses a broad phenotypic spectrum and disease severity, ranging from fever and inflammation to myocardial injury, hyperinflammatory shock, nervous system involvement and other organ involvement. There is complete resolution of symptoms and laboratory parameters with immunomodulator therapy

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Oral Presentation Number 33
General Paediatrics

PROGRESS OF THE NATIONAL REGISTER FOR CHILDREN WITH DOWN SYNDROME

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Aims:
Down syndrome (DS) or trisomy 21 is one of the most common congenital genetic conditions. Ireland is considered to have one of the highest incidence of DS in the world yet there are little data regarding the prevalence or epidemiology of DS in Ireland and the associated health conditions. The National Register was established in 2015 in response to requests from families with the aim to address these deficits.

Methods:
A National prospective incidence study of babies born with DS since January 2015 was established following ethical approval. After genetic confirmation parents of newborns were invited to participate in the register following informed consent after discussing with their clinician. All 19 maternity centres agreed to participate. Clinical progress of babies on the register is monitored prospectively by questionnaires.

Results:
At present 67 children are on the register. Following the introduction of GDPR legislation families were asked to re-consent to remain resulting in some loss of participants but over the past year there has been steady progression in the awareness of the register and increase in enrolment. Preliminary results of 47 of those enrolled to date shows that 9 were diagnosed antenatally (19%,) 14 born pre term (30%,) and 17 required NICU(36%,) 6 had a family history of DS (13%,) and some cardiac conditions ASD 12 (26%) and VSD 5 (11%) were shown prior to 6 weeks of age.

Conclusion and Recommendations:
The number of babies referred to the register is less than we would anticipate in the age group and so not all cases are being reported. Participation in the register is increasing which will aid the definition of the epidemiology of DS in Ireland. Further initiatives are required to increase awareness of the DS Register and offer more families the opportunity to participate.

Oral Presentation Number 34
General Paediatrics

ROLE OF PHYSIOTHERAPY IN PREVENTING EXCESSIVE STEROIDS IN CHILDREN WITH ASTHMA

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Aims: To investigate the prevalence of breathing pattern disorder (BPD) in children with asthma and to improve the control of asthma while working with breathing exercises and avoiding the excessive use of inhaled corticosteroids (ICS).

Methods:
In one of the regional hospitals in Ireland, a consultant paediatrician who has an Interest in Asthma and Allergies runs asthma clinics 3-4 times a month and on average had 665 appointments in the year 2019. He runs one-stop-shop-asthma clinics where children with asthma are seen by MDT which includes, a staff nurse, an asthma specialist nurse, a consultant paediatrician, and a physiotherapist. In the year 2019, in our asthma clinic, 151 new paediatric patients with asthma were registered. Every new patient was assessed for possible breathing pattern disorder and it was found that 45 patients required intervention and advice on breathing exercises to counter the breathing pattern disorder.

Results:
We found 40 patients out of 151, i.e. 30% had breathing pattern disorder. Hyperventilation was the most common among the different types of breathing patterns disorder along with mouth breathing and dysfunctional breathing-among teenagers. We noted that all the children who received physiotherapist intervention with breathing exercises had good control of asthma and did not require stepping up of inhaled corticosteroid (ICS) dose.

Conclusion:
Current access to inculcate breathing therapy within the HSE hospitals is limited by the availability of suitably trained physiotherapists as well as the logistical and economic difficulties to offer face-to-face appointments. We suggest that the presence of a professional physiotherapist in these facilities can have a significant positive effect on everyone, including, young patients, parents, and practitioners.

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Oral Presentation Number 35
General Paediatrics

VITAMIN D SUFFICIENCY IN A WELL, IRISH PAEDIATRIC POPULATION. A SNAPSHOT OF SUFFICIENCY USING THE CELTIC RANGES STUDY

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The need for Vitamin D sufficiency has been well studied. In 2010, the HSE implemented a neonatal vitamin D supplementation policy which has been modified recently to recommend all breastfed babies and babies taking less than 300mls of formula should be supplemented [200IU] until the age of 12 months with continued supplementation during the winter months for children aged 1 to 4years.

Aims
The Celtic Ranges study is a prospective study to establish paediatric reference ranges of frequently used laboratory tests in well children attending CHI at Tallaght. The study also gathers auxological data and information on general health, activity and diet. Eligible children and adolescents are aged from 1 month to 21 years attending for routine GP tests with no underlying condition. We have utilised data from this cohort to provide a snapshot of Vitamin D sufficiency.

Methods
This study includes 500 patients who have consented to the Celtic Ranges Study. The definition of Vitamin D sufficiency was >50nmol/L. Ethical approval has been provided by the Joint Ethics Committee of St James/Tallaght University Hospitals. Information gathered includes age, date of sample and vitamin D level.

Results
497/500 had a valid Vitamin D level available for analysis with an average age of 8.7years (range 6 months to 21 years). The median Vitamin D is 57.8nmol/L. This was higher in summer (July to September) compared to winter (October to February) 64 nmol/L+/-2.7 versus 51nmol/L +/-2.2. There was a fall in median vitamin D levels relative to increasing age from the under 5 age group (65.5±3.7nmol/L), 5 to 9.9 years (62±3.2nmol/L), 10-14.9 years (48±2.7nmol/L) and over 15 years (44 ±6nmol/L) groups. Further statistical analysis is in progress.

Conclusions
Despite national supplementation policies children and adolescents still appear to have Vitamin D insufficiency which has implications for metabolic bone health.

Oral Presentation Number 36
General Paediatrics

THE SAFE INITIATIVE: THE CORK PAEDIATRIC EXPERIENCE OF HUDDLE INTRODUCTION TO IMPROVE SAFETY AND COMMUNICATION OUTCOMES

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Aims

Situation Awareness for Everyone (SAFE) is an initiative developed by the Royal College of Paediatrics and Child Health to help clinical teams to improve communication, create a safety based culture and deliver better outcomes for their paediatric patients.
Our paediatric department in Cork took part in in the initiative and introduced the 'Huddle' toolkit as a quality improvement project. Our stakeholders included consultants, NCHDS and nursing staff.

Methods

The Huddle took place every morning with the registrar on call for the day carrying out the toolkit. The key areas we aimed to address were:

1. Gathering information
2. Understanding Issues
3. Anticipating problems and safety concerns
4. Learning from cases and specific challenges

The registrar of the day took staff attendance, highlighted sick patients, discussed space, staffing and clinical challenges for that day and any concerns attendees had. We collected and analysed data generated from the Huddle toolkit. We surveyed our staff pre and post introduction of the Huddle. We also carried out a qualitive evaluation post 6 months of introduction for feedback.

Results

Key performance indicators were attendance at huddle, ISBAR compliance during clinical communication and anticipation of urgent PEWS calls or patient deterioration.

100% of staff agreed it improved patient safety with 73% strongly agreeing. 80% (N= 13) felt reduced adverse clinical events. Our daily ISBAR compliance at handover improved from 50% to 87-90%. The introduction of Huddle created a safe place to voice patient concerns. 100% of staff felt it created teaching and learning opportunities. Areas to improve were attendance and recognition as protected handover time.

Conclusion

The National Safe Collaborative was effective in our centre in impacting paediatric patient safety outcomes. We were able to introduce a new culture of safe handover and benefit our department by reducing avoidable harm, improving communication and clinical outcomes.

Oral Presentation Number 37
Medical/Education Management

AIRWAY MANAGEMENT PSYCHOMOTOR SKILL IMPROVEMENT. THE ROLE OF IMMERSIVE REALITY

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[2]School of Media, Technology University Dublin, Dublin, Ireland

This is a project done by a team of game design students from Technology University Dublin in conjunction with the paediatric department of St Luke's General hospital.
Aims:

- The purpose of the project was to create a virtual reality game to teach student doctors how to insert a laryngeal mask airway in all potential patients.
- Our goal is to improve on the current teaching methods by creating a fun and repayable experience of performing the procedure in virtual reality.
- We plan to use this current prototype to teach students the procedure.
- Our end goal is to have a portable end product where you only need a headset to play and learn.

Methods:

- The game currently consists of a testing level where the player can learn the controls
- There is a picture puzzle where the player has to put the steps of the procedure in order.
- There is a true or false quiz on the procedure.
- There is also an operating room level where you have to perform the procedure yourself.

Results:

- 3rd year postgraduate medical students from UCD feedback was
    - They enjoyed the game.
    - They understood the controls.
    - They were able to complete all steps.
- National Ambulance Service paramedic students and instructors feedback was:
    - They enjoyed the game.
    - They felt that it inspired more confidence in them.
    - the instructor said that he believed it would help with teaching the steps of the procedure.

Conclusion:
We have been told by people who are both teaching and learning the procedure that our project will improve the current method of teaching, especially with Covid-19 limiting hands on learning.

Oral Presentation Number 38
Neonatal

EFFECT OF GESTATIONAL DIABETES ON NEONATAL MYOCARDIAL DEFORMATION AND LEFT VENTRICULAR ROTATIONAL MECHANICS

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[3]Department of Paediatrics, The Royal College of Surgeons in Ireland, Dublin, Ireland.
[4]Department of Obstetrics & Gynaecology, The Royal College of Surgeons in Ireland, Dublin, Ireland.

Background & Aims: Infants born to mothers with gestational diabetes mellitus (GDM) have impaired myocardial performance and are at risk of pulmonary hypertension (PH). Myocardial deformation and left ventricular (LV) rotational mechanics remain relatively unexplored in this population. We aimed to assess LV and right ventricular (RV) function in GDM infants and compare them to healthy controls.

Methods: We studied 40 infants with maternal GDM and 40 infants of healthy mothers. Echocardiograms were carried out over the first 3 days after birth to measure LV and RV function using speckle tracking echocardiography (STE), LV rotational mechanics and pulmonary vascular resistance (PVR).

Results: GDM infants had a lower gestation at birth and a thicker septal wall, a higher LV eccentricity index (indicating septal bowing) and a higher PAATi (indicating higher PVR). GDM infants had lower LV strain, systolic and early diastolic strain rates, lower RV strain and early diastolic strain rates. By day 3 of age, GDM infants had higher twist, torsion and higher LV twist and untwist rates. GDM status was an independent predictor of LV and RV function and pulmonary vascular resistance ($p=<0.01$).

Conclusion: GDM results in important changes in LV and RV function in addition to increased pulmonary vascular resistance. Decreased LV strain rate (marker of impaired contractility) in combination with LV diastolic dysfunction will lead to elevation of LV end diastolic pressure and consequent increase in LA pressure. High LA pressure may impinge pulmonary venous drainage causing increased PVR and high RV afterload in the GDM cohort. Infants of GDM mothers have higher LV twist and torsion (driven by an augmentation of counter-clockwise apical rotation). The increased LV torsion found in GDM infants may be a compensatory mechanism to maintain normal cardiac performance in the face of impaired longitudinal function.

AN AUDIT OF THE SCREENING AND MANAGEMENT OF DYSLIPIDAEMIA IN A REGIONAL PAEDIATRIC TYPE 1 DIABETES POPULATION

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Background and Aims:
Individuals with Type 1 Diabetes have a significantly increased risk of morbidity and mortality from cardiovascular disease compared to the general population. Onset of atherosclerosis has been demonstrated in childhood, with cholesterol deposition playing an important role in atherosclerosis initiation. The ISPAD guidelines were refined in 2018 and describe current recommendations for the management of dyslipidaemia in paediatric type 1 diabetes.
We aimed to audit dyslipidaemia screening and management in our paediatric Type 1 Diabetes population compared with ISPAD guidelines.

Methods:
Data were collected prospectively on all paediatric type 1 diabetes patients in the service over a period of three years (n=229). We measured the proportion of patients who were appropriately screened for dyslipidaemia based on age (≥ 11) or family history. We also calculated the mean delta LDL for our patients with multiple LDL measurements. We then compared our management with ISPAD guidelines on dyslipidaemia.

Results:
Of our cohort of 229, 158 were aged ≥11 years. Of these, LDL was measured in 108 (68%). 15 (10%) had total cholesterol measured without LDL, while 35 (22%) had no lipids checked. Family history of hypercholesterolaemia or early CVD was documented on two occasions. 57 patients had LDL checked once, 6 of these patients had abnormal results with no repeat LDL after at least one year. The average delta LDL-C of the patients with multiple measurements was +0.13 mmol/L. 48 patients met the criteria for referral to a dietician for specific cholesterol education, however, only 12 patients underwent this counselling. Following a trial of diet and exercise, 16 adolescents met criteria for treatment with a statin however none are currently on treatment.

Conclusions:
Our audit suggests that the screening and management of dyslipidaemia is suboptimal in our population. We aim to introduce several quality improvement measures prior to re-auditing.

Donaghue, K., Marcovecchio, M., Wadwa, R., Chew, E., Wong, T., Calliari, L., Zabeen, B., Salem, M. and Craig, M., 2018. ISPAD Clinical Practice Consensus Guidelines 2018: Microvascular and macrovascular complications in children and adolescents. Pediatric Diabetes, 19, pp.262-274.

Oral Presentation Number 40
General Paediatrics

HEMIHYPERTROPHY: IT'S NOT ALWAYS BECKWITH-WIEDEMANN

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Background:
Hemihypertrophy is a condition characterised by bone and soft tissue overgrowth of one side of the body in comparison to the other. Overgrowth may affect the entire side of the body or just one body-part. Hemihypertrophy may occur in isolation or as part of a number of genetic and congenital syndromes, the most common being Beckwith-Wiedemann Syndrome. Potential sequelae (depending on aetiology) include: intra-abdominal tumours, orthopaedic complications, vascular malformations and genetic implications. We present two cases of hemihypertrophy, each with a different aetiology and follow-up surveillance.

Case Report 1:
Our first case is that of an eighteen-month-old, noted to be late to walk by his parents. On examination, there was mild leg length discrepancy but no other significant abnormalities. A diagnosis of Isolated Hemihypertrophy Syndrome was made. Further diagnostic studies were not deemed necessary following clinical genetics review. Regular four-monthly abdominal ultrasound was organised for tumour surveillance, until aged seven, and he will receive periodic paediatric and orthopaedic follow-up.

Case Report 2:
Our second case describes a three-year-old child, referred with parental concerns regarding arm size incongruity, as well as an enlarging ‘birth mark’. On examination, a mild discrepancy was apparent, with right mid-arm circumference and right leg circumference measuring greater than the left. In addition, a solitary lesion, measuring 15cm x 12.5cm, was observed on the right lower limb, consistent with a capillary malformation. Clinical genetics review was sought, following which a clinical diagnosis of Klippel-Trenaunay Syndrome (KTS) was made. This child does not require routine tumour surveillance as the evidence suggests no increased risk in patients with KTS. Significant leg length discrepancy may cause functional impairment, which may not be apparent until adolescence and may require orthopaedic intervention.

Conclusion:
Providing families with a definitive diagnosis as to the cause of hemihypertrophy allows for a tailored clinical follow-up and surveillance strategy.

Oral Presentation Number 41
General Paediatrics

SHOULD THE SEASONAL FLU VACCINE BE ROUTINELY PROVIDED TO ALL CHILDREN?

N Bochor[1], LA Lik[1], M Kwok[1], B Alsayab[1], S Rahmat[1], C Condon[1], J Corbett[1], J Allen[1-3], D McCollum[1-3], NO O' Cathain[1,2,5], J Meehan[1-3], E Roche[1-3], E Molloy[1-5]
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Background & aims: Influenza virus is a major respiratory pathogen transmitted via respiratory droplets, specifically types A and B which cause seasonal epidemics. Vaccination is the main method of prophylaxis. This study aims to explore if the seasonal flu vaccine should be routinely provided to the whole paediatric population.
Methods: A systematic review of all the literature was performed on PubMed. English language studies about the vaccine regarding children aged 6 months-18 years were included. Meanwhile, studies focusing on target groups included in HSE's vaccination recommendation, and the vaccine during the H1N1 pandemic were excluded.
Results: The search yielded 238 relevant studies. A recurring theme of this systematic review was the significant disease burden of influenza, especially in children between six months and five years. The vaccine is efficacious in reducing influenza related hospitalisation by 25%,mortality by 2.5%, and incidence/morbidity by 40-60%. Studies showed that the vaccine's effectiveness on the 6 months- 8 years cohort has been increasing yearly. Also, it is cost-effective when considering reduced health care and societal burdens, and has an economically feasible method of administration through school-based vaccination campaigns. Furthermore, the reported adverse effects of vaccines are at acceptably low rates. WHO recommends everybody over 6 months be administered the vaccine seasonally.
Conclusion: A universal seasonal influenza vaccination policy should be implemented due to the high disease burden of influenza, and high impact of vaccination. The evidence from this study illustrates that the advantages of influenza vaccine administration to healthy children far outweigh the disadvantages.

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Display Poster Number 1
General Paediatrics

Play, Art, Music and Exercise Therapy impact on Children with Diabetes.

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[2]University Hospital Limerick

Diabetes mellitus (DM) continues to rise worldwide and both Type 1 diabetes (T1D) and Type 2 Diabetes (T2D) has been increasing in children yearly with many children going on pharmacological therapy to treat diabetes. Our objective was to do a systematic review of the literature for non-pharmacological treatment and control of DM. A literature review was performed using PubMed, Medline, Embase, and Cochrane library to evaluate play, art, music, and exercise therapy in the treatment of DM using the keywords: “paediatric”, “diabetes”, “play therapy”, “art therapy”, “music therapy”, and “exercise therapy”. These search terms initially returned 270 cases, which result in a total of 11 papers being reviewed after eliminating duplicate or irrelevant papers. Art, play and exercise therapy showed to have a positive impact on the child both physically and psychologically in managing their diagnosis. No papers were found on music therapy that met the criteria. Limited research exists looking at the impact of therapy on quantitative measures such as HbA1c providing an avenue for future research.

Display Poster Number 2
General Paediatrics

BROWN-SÉQUARD SYNDROME: A PRESENTATION IN AN ADOLESCENT MALE FOLLOWING VERTEBRAL ARTERY DISSECTION.

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Aims:
Our aim is to present the case of a rare presentation of vertebral artery dissection (VAD) which led to a spinal cord infarction, resulting in Brown-Séquard syndrome (BSS). We are hoping to raise awareness that BSS symptoms can mimic those of a stroke. This should prompt examination for sensory deficit on presentation of hemiparesis, particularly when there is a history of trauma.

Methods:
We report the presenting features, examination findings, radiological images and challenges to treatment involved with this patient, including the outcome on follow-up.

Results:
We present the case of a 17 year old male who developed BSS as a result of a VAD that was thought to have occurred nine weeks previously. He noticed the symptoms following a run and experienced significant weakness of both limbs on his left hand side. On radiological investigation, a left sided VAD was noted, with three small cerebellar infarcts and an anterior cervical cord infarct, which was identified as the cause of the BSS. It was suspected that an anatomically small left vertebral artery contributed to the severity of his symptoms. He was successfully treated with anticoagulation and significant input from the multi-disciplinary team (MDT). His neurological deficit was almost completely resolved upon follow-up 3 months post-discharge.

Conclusion:
BSS is a rare condition, even more so in patients under 25 years old. It was first reported in 1998 and there have only been a few cases reported since, especially in the younger population. It is important to identify the underlying cause of BSS early while it is treatable, otherwise it can result in significant neurological damage. VAD is an important cause of stroke in patients under 45 years old. This case demonstrates the success of rapid diagnosis, effective anticoagulation and MDT input in leading to a swift neurological recovery.

Display Poster Number 3
General Paediatrics

SECTION 12 ADMISSIONS TO A REGIONAL PAEDIATRIC DEPARTMENT

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AIM

Section 12 of the Child Care Act (1991) grants power to An Garda Síochána to take a child to safety where they have reasonable grounds to believe that there is an immediate and serious risk to the health or welfare of a child. Where no suitable placement is found by TUSLA the child is instead admitted to the nearest Paediatric Department. A recent retrospective review established that there were 174 admissions under Section 12 to the Paediatric Department at UHL in the past decade.
This study aims to establish:
1. Number of admissions to the Paediatric Department at UHL in the 12 month period between July 8th 2019 - July 5th 2020.
2. Where possible: age; gender; referral source; site of admission; medical investigations; medical treatment.

METHOD

Prospective collection of a standardised data set from all children <16 years admitted to the Paediatric Department at UHL under Section 12 during the dates outlined. Exclusion criteria: children presenting to and discharged from the ED without admission; Section 18 admissions.

RESULTS

Total admissions: 19. Age: 5% under 1; 52% >1<12; 36% 12 or older. Gender: 14 F; 5 M. 17 referred by An Garda Síochána; 2 BIBA. All presented to PED. 17 due to domestic violence in the family home. 4 may have suffered direct assault. 12 may have experienced significant neglect. 1 due to a family breakdown. All 19 required vital signs, history and physical examination. 3 required speciality review; 4 required imaging and bloods; 2 required urine tests. 3 children required medical treatment. LOS: median: 2 nights; mean: 1.2 nights.

CONCLUSION

84% of those admitted did not need medical treatment yet stayed in hospital at least one night, exacerbating the fear they already felt. We must advocate for more appropriate places of safety for such vulnerable children.

Display Poster Number 4
General Paediatrics

THE GREEN SOLUTION? A REVIEW OF A TRANSITION TO TELEHEALTH FOLLOWING THE ONSET OF THE COVID-19 PANDEMIC

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Aim:
Our aim is to assess the environmental impact and personal savings of the new postal HbA1C service put into practice by the Department of Paediatrics, University Hospital Limerick. This was implemented to reduce the need for in-person consultations, and to reduce the potential for transmission of COVID-19.

Methods:
This postal service was implemented at the beginning of March as the COVID-19 pandemic and Irish lockdown arrived. All paediatric patients with type-1 diabetes were included in the study. All were sent paediatric EDTA blood vials and were scheduled for telemedicine consultations. The patients excluded were those who had inpatient consultations. The patient's address was documented from their charts. The distance and time taken to travel to the University Hospital Limerick was analysed using Google Maps. We calculated the range and median times of distances travelled per consultation. We used the Carbon Calculator to calculate the carbon footprint of each of these values.

Results:
The total study population was 220 patients. Fifteen of these patients were excluded. The remaining 205 patients returned at least one sample. Patients typically attend clinics every three months.The range of distance travelled is 13.6- 885.6km annually. The median distance travelled annually is 254.4km. The time saved per annum travelling from home to hospital ranges from 24- 664 minutes. Taking the median distance travelled per annum for the patients collectively, we calculated the average carbon footprint to be 9.09 metric tons of CO_2e.

Conclusions:
Savings in time, finance and carbon footprint have been made following the implementation of the postal service. While these figures are crude, no economic gold standard has been set for analysis of such services. This is an area with much potential for ongoing and future practice, and recognition of non-medical findings should be built on.

Display Poster Number 5
General Paediatrics

SHOULD THE SEASONAL FLU VACCINE BE ROUTINELY PROVIDED TO ALL CHILDREN?

N Bochor[1], LA Lik[1], M Kwok[1], B Alsayab[1], S Rahmat[1], C Condon[1], J Corbett[1], J Allen[1-3], D McCollum[1-3], NO O' Cathain[1,2,5], J Meehan[1-3], E Roche[1-3], E Molloy[1-5]
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[3]Children's Health Ireland at Tallaght, Tallaght, Dublin 24, [4]Children's Health Ireland at Crumlin, Cooley Road, Dublin 12, [5]The Coombe Women and Infants University Hospital, Dublin 8, Ireland

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Results: The search yielded 238 relevant studies. A recurring theme of this systematic review was the significant disease burden of influenza, especially in children between six months and five years. The vaccine is efficacious in reducing influenza related hospitalisation by 25%,mortality by 2.5%, and incidence/morbidity by 40-60%. Studies showed that the vaccine's effectiveness on the 6 months- 8 years cohort has been increasing yearly. Also, it is cost-effective when considering reduced health care and societal burdens, and has an economically feasible method of administration through school-based vaccination campaigns. Furthermore, the reported adverse effects of vaccines are at acceptably low rates. WHO recommends everybody over 6 months be administered the vaccine seasonally.
Conclusion: A universal seasonal influenza vaccination policy should be implemented due to the high disease burden of influenza, and high impact of vaccination. The evidence from this study illustrates that the advantages of influenza vaccine administration to healthy children far outweigh the disadvantages.

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Display Poster Number 6
General Paediatrics
UNFORGETTABLE TRIP TO PARIS: WAS IT WORTH IT?
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Aims: To illustrate that the absence of anti-GQ1b antibody in a patient with Miller Fisher syndrome (MFS), an immune-mediated neuropathy considered a variant of Guillain-Barré syndrome, does not exclude the diagnosis, although up to 95% of the patients have anti-GQ1b antibodies during the acute phase of MFS.
Methods: A 13-year-old healthy boy presented to ED with bilateral mydriasis, ophthalmoplegia, diplopia, areflexia, ataxia and nasal dysarthria. Systemic neurological examination showed that the strength of the facial muscles as well as the upper and the lower limbs muscles was normal. A gait ataxia was present. Deep tendon reflexes were absent with bilateral flexor plantar responses. There was no evidence on history nor examination of involvement of sensory, respiratory, and autonomic systems nor of sphincter functions. Nasal dysarthria noted on exam. Motor and sensory nerve conduction studies were within normal limits. The blink response testing was normal and suggested intact bilateral afferent trigeminal nerve and efferent facial nerve.
Results: The results of routine blood chemistry tests, as well as a panel of serology tests of autoimmune disorders were unremarkable. PCR screen of peripheral blood for Meningococcal DNA was negative. The cerebrospinal fluid (CSF) analysis revealed clear CSF, normal pressure, normal glucose and protein levels. CSF culture and PCR for possible organisms, such as bacteria, mycobacterium tuberculosis, herpes viruses, yielded negative results. CT brain and MRI brain and spine were normal. Stool analysis for *Campylobacter jejuni* was negative. CSF testing for anti-GQ1b and GM1 antibodies was negative. The patient was treated with intravenous immunoglobulin 0.4 g/kg/day over 5 days, with a good response to the therapy. He improved clinically within few days and had an excellent recovery.
Conclusion: Miller Fisher syndrome is usually associated with anti- GQ1b antibody in CSF/serum, although a negative result does not exclude the diagnosis. Early treatment has a positive impact on patient outcome.

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Display Poster Number 7
General Paediatrics
CASE REPORT; PAEDIATRIC INFLAMMATORY MULTISYSTEM SYNDROME (PIMS). A NEW FACE OF KAWASAKI DISEASE IN COVID-19 ERA?

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Presentation: We describe a case of Paediatric Inflammatory Multisystem Syndrome **(**PIMS), an inflammatory condition which shares features of Kawasaki disease and in which SARS-CoV-2 PCR testing may be positive or negative.
A 9-year-old boy was referred to surgical team by GP with suspicion of Appendicitis. He had generalized abdominal pain, fever, vomiting and loose stools for last 4 days. He was kept under observation and was on IV fluids and metronidazole. His abdominal and chest x-rays and abdomino-pelvic ultrasound were normal. He was reviewed by Paediatric team. A CT abdomen was planned to rule out appendicitis. However, he developed bilateral non purulent conjunctivitis, irritability and myalgias. A transient rash appeared on his hands which resolved before conjunctivitis was noticed.
Diagnosis: Diagnosis of PIMS was made based on clinical features of persistent fever, abdominal pain, diarrhea, non-purulent conjunctivitis, generalized myalgias, transient rash, hypotension and investigations including lymphopenia, raised D-Dimers, BNP, fibrinogen, ferritin, CRP and ESR. His SARS COVID-19 antibodies came back positive for IgG.
Treatment: IVIG, Aspirin and Methylprednisolone were administered. Hypotension was managed with IV boluses and Noradrenaline infusion.
Conclusion: PIMS was suspected promptly in the setting of evolving clinical features and managed according to the suggested guidelines. It is a rare presentation and should be considered in setting of persistent fever, inflammation and evidence of single or multi-organ dysfunction with additional laboratory features and in the absence of other microbial cause including sepsis.

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Display Poster Number 8
General Paediatrics
POST-OPERATIVE SEROTONIN SYNDROME IN A PAEDIATRIC PATIENT
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Presentation: We present the case of a 13 years old girl with mild to moderate postoperative serotonin toxicity secondary to Fentanyl, Propofol and Ondansetron.
A day before presentation, she had open reduction and K-wire fixation of a fracture of the left ring finger under general anaesthesia.She received IV Propofol, Fentanyl, an inhaled anaesthetic – Sevoflourine and local anaesthetics including Lidocaine & Levobupivacaine. She also received IV Ondansetron, Dexamethasone and Paracetamol.She was discharged home 4 hours post-surgery.
She was reported to be flushed, sleepy and having unusual behaviour. Her eyes were moving to and fro and her jaw was moving sideways. She had facial grimacing and lip smacking. She was also flinging her arms in the air. Her pupils were noted to be wide.
Following day, she was noted to be sleepy, disorientated and agitated. She was again reported to have wide pupils, her eyes were moving to and fro and her jaw was moving sideways. She looked flushed and felt warm. She reported left sided frontal headache. She had hand tremors, photophobia and phonophobia.
In A&E, she was delirious, hyperventilating and flushed. She had mydriasis, horizontal nystagmus, facial grimacing, lip smacking and had difficulty walking. Her temperature was 38°C, pulse was 77 to 84 per minute, BP was 131/83, SPO2 were 100%, CRT <2 sec and blood sugar was 5.5mmol/l. There was no focal neurological deficit. Her serum Na, Ca, Mg was normal. Urine toxicology, ECG and CT brain, FBC, CRP, CPK and LFT were normal. She had no notable past medical history apart from glue ears requiring grommets.

Diagnosis:Her symptoms resolved spontaneously. Her clinical features were consistent with both Sternbach's and Hunter Serotonin toxicity criteria.

Treatment: Our patient was admitted for observation and managed conservatively.
Conclusion: An appropriate approach for the diagnosis of serotonin toxicity depends on focused history taking and thorough examination and comparing them against the proposed criteria.

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Display Poster Number 9
General Paediatrics
Suck, Sun and See the Rash!!
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Background: Phytophotodermatitis is an acute phototoxic cutaneous eruption resulting from contact with light-sensitizing botanical substances, psoralens, combined with UVA radiation (1). The rash presents in a bizarre linear pattern, progressing from erythema to bullae with residual hyperpigmentation (2). Phytophotodermatitis is an important diagnosis as it can be mistaken for abuse (3).
Case: A 5 month old boy was taken to ED by his mother, with a 1 day history of a progressive erythematous rash on his face, chest and hands with associated blistering. The patient was systemically well with no past medical history. Initial impression was staphylococcal scalded skin syndrome. Septic screen was negative.
History revealed that 18 hours prior to admission, he had been feeding himself mashed carrots and parsnips while sitting outside wearing only a nappy. As he was a "messy" eater and it was sunny, he subsequently had his bath outside. His parents noticed the rash on his right hand the next morning. It progressed during the day to his left hand, face and trunk. By evening, he had developed blistering of his right hand.
He had a streaky, erythematous rash distributed periorally, centrally on the chest and abdomen with irregular patches on his thighs, shoulders and hands. On his right hand there were large tense bulla and areas of desquamation. Superficial erosions were evident on his abdomen and bilateral cheeks. There was sparing of his posterior trunk and mucus membranes.
Phytophotodermatitis was diagnosed based on the history of outdoor eating in sunshine and the streaky appearance of the rash in a distribution where food came into contact with his skin. The patient responded to topical corticosteroids. Mild residual hyperpigmentation remains.
Conclusion: Phytophotodermatitis is a clinical diagnosis and should be suspected when patients present with an acute irregularly shaped rash, exposure to sunlight and a psoralen-containing substance.

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Display Poster Number 10
General Paediatrics
Management of Head Injuries in Under 2s: Assessing the Implementation of a Clinical Guideline during the Covid-19 Pandemic.
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Aims:
Head injury is a common presentation to the Paediatric Emergency Department (PED). Responding to the Covid-19 pandemic, practice guidelines in University Hospital Limerick changed so that children under 2 years were assessed directly by the Paediatric Medical Emergency Team, reflecting the NICE head injury assessment guidelines.
Our aim was to determine the prevalence of head injury presentations in the under 2s cohort to the PED between April and June 2020 and to compare this with the same period in 2019. To assess admission rates, the number of neuroimaging studies, and the significance of the newly implemented guideline.

Methods: A retrospective audit of presentations of head injury (<2 years of age) to the PED was completed. The three months surveyed corresponded with a change in service provisions in PED due to the Covid-19 pandemic and compared to the same period in 2019. Data was compiled assessing presentation, admission and neuroimaging rates.

Results: Between April-July 2020, there were 53 presentations with a total of 21 admissions (39.6%), and 4 (7.5%) requiring neuroimaging. Frequency of admission by age was as follows; 0-6 months (100%), 6-12 months (66.6%), 12-18 months (20%), 18-24 months (9%). In 2019 there were 46 presentations, 4 admissions (8.7%) and 1 requiring neuroimaging (2.17%). Admissions by age group were as follows: 0-6 months (50%), 6-12 months (0%), 12-18 months (25%), 18-24 months (25%).

Conclusion: We have shown that the change in service provision for PED during the Covid-19 pandemic has increased our rates of admission, due to the introduction of a local guideline for head injuries under 2 years, in keeping with NICE Guidelines. We feel that this has improved patient safety and reduced risk of adverse events. The care of patients under Paediatrics vs Surgical Teams prior to Covid-19 must also be considered as an influencing factor.

Display Poster Number 11
General Paediatrics
Spontaneous Temporomandibular Joint Dislocation in a Toddler

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Aims/Background:
The following is a case of a 2 year and 4-month-old boy (XY) presenting to the Paediatric Emergency Department (PED) with new-onset trismus with visible spasm of masseter muscles bilaterally. The causes of trismus are numerous, although rare in presentation.
XY presented to the PED with his mother with an inability to close his mouth and associated masseter spasm and drooling. The trismus began suddenly and without associated trauma. Despite trial of soft foods, XY's jaw position remained fixed and he expelled foods using his tongue. There was no associated altered level of consciousness, fever or abnormal movements. Vaccinations were up to date.
Initially self-resolving in PED, XY was discharged home, only to present again less than 24 hours later with recurrence of symptoms. At this time, a decision was made to admit XY for further investigation.

Methods:
On admission, XY was vitally stable, although, visibly distressed with his mouth held open. Spasm of masseter muscles was visible bilaterally. Examination revealed a normal oropharynx with absence of tonsillar exudates and Quincy. Neurological examination was normal, including presence of gag reflex Systemic examination revealed no contributory findings.

Results:
Laboratory investigations were unremarkable, with tetanus serology consistent with prior vaccination. X-ray of the mandible and MRI Temporomandibular Joint (TMJ), carried out under sedation, were normal.

Discussion:
In light of these normal investigations and persistence of symptoms over 24 hours, XY was transferred to a tertiary paediatric centre under the care of Craniofacial Surgeons. A diagnosis of spontaneous TMJ dislocation was reached. He was treated with a soft neck collar and a soft elastic brace across the chin to keep the TMJ in position and made a full recovery. Although a rare presentation, it is important to keep in mind the vast range of causes for trismus in a paediatric population and investigate appropriately considering both intra- and extra-articular causes.

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Display Poster Number 12
General Paediatrics
QUALITY OF LIFE AND EXERCISE IN T1DM – A PERIPHERAL PERSPECTIVE
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Aims

To evaluate health related quality of life (QoL), exercise and their relationship with glycaemic control in children with T1DM in the Cavan/Monaghan area. The incidence of T1DM in the Irish paediatric population is approximately 27.5 per 100,000. Its impact on quality of life, exercise and overall psychosocial well-being is underreported. HbA1c as an indicator of gylcaemic control may correlate with diabetes related QoL in children[1,2].

Methods

This was a cohort study of 31children with T1DM. Children and parents completed questionnaires whilst attending an outpatient appointment. The PedsQL 3.0 Diabetes questionnaire was used, along with an exercise questionnaire which recorded time exercising for each of the last 7 days. A mean HbA1c for the preceding twelve months was calculated for each patient.

Results

The overall mean HbA1c was 64.1mmol/mol. The mean HbA1c amongst 0-10, 10-15, and 15-18 year olds was 60.5mmol/mol, 66.7mmol/mol and 60mmol/mol respectively. The highest child QoL score was in the 0-10 year group, with the lowest score reported by 15-18 year olds. The parent QoL score was highest in the 15-18 year olds, with the lowest scores given by parents of 10-15 year olds. Higher parent QoL scores and exercise scores across all groups were associated with lower average HbA1c.

Conclusion

Interpretation is hampered by the small sample size. We found an overall apparent association between lower HbA1c, improved QoL and regular exercise. There was discrepancy in self-reported and parent-reported QoL relative to average HbA1c. The 10-15 year age group reported the best QoL scores despite having the worst HbA1c. This may reflect the small sample size but may also reflect the lack of compliance with diabetes management within this challenging age group. There was a positive linear correlation between parent and child reported exercise scores and QoL, reflecting improved QoL in those who exercise more frequently.

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Display Poster Number 13
General Paediatrics

A REVIEW OF CHEST X-RAYS PERFORMED IN CHILDREN PRESENTING TO A PAEDIATRIC EMERGENCY DEPARTMENT IN MELBOURNE WITH ASTHMA OR BRONCHIOLITIS

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To ascertain the number of CXRs performed for children presenting with asthma, wheeze and bronchiolitis, and to compare the frequency to international guidelines.
This retrospective audit was carried out in a paediatric ED nested within a large, mixed ED in Melbourne. A list was generated from the Emergency Department Information System of patients with diagnosis codes 'ASTHMA', 'WHEEZING', 'BRONCHIOLITIS'. This was then cross-referenced with the Electronic Medical Record to determine the number of children who had CXRs performed.

Over a one-year period, from January to December 2019, there were 2,421 ED presentations for asthma, wheeze or bronchiolitis. This represented 9.5% of the total presentations to the paediatric ED that year. Overall, 307 (12.6%) had CXRs performed. In December, just 5% (n=121) of children had CXRs compared to a peak of 19.1% (n=173) in March. Over the subsequent six months, from January to June 2020, a period which coincided with the CoVID-19 pandemic, 453 children presented with the above diagnoses. However, the proportion of patients referred for CXRs was similar, with 70 patients (15%) getting an x-ray. Of note, in April 2020, at the beginning of the Australian winter, none of the 24 patients presenting with asthma, wheeze or bronchiolitis were referred for CXRs.

Asthma and bronchiolitis account for a significant proportion of presentations to the paediatric ED each winter. Both are clinical diagnoses with limited role for imaging, and national and international guidelines advise against the use of routine CXRs. There is no documented rate for the proportion of CXRs that is deemed acceptable. Our findings are in keeping with international guidelines that clinicians do not routinely order CXRs for these presentations. Interestingly, there was no significant change in the number of CXRs ordered during the CoVID-19 pandemic. Continued audit and education is required to avoid unnecessary radiation in the paediatric population.

Display Poster Number 14
General Paediatrics
Constipation secondary to Intestinal Neuronal Dysplasia: A Case Report
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Introduction:
We present the case of a 10 year-old Irish male presenting with intractable constipation, subsequently diagnosed with intestinal neuronal dysplasia (IND) Type B.

Case Description:
A 10 year-old-boy was initially referred to paediatric gastroenterology for management of constipation. He had delayed passage of meconium on day four of life, and difficult passing stool since birth. Over the course of a number of years, this remained refractory to lifestyle and medical treatment. He failed escalated treatment with stool softeners, osmotic laxatives, stimulant laxatives, bulking agents and prokinetics. By the age of nine, his symptoms had worsened significantly: he was soiling on a daily basis, requiring hourly toilet sits during school, passing bowel motions approximately every six weeks, all of which had a profound effect on his psychosocial development.

A pellet study was indicative of dysmotility and he was subsequently investigated at GOSH. A colonoscopy was normal, anorectal manometry was normal. However colonic manometry was suggestive of a neuropathic colon, most likely due to intestinal neuronal dysplasia.

Discussion:
Chronic constipation is a common presentation in paediatrics, present in up to 30% of 4-11 year olds[(1)]. While approximately 95% is deemed functional or idiopathic, 5% of cases have an organic aetiology. In our case, the patient received appropriate medical management and lifestyle interventions repeatedly without adequate response. This raised the possibility of an organic cause for his constipation.

IND is a malformation of the parasympathetic submucous and myenteric plexuses[(2)]. Intestinal neuronal dysplasia is characterised by hyperplasia of the myenteric plexuses, increased acetylcholinesterase activity in nerves of the submucosa and lamina propria, and an increased number of ganglion cells with formation of giant ganglions[(3)].

Management of IND involves anal and pelvic floor procedures, antegrade colonic irrigation, formation of a bowel diverting stoma, or in severe cases, colon or rectal resection[(4)].

This case highlights the value of adequate history-taking, and the importance of reflecting on past treatments and its necessity in considering alternative diagnoses.

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Display Poster Number 15
General Paediatrics
URINARY TRACT INFECTIONS IN THE PAEDIATRIC EMERGENCY DEPARTMENT; A QUALITY IMPROVEMENT INITIATIVE

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Introduction

Urinary Tract Infections (UTIs) are common amongst children with a rising incidence in presentation to the ED[1]. In line with international best practice guidelines[2], the diagnosis of UTI in children presenting to the ED involves correlation of symptoms with point-of-care urinalysis, followed by microscopy, culture and sensitivity. Failure to instigate appropriate antibiotics based upon sensitivity results leads to poor patient outcomes[3]. Routine practice in our ED prior to this QI initiative involved follow-up of sensitivities by a designated NCHD upon receipt of a hard-copy results report from the microbiology laboratory. We noted a time-lag between availability of results online and receipt of hard-copy in the ED, representing an avoidable delay to instigation of appropriate antimicrobial therapy.

Aim

To reduce the time interval between availability of urine sensitivity results and the instigation of appropriate antimicrobial therapy through the creation of an online worklist.

Methods

An online worklist was created using existing software and training was implemented. This allowed NCHDs to access and act upon urinalysis results immediately following authorisation by the microbiology laboratory. A retrospective review was performed of children presenting with UTIs over a 2 month period pre and post-implementation of the online worklist.

Results

Following implementation of online worklist the mean time to review of culture and sensitivity results fell from 72 hours to 48 hours. Sensitivities were noted to alter antimicrobial therapy in 10% of cases, most commonly in children with multiple co-morbidities or recurrent UTIs. Feedback from NCHDs has been positive with no adverse events reported.

Conclusion

This QI initiative implemented in our department has led to positive patient outcomes with a mean reduction of 24 hours to instigation of appropriate antimicrobial therapy. The ED at CHI Temple St is the busiest paediatric ED in Ireland, with UTIs constituting a significant burden of presentations. This QI initiative allows for superior communication amongst staff resulting in an avoidance of duplication of tasks and importantly leads to improved patient safety outcomes.

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Display Poster Number 16
General Paediatrics
DIGITAL HEALTH IN THE PAEDIATRIC CYSTIC FIBROSIS SERVICE AT TALLAGHT UNIVERSITY HOSPITAL

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Aims
To explore the patient experience in using new digital health tools and attending the virtual Cystic Fibrosis clinics at Tallaght University Hospital.
Methods
All paediatric patients utilising spirometry based tools (‘NuvoAir’ and ‘patientMpower’) and virtual clinic software ('Attend Anywhere') were recruited. A feedback questionnaire was carried out via telephone using closed and open-ended questions. Patient satisfaction and perceived convenience were determined using Likert scale responses. Open-ended responses were thematically examined to identify key themes for advantages and disadvantages to the use of this platform.
Results
All patients utilising 'Nuvoair' (n=5) and 'patientMpower' (n=3) successfully completed the questionnaire. 100% (n=8) of patients utilised the spirometry tool >5 times. When asked if the spirometry tool was easy to use, 87.5% (n=7) of patients responded with ‘definitely’ and 12.5% (n=1) responded with ‘to some extent’.100% (n=8) of patients were satisfied with their virtual appointment experience and 87.5% (n=7) regarded the standard-of-care equivalent to face-to-face appointments. 75% (n=6) of patients preferred virtual clinic appointments during the current COVID-19 pandemic. 100% (n=8) of participants would recommend the spirometry tools to other patients for long-term use.
Conclusion
The results of this survey show that digital health tools such as 'NuvoAir' and 'patientMpower' are useful adjuncts in the care of children with chronic respiratory disease. Patients find these tools easy to use and regarded virtual clinic appointments as convenient. Further research exploring the use of such tools would provide further confirmation of the findings of this study.

Display Poster Number 17
General Paediatrics
Title: Medical Escalation Agreement: Clear or Unclear?
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Aims: The aim of this study is to explore the cause and implication of variation in the Medical Escalation Agreement (MEA) in relation to paediatric patients with respiratory tract infections when using the Irish Paediatric Early Warning System (PEWS). Nursing staff were also surveyed to assess the clarity of these PEWS amendments.

Methods: Convenience sample of MEA were obtained from children admitted to Temple Street. The MEA sections of relevant patients were anonymised and transcribed. They were then analysed for common language, phrases, instructions and themes. Transcribed amendments were then shown to staff nurses who were asked to interpret the statements.

Results: The MEA section should is recorded by a clinician of Registrar level or above. Following clinical assessment, if appropriate, the clinician should clearly state clinical impression, permitted parameters and calling criteria on the MEA sections of the PEWS chart.
This study found that PEWS parameter amendments varied widely in their clarity and prescriptiveness. Some outlined ranges while others used singular values. There was wide variation in the parameters outlined in each amendment. Some outlined a range for each core parameter while others specified only a few parameters. Some concerns were identified including the allowance for oxygen therapy to maintain oxygen saturations greater than a specific level; however, there was no prescribed amount of oxygen or indication for review. Nursing staff generally felt the PEWS amendments worked well however, several specific problems were identified.

Conclusion: The Medical Escalation Agreement is an essential component of the Paediatric Early Warning System. It is meant to represent a multidisciplinary decision on how to best monitor a sick child. This study highlights some potential areas for improvement that will require collaboration between medicine and nursing.

Display Poster Number 18
General Paediatrics
THE STATE OF MALARIA IN A RURAL-MISSION HOSPITAL IN NKHOMA, MALAWI. - A RETROSPECTIVE COHORT STUDY.

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Introduction
In recent times, Malaria has fallen out of the limelight due to an economical migration of populations into medium and higher income settings. Despite this, it remains endemic in 31 countries with 228 million cases per annum. In Malawi, the WHO have reported that all of its citizens are at risk of contracting the disease. In this study we hope to expand on the clinical data available at a rural mission hospital in Malawi, as well as highlight some of the external global health factors in such environments.
Methods
An observational retrospective cohort Study looking at severe malaria admission in a paediatric population was conducted. The Nkhoma hospital Paediatric department was the centre of the data collection which focused on the diagnosis of severe malaria, as well as the signs and symptoms and treatment regimens of same.
Results
Severe Malaria accounted for over 40% of all paediatric admissions in the month of May 2019. Patients suffered from anaemia (80%) and cerebral Malaria (41%), as well as a host of generalised symptoms such as fever (95%), vomiting (36%), malaise (30%), and diarrhoea (21%). Promisingly, a strict and comprehensive treatment regime for severe Malaria was in practice with artesunate, Lumefantrine used in ~100% of cases.
Conclusion
Sadly, Malaria continues to create horrendous amounts of morbidity and mortality, but our united commitment to eradicating Malaria is stronger than ever.

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Display Poster Number 19
General Paediatrics
A SOCIAL SNAPSHOT OF PAEDIATRIC PRESENTATIONS TO AN EMERGENCY DEPARTMENT IN THE WEST OF IRELAND

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Backgrounds and Aim:
It is essential that we document the social history of the patients we encounter to tailor the services we provide to the healthcare needs of a diverse Irish community. It is an integral part of any medical assessment; however it can often be undervalued in terms of what it adds to a clinical picture. It can be overlooked in the highly pressured environment of the PED, which is often the only health services' contact for some children.
Our aim is to compile a demographic profile of children presenting to our PED by reviewing documentation of social circumstances in the emergency setting.

Methods
A single centre, retrospective review of one week of paediatric presentations from April 2019 was carried out by two NCHDs. A total of 371 patient presentations were analysed of which 34 were excluded. The remaining 337 patient PED files were analysed and the data was collated using Excel.

Results:
Of the 337 included patients, only 65 patients (19.2%) had *any* social history recorded. The most commonly noted parameter was household constituents, of which 16% of the 337 presentations made reference too, usually in the form of a family tree illustration. Only 3% of the presentations contained information about school or crèche attendance and only 0.9% made reference to smoking exposure; 0% of records made note of alcohol and illicit drug history, ethnicity or type of accommodation

Conclusion:
It is evident from our study that social histories are rarely documented in PED notes and those that are documented often contain only sparse detail. Given the significant proportion of admissions for 'unwell child[ren]' and 'limb problems' there is a reinforced need to document a social history to identify environmental exposures and risks for non-accidental injury.
Based on the results, an educational session was conducted on October 29th to emphasise the importance of documenting a social history. We also plan to repeat our study looking at December 2020.

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Display Poster Number 20
General Paediatrics
UTILISING POSTAL EDTA SAMPLES TO MONITOR PAEDIATRIC TYPE-1 DIABETIC PATIENT'S HBA1C LEVELS DURING THE COVID-19 PANDEMIC.

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Aims
Our aim is to assess the suitability of postal HbA1c samples as a means of monitoring patients with Type 1 Diabetes (T1D) patient's glycaemic control during the COVID-19 pandemic. This is done to reduce the need for in-person consultations, and reduce the potential for transmission of COVID-19.

Methods
Paediatric ethylenediamine tetraacetic acid (EDTA) vials were posted to each of our paediatric T1D patients, with pre-paid envelopes for return of the sample. Instructions on how to correctly fill the sample in pictographic and video format accompanied the vials. Upon return of the HbA1C samples, they were analysed by the in-hospital biochemistry laboratory. The results were recorded and analysed for the purpose of this study. The time period was March 1st - October 26th 2020. Patients were asked to send repeat samples every three months. The blood samples excluded were those who had inpatient consultations and had bloods sent from their general practitioner.

Results
The total study population was 220 patients. Fifteen of these patients were excluded. The remaining 205 patients returned at least one sample. Over the duration of the study, 335 postal samples were returned. Of the 335, 75 (22.4%) were unable to be analysed (42 (12.5%) were clotted, 12 (4.4%) leaked, 14 (4.1%) were unfilled, and 4 (1.1%) had no patient details attached). Conversely, 260 of these samples were suitable for analysis.

Conclusion
The introduction of the postal service has been an asset to the department, allowing for ongoing monitoring of HbA1C levels of all paediatric T1D patients under the care of University of Limerick. To increase the efficiency of the service, we will be addressing the issues that made the samples unsuitable for analysis by giving simple reminders on how to correctly collect a suitable sample.

Display Poster Number 21
General Paediatrics
NEUROFIBROMATOSIS TYPE 1 - THE IRISH EXPERIENCE
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Neurofibromatosis type 1 (NF1) is an autosomal dominant disorder with an incidence of approximately 1:2600 to 3000 individuals. NF1 is caused by germline mutations in the *NF1* tumour suppressor gene. While penetrance is complete, expression is highly variable. The vast majority of those with neurofibromatosis type 1 develop pigmentary lesions and dermal neurofibromas. Further associated with this condition are skeletal abnormalities, peripheral nerve tumours and brain tumours (optic pathway gliomas and glioblastomas). Significantly, between 15% and 20% of children with neurofibromatosis type 1 will develop an optic pathway glioma. The greatest risk for the development of an optic pathway glioma is during the first 6 years of life.

While gliomas present mostly with the rapid onset of proptosis accompanied by moderate-to-severe visual loss in the affected eye, they are often asymptomatic and are detected only on ophthalmological examination.

A national paediatric neurofibromatosis clinic was established in Tallaght University Hospital in 2017 to streamline services available to children with NF, and to further enable a multidisciplinary approach to their care. To date, 100 children with NF1 attend this service for annual review and monitoring.

This study examines the genetic mutations identified in this cohort of patients, and the phenotypic expression of the disease in same. We will further examine the early ophthalmological findings in those with optic gliomas, in an attempt to identify the cohort most at risk.

Data analysed thus far indicates that approximately 50% of our cohort have de novo genetic mutations. The most common presenting complaint of those with optic glioma remains visual deterioration, however, we have identified a variety of ophthalmological pathology in otherwise asymptomatic patients including visual field deficits and optic disc swelling and/or disc pallor.

We aim to further analyse the remaining data to identify the above risk factors and to further determine if there exists a correlation between genetic mutation and development of optic glioma.

1. Optic pathway gliomas in Neurofibromatosis Type 1 Campen CJ, Gutmann DH J Child Neurol. 2018 Jan; 33(1): 73–81. 2. Optic pathway glioma in type 1 neurofibromatosis: review of its pathogenesis, diagnostic assessment, and treatment recommendations Cassina M, Frizziero L et al. Cancers 2019, 11(11), 1790 3. Health Supervision for Children With Neurofibromatosis Type 1 Miller DT, Freedenberg D et al. Pediatrics May 2019, 143

Display Poster Number 22
General Paediatrics

AUDIT OF CURRENT UTILISATION OF PAEDIATRIC INDIRECT MAG3 RADIONUCLIDE CYSTOGRAPHY IN CHILDREN'S HEALTH IRELAND AT CRUMLIN AND TEMPLE STREET

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AIMS:

To assess clinical characteristics and indication for imaging of the patients who have had indirect MAG3 cystography (IRC) performed in CHI at Crumlin and Temple Street, and whether it changed patient management.

METHODS:

In this retrospective audit we identified all children who had IRC performed in Temple Street and Crumlin in the last 4 years by searching the radiology systems. Data collected included age of patient at time of scan, indication for scan, results of scan, whether a conventional micturating cystourethrogram (MCUG) had previously/subsequently been performed, and what changes were made to management.

RESULTS:

N=36 patients were identified (3 male). Mean age at scanning was 9 years 5 months. The most common indication was recurrent UTI (33/36), with additional renal scarring in 14/33 of these. 12 patients had had a previous MCUG, and 11 of these demonstrated reflux. 5 patients had previously had a STING procedure and one had ongoing reflux on IRC and was referred for surgery. 8 patients had reflux demonstrated on IRC. 4 of these went on to have surgical intervention based on their IRC – 1 had a ureteric reimplantation, and 3 had STING procedures. 3 patients had a standard MCUG following a negative IRC due to high suspicion of reflux. One of these displayed grade 1 reflux, one displayed grade 2 bilateral reflux, and one was normal. The patient with grade 2 bilateral reflux also had renal scarring and went on to have a STING procedure performed.

CONCLUSIONS:

IRC is a safe, non-invasive alternative to MCUG in older children with suspicion of reflux. Demonstration of reflux on IRC can be helpful in decision making regarding further intervention for patients with recurrent UTIs, particularly with renal scarring. For the majority of patients a negative result can reassuring, without the patient having an invasive procedure.

Display Poster Number 23
General Paediatrics
HISTORY TAKING IN THE PAEDIATRIC EMERGENCY DEPARTMENT IN MIDLAND REGIONAL HOSPITAL MULLINGAR (MRHM)
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Background: History taking in the emergency department (ED) is an essential part of patient care, providing an opportunity to screen for medical conditions and provide brief interventions. Failure to ask key questions may lead to lost opportunities to educate patients, or to misdiagnosis. This study will review the quality of history taking and implement improvement measure to address areas that are lacking[1].

Methodology: A retrospective chart review was conducted of a convenience sample of notes of children attending paediatric ED in February and August 2019. Presence of absence of data relating to the following topics was noted: presenting complaint, exam, medical history, medications, medication dose and frequency, allergies, vaccination status, birth history, developmental history, social history, parental smoking, guardian present, family history. This list was developed in consultation with senior clinicians based on core aspects of paediatric history taking.

Results: 192 ED notes were reviewed, showing high rates of inclusion of presenting complaint, examination, medical history, medication use, allergies, vaccination status, and family history (100%, 99.5%, 92.2%, 83.9%, 83.9%, 83.9%, 73.9% respectively). Birth History was recorded in 72.4%, developmental history in 11.9%, social history in 60.9%, parental smoking in 4.2%, and guardian presence in 9.4%. Items contained in the headings of the ED proforma were more likely to be documented than other items (84.8% vs 24.2%). Completion of history taking by category was lower in winter than summer. In conclusion, history taking requires improvement in paediatric ED.

Improvement measures and re-audit: A paediatric ED history taking proforma was developed to include headings for all categories. Staff education was carried out. Re-audit showed improvments in documentation in all areas except birth history. See figure 1. Development of a paediatric ED booklet and NCHD education sessions were associated with improvements in history taking in the emergency department, and ongoing work is required.

1. Mehta, R. et al. 2016. The Use of Evidence-Based, Problem-Oriented Templates as a Clinical Decision Support in an Inpatient Electronic Health Record System. Appl Clin Inform 7(3), pp. 790-802.

Display Poster Number 24
General Paediatrics
STANDARD OF MEDICAL NOTE DOCUMENTATION IN THE SPECIAL CARE BABY UNIT IN A REGIONAL HOSPITAL

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Background: Documentation is an essential part of patient care. Lack of clarity in charts is common (1), leading to communication errors and medio legal issues (2, 3). The HSE Standards and Recommended Practices for Healthcare Records Management (SRPHRM) outlines requirements for medical record documentation (4). This study reviewed the quality of documentation by doctors in the special care baby unit (SCBU) against this standard, implemented improvement measures, and re-audit was completed to assess effectiveness.

Methodology: Retrospective chart review of a convenience sample of notes from March-April 2020 examined inclusion of patient name, hospital number, and date of birth on each page of the entry; doctor name, signature, medical council registration number (MCRN), date, and time in each entry; legibility; black ink use; note type (landscape notes or portrait notes)

Results: Patient identifiers were infrequently included (16-17% entries). Legibility and black ink use was high (99-100%). Date and time were included in 98% and 85% of entries, respectively. Doctor signature, name and MRN were included in 97%, 92%, and 88%. Notably, 94% of portrait notes had had patient identifiers compared to 0% entries on the landscape notes.

Implementation measures and re-audit: A teaching session was conducted, individual feedback to staff was given, and a new admission template was produced. Re-audit in June 2020 showed that patient identifier use had increased to 100% with other measures relatively unchanged (see figure 1). All notes were on portrait layout clinical notes, with 30 (52%) being part of the new admission template and 28 (48%) being on standard clinical note paper.

Conclusion: Patient identifier use was poor prior to this intervention, and this may be due to poor template design. Simple improvement measures such as template re-design, individual feedback, and virtual teaching sessions have significantly improved the quality of medical documentation in the SCBU in MRHM.

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Display Poster Number 25
General Paediatrics
THE SAFE INITIATIVE: THE CORK PAEDIATRIC EXPERIENCE OF HUDDLE INTRODUCTION TO IMPROVE SAFETY AND COMMUNICATION OUTCOMES

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Aims

Situation Awareness for Everyone (SAFE) is an initiative developed by the Royal College of Paediatrics and Child Health to help clinical teams to improve communication, create a safety based culture and deliver better outcomes for their paediatric patients.
Our paediatric department in Cork took part in in the initiative and introduced the 'Huddle' toolkit as a quality improvement project. Our stakeholders included consultants, NCHDS and nursing staff.

Methods

The Huddle took place every morning with the registrar on call for the day carrying out the toolkit. The key areas we aimed to address were:

5. Gathering information
6. Understanding Issues
7. Anticipating problems and safety concerns
8. Learning from cases and specific challenges

The registrar of the day took staff attendance, highlighted sick patients, discussed space, staffing and clinical challenges for that day and any concerns attendees had. We collected and analysed data generated from the Huddle toolkit. We surveyed our staff pre and post introduction of the Huddle. We also carried out a qualitive evaluation post 6 months of introduction for feedback.

Results

Key performance indicators were attendance at huddle, ISBAR compliance during clinical communication and anticipation of urgent PEWS calls or patient deterioration.

100% of staff agreed it improved patient safety with 73% strongly agreeing. 80% (N= 13) felt reduced adverse clinical events. Our daily ISBAR compliance at handover improved from 50% to 87-90%. The introduction of Huddle created a safe place to voice patient concerns. 100% of staff felt it created teaching and learning opportunities. Areas to improve were attendance and recognition as protected handover time.

Conclusion

The National Safe Collaborative was effective in our centre in impacting paediatric patient safety outcomes. We were able to introduce a new culture of safe handover and benefit our department by reducing avoidable harm, improving communication and clinical outcomes.

Display Poster Number 26
General Paediatrics
GROUP B SEPSIS LEADING TO CELLULITIS OF NECK IN INFANCY – A CASE REPORT

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Introduction: Early and late-onset Group B Streptococcus (GBS) infections occur in 0.28 and 0.25 per 1000 cases, respectively.[1] Soft tissue involvement with GBS is not commonly reported, however, few case reports on GBS bacteremia proceeding towards adenitis, cellulitis, or eventually necrotizing fasciitis in infancy. The submandibular area is the most common site of cellulitis and lymph node enlargement.[2] Nevertheless, GBS is commonly associated with meningitis in neonates, its coevality with cellulitis is rare.[3] The prime pathological cause of cellulitis is still debatable, as in some of the cases it was associated with cervical lymphadenitis in contrary to secondary to bacteremia in another case.[2,4] Ludwig angina may also be considered with a rapidly progressive submandibular swelling even in an infant, as it has been reported in a 13-day old neonate.[5]

Case Presentation: We report an infant presented in the emergency department on the 29th day of life with symptoms of irritability, poor feeding. On Examination, he had tachycardia, capillary refill time of 3 seconds, and mottled skin while without any rash, bruises, or petechiae. As the initial survey suggested septic shock, he was managed accordingly. Initial blood tests revealed normal infection markers. Urine and CSF microscopy was negative for infection. Repeat blood tests showed an immense increase CRP and WBC. Within 3 hours, erythematous, tense, and tender swelling of the left mandibular angle was noted. It progressed rapidly involving the pre-auricular area, then extended to the submandibular area. Ultrasound (US) Neck revealed diffusely oedematous soft tissue changes with no localized abscess – with a diagnosis of cellulitis. Blood culture was positive at 8.6 hours, with a GBS. The patient was transferred to a tertiary care hospital and was treated conservatively as cellulitis of the neck secondary to GBS sepsis. The patient was discharged after 5days of IV antibiotics with follow up in the local hospital.

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Display Poster Number 27
General Paediatrics

3-METHYLCROTONYL CoA CARBOCYLASE DEFICIENCY IN A CHILD WITH DEVELOPMENTAL DELAY ; CALL FOR EARLY DIAGNOSIS AND MULTI-DISCIPLINARY APPROACH

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Isolated 3-methylcrotonyl-CoA carboxylase (MCC) deficiency is a disorder of Leucine metabolism caused by mutation in MCCC 1 or MCCC 2 encoding the alpha and beta subunits of MCC, respectively. In 3MCC deficiency, the child can present with variable symptoms but is predisposed to develop non-ketotic hypoglycaemia and metabolic acidosis.
We report a 2 years old child with delayed development. The child achieved normal milestones till the age of 12-months. Her speech development was also normal until the age of 1 year. She was formula fed and weaning was started at an appropriate age
On initial assessment - her general and systemic examination was unremarkable. An ages and stages questionnaire at 24 months of age reflected severe delayed gross motor milestones and mild delay in the speech. Thus she was investigated revealing high levels of free carnitine and high levels of C5-OH carnitine, high levels of 3-mthylcrotonylglycine and 3-hydroxyisovaleric acid, coinciding with 3MCC. She was then referred to tertiary hospital to a metabolic team where she is having regular follow-ups. It is important to consider 3MCC in children with poor weight gain or delayed development especially to avoid acute decompensation in case of any illness or metabolic stress.

From initial blood tests, blood gas analysis, renal, liver and thyroid profiles were normal including the serum lactate and ketones level. However, her Acylcarnitine profile showed low levels of Free carnitine (3 umol/L), high C5-OH carnitine (22.71 umol/L) that coincides with the diagnosis of 3-methyl-crotonyl-glycinuria.

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Display Poster Number 28
General Paediatrics

Moving On: An Assessment of Transition to Adult Services in Adolescents with Type 1 Diabetes Mellitus

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Objective: To assess the attitudes of Type 1 Diabetes Mellitus (T1DM) patients at different stages of adolescence towards: (a) transition from paediatric to adult diabetic services; (b) expectations of adult services; (c) discussion of sexual health and alcohol education; (d0 relationship between views regarding transition and glycaemic control. We further examined differences between adolescents and their caregivers related to these topics.
Methods: A cross-sectional mixed-methods study, where a largely quantitative questionnaire was administered to patients and their caregivers between April 2015 – August 2015 at a dedicated paediatric diabetes outpatient clinic. HbA1c data (average value for previous 12 months) from medical records. 82 adolescents aged >12 years were divided across the following stages of adolescence: Early Adolescence (11-14 years, N=31); Middle/Late Adolescence (15-18 years, N=52). Statistical comparisons were conducted using Pearson's chi-square and Mann-Whitney U or Kruskal-Wallis analysis of variance tests.
Results: Early adolescent respondents were significantly more likely than Middle/Late stage adolescents to recommend an earlier transfer to adult care ($p < 0.001$). HbA1c levels were significantly higher among those who indicated a preference for an earlier transition ($p < 0.05$). Over 40% of adolescents and 71% of caregivers confirmed that they were worried about the transfer to the adult service. Qualitative analysis of open-ended comments focused on specific areas for concern regarding the transition, as well as strategies for minimising its impact. Adolescents were more likely than caregivers to favour involvement of parents in discussions related to alcohol and diabetes, but the opposite pattern was observed for discussions related to sexual health and diabetes.
Conclusion: Adolescent patients and their caregivers expressed concern regarding transfer to adult services and a desire for a sheltered, structured plan for the transition. The uncertainty was reflected in the preference indicated by Middle/Late adolescents to stay in paediatric services longer. This feedback exposes a gap in knowledge, forming the foundation for further research into a structured, patient-centered algorithm to deliver developmentally appropriate healthcare.

Display Poster Number 29
General Paediatrics
IV IRON INFUSION CAUSING AN APPARENT DESATURATION IN OXYGEN LEVELS
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Aims:
To determine the effects of an IV iron infusion on oxygen saturations measured on pulse oximetry.

Methods: Case Report
A 14-year-old boy who was previously assessed for episodes of bloating, diarrhoea and liquid stools containing blood, which were initially reported in December 2018. His weight is on the 48th centile and height on the 83rd centile. There is a family history of ulcerative colitis. In 2019, a colonoscopy reported rectosigmoid ulcerative colitis and he was started on mesalazine. At follow up clinic his bloods demonstrated a ferritin level of 4ng/mL and he required an infusion of IV iron. Throughout the transfusion his vitals were checked and SpO2 was 74% initially and then 82%. The boy was sitting comfortably with no signs of respiratory distress and physical examination remained unchanged.

Results: Pulse oximetry is a simple, widely-utilised, non-invasive method of monitoring oxygen saturations. It allows close monitoring of patients throughout their stay in hospital and procedures. In this case, pulse oximetry displayed a desaturation of oxygen levels to 74%, which was a false positive. The colour of the IV iron affected the absorption of light in the oximeter resulting in an apparent desaturation.

Conclusion: The oximeter detects the amount of oxyhaemoglobin and deoxygenated haemoglobin in arterial blood which then gives an estimation of arterial saturation levels. 1 Oxygen saturation readings are determined by the differing absorption levels of both oxyhaemoglobin and deoxyhaemoglobin of red and near-infrared light. 2 There are several documented scenarios in which oximeters can give false readings, including intravenous pigmented dyes such as an IV iron infusion, severe anemia and excessive movement. This case highlights the limitations that exist when measuring oxygen saturations through an oximeter peripherally and the importance of understanding how medical equipment works to allow for a safer interpretation of clinical scenarios
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Display Poster Number 30
General Paediatrics

An early atypical presentation of Mayer-Rokitansky-Kuster-Hauser (MRKH) Syndrome

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Case description; An 8 year old girl presented to the Emergency department with a painful right sided inguinal swelling. Clinically this was extending from the right labia into the perineum, with overlying bruising. No history of trauma, past history included a haemiangioma. Cardiac, respiratory, abdominal and ENT examination were all normal. Of note she had recently gotten a new bicycle.
This was investigated with an Ultrasound of the groin; which demonstrated a lymphovascular malformation. Further workup with an MRI showed an absence of a uterus and vagina but with both ovaries present. The case was then referred to urology in TSH, where the patient is due to undergo a laparoscopy in the coming weeks. The most likely diagnosis is MRKH.

Discussion;
Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome refers to a congenital aplasia or hypoplasia of the structures that derive from the mullerian ducts including the upper vagina, uterus and fallopian tubes. It is estimated to occur in one in 5,000 births. (1)
This is an early aytpical presentation for MRKH. The working theory for the presentation of this patient, is that the new bicycle caused an acute heamorrhage of the lymphovascular malformation, and the subsequent investigations revealed MRKH. This syndrome usually presents aged 16-17 during the work up of primary amenorrhea. MRKH is typically classified as Type I (isolated uterovaginal aplasia) or Type II (associated with extragenital malformations), these are typically renal, skeletal, ear or cardiac. Management of these cases is complex and recquired MDT input, as the psychosexual impact of having MRKH is significant.

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Display Poster Number 31
General Paediatrics

IDENTIFYING PROGNOSTIC FACTORS FOR BRONCHIOLITIS SEVERITY - A RETROSPECTIVE COHORT STUDY

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Background
Bronchiolitis is a viral respiratory tract infection that is responsible for majority of paediatric admissions under one year of age. Disease progression for bronchiolitis is often not apparent at early stages, thus being able to accurately identify patients that need inpatient monitoring or intervention can prevent unnecessary admissions and better inpatient bed allocation.

Aim
To identify prognostic factors for bronchiolitis severity.

Methods
A retrospective chart review of 30 patients presenting to CUH from Oct-Dec 2011 was performed.

Patients were gender-stratified, and the data collected include patient demographics, presenting parameters, inpatient parameters, and treatment outcome.

Results
The mean age of the 30 patients included in this study is 145 days [range: 7-480], while the mean gestational age is 37.7 weeks [range: 29.7-40]. At presentation, the mean oxygen saturation was 96% [range: 87-100], with 28.6% (n=6) showed signs of dehydration. The mean presenting heart rate was 150 [range: 116-182]. 33.3% (n=10) received oxygen therapy. For outcomes, all 30 patients were discharged without therapy escalation. The mean length of stay was 2.8 days [range: 1-11].

Statistical analysis was conducted with single factor ANOVA. Presenting heart rate was found to have a weak positive correlation with the length of stay ($p=0.04$). Gestational age was found to have a negative correlation with the length of stay ($p=0.13$).

Conclusion
This study supports the need to correctly identify and utilise prognostic factors in predicting bronchiolitis severity. Higher heart rate at presentation is found to predict disease severity, while gestation seems promising as a second predictor of disease severity.

Display Poster Number 32
General Paediatrics
PRE-DIABETES OR MONOGENIC?
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1. INTRODUCTION A raised blood sugar level is a red flag that warrants further investigation. Here, the case of a 7 year old boy who presented to the GP with mildly elevated BG, intermittent nocturia with a family history of diabetes.
2.CASE STUDY JO is a 7y Caucasian boy with a several admissions re- UTI, tonsillitis and surgical procedures. His BG was always on the higher side (6.6, 6.7, 6.9 ,7.4 mmol).Summary**:** Average fasting glucose(≤ 7.0 mmol),Post prandial (<11mmol/l), HbA1c = 6.5 % (48 mmol/l), Anti-GAD antibody-negative, Anti tyrosinephosphataseAntibody(IA-2)-Positive,C-Peptide=0.76(1.1-4.4ug/l).
3.**DIAGNOSIS** it was challenging,JO had Positive(IA2) antibody, and Low C-peptide level, yet Negative for other autoantibodies,with borderline A1c and BG levels.Therefore genetic testing was performed, confirming; heterozygous mutation p.G285fs (c.852del) in the *GCK* gene(glucosidase subtype)indicative of MODY type 2. Surprisingly, the repeated IA-2 antibody 6 months later, was Negative**.**
4.DISCUSSION. GAD65 and IA-2 antibodies are found in 60–80% of children with new-onset T1D(21). IA-2A were particularly strong predictors of T1D and indicates high risk even in the absence of antibodies to GAD or insulin(22).
6. CONCLUSION. Initial investigations of this case was suggestive of a diagnosis towards T1D,so thinking of alternatve diagnosis (MODY) has been delayed. The presence of antibodies at a young age can temporarily be positive(23), so caution should be taken in interpreting these results. No formal OGTT was performed, which was a drawback in this case. In Better Diabetes Diagnosis(BDD) study, absence of islet autoantibodies, modest hyperglycaemia (HbA_{1c}<58mmol/l (<7.5%), and family history of diabetes are features to guide testing for MODY(24),which is similar to ISPAD 2014 guidelines. JO's unaffected family members may be tested for fasting BG; if (> 5.5mmol/l), genetic testing can then be performed. Information will need to be given to JO, as his children will have a 50% risk of inheriting this mutation and having fasting hyperglycaemia.

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Display Poster Number 33
General Paediatrics
RECURRENCE OF INTRACRANIAL BLEED AFTER ARTERIOVENOUS MALFORMATION EMBOLIZATION

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Background:
Arteriovenous malformation are rare defects in the vascular system. AVM is an abnormal collection of arteries and veins that are connected to each other without capillaries. Some AVM's get progressively larger as the amount of blood flow increases. The usual site is the brain and spinal cord. Patients can remain asymptomatic or present with neurological symptoms like headache, weakness, seizures and problems with speech. The cause is not known and usually develop in utero or after birth. They are diagnosed on imaging and treatment includes surgery or embolization.

Case report:
A 10-year-old girl presented to emergency department with headache, vomiting and new onset of seizure. She was diagnosed at 2 years of age with arteriovenous malformation, after she developed seizures. She was treated by embolization in 2012. She was started on oxcarbazine antiepileptic post procedure which was discontinued 2 years later. Her follow up angiograms and MRI brain up to the age of 6 years were normal. She was symptoms free and had no neurological deficit.
She developed headache, vomiting, drowsiness and had a seizure a day before presentation. She was brought to emergency department of cork university hospital. On arrival she was oriented with GCS 15/15. She had stable vital signs. Her neurological examination was grossly normal with only complaint of diplopia on looking to left side. CT Brain was performed showing acute left temporal haemorrhage with intraventricular extension. CT carotid and cerebral angiogram confirmed acute rupture of left temporal AVM Spetzler-Martin Grade III.
She was loaded with levetiracetam (keppra) 40 mg/kg and was transferred to neurosurgical team, Temple street university hospital for further management.

Conclusion:
Risk of recurrence remains high even after embolization therapy in a patient with arteriovenous malformation.

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General Paediatrics

COMPLETE AUDIT CYCLE OF ISBAR TOOL AT PAEDIATRIC HANDOVERS IN CORK UNIVERSITY HOSPITAL

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AIMS
ISBAR is a recognized handover tool. The increase in shift work among Doctors in Training (DIT) in Cork University Hospital (CUH) has highlighted the importance of incorporating a handover tool between DIT shifts. Our aim was to assess DIT compliance with ISBAR at morning handovers.
METHODS
Explanation of ISBAR and introduction ISBAR handover sheets took place during DIT induction in CUH in July 2020. A full audit cycle was then completed. Registrar, house officer and intern handovers were included. Ten handovers were audited in September 2020. A teaching session was organized before the second cycle, presenting the results of the first audit, patient examples and feedback. A second audit with a sample of ten handovers was then performed in October 2020. The ISBAR audit tool from the RCPI was used for both audits.
RESULTS
Overall 100% of handovers complied with some aspects of the ISBAR tool. For 'Background' and 'Assessment' the score was 100 % for both cycles but presentations were more concise during the second audit. For 'Recommendation' compliance increased from 30 % to 50 %
CONCLUSION
This audit identified that while overall compliance was good a minority of DITs were presenting their recommendations at handover. This is an essential component of ISBAR and the most useful for DIT learning. The compliance increased following a teaching intervention during the audit cycle but remained suboptimal. Further teaching sessions are required to encourage DITs full compliance with ISBAR handover tool.

Display Poster Number 35
General Paediatrics
A RARE CASE OF ACUTE NECROTISING PANCREATITIS IN A PAEDIATRIC PATIENT

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Case study

The diagnosis of acute necrotising pancreatitis is a rare event in the Paediatric Emergency Department(PED).Whilst it's an important differential diagnosis in adults with acute abdominal symptoms, the diagnosis in children is particularly seldom and easily overlooked in the previously healthy child. We report the case of an 8year old girl who presented to our PED with one week history of constipation.For 3days, she had worsening abdominal pain, back pain, dysuria and nausea.She had no past medical history.Of note, she had a laparoscopic appendectomy 1year prior and was treated in hospital as a severe mesenteric adenitis after a normal appendix on histology. Physical examination revealed abdominal distension and percussion resonance.She was tachycardic(130bpm) and pale.She started vomiting shortly after her arrival to the ED and further deteriorated, with worsening abdominal pain and hypertension(131/61mmHg).Repeat examination revealed peritonitis.Point-of-Care-echocardiography demonstrated a hyperdynamic left ventricle and collapsed IVC,consistent with the diagnosis of septic shock.The differential diagnosis bowel obstruction,malrotation and bowel perforation remained.The child was resuscitated with 40ml/kg 0.9%NaCl, guided by POCUS echocardiography.Intravenous broad-spectrum antibiotics were administered along with ketamine analgesia. Abdominal and chest x-rays showed no significant findings.An abdominal ultrasound showed multiple dilated bowel loops, free fluid and generalized mesenteric hyperechogenicity.Blood results showed a CRP of 270mg/L and amylase of 1951U/L.CT-abdomen confirmed severe acute necrotic pancreatitis and splenic vein thrombosis.No underlying aetiology was identified. She was admitted to the paediatric intensive care unit for 3days.She was discharged home after a 4week inpatient stay.This lengthly stay reflects the extensive resuscitation and efforts in determining the cause for the acute necrotising pancreatitis.To date,no cause has been identified.

Learning points

Acute pancreatitis is an important differential in children presenting with acute abdominal pain.Timely,effective resuscitation is vital.

Conclusion

Although rare, pancreatitis can cause significant morbidity,and a high index of suspicion should be maintained when approaching these cases.

Display Poster Number 36
General Paediatrics
DIGITIZING CLINICAL DOCUMENTATION OF PAEDIATRIC EMERGENCY DEPARTMENT PRESENTATIONS AT UNIVERSITY HOSPITAL GALWAY

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Intro/aims:
Handwritten clinical notes has been a practice for centuries. Medicine today, consist of a multidisciplinary team in different locations such as the emergency department(ED), clinic, ward, and general practice. We found handwritten notes inefficient, illegible and a potential GDPR violation.

Method:
An audit in August 2020 of randomly selected ED presentations notes(n=39). We found that 17.94%[7:29] were missing names of the clinician, 20.51%[8:39] were missing medical registration numbers(MRN). 48.71% where date/time was not documented. 87.17%[34:39] were missing patient identifiers. 7.69%[3:39] of the clinical notes we completely Illegible. Additionally, we identified for a need of digital notes that can be accessed instantly while in another location. We found that handwritten paper notes commonly gets misplaced.

We worked with EVOLVE, a team that has experience setting up digitized systems in hospitals. It supported concurrent secure access to the patient information 24/7 and enables multi-disciplinary teams working across the hospital.
We designed new forms and proformas for our clinicians. Forms were coded that it auto populated information such as Name,MRN,day,date,time, and a digital signature unique to the user. Tabs were programmed into the existing system as an organisational feature. We added more “computer on wheels” for this purpose.

Result:
Through the successful implementation of this. Missing names of clinicians were 0%. Missing MRN’s were 0%. Missing day and dates were reduced 100% to 0. All notes were 100 % legible because. missing patient identifiers were also reduced to 0. We decreased the amount of paper printed from 12 pages to 1. We were also able to offer solutions to multiple other issues including accessing clinical notes 24/7 in multiple locations.
Conclusively, Digitizing notes proves that it can impact efficiency and the quality of life any healthcare professional. It evidently also proves that its safety features outweigh any errors in the lack of documenting essential information.

Display Poster Number 37
General Paediatrics
NAI: NEVER ACTUALLY INJURED

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AIMS: To present a case study to highlight a rare an important differential for Non-Accidental Injury (NAI), not previously presented in the literature.
METHODS: We conducted a retrospective analysis of the clinical notes, imaging, and investigations of the patient in question. We also reviewed the patient during outpatient followup and conducted a literature review regarding the available evidence on the condition in question (faulty foetal packing).
RESULTS: Our patient presented at 31 days of life following a head injury with concerning features for NAI, including delayed presentation, incongruent mechanism and previous social concerns. Examination revealed a noticeable depression in the left temporoparietal region with a concave depression of the left parietal bone on CT imaging. After careful consideration of the history and examination findings, along with investigations for non-accidental injury (as well as discussion with neurosurgery, radiology, and social services), the infant was diagnosed with faulty foetal packing (congenital vault depression). The defect had almost completely resolved by follow-up at 5 months. This case represented a diagnostic conundrum not previously reported in the literature.
CONCLUSION: This is an unusual and late presentation of a rare congenital deformity. Congenital vault depression (also known as faulty foetal packing) has an incidence of approximately 0.01% (1 in 10,000 births). The more malleable foetal skull is deformed by an exaggerated or prolonged external pressure in utero, for example, from a foetal limb, twin, uterine fibroid or a bony prominence of the maternal pelvis. This case highlights that investigation of possible non-accidental-injury should be thorough and include a very broad differential, even when the diagnosis appears apparent.

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Display Poster Number 38
General Paediatrics
BABIES BORN IN LOCKDOWN: EARLY DATA FROM THE *CORAL* STUDY

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Aim
The CORAL study is a cross-sectional study of the impact of the Coronavirus pandemic on allergic and autoimmune dysregulation of infants born in March, April and May 2020, during Ireland's 1st Pandemic Lockdown.

Methods
Invitations were sent to families of 3065 term, singleton babies. Exclusion criteria were PCR-proven SARSCoV-2 in a parent or co-dwelling person, IV antibiotics in neonatal period, multiple births and major congenital anomalies.At 6 months babies were invited to attend CHI Connolly for point-of-care SARSCoV-2 antibody testing.

Results
Of the 3065 letters sent 303 babies have been enrolled so far, a response rate of 9.9%. To date, 287 participants completed the enrolment questionnaire with 229 also completing the 6m survey. 53.7% of enrolled infants were male, 78.4% were white-Irish, average birth weight was 3.506kg. 45% were first-born and 95.5% of mothers were educated at 3rd level or higher. Babies' average number of close contacts other than household members was 2.3 during lockdown and 5.6 afterwards. 42.5% were reported to be currently "breast-fed" at enrolment. By 6 months, 97% of infants had solid foods introduced but only 24.5% had tried egg and 9.6% had tried peanut. Complete primary immunisation uptake at 6 months was 99%. Lastly, 2 babies out of 150 (1.3%) tested to date showed presence of IgM & IgG SARSCoV-2 antibodies; one was PCR negative, the other PCR positive.

Conclusion
Recruitment is lower than expected but is ongoing. Initial breastfeeding and immunisation uptake to 6 months are reassuringly high in this self-selected, highly-educated cohort. The rare positive antibody tests suggest recent or current infection, so newborn babies appear to have been protected from SARSCoV-2 exposure during the 1st COVID Pandemic lockdown.

Display Poster Number 39
General Paediatrics
SYSTEMATIC REVIEW OF THE NEED FOR CALCIUM AND VITAMIN D SUPPLEMENTATION IN CHILDREN WITH DAIRY ALLERGY

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Aims: Cow's Milk Allergy (CMA) is one of the most common food allergies affecting 2-3% of children. Currently, there is no consensus in clinical guidelines regarding the assessment of Vitamin D, calcium and bone mineral density in children with CMA (Mailhot et al., 2016). This review aims to discern the negative impacts of potential deficiencies in these children and any requirements for appropriate supplementation.
Methods: We conducted a database search using a systematic search strategy. The databases accessed included MEDLINE, EMBASE, PubMed and Cillian. Using the results from these databases, we screened 140 searched papers, 76 papers were then removed on abstract screening and 25 were removed on full-text screening which left us with 39 eligible articles.
Results: CMA causes reduced Bone Mineral Density (BMD) (11 out of 39 papers), increased instances of rickets (6 out of 39 papers), and decreased growth (5 out of 39 papers). It was also revealed that appropriate supplementation of Vitamin D and Calcium was recommended (17 out of 39 papers) to correct these abnormal results.
Conclusion: Therefore, the negative impacts of Vitamin D and Calcium deficiencies associated with CMA can, and should, be corrected with supplementation. We recommend giving amino-acid based formulas with or without synbiotics, an intake of 200IU/day of vitamin D and diet-based calcium supplementation.

Mailhot, G., Perrone, V., Alos, N., Dubois, J., Delvin, E., Paradis, L., Des Roches, A., 2016. Cow's Milk Allergy and Bone Mineral Density in Prepubertal Children. Pediatrics 137. https://doi.org/10.1542/peds.2015-1742

Display Poster Number 40
General Paediatrics

AN AUDIT OF COMMUNICATION AND DOCUMENTATION OF COVID-19 SWAB RESULTS TO PARENTS OF PAEDIATRIC INPATIENTS

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Background and Aims:
As per the guidelines issued by the HSE (April, 2020) it is the responsibility of the ordering hospital to inform patients of their Sars Co-V swab results. It is expected that the patient is informed of a positive or negative result, and the outcome of the discussion should be documented in the patient notes.
Our aim was to assess if it is documented in the medical notes at UHL that parents have been informed of their child's Sars Co-V swab results.

Methods:
1. A list was generated of all children who had a nasal/throat Sars Co-V swab in University Hospital Limerick over a three-month period.
2. The medical notes of 88 patients were reviewed, noting the documentation of communication of swab results to parents.
3. An educational teaching session was provided to doctors, informing them of the current HSE guidelines.
4. The data was re-audited one month following our education session. A further 27 medical charts were reviewed.

Results of Primary Audit Cycle:
A total of 109 swabs were performed on the 88 patients.
In 63.6% (56/88) of cases, the swab result was documented. In 12.5% (11/88) it was documented that parents were informed of swab results. In 35.2% (31/88) cases, neither were documented.

Results of Re-Audit Cycle:
Of the 27 charts reviewed; 92.6% (25/27) documented a swab result.
In 48.1% (13/27) of cases it was documented that the result had been communicated to parents. In 7.4% (2/27) there was neither documentation of result or communication.

Conclusion:
An absolute improvement in documentation of swab results by 29% was noted. There was a 35.6% improvement in the documentation of the communication of swab results.
There is a need for ongoing improvement in order to maintain compliance with the HSE guidelines. This is to ensure families are informed in a timely fashion, to aid contact tracing and to alleviate their anxieties.

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General Paediatrics
A CHALLENGING CASE OF COMMUNICATION AND CONFIDENTIALITY IN THE CONTEXT OF A NEONATAL RASH

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Background and Aims
Neonatal herpes simplex virus is an infection within the first 28 days of life with 50% of infants with invasive HSV infection having neurological morbidity aged one. The mortality risk is 30% despite anti-viral treatment (1).
Our aim is to report a case which posed significant challenges to us in terms of maintaining effective communication and patient confidentiality in the context of a potentially devasting differential diagnosis.

Methods
We report the clinical cases, investigations, treatments and outcomes to date.

Result
Baby A, an ex-term seventeen-day old male, born by spontaneous vaginal delivery, presented with a worsening pustular erythematous rash with crusted lesions to his face. He was systemically well, with a normal neurological examination.
His mother had been treated with acyclovir in the antenatal period for ocular HSV infection. There was no history of genital HSV infection.
Baby B subsequently presented on day of life eighteen, with a ten-day history of an exudative pustular facial rash to his cheeks and inner left eye.
Both mothers had shared a room postnatally in a healthcare facility. The babies had been in close contact secondary to maternal interaction.
HSV infection was the primary concern due to the clinical similarities and nature of their rashes.

Both babies were commenced on acyclovir IV and flucloxacillin IV. CSF analysis and skin swabs were negative for HSV. Baby A's skin swab was positive for staph aureus. They were discharged on oral flucloxacillin.

Conclusion
These patients stayed in a shared room of a healthcare facility. The implications of this would have been devastating if the infants had developed disseminated neonatal HSV infection.
Another challenging aspect of this case was maintaining effective communication whilst adhering to GDPR regulations. Despite the close relationship of the parents, strict confidentiality was maintained with regards to non- disclosure of information to the alternate set of parents.

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Display Poster Number 42
General Paediatrics
ACCIDENTAL POISONING IN CHILDREN!
ARE WE SEEING MORE PRESENTATIONS DURING LOCKDOWN?

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Background and Aim: According to the National Poisons Centre over 6000 cases of accidental poisonings in children less than ten years of age were reported in 2018. Three quarters of these were under 5 years of age and 27% were paracetamol related (1).

Anecdotally, we noted a rise in such presentations to our PED at the outset of the implementation of COVID-19 restrictions in March 2020 limiting families to within a two kilometre radius of their homes, suspension of schools, working from home, Cocooning etc.

Our aim was to carry out a prospective study on accidental poisonings presenting to our PED during a six-week period of the first lockdown from April 1st to May 20th 2020 in order to answer this question.

Methods:

1. A list of all patients attending with a history of accidental exposure of potentially toxic substances was collated from our PED log book.
2. Patient demographics, substance ingested, and outcomes were documented.
3. A list of all patients presenting with poisoning during the same timeframe in 2019 was obtained using the hospitals health information system (HIPE) for comparison.

Results: There were 14 accidental poisoning presentations during this six- week period of which 92.9% (13/14) were aged six or less and 57.1%(8/14) were paracetamol ingestions. Other substances included; laundry detergent, antihistamines, batteries, chemical substances. Hospital admission was required in 7.14% (1/14). No fatalities were recorded.
In 2019; over the same 6 week period, there were only three presentations to our PED with toxic ingestions/ poisonings.

Conclusion: Since the implementation of COVID-19 restrictions, limiting children to their homes, an increase in accidental poisoning presentations to our PED was noted when compared to 2019.
Children's curiosity, distracted care providers, poor storage or inadequate packaging of potentially lethal substances are all probable contributing factors (2).
A further prospective study during the second lockdown is currently underway.

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Display Poster Number 43
General Paediatrics
CHILDHOOD CANCER IN A REGIONAL PAEDIATRIC CENTRE: A 5 YEAR REVIEW

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Background: Although childhood malignancies are rare, they remain the most common cause of disease-related death in children[1].
There are approximately 177 new cases of cancers diagnosed in children per year.
The types of cancers most commonly seen in children include leukaemias, brain and spinal cord tumours and neuroblastomas[8,2,1].

Aim:
The purpose of our study was to review oncological diagnoses and identify trends in children attending our regional paediatric centre over the past five years.

Method: A list of children with paediatric malignancies attending UHL from 2015-2020 was obtained from our database.

1. Clinical records were reviewed to assess our case mix.
2. Patient diagnosis, demographics and outcomes were recorded.

Results: A total of 41 patients attended our unit during the study period 56.1% female; 48.8% (20/41) of our patients were diagnosed between the ages of 5-16 years; 41.4% (17/41) were diagnosed aged 1-5 years.
48.8% (20/41) of patients had haematopoietic malignancies; 31.7% (13/41) with acute lymphoblastic leukaemia, 12.2% (5/41) lymphoma, 4.9% (2/41) acute myeloid leukaemia.
Interestingly, 24.3% (10/41) had tumours of bone and soft tissue. Brain and CNS tumours accounted for 12.2% (5/41). 9.8% (4/41) of patients had solid tumours. The remaining two patients had rarer cancer types.
46.3% (19/41) of patients were undergoing active treatment and 34.1% (14/41) patients were in remission. 7.3% (3/41) of patients were undergoing palliative treatment. 12.1% (5/41) of patients had died.

Conclusion The current 5-year survival from paediatric malignancies is in excess of 80%. Multi-modality treatments are utilised, being mindful to maximise chance of cure while minimising risk of morbidity associated with the disease and its treatments. As the number of survivors increase, it is vital that local and tertiary services provide long term follow up for the recognition and treatment of late effects[4 7].

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General Paediatrics

LOW PREVALENCE OF SARS-COV-2 DETECTED IN SYMPTOMATIC CHILDREN ADMITTED TO HOSPITAL DURING THE INITIAL PHASE OF THE COVID-19 PANDEMIC

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Introduction
Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) originated in Wuhan, China in 2019 and is responsible for the condition known as COVID-19. COVID-19 was first reported in Ireland in February 2020 with University Hospital Limerick's (UHL) first paediatric case reported on 4th March 2020. Studies have shown clinical manifestations of children's cases are generally less severe than those of adults.

Aims:
UHL serves a catchment population of approximately 100,000 children. We aimed to describe the clinical presentation, and prevalence of SARS-CoV-2, in children requiring inpatient hospitalization during the initial phase of the pandemic in Ireland.

Methods:
Data were examined relating to all inpatients aged 0 – 16 years admitted with a queried or confirmed diagnosis of COVID-19 from 8th February 2020 to 8th June 2020. Emergency Department notes and inpatient records along with laboratory and radiology records were reviewed.

Results:
220 paediatric inpatients were tested by PCR for SARS-CoV-2 during this period; 101 (45.9%) were female. Ninety-five (43.2%) were diagnosed with 'viral illnesses'. Seven (3.2%) had laboratory-confirmed SARS-CoV-2, with an average age of 8.1 years (range: 0.59 years to 13.77 years). There were two Kawasaki-like illnesses admitted; both tested negative for SARS-CoV-2 on PCR. In our SARS-CoV-2 positive cohort, there was no associated significant morbidity and no associated mortality.

Conclusion:
During the initial phase of the COVID-19 pandemic, prevalence of confirmed SARS-CoV-2 in symptomatic hospitalised children was low at 3.2%.

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An unintended twin study: a case of inhaled corticosteroid-induced growth restriction and subsequent adrenal suppression in a prepubertal monozygotic twin girl.

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Corticosteroids are known to negatively impact the growth of pre-pubertal children, even though their adverse effects are often balanced against the risks of inadequate asthma control. However, it is usually impossible to say for certain how much the use of corticosteroids may have impacted the growth of any particular child. Here we present the unfortunate case of a monozygotic twin girl with severe, persistent asthma, who erroneously received a double dose of nebulized budesonide (2 mg/day) for a period of 26 months. Although the patient's height and weight tracked along the 50th percentile before starting budesonide, her height and weight fell to the 5th and 10th percentile respectively following initiation of this prescription error. In contrast, during the same time period, the patient's twin sister experienced normal growth along the 50th centile, despite having been diagnosed with asthma as well. A DEXA scan of the patient revealed an age-matched Z-score of -2.5 at the time of excessive budesonide cessation, consistent with corticosteroid-induced osteopenia. This unfortunate outcome substantiates the data of previous meta-analyses and serves as a stark warning for clinicians using long-term corticosteroids (systemic and/or inhaled) in pre-pubertal children.

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Display Poster Number 46
General Paediatrics
Paediatric Rhadomyolysis
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Introduction
Rhabdomyolysis is a metabolic disorder where contents of damaged muscle cells is released into plasma. Presentation include asymptomatic, myalgia, gross hematuria, and complications of acute kidney injury.
Presentation

Case report:
2 years old boy presented with two episodes of severe Rhabdomyolysis with myoglobinuria and creatinine phophokinase (CPK) measurements more than 10,000. These have been associated with intercurrent infections. First episode, he presented with a mild cough, headache, fever, reduced oral intake and vomiting. Following admission he became unable to walk and developed myoglobinuria. CPK was elevated at 20,000 and AST and ALT were also elevated (possibly muscular in origin). Initial impression was of viral myosotis and after a prolong recovery phase of several weeks he returned to normal.

He required hospitalisation again few months later with a left sided pneumonia. CPK was raised at 23,791 but this rapidly resolved and he recovered from this episode relatively quickly. There was no myoglobinuria on this admission. A fractioned CPK showed dominant skeletal muscle involvement.
Birth and past history was not significant. His energy levels are good as is his exercise tolerance. He never complains of pains with exercise nor does he note any change in his urine colour with heavy exercise. His development is age appropriate. He was thriving.
Metabolic investigations were non revealing. DNA sample was sent for Rhabdomyolysis gene panel which was positive for LPIN1 deficiency.

Discussion:
LPIN deficiency is a rare disorder which causes recurrent rhabdomyolysis that can be fatal. It is an autosomal recessive disorder. Likely triggers are usually intercurrent illnesses but may include prolonged fasting, general anaesthesia, and intense exercise. There is no definite treatment available. Treatment is supportive which includes antipyrethics, urgent medical review and measure CPK, U & Cr (particularly watch potassium). Most patients recover by sufficient fluid therapy.

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General Paediatrics

Confused by vomiting: Intermitent duodenal obstruction mimicking cyclical vomiting

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Case report:
4 years old boy with a background of failure to thrive since infancy, weight consistently below 3rd centile.

He had recurrent hospitalisation with vomiting and epigastric pain. Initial impression was of possible cyclical vomiting syndrome. However later he developed recurrent episodes of definite bilious vomiting. Bowel movements were normal. A barium follow through was unremarkable. His symptoms of intermittent vomiting, epigastric pain and poor weight gain persisted. Transferred to tertiary centre for multidisciplinary assessment.

Results and findings:

He had a MRCP, a limited CT abdomen and upper GI contrast study. This was suggestive of an inflammatory process abutting the second part of the duodenum which in view of his moderately raised amylase at the time may represent chronic pancreatitis. Chronic pancreatitis screen was normal. It was felt that he may have duodenal duplication cyst.
Case was discussed with Hepatobiliary Surgeon in UK. A repeat MRCP was in keeping with proximal duodenal obstruction with duodenal duplication cyst. He underwent Duodenostomy and excision of the duodenal cyst. He was also noted to have a small pancreas and faecal elastase was suggestive of moderate pancreatic insufficiency. He recovered well postoperatively with no further complaints of recurrent abdominal pain and vomiting. He started to gain weight and height steadily as well.
He remained on Creon for two years after surgery. There were no symptoms of steatorrhea off Creon.

Conclusion:

The position and appearance of duplication cyst was unusual in this particular case. There was a suggestion of communication of the cyst with the duodenum. This may explain why on occasions cyst was not visualised on ultrasound. The fact that the child presented with weight loss after the vomiting episodes, the duration of vomits for several days and the raised amylase were the clues to establish a diagnosis of intermittent mechanical obstruction instead of cyclical vomiting syndrome.

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Display Poster Number 48
General Paediatrics
Superior vena cava syndrome mistaken for a benign rash
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Case report :
13 years old boy presented with complaint of breathlessness, ecchymosis on upperchest, distended abdomen, pallor and cold clammy skin. Rash developed on right arm, neck and chest seven days ago. He was treated with oral antibiotics with the impression of insect bite. He got worse with increasing dyspnea and abdominal distension. On presentation, he was noted to have echymosis on upper chest with moderate respiratory distress and cervical lymphadenopathy. Abdomen was distended with hepatosplenomegaly.
Results:
Raised White cell count at 300* 109 /L, Heamoglobin was 6 and platelets at 53. A mediastinal mass with bilateral hilar lymphadenopathy on chest xray imaging. Flow cytometric analysis and cytomorphology confirmed high risk acute monoblastic leukaemia.
He had evidence of lung leucocytosisalong with multiple pulmonary emboli and tumour lysis presentation. CT-TAP imaging showed mutiple pulmonary emboli along with extensive intrathoracic lymphadenopathy, pleural effusions and anterior mediastinal mass. He entered remission following induction chemotherapy.
Conclusion:
Superior vena cava syndrome (SVCS) refers to the signs and symptoms of compression of superior vena cava. It is the major vessel for drainage of venous blood from head, neck, upper extremities and upper thorax. It is thin walled and compliant and therefore vulnerable to compression by any space occupying lesion in the vicinity. Clinical features of superior vena cava compression include swelling of face, neck and upper torso, prominence of neck and superficial chest veins, cyanosis or plethora, stridor, dyspnoea, cough, chest pain and headache. SVCS is rare and especially more so in children. It is a medical emergency requiring urgent treatment. Early in its course, it may be asymptomatic and minimal signs overlooked or disregarded. However, complete venous blockage may develop suddenly leading to catastrophic event. Lymphoma, leukaemia and mediastinal tumors are the commonest cause of primary non iatrogenic SVCS. Iatrogenic causes included cardio vascular surgery, ventriculoatrial shunting for hydrocephalus and catheterization of SVC.

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Display Poster Number 49
General Paediatrics
TRIAL OFF TREATMENT – THYROID DYSHORMONOGENESIS
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Aims
To review the management of infants diagnosed with Congenital Hypothyroidism (CHT) from the Cavan/Monaghan area over a fourteen year period and to identify the outcome of those who were trialed off therapy. CHT may be a permanent or transient condition. If no anatomical defect of the thyroid is identified at diagnosis, a trial off treatment should be considered at 3 years. If biochemically euthyroid off treatment, replacement therapy may be ceased permanently.

Methods
National Newborn Bloodspot Screening Laboratory (NNBSL) records from 2004 to 2018 were reviewed. These were correlated with patients having repeated TFT analysis in the local laboratory. All CHT cases that met criteria for a trial off therapy were examined to identify if trial had occurred and if it was successful.

Results
Twenty-one infants were identified with a diagnosis of CHT. Twelve had a diagnosis of dyshormonogenesis, eleven having a normal gland and one a hyperplastic gland on imaging. Ten of the twelve were trialed off therapy with seven of these being successful. One emigrated and was not contactable. The other was not eligible for trial off due to increasing T4 dose. The median age to trial off therapy was three years. The mean initial TSH value for those who failed a trial- off was 35.33mU/L.

Conclusion
Existing national data shows that 47.7% of patients with a normal or hyperplastic gland had transient CHT. Our small sample study found 63.6% had transient CHT. All our patients who were eligible/available for a trial-off therapy received one. Our study results supported national data that NBS TSH levels in permanent CHT may be only mildly elevated and screening TSH levels do not discriminate between permanent and transient CHT. This emphasises the need to trial all eligible CHT cases off therapy at 3 years old.

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General Paediatrics
THE IMPACT OF PANDEMICS ON ETHNIC MINORITY GROUPS; A LITERATURE REVIEW

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Background and Aims: Disadvantaged indigenous minority groups are known to bear a greater burden of illness than general populations. Our aim was to collate data on morbidity and mortality of ethnic minorities in past pandemic situations with particular reference to Irish Traveller and Irish Roma people, with a view to planning of services and provision of healthcare for the children of these communities residing in our region during the current COVID19 pandemic.
Methods: A review of the currently available literature on the topic of the plight of ethnic minority groups during past pandemics was undertaken. Fields of both medical and anthropological literature were searched.
Results: Historically, ethnic minorities fared considerably worse during pandemics than the general population[1-8]. This was particularly evident during the 1918 Spanish Flu pandemic and the 2009 H1N1 Influenza[1-8]. Similar patterns have been observed during the current pandemic, where ethnic minorities have shown to be at an increased risk of significant morbidity and mortality from Covid 19[9-12]. Ethnic Minorities are disproportionally affected by underlying health conditions thus placing them at increased risk[10,14,15,17]. This is notably observed in the Irish Traveller and Roma Gypsy populations where there are high levels of consanguinity resulting in increased frequency of genetic disorders[18,19]. Often ethnic minorities have reduced access to healthcare, poor health literacy, increased socioeconomic deprivation, reduced access to education and employment and improper housing conditions[10-19]. This creates favourable conditions for the spread of infectious diseases, such as Covid 19.
Conclusion: Our study highlights the disparities in access to healthcare and education that ethnic minorities face, and explores the factors that propagate this disproportionate affect. It provides useful epidemiological information with particular reference to the healthcare needs of minority groups marginalised in our society that are magnified during this world crisis.

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Display Poster Number 51
General Paediatrics

IDENTIFICATION AND MANAGEMENT OF CHILDREN AND ADOLESCENTS WITH OBESITY REFERRED TO A GENERAL PAEDIATRIC OUTPATIENT DEPARTMENT.

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Aims: This study aimed to identify all children/adolescents with overweight or obesity attending the outpatient department and to audit our processes in their identification and management against NICE Guideline CG189 and Quality Standard QS127[1,2].
Methods: A retrospective electronic chart review was performed. BMI growth charts (generated for every patient ≥2 years) were used to identify children/adolescents (2-18 years) with overweight/obesity attending the department for any reason in January and February 2020. The patient journey from referral to post-clinic correspondence was audited to ascertain if overweight/obesity was identified, whether this was communicated to the child/their carer and whether intervention was offered.
Results: Of 466 children/adolescents ≥2 years with a recorded height/weight seen during the study period, 27%(n=127) were identified with overweight/obesity. 91%(n=115) were referred for reasons not primarily related to the assessment/management of excess weight- this group was analysed. 47%(n=54) were identified with overweight and 53%(n=61) with obesity[3]. Height and weight and/or BMI were communicated in 14%(n=16) of referral letters. Permission to discuss growth was not documented in any cases. A record of discussing growth was observed for 16%(n=18) of patients. In the post-clinic correspondence to the primary care physician (n=111), height and weight and/or BMI were communicated in 57%(n=63) of letters.
Conclusion: The percentage of children attending our outpatient department with overweight/obesity is in keeping with national figures. Whilst growth measurement occurred systematically, the findings were not always shared with children/their carer or the initial referrer. Further research is required to ascertain what barriers exist to the discussion of growth with presenting families and how communication with primary care might be enhanced. Additional education of healthcare providers is required to develop standardised procedures around the processes for referral, clinical encounter and post-clinic actions related to child growth. This will help us meet the significant health needs of this growing population.

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Display Poster Number 52
General Paediatrics

PAEDIATRIC OBESITY – AN AUDIT OF NEW REFERRALS TO A GENERAL PAEDIATRIC OUTPATIENT DEPARTMENT

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Aims: This study aimed to audit our processes related to the assessment and management of paediatric obesity against NICE Guideline CG189 and Quality Standard QS127[1,2].
Methods: A retrospective electronic chart review was performed. New referrals for assessment and management of obesity, scheduled between October 2019 to February 2020, were identified. Clinical notes and post-clinic correspondence were analysed, focusing on history taking, examination and intervention. Referrals received by the national hospital-based weight management service were also reviewed.
Results: There were 33 scheduled new appointments for assessment and management of obesity during the study period; 82%(n=27) of which were attended. History-taking content included information related to; diet in 92.6%, physical activity in 88.9%, sleep in 33.3% and screen time in 11.1%. Documentation of the following examinations was noted; height/weight 100%, cardiovascular 88.9%, respiratory 77.8%, abdominal 77.8%, endocrine 48.2%, tanner staging 11.1%, waist circumference 7.4% and musculoskeletal 3.7%. A record of patient education provided in the following areas was observed; dietary 44.4%, physical activity 33.3%, hydration 11.1%, sleep hygiene 7.4%, reduction of screen time 3.7% and general lifestyle advice 3.7%. 92.6% of children/adolescents were referred to the hospital-based weight management service, but 24% of these referrals were not received.
Conclusion: Significant variability in history taking, examination and provision of education was observed. Additional education of healthcare providers is required to develop standardised procedures for assessment and management of children with obesity to align with recommended standards. The majority of children were appropriately referred to a hospital-based weight management service, but almost one quarter of these were not received. A review of the onward referral pathway is required to address the breakdown in communication. These steps are essential if we are to provide early, integrated care to a complex growing population at risk of developing significant long-term health needs if this is not achieved.
1. National Institute for Health and Care Excellence. Obesity: identification, assessment and management (Clinical Guideline 189). 2014. Available from: https://www.nice.org.uk/guidance/cg189 2. National Institute for Health and Care Excellence. Obesity: clinical assessment and management (Quality Standard 127). 2016. Available from: https://www.nice.org.uk/guidance/qs127

Display Poster Number 53
General Paediatrics
HEMIHYPERTROPHY: IT'S NOT ALWAYS BECKWITH-WIEDEMANN

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Background:
Hemihypertrophy is a condition characterised by bone and soft tissue overgrowth of one side of the body in comparison to the other. Overgrowth may affect the entire side of the body or just one body-part. Hemihypertrophy may occur in isolation or as part of a number of genetic and congenital syndromes, the most common being Beckwith-Wiedemann Syndrome. Potential sequelae (depending on aetiology) include: intra-abdominal tumours, orthopaedic complications, vascular malformations and genetic implications. We present two cases of hemihypertrophy, each with a different aetiology and follow-up surveillance.

Case Report 1:
Our first case is that of an eighteen-month-old, noted to be late to walk by his parents. On examination, there was mild leg length discrepancy but no other significant abnormalities. A diagnosis of Isolated Hemihypertrophy Syndrome was made. Further diagnostic studies were not deemed necessary following clinical genetics review. Regular four-monthly abdominal ultrasound was organised for tumour surveillance, until aged seven, and he will receive periodic paediatric and orthopaedic follow-up.

Case Report 2:
Our second case describes a three-year-old child, referred with parental concerns regarding arm size incongruity, as well as an enlarging 'birth mark'. On examination, a mild discrepancy was apparent, with right mid-arm circumference and right leg circumference measuring greater than the left. In addition, a solitary lesion, measuring 15cm x 12.5cm, was observed on the right lower limb, consistent with a capillary malformation. Clinical genetics review was sought, following which a clinical diagnosis of Klippel-Trenaunay Syndrome (KTS) was made. This child does not require routine tumour surveillance as the evidence suggests no increased risk in patients with KTS. Significant leg length discrepancy may cause functional impairment, which may not be apparent until adolescence and may require orthopaedic intervention.

Conclusion:
Providing families with a definitive diagnosis as to the cause of hemihypertrophy allows for a tailored clinical follow-up and surveillance strategy.

Display Poster Number 54
General Paediatrics
PUO: PYREXIA OF UNFORTUNATE ORIGIN
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Aims: To present a case report in order raise awareness of the potential adverse effects and unintended consequences of telephone consultations and delayed presentations in the current pandemic, as well as to raise awareness of the appropriate certification on medical devices and of the importance of reporting dysfunctional devices to the Health Product Regulatory Authority (HPRA).

Methods: We conducted a retrospective chart review in addition to contemporaneous knowledge of the case. The thermometer in question was obtained and CE certification confirmed. We also reviewed current public health guidelines in relation to school attendance and contacted the HPRA.

Results: Our patient, a twelve-year old girl, became unwell and was excluded from school in line with public health advice. She had negative covid-19 PCR on repeat testing but had an ongoing cough and fevers recorded at home, which persisted over a month long period. Owing to the pandemic, she was not seen in a face-to-face setting nor allowed back to school. There was also a delayed presentation to hospital due to concern regarding covid-19 exposure, and on admission our patient underwent multiple investigations given the duration of her fevers (which ultimately transpired to be attributable to an inaccurate tympanic thermometer).

Conclusion: Through a combination of factors attributable to the climate surrounding the current pandemic, our patient was absent from school and isolated for over four weeks. The factors that led to this outcome include public health measures to curb the spread of Covid-19, as well as mass-production of medical devices to meet an explosion in demand. Thought needs to be given to balancing the risk-benefit ratio of telephone consultations, particularly in ongoing ‘illness’ such as in this case. Additionally, given the explosion of medical devices on the market, it is important that devices are checked for CE certification and faulty devices reported.

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General Paediatrics

VITAMIN A DEFICIENCY AND XEROPHTHALMIA SECONDARY TO SEVERELY RESTRICTED DIET IN A CHILD WITH AUTISM SPECTRUM DISORDER

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Aims: To report the case of an 11 year old boy with vitamin A deficiency secondary to a very limited diet on a background of Autism Spectrum Disorder.

Methods: Clinical notes and investigations were collated. A review of relevant literature was conducted.

Results: The patient was diagnosed with Autism Spectrum Disorder and mild intellectual disability in 2013, aged four years. He was monitored closely as an outpatient from a General Paediatric perspective until 2016 when he returned to his home country and was subsequently lost to follow-up for a two-year period. On return to Ireland, he was referred by his GP to Ophthalmology services for severely dry eyes and conjunctivitis which subsequently required bilateral punctal plug insertion and lubricating eye drops as treatment. At this time, vitamin A deficiency was suspected as the most likely cause for the aforementioned ophthalmic issues and blood tests revealed vitamin A levels well below normal limits. He was re-referred urgently to our service and a decision was made to commence daily oral vitamin A supplementation in order to combat the deficiency. Vitamin A levels have subsequently increased back to normal and the dry eyes and conjunctivitis have resolved, although the patient reports that any omission of vitamin supplementation leads to almost immediate return of symptoms. Regular monitoring of vitamin levels, as well as ongoing ophthalmology review are now a mainstay of this patient's care.

Conclusion: This case highlights the importance of close monitoring of vitamin levels in patients with severely restrictive diets, particularly in the Autism Spectrum Disorder cohort, in order to prevent any potentially detrimental consequences of deficiency. Dietary supplementation and referral to specialist dietetic services should be considered in all of these patients. Education for parents is also a key strategy to ensure sufficient dietary requirements are maintained.

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Display Poster Number 56
General Paediatrics
ETHNIC DIVERSITY IN GENERAL PAEDIATRIC PRACTICE IN IRELAND
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Aim
Ethnic diversity in paediatric practice is one of the important topics needed to be addressed as clearly evident now days the massive numbers of people moving from one country to other worldwide. Ireland is part of this change as numbers of non-Irish immigrants on increase. Joining the EU was another factor which played a role in number of migrants, families and their children to move to Ireland looking for better opportunities. The influx of immigrants to Europe is considered appealing for many hoping to improve their economic status from one hand to fleeing conflicts and safe havens for politicians on the other.
Immigrant children can be seen in emergency department as well as other health services for diseases not prevalent within the country they live in. Immunization can be another issue risking themselves for contracting disease in addition to the possibility of spreading Preventable vaccine diseases to other local communities. Other aspects such as language barriers, mental health can all be challenging for health care professionals to deal with.
Obtaining data interms of how frequent children from different background cultures and ethnic background presented to our hospitals is a vital step in achieving best quality of care to those children. Health competence is another step towards offering high quality of care that not discriminate against others.
Methods:
Data collected prospectively from children between 0 -16 years of age who were seen in University Hospital Limerick. Parents were asked were they originally from also were being asked if they are members of the travellers community.
Results:
5460 out of 637 patients seen were Caucasians, constituted 85.7 % 95% CI (82.7% -88.3%). Parents of Mixed ethnicities were 0.8%. Pakistanis comprised 2.5% with 95% C.I(1.3% to 3.7) almost half of the traveller's community seen.
Non-Irish migrants comprised 12.6% ,95% C.1(9.9 % -15.1%).
Conclusion:
While the majority seen were Caucasians, there was diversity interms of ethnicity with Asians represented the majority.

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General Paediatrics
THE IMPACT OF THE COVID-19 PANDEMIC ON ACUTE PSYCHIATRIC ADMISSIONS IN A TERTIARY PAEDIATRIC CENTRE
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Background/ Aims:
In March 2019, in an effort to reduce the spread of COVID-19, a wide range of public health restrictions were introduced in Ireland. This included closure of schools. These measures led to social isolation and loss of support , with particular impact on children in challenging social circumstances. This study aimed to evaluate the impact of COVID 19 restrictions on acute psychiatric admissions through the emergency department in a tertiary paediatric centre in Dublin.

Methods:
Two 13 week time-blocks were studied, between March to June, in 2019 and 2020. All acute presentations to the emergency department requiring admission for psychiatric input were included. Data was collected from patient lists, which are generated daily by the general paediatric team and stored on the hospital's hard drive. Data was also obtained on the total number of acute admissions through the emergency department during each time-frame.

Results:
There were a total of 672 acute admissions through the emergency department during the 2019 time period- 3.2% (n =24) were psychiatric admissions. In comparison, there were a total of 618 acute admissions during the 2020 time period- 7.3 % (n=45) were acute psychiatric admissions. In 2019, 87.5% (n=21) were female; 12.5% (n=3) were male. In 2020, 69% (n=31) were female, and 31% (n=14) were male. The age range and reasons for admission were similar across both groups.

Conclusion:
This highlights the negative impact of COVID 19 restrictions on the mental health of children and adolescents. There is a need for easier access to psychology/psychiatry services at the community level, in order to prevent children presenting to the emergency department in a crisis. Living with COVID 19 might be a long term battle, the on-going effect of fluctuating levels of restrictions on the psychology of vulnerable children warrants further assessment.

Display Poster Number 58
General Paediatrics
Scurvy in modern Ireland.
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Aims
Scurvy, which is due to vitamin C deficiency, is rare in paediatric population[1] and is now considered to be a historical disease[2]. Children with Autistic spectrum disorder (ASD) may have highly specific food selectivity and are more prone to different types of nutritional deficiencies. Several studies in the past have linked scurvy with ASD[3]. The aim of this report is to describe the presentation of a six year old boy with the background diagnosis of ASD who progressed from limping to a complete lack of mobility within weeks, due to scurvy.

Methods
It is a single case report. All the information was retrieved from the patient's health care record.

Results
This six year old boy who had the background diagnosis of ASD was able to walk independently as a baseline. He presented with a week history of limping on the right side and pain in lower limbs. It progressed to inability to bear weight within couple of weeks. Base line investigations including bone marrow biopsy were normal. He had severely restricted diet. Nutritional deficiency including scurvy was suspected as a cause of his symptoms. Vitamin C level essay confirmed the diagnosis. His MRI scan showed diffuse increased T2 signal intensity in the axial skeleton, which was consistent with scurvy. Response to treatment was excellent with regaining of the ability to walk independently.

Conclusion
Restrictive eating pattern is very common in children with ASD, it is important to prevent nutritional deficiencies in these children. Supplementation with multivitamins whenever food selectivity is suspected may prevent nutritional deficiencies which can otherwise lead to significant morbidity. A high index of suspicion is required to diagnose scurvy. Not considering scurvy at an early stage risks delaying the diagnosis and exposing the patient to a lengthy, expensive, and invasive diagnostic voyage[4].

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Display Poster Number 59
General Paediatrics

AUDIT ON COMPLIANCE OF DOCTORS IN PAEDIATRIC DEPARTMENT, UHK WITH IRISH MEDICAL COUNCIL STANDARD REGARDING DISCHARGE SUMMARY FOLLOWING ASSESSMENT IN EMERGENCY-DEPARTMENT

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Aim: To assess the compliance of the Paediatric Department staff in University Hospital Kerry with the IMC standard regarding discharge summary, specifically following assessment in the ED. This IMC compliance rate is expected to be 100%.
Background: Discharge summary is an important document produced by the healthcare professionals in hospitals for the primary care practitioners. This summary provides information on the presenting complaints, diagnoses, investigations, managements and follow-up plan of patients presenting to the hospital. According to the Irish Medical Council Guide to Professional Conducts and Ethics for Registered Medical Practitioners, when discharging patients back to primary care, all relevant information should be given promptly[1]. This constitutes a good resource for GP follow-up of shared care and feedback.
Method: Data were collected by prospective cohort follow up of patients assessed by the paediatric doctors in the ED over a 4-week period. Out of all cases over this period, 100 cases were randomly selected and the outcome of the assessment was recorded. Data collected were the Medical Record Number, diagnosis, source of referral, outcome whether the patient was admitted or discharged, and if discharge summary to the General Practitioner was provided.
Result: Out of the 100 cases, 58 patients were admitted to the paediatric ward, 42 patients were discharged following assessment by paediatric doctors in the ED. From the 42 patients discharged, only 7 (16.7%) had their discharge summary written to the GP.
Conclusion: Our result showed very poor compliance to the standard regarding handover of patient's care to the GP following assessment in the ED. Several reasons for this were postulated but these factors should not be allowed to affect the expected standard of care.
Recommendation: This audit will be shared with all NCHDs. QI project to improve this practice. There will be regular reminders to the doctors to produce a discharge summary for each patient discharged from the ED. There will be a re-audit in 4 months following the recommendations above.

1. Irish Medical Council Guide to Professional Conduct and Ethics for Registered Medical Practitioners (Amended) , 8th Edition 2019

Display Poster Number 60
General Paediatrics
PSYCHIATRIC ILLNESSES IN THE AFTERMATH OF VIRAL PANDEMICS
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Aim: A pandemic is defined as "an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people" [1]. Humankind has experienced numerous pandemics to date such as the Spanish Fluid 1918, the Asian flu 1957, SARS 2003, Swine flu 2009 and Coronavirus-2019. Historically, the aftermath of pandemics has been associated with increased onset of psychiatric disorders in the general population. Our aim was to identify the various psychiatric illnesses that viral pandemics precipitate, specifically in children, in order to ensure that we have the adequate resources in place for our pediatric population during the current world crises.
Methods: A narrative literature review was carried out using English-Language publications only from the year 1990 to 2020.
Results: Viral pandemics are associated with increased psychotic symptoms. This was evident during the H1N1 pandemic where some children who were exposed to the viral infection, developed severe psychosis symptoms similar to early-onset schizophrenia [2]. Other studies also suggest new onset psychiatric symptoms in general populations infected with SARS and MERS [3][4]. The studies suggest that the occurrence is mainly due to total isolation measures put in place by public health to avoid the spread of infection and from the use of treatment medication. Another factor that has been suggested is maternal influenza exposure and its link to increased risk of developing schizophrenia or bipolar in offspring. However, it was found that there was not sufficient evidence to link prenatal exposure with schizophrenia or bipolar disorder in children [5][6].
Conclusion: The aftermath of viral pandemics is associated with increased development of psychiatric disorders in the general population. Knowledge of past pandemic outcomes regarding this topic is vital in order to allow our neuropsychiatric services to prepare and combat the recurrence of similar presentations after Covid-19.

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Display Poster Number 61
General Paediatrics
TEMPOROMANDIBULAR JOINT CLICKING IN THE NEONATE: A CASE REPORT
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Current literature provides both guidelines and many case reports of temporomandibular disorder in children and adolescents. However, case reports of non-traumatic and painless temporomandibular joint dysfunction within the neonatal population are minimal. Guidance on how to approach such an unusual presentation relies predominantly on small, scattered, historical and international case reports. We report on one such presentation to the paediatric department of a regional Irish hospital in 2020.

A 16-day old girl was referred by her general practitioner following two week check-up, for review of right sided temporomandibular joint dysfunction in an otherwise well neonate. She had normal antenatal scans and an insignificant perinatal course. There is no family history of temporomandibular joint disorders or craniofacial abnormalities. She was discharged home after 48 hours from the post-natal ward. Being exclusively formula fed, tolerating feeds and passing urine and stool normally. Parents reported a loud and persistent noise when feeding and sucking pacifier, with visible and palpable clicking of the right temporomandibular joint while holding the neonate to feed, present from birth. No apparent history of distress during mandibular movements or while the noise occurs. On presentation and at 6 week follow-up the infant was tracking along birth centiles with age appropriate development. No facial asymmetry or dysmorphic features were observed with normal systemic examination on both occasions. Visible and palpable, non-tender clicking of both temporomandibular joints with the right more pronounced than the left was appreciated. A normal suck with coordinated feeding from bottle was observed. Parental report at 8 weeks of age is of reduction in volume of noise from both temporomandibular joints and decreased palpable clicking. As was suggested in the few applicable case reports available, we adopted a watch and wait approach as the infant remains well and thriving.

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General Paediatrics

PHYSICAL ILLNESSES IN THE AFTERMATH OF VIRAL PANDEMICS; A LITERATURE REVIEW

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Aims: The unexpected emergence of COVID-19 which has globally spread in a short period, has led us to believe that this pandemic may rival those of 1957, 1968, 2009 and even the most severe of 1918. Although the development of modern medicine has aided in the acute management and improved prevention of infections, patterns of sequela in pandemic survivors continue to be recognized. The prevalence of physical manifestations amongst survivors extends beyond the resolution phase, impacting quality of life. Recognizing similar patterns in historical viral pandemics and the associated ongoing sequelae highlight the need for improved awareness, infection control, prevention and response.
Method: In this review, we reflect on current literature involving viral historical pandemics and its aftermath on long-term physical morbidities amongst survivors. Past outbreaks studied encompass the Spanish, Asian, Hong Kong, and Swine flu.
Result: Previous literatures highlight physical morbidities in post-viral pandemic survivors that clinically present in the nervous and cardiopulmonary systems. Despite overcoming the acute viral illnesses, neurological manifestations such as seizures, acute necrotizing encephalopathy, encephalitis, Guillain-Barré syndrome and Reyes syndrome were the most commonly recognized amongst survivors. Past pandemics also influence survivor mortality through cardiopulmonary complications presenting as asthma, bronchiectasis, chronic rheumatic heart disease, myocarditis, and coronary heart disease. The physical sequela of these infectious diseases studied were found to last several months to years post resolution.
Conclusion: This literature review recognizes historical patterns in complications arisen from the unforeseen evolution of viral pandemics and provide an overview of the relationship that exists between them and the ensuing evolution of physical sequelae amongst survivors. Limited by the available literature and the current occurrence of COVID-19, this report strengthens the imperative need for additional studies in this area to ensure improvements on infection control and prevention are attained in preparation for the next pandemic.

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General Paediatrics
AN INVESTIGATION OF THE EFFECT OF THE COVID-19 LOCKDOWN ON HBA1C LEVELS IN A PAEDIATRIC DIABETIC POPULATION.
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AIMS: The CoVID-19 pandemic may negatively affect HbA1c levels due to lack of physical activity, increased stress levels, or changes in dietary habits. Alternately, control may improve with increased parental supervision. Our aim is to investigate the effect of the CoVID-19 lockdown on the HbA1c levels recorded for the paediatric diabetic population in Wexford General Hospital.

METHODS: A retrospective study was undertaken of HbA1c values from September 2019 to September 2020. Baseline characteristic data and point-of-care HbA1c values were taken from patient charts. Lab HbA1c values were taken from the hospital laboratory record. Statistical analysis was performed using paired and unpaired Student's *t*-test.

RESULTS: A total of 66 patients were included, 28 (42.4%) were female. Age range was 2-17 years, with a mean of 12.8 [± 3.2] years. 65 (98.48%) patients had type 1 diabetes. No significant difference was noted between male and female patients for OPD ($p = 0.118$) or virtual ($p = 0.369$) clinics. There was no significant difference noted between pre-CoVID (69.38 ± 15.06) and CoVID (70.66 ± 20.99) mean HbA1c values ($p = 0.563$). A small, non-significant positive trend was noted in the CoVID values, compared to the pre-CoVID values.

CONCLUSION: The CoVID-19 pandemic and associated lockdown had no significant effect on diabetic control within this patient population.

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General Paediatrics
PAEDIATRIC EMERGENCY MEDICINE IN SLIGO: A TEN YEAR REVIEW
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Aims
In 2019, Sligo emergency department (ED) reviewed 8,085 children. This study aimed to review acute paediatric attendances requiring escalation of care.

Methods
Electronic healthcare records identified ICU admissions, transfers, and deaths, and were correlated with the National Paediatric Mortality Register, and Paediatric Intensive Care Audit Network. Available paper charts were reviewed. Exclusion criteria included patients who hadn't attended ED, congenital neonatal conditions, and ICU admissions after day 3 of admission.

Results
From 2009-2019, 108 acute paediatric presentations resulted in ICU admission, transfer or death. Median age was 48 months. Most (48%) had no previous medical history. Ethnicity comprised white Irish (86.2%), white EU28 (8.3%), Asian (4.6%), and Australian (0.9%).

Median days of illness was 2. Common presenting symptoms included respiratory (33%), reduced GCS (19%), seizures (8%), lethargy (8%), and injuries (7%). Top diagnoses included asthma / bronchiolitis / croup (20%), DKA (11%), sepsis (10%), cardiac (9%), cardiorespiratory arrest (8%), LRTI (7%), status epilepticus (7%), and intoxication (6%). Undiagnosed congenital cardiac conditions comprised 3%.

Intubation was required in 57%, with median ventilation period of 1 day. Inotropes and haemofiltration were required in 29% and 2% respectively.
Of Sligo ICU admissions, 36% were discharged to the ward, 8% transferred to tertiary paediatric care, 55% transferred to a tertiary ICU, and 18% ultimately died.

At thirty days, 71% were home, 6% remained inpatients, and 18% were dead. Top causes of death included sepsis (32%), cardiac arrest (21%), HIE / traumatic brain injury (16%), and SIDS (16%).

No statistically significant variables affecting presentation or outcome were found.

Conclusion
Children have predictable patterns of presentation. They become unwell rapidly, with most having no previous medical history. Sepsis remains a top cause of death. Efforts should be made to improve diagnosis of congenital cardiac conditions.

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General Paediatrics

HYPEROSMOLAR HYPERGLYCAEMIC STATE IN AN ADOLESCENT CYSTIC FIBROSIS PATIENT WITH A BACKGROUND OF CF RELATED DIABETES AND BILATERAL LUNG TRANSPLANTATION.

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Aims:
To report the case of a sixteen-year-old female cystic fibrosis patient with cystic fibrosis related diabetes (CFRD) who presented in hyperglycaemic crisis nine months post bilateral lung transplantation. We also aim to highlight the difficulty in managing patients with CFRD on diabetogenic immunosuppressive medications.

Methods:
We describe the clinical presentation and laboratory results of the case. We also discuss management and outcome for the patient.

Results:
A 16-year-old patient with cystic fibrosis presented with fatigue, polyuria, polydipsia and vomiting over several days. Her oral intake consisted mainly of sugary drinks. This was on the background of pre-existing CFRD and bilateral lung transplantation 9 months previously. On examination she had lost approximately 10% of her body weight. Her heart rate was elevated at 119BPM with a stable blood pressure of 118/81, her GCS was 15/15. The remainder of her vital signs were within normal limits, she had moist mucous membranes and a capillary refill time <2 seconds.
Initial serum glucose measurement was 54.8 mmol/L with a pH of 7.53 and ketones 0.7. Serum osmolality was 305. A diagnosis of hyperosmolar hyperglycaemic state was made given her severely elevated blood glucose level, alkalaemia and absence of ketonaemia.
She was managed as per the ISPAD guidelines for the management of paediatric HHS. She was discharged home well 4 days post admission.

Conclusion:
While HHS is rare in the paediatric population, its incidence is rising given the increased rates of adolescent obesity and type 2 diabetes. Therefore, it is important that paediatricians are aware of the clinical presentation and management as it carries significant morbidity and mortality. Furthermore, this case highlights the challenges in controlling blood glucose in CFRD patients who are post-transplant. Knowledge of the effect of immunosuppression on glucose control is crucial for clinicians managing diabetic patients.

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General Paediatrics

LYME DISEASE IN THE PAEDIATRIC POPULATION: THE EXPERIENCE OF A PERIPHERAL UNIVERSITY AFFILIATED TEACHING HOSPITAL.

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Aims:
The authors report a case series of Lyme disease in a peripheral university teaching hospital to educate and raise awareness among paediatricians about presentation, diagnostic dilemmas and management of Lyme disease in children. Lyme Disease, also known as Lyme borreliosis, is an infectious disease caused by the *Borrelia* bacterium which is spread by ticks. There are an estimated 50 to 100 case, among adults and children, in Ireland each year [1]. There is a higher prevalence in rural areas.

Methods:
The authors report a case series of 4 cases which presented to their Paediatric Department, over a four week period in 2020, with symptoms and signs prompting investigations for Lyme Disease.

Results:
The four cases present with different signs and symptoms along with variability in a tick bite history. Ages of the children ranged from newborn to nine years of age. The newborn being born to a mother who recently had Lyme Disease. Two had positive serology with one of the four cases receiving treatment. The authors discuss these four individual cases in detail along with their individual management.

Conclusions:
Symptoms and signs of Lyme Disease vary depending on the time between initial infection onset and clinical assessment [2]. Lyme disease can be difficult to diagnose, particularly in its latter stages, because symptoms are also shared by other, more common conditions, such as other infections. In this case series the authors highlight the need for awareness of Lyme Disease as a differential diagnosis, the management of such cases and practical advice around tick management.

https://www.hse.ie/eng/health/az/l/lyme-disease/
https://www.cdc.gov/lyme/

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General Paediatrics
DANGEROUS DIETS! CULTURE AND UNCONSCIOUS HARM
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Background & Aim: Our aim is to report a case series of 2 unrelated toddlers who presented to our Paediatric Emergency Department (PED) this Autumn in an acute manner with significant medical issues related to unusual diets imparted on them by their parents.

Methods: We describe the clinical presentations, investigations, treatment and outcomes in our cohort.

Results:
Case 1: An almost three year old previously well girl presented following an unresponsive episode at home. She had a blood glucose reading of 2.9mmol/L and responded to honey. Endocrine and metabolic investigations were normal. She is of Slovakian descent. Her mother had “removed carbohydrates” from her diet during the preceding 6 weeks, and fed her a diet of “ protein and vegetables. “A Naturopath” commenced her 6-year-old sister on this diet as “treatment” for recurrent Candida infections which he had attributed to “ too much sugar in her food”. For convenience her mother put both children on the same meal plans. Following dietetics review a normal diet was re-introduced. She has remained well since.
Case 2: The second patient was a 2 year and 3 months ethnically Irish girl, presenting with lethargy and pallor for 1 week. Laboratory investigations revealed a hemoglobin of 4.2g/dl (Reference range 10-15g/dl), findings consistent with a diagnosis of dietary iron deficiency anemia. This was her second such presentation within 12 months. She had a diet rich in cow’s milk. Interestingly her father is a “dairy farmer” and a “firm believer” in the “benefits of Cow’s milk” for himself and his family. She responded well to oral iron supplementation on her first presentation and intravenous on her second; “Milk baby of olden times”.
Conclusion: Our cases highlight the serious effects that abnormal diets have on otherwise healthy children. Is this an emerging phenomenon in our community needing further attention in order to prevent detrimental sequelae?

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General Paediatrics
HEREDITARY SPHEROCYTOSIS; A CASE SERIES
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Background and Aims:
Hereditary spherocytosis (HS) is an autosomal dominant condition and a common cause of inherited haemolysis in northern Europe with an incidence of 1 in 2000. The symptoms of HS can emerge in any period of life from birth to adulthood. The clinical picture can vary from asymptomatic to severe hemolysis.
Our aim is to compile a profile of patients with this rare disorder attending our services.

Methods:
Hospital electronic databases were used to identify the cohort of patients with this diagnosis currently listed under the care of Paediatricians at UHL. Case files were reviewed and the following characteristics recorded; Gender, age profile, age at diagnosis, positive family history, complications, ethnicity, and frequency of hospital visits, (inpatient, day case, outpatient) and shared care arrangements.

Results:
A total of 15 patients under 16 years of age attend our service, 6 males and 9 females, current age range is 22 months to 16 years, age range at diagnosis was from birth to 8 years of age. The majority of our cohort are ethnically Irish (n=11), 3 are of Italian and 1 of Chinese descent. 14 patients were diagnosed in the newborn period and were EMA confirmed. 1 patient was diagnosed at 8 years of age following presentation with parvovirus B19 infection. One patient experienced acute severe pancreatitis and cholelithiasis aged 9 years. She subsequently underwent a cholecystectomy. Splenectomy was performed in one male patient at the age of 12. Megaloblastic crisis was not observed in any patient. Each patient is prescribed Folic Acid daily. All of these patients are offered yearly follow up appointments at Tertiary Paediatric Hematology Centres (n=14 to CHI @ Crumlin, n=1 to Cork University Hospital) but eventually transition to our local Adult Hematology team.

Conclusion:
We report a case series of 15 Paediatric patients with this rare hematological disorder attending our Regional Paediatric unit and highlight the importance of shared care management.

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General Paediatrics

MENTAL HEALTH COMPLICATIONS IN A 5-YEAR-OLD FEMALE WITH LATE PRESENTATION OF CONGENITAL ADRENAL HYPERPLASIA

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Aims: Classical CAH presents with salt wasting crisis in the neonatal period; however, not all CAH cases presents in a classical way. We describe an unusual and late presentation of Congenital Adrenal Hyperplasia, with associated mental health complications attending CAMHS.

Methods: A retrospective chart review was conducted, and symptoms and results revised.

Results: NN presented at 5 years-of-age with low mood, aggressive, hypersexualised behaviour and deliberate self-harm. This was a notable personality change that occurred over a period of 4-6months. On examination she was found to have features of premature adrenarche including axillary hair, pubic hair, body odour and mild acne. Her initial physical examination revealed Tanner stage A2, B1, G1, PH2, M0. Blood work up did not support a diagnosis of central or peripheral precocious puberty: LH <0.1, ACH 2.6, Oestradiol <37, IGF-1 177. At this time the working diagnosis was premature adrenarche. There were no signs of true puberty and the DHEAS was elevated at 5.5, consistent with this working diagnosis. As a result of ongoing aggressive behaviour, she was re-examined, revealing slight cliteromegaly. A urinary steroid profile was sent, which demonstrated high concentrations of 17-hydroxyprogesterone metabolites indicating 21-hydroxylase deficiency. Her bone age was advanced, chronological age 5 years 11 months, skeletal age 9 years, (> 2SDS). She was subsequently confirmed as compound heterozygous for two pathogenic CYP21A2 variants. Hydrocortisone and fludrocortisone replacement therapy was initiated and very quickly her behaviour and mood significantly improved.

Conclusion: CAH should be considered in patients with acute personality changes, where there are also features of premature adrenarche. This case serves as a reminder to clinicians that a detailed physical examination including: examination of the genitalia and full Tanner staging, must be performed on any patient with query precocious puberty and mental health illness to outrule organic pathology.

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A REVIEW OF GENERAL PAEDIATRIC'S OUTPATIENT WAITING TIMES IN TALLAGHT UNIVERSITY HOSPITAL

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Aim: We conducted a retrospective analysis of the General Paediatric's outpatient waiting times in Tallaght University Hospital (TUH). We analysed methods of referrals, referral pathways and outcomes from February 2019 to February 2020. Waiting lists are a perennial issue and General Paediatrics is no exception. Evidence suggested that some paediatric patients were waiting longer than 2 years to be seen in a General Paediatrics outpatients clinic. The purpose of this audit was to assess various methods employed to tackle this waiting list and to make recommendations for the future.

Methods: Data was collected using the HIPE coding system in TUH and by manual analysis in Children's Health Ireland (CHI) at Connolly Hospital. We analyzed data from February 2019 to February 2020. We set a goal of seeing more than 90% of patients within six months of their referral.

Results
In 2019, 2056 patients were waiting to be seen. 56% were waiting 6 months and a further 26% were waiting up to one year. In 2020, 1623 patients were awaiting appointments, 69% for 6 months, and a further 20% were waiting up to one year. There were 1094 new referrals made in these 13 months. At the same time 972 patients were seen. 25% were discharged to their GP and 62% (599) were given new appointments in CHI Connolly. Connolly saw 1,815 patients with a 70% discharge rate and (854) required further appointments.

Conclusion
Pooling the new referrals based on waiting time was a tremendous success allowing patients to be seen quicker. 62% of patients were seen in the 6 months target, 84% of patients were seen within 12 months. Further scope for improvement lies with collaboration between Consultant Paediatricians and community GPs. E-referrals from GPs have also improved the efficacy. There will be a further reduction when referrals to Connolly Rapid Access Clinics are further streamlined and opened.

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General Paediatrics

CHANGING PATTERNS IN PAEDIATRIC ATTENDANCES DURING THE COVID-19 PANDEMIC

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Aims:
The WHO declared COVID-19 a pandemic on 11 March 2020. Irish schools closed on 12 March and a nationwide stay-at-home order was issued on 27 March. A 34-76% decrease in paediatric ED presentations has been reported during the pandemic.[1,2] This study will assess the impact of the pandemic on attendances and admissions to a regional paediatric unit.

Methods:
A single-centre retrospective review of presentations to the paediatric assessment unit (PAU) and admissions to the paediatric ward from April-July 2019 and 2020 was performed. Data was obtained from the PAU attendance diary and HIPE reporting database. Unscheduled PAU attendances included GP/self-referrals with medical or surgical complaints, excluding injuries.

Results:
There was a 40% decrease in unscheduled PAU presentations in April-July 2020 (n=747) compared with 2019 (n=1244). The most common presenting complaints in 2020 were gastrointestinal symptoms (33.2%), rashes (12.2%,), unwell child <1 year incl. pyrexia (7.4%) and respiratory symptoms (7%).
There was a 67.2% decrease in admissions in April-July 2020 (n=170) compared with 2019 (n=519). Discharge diagnoses were categorized for admitted patients in May-July 2019 and 2020. There was a reduction in most categories in 2020 including dermatological (-80.7%), respiratory (-80%), cardiovascular (-75%), neurological (-62.2%), gastrointestinal (-61.3%), surgical (-60%), musculoskeletal (-57.1%), injury & poisoning (-45.2%) and mental health/safeguarding (-33.3%) cases. There was an 11.1% increase in genitourinary cases in 2020.

Conclusions:
The COVID-19 pandemic has resulted in a drastic decrease in paediatric clinical activity. Not surprisingly, we have seen a reduction in presentations relating to viral transmission (wheeze, gastroenteritis, rashes) and school-related stress (headaches, abdominal pain). Despite the anticipated negative effects of the pandemic on mental health[3], psychiatric admissions did not increase. Whilst SARS-CoV-2 infections in children have been relatively mild, the pandemic has had a profound impact on paediatric services and we have much to learn as the pandemic evolves.

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General Paediatrics

BARRIERS TO SAFE IMPLEMENTATION OF PAEDIATRIC SIMULATION BASED TEACHING DURING THE COVID-19 PANDEMIC

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Managing paediatric emergencies is a daunting and challenging experience for physicians. Children are anatomically and physiologically entirely different in comparison to the adult population; which places additional demand on the paediatric physician. In a paediatric resuscitation any delays can have a negativeimpact on the outcomes for both the patient and the physician (the second victim)[i].

Regular Paediatric Simulation Based Teaching Scenarios (PSBTS) were well established in University Hospital Limerick (UHL) to improve both knowledge base and confidence levels regarding management of paediatric emergencies. The Covid-19 pandemic has created additional unprecedented challenges to the implementation of this teaching[ii].

Aim:
The aim of this study is to identify these challenges through a questionnaire of participants and to establish possible interventions that would address these challenges.

Methods:
An online questionnaire was circulated to all scenario participants; including Non Consultant Hospital Doctors (NCHDs) and nursing colleagues in the Children's Ark (Paediatric Department) and the Paediatric Emergency Department (PED) in order to identify these challenges and interventions that would address them.

Results:
Covid -19 has significantly negatively impacted the delivery of PSBTS. It is anticipated that the questionnaire will reveal important inhibitory factors to the establishment and continuation of these scenarios during the Covid -19 pandemic and identify possible facilitators to enhance this teaching provision.

Conclusion:
Regular PSBTS are essential to the continuing professional development of all staff involved in acute care of paediatric provision. Covid-19 has severely inhibited the delivery of these scenarios. This study will provide insight into barriers and facilitators to the scenario teaching process and ultimately enhance the provision of simulation based teaching in our unit and other similar health care facilities.

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General Paediatrics
DELIVERING AN UNEXPECTED DIAGNOSIS
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Aims
To describe the identification of a mutation associated with a monogenic form of diabetes and to review the literature.

Methods
A retrospective chart review was undertaken to ascertain details of presentation and investigations. A PubMed database search was conducted to identify similar cases.

Results
An 11 year old female was admitted with a 2-day history of fever, vomiting and abdominal pain, without tenderness or guarding. Bloods demonstrated elevated alanine aminotransferase (ALT) of 111 U/L (<35), alkaline phosphatase 603 U/L (50-350) and gamma-glutamyltransferase (GGT) of 222 U/L (1-24). Bilirubin & albumin were normal. Abdominal ultrasound was normal. A viral aetiology was suspected. No family history of note was elicited initially however on discharge the patients mother revealed that the patients father had previously undergone a liver biopsy which was reported to be “inconclusive”.
Post discharge the parents phoned to provide further information. The patients father was diagnosed with diabetes aged 36 which was treated with oral hypoglycaemics. He had abnormal renal function with a creatinine of 150µmol/L and elevated uric acid. His mother and two sisters had a similar phenotype. He was aware of members of his extended family who had problems with their liver or biliary tree. He did not seem to be aware of a unifying diagnosis. The family history was suspicious for monogenic diabetes and the combination of hepatic and renal abnormalities lead to a suspicion for *HNF1B*-MODY. Following a standard workup for other causes of liver disease, analysis revealed her to be heterozygous for a splicing variant of the HNF1B gene.

Conclusion
A detailed family history is helpful and lead to the diagnosis in this case. Patients with complex disorders may be unclear regarding the exact nature of their diagnosis.

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General Paediatrics

BRONCHIOLITIS-AN AUDIT ON CURRENT MANAGEMENT IN UNIVERSITY HOSPITAL LIMERICK.

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Background: Bronchiolitis is the most common viral lower respiratory tract infection in the first two years of life. The American Academy of Paediatrics (2014) states clinicians should not administer salbutamol, but may administer nebulized hypertonic saline, to infants and children with a diagnosis of bronchiolitis.

Aims: To compare bronchiolitis treatment in paediatric patients at University Hospital Limerick (UHL) with the American Academy of Paediatrics guidelines.

Objectives: To identify the number of patients presenting to UHL with bronchiolitis who were treated with saline versus salbutamol nebulisers.

Methods: Using the key word "bronchiolitis" a list of all patients aged less than two years of age, admitted to UHL during the period November 2019 to March 2020, was obtained. Twenty patients were selected from this list at random,. Each of these patients gender, date of birth, date of admission, length of stay, and whether they were treated with saline or salbutamol nebulisers was recorded.

Results: Pending.

Conclusion: Pending upon conclusion of audit.

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General Paediatrics
VIRAL INDUCED WHEEZE, AN UNUSUAL TREATMENT APPROACH.
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Background and Aims:
Viral induced wheeze is a common cause for presentation to the Paediatric Emergency Department, particularly in children under two years of age. Treatment regimens focus upon supportive therapy. This case report aims to highlight an unusual treatment approach.

Methods:
A retrospective chart review was conducted.

Results:
A 2 years and 10 months old boy who presented to ED with a two day history of coryzal symptoms, dry cough, tachypnoea, moderate increased work of breathing and wheezing. He has had multiple previous admissions since 8months of age, all following a similar pattern. Treatment involves a trial of salbutamol and hypertonic saline nebulisers combined with high flow oxygen to maintain saturations above 94%. An individual treatment algorithm has been designed for him with a low threshold for progression to Paediatric HDU and the use of non- invasive ventilation (NIV) with CPAP and, if needed, progression to BiPAP. He has a history of deteriorating rapidly and dramatically. CT investigation has shown some sub-segmental atelectasis and flexible bronchoscope displayed normal airway anatomy with no mechanical cause found.

Conclusion:
Viral induced wheeze is a common paediatric presentation, particularly in children attending crèche and school. The standard treatment of oxygen, nebulised hypertonic saline and salbutamol has little effect on this patient and he can rapidly progress to marked respiratory distress. He has had significant investigation for a mechanical cause and has had little improvement with trials of prednisolone or magnesium sulphate. His case presentation has led to a change in practice and the installation of a Trilogy ventilator in the Paediatric HDU in UHL. His parents are trained to recognise signs of impending respiratory distress and will attend to ED with a NIV mask that fits him. The use of acute NIV in respiratory distress for this challenging cohort of children shows promise.

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REMOVAL OF RETAINED AND FRACTURED PERIPHERALLY INSERTED CENTRAL CATHETER(PICC) LINE - AN UNCOMMON COMPLICATION

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AIM: To report a case of successful removal of Peripherally Inserted Central Catheter(PICC) line which got retained and then broke in the end.
METHOD: Removal of the catheter at conclusion of therapy is routinely relatively easy . However, it can cause complications like pulmonary embolization, infection, sepsis, iatrogenic acute cardiac tamponade. Venospasm has been described the most common aetiology ,fibrinous sheath encasing catheter ,medication crystallization , mechanical occlusions due to crimping and malpositioning are the other causes. We describe a case of difficult catheter that broke but in the end was successfully removed by using non -invasive interventions.

CASE: 18 days old baby boy who received a PICC for intravenous antibiotics in general paediatric ward to treat Urosepsis . The PICC line was used for 9 days .After completion of therapy ,the catheter was pulled out gently ,but there was resistance noted at 7cm . All the attempts to remove the catheter were used, which included changing position of the arm, massage along the line, flushing of the PICC line with Normal Saline while pulling out catheter at the same time.
Radiological evaluation X-ray of arm showed the position of the Catheter, lying in mid forearm with no kink noted at the tip . After 30 minute of giving rest to PICC line , the massage was done at exact position of the catheter.While taking off the bandage as applied before imaging ,it broke at 8.5 cm. As the catheter was held ,the remaining line was saved from being pulled in. Gentle massage and slow pull made a successful removal of the PICC line.

DISCUSSION This case highlights the rare complication of breakage of PICC Line which was stuck initially but then removed with sterile field, gentle pull without applying excessive force, and the whole length including the tip was removed without any complications.

Westergaard, B, Classen, V, and Walther-Larsen, S. "Peripherally Inserted Central Catheters in Infants and Children - Indications, Techniques, Complications and Clinical Recommendations." Acta Anaesthesiologica Scandinavica 57.3 (2013): 278-87. Web.

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General Paediatrics

RETROSPECTIVE AUDIT OF PAEDIATRIC HIGH DEPENDENCY UNIT ADMISSIONS IN UNIVERSITY HOSPITAL LIMERICK

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AIM :To evaluate utilization, functioning and outcome of Paediatric High Dependency Unit(pHDU) in University Hospital Limerick

METHOD Audit form accepted, ethical approval obtained from local ethics committee (UHL) and data protection approval from local data protection officer (UHL)..Review of data entry into pHDU admission book and online medical records over a 12 month period,(1 January2019-31 December2019).

RESULT: There were total 126 admissions to Paediatric HDU in 2019,of which 71(56%) were males and 55 (43%)were females .Mean age was 3.97 years(0.01 -17.03) ,median age was 2.10 years , mean admission weight was 17.58 kgs(2.40-70.70) and most of the patients stayed in HDU for 2 days(1.00-11.00).There were 124 patients who were alive and 2 dead at the time of discharge from pHDU and the same was the number post 30 days discharge as well.100 patients were shifted to general paediatric wards of UHL after improvement ,13 were transferred to other hospitals and 13 went home .There were total 119 unplanned admissions,1 planned medical and 6 unplanned admissions to pHDU after surgery. The peak of patients admitted to pHDU was in November**.**
Out of total admissions ,64% were due to respiratory issues,18% were neurological, 9% cardiovascular or circulatory,6% were surgical and 3% were due to endocrine/metabolic reasons. Among respiratory cases, bronchiolitis and LRTI were the most common reasons for HDU admission comprising of 42% and 32% respectively. 100% patients with respiratory issues required supplemental oxygen out of which 38% required high flow nasal cannula and 32% went on to CPAP.78% of neurological admissions were due to seizure disorder. Cardiovascular admissions were mostly due to sepsis 37%, that of cardiomyopathy and poisoning were 18% each.

CONCLUSION: In conclusion, Paediatric HDU of University Hospital Limerick (UHL) manages maximum percentage of admitted patients with very low mortality rate and transfer to other hospitals .

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General Paediatrics
A SYSTEMATIC REVIEW ON THE USEFULNESS OF OTC REMEDIES FOR URTIS IN CHILDREN

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Background: Over the counter (OTC) remedies are widely used for symptomatic relief for upper respiratory tract infections (URTIs). Prior to seeking medical attention, 85% of parents treat their children with an OTC[1]. However, use in children under two is not recommended as limited data regarding efficacy and risks is currently available[2].
Aim: This study aimed to examine the existing evidence for the use of OTC remedies for treating URTIs in children.
Materials and Method: A systematic literature review was completed using PubMed, Cochrane, Medline-Ovid and EMBASE databases in the period of January 1st 1990 – December 31st 2019 with the keywords *'over the counter', 'upper respiratory tract infection' and 'children'.*
Results: 24 papers were included for data extraction regarding OTC remedy type, symptomatic target, effectiveness and limitations. Analysis of the data demonstrated a percent effectiveness of 100% analgesics, 75% honey, 50% zinc, 50% vapour rubs, 40% mucolytics, 30% decongestants, 16.6% expectorants, 15.4% anti-tussives and 7.7% antihistamines. None of the included studies found homeopathic remedies, vitamin C, or Echinacea to be effective treatment options.
Conclusion: The two most effective remedies of simple analgesics for fever and pain, and honey for cough relief are generally considered safe in children. Decongestants and anti-tussives are not recommended for children under 12 due to potential side effects. The findings in this study were limited by variability in remedy dosage and duration, subjectivity of methods used for outcome measurement and most side effects being extrapolated from adult studies. Further research could be done to determine the specific types of OTC remedies that benefit children the most and for which particular age group.

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PRESCRIBING ANALGESIA: COMMON YET CHALLENGING – A QUALITY IMPROVEMENT PROJECT ASSESSING CONCERNS AND GUIDING CORRECT PRESCRIBING.

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Aim – To reduce prescription errors by identifying challenges associated with prescribing analgesia in Children's Health Ireland (CHI) at Temple Street.

Method – In June 2019, a staff survey was undertaken to assess confidence levels, reference sources used, and challenges faced in prescribing and administering analgesia.
A quality improvement intervention was introduced in July 2019 which included education and the launch of simplified pocket sized Analgesia Prescribing Guidelines to encourage appropriate prescribing.
A baseline point prevalence audit of inpatients was undertaken in June 2019 to establish the accuracy of prescribed analgesia and repeated December 2019 post intervention.

Results – 126 (19 doctors, 107 nurses) participants undertook the survey. 67% reported feeling "extremely or very confident" with prescribing/administering analgesia and 95% reported they were "very likely or likely" to double check dose beforehand. Fear of masking pain, unfamiliarity with agents and concern regarding correct dose/route/drug/form were the main challenges reported. Only 54% of participants felt it appropriate to round doses.
93 analgesia prescriptions were audited at baseline and 95 post intervention. 96% and 93% of prescriptions respectively had correct dose and frequency. The proportion of PR prescriptions with the correct dose improved from 31% to 88%. The percentage of prescriptions with correct route improved from 87% to 95%. The percentage of PRN prescriptions with the maximum daily dose charted remained low pre and post intervention (11% vs 10%).

Conclusion – Analgesics are the prescribed medications most frequently associated with medication errors[1, 2]. Analgesic monographs differ and may recommend age or weight based dosing, doses vary depending on route of administration, this poses enormous challenges to prescribers.
Introducing accessible, simplified analgesia prescribing guidelines reduces errors. Analysis of ease of use in comparison to other reference sources, and surveillance of medication error reports will permit further refinement prior to consideration for inclusion in CHI Paediatric Formulary.

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AUDIT ON ADHERENCE TO THE AMERICAN ACADEMY OF PAEDIATRICS (AAP) CLINICAL GUIDLINE: THE DIAGNOSIS AND MANAGEMENT OF BRONCHIOLITIS

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Aims: In the first year of life approximately 3% of infants with bronchiolitis require hospitalization.[1] Bronchiolitis is a clinical diagnosis, treatment largely supportive.[2] We assessed our adherence to the AAP guideline on diagnosis and management of bronchiolitis which recommends: CXR for unexpected deterioration/ICU admission, supplemental oxygen for saturation <90%, nasogastric tube (NGT) for inability to maintain oral feeding, and discourages use of continuous pulse oximetry (CPO).[2]
Methods: Infants admitted to University Hospital Galway with bronchiolitis December 2019 to January 2020 were retrospectively identified using handover documentation. Pertinent data retrieved from electronic medical record and analysed using SPSS.
Results: Thirty-two patients included; male to female ratio 1:1, median age 24 weeks [range: 1-156]. Median length of stay (LOS), 5 days [range: 2-24]. Fifteen infants had a CXR performed, 6 of 15 (40%) not in line with AAP recommendations; 4 of the 6 were prescribed an antibiotic based on CXR report. Supplemental oxygen prescribed for 29 (90.6%) infants; only 6 (20.7%) met AAP criteria (oxygen saturation <90%). Of those on supplemental oxygen, 14 of 29 (48.3%) were escalated to high flow oxygen (HFO). CPO in 30 infants (93.8%); median LOS 2 days longer when CPO performed. NGT placed in 26 infants (81.3%); in line with guideline recommendation in 23 cases (88.5%).
Conclusion: Three key findings highlighted 1) CXRs should be performed more cautiously due to the associated risk of both unnecessary radiation and antibiotic prescription and 2) the AAP guidance on supplemental oxygen use may need revision given that 48.3% who did not meet guideline indications for use, were escalated to HFO. 3) CPO prolongs hospitalization. The results of the audit were disseminated among key staff with a view to repeat audit during the 21/22 season.

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RE-PYLOROMYOTOMY

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Case presentation

A 7 week old male infant represented to UHK after being discharged from Crumlin where a pyloromyotomy for pyloric stenosis His mother complained of vomiting post feed, associated with weight loss - from 4.89kg to 4.40kg. On physical examination, his vitals were within normal limits and he was moderately dehydrated. The rest of systemic examination was normal.
A Barium meal and follow through was booked and it revealed a narrowing with obstruction within the region of the pylorus likely representing recurrent stenosis.
A re-pyloromyotomy was required and he was Transferred to Crumlin for further surgical care.

Conclusion

Pyloric stenosis is a dynamic diagnosis and is not a static disease process. It is important to inform parents/guardians of red flags, such as vomitus over 5 days and weight loss. The investigation of choice is a barium meal and follow through and Re-pyloromyotomy is Gold standard management.

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SHAPIRO SYNDROME; DYSAUTONOMIA IN GENERAL PAEDIATRIC PRACTICE; A CASE STUDY

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Background and Aim

Dysautonomia is a general term that refers to a range of disorders whose common problem is a dysfunction of the autonomic nervous system[1]. Shapiro Syndrome is a rare neurological disease thought to be caused by hypothalamic dysfunction[2]. Along with hypothermia and hyperhidrosis it shares many other features with dysautonomia, such as gait disturbances, dizziness, fatigue, nausea and vomiting[1,2].
Recent literature describes the neuroinvasion potential in human coronavirus, resulting in the manifestations of neurological symptoms[3-6]. A hospital-based cohort study showed that more than half the patients with COVID-19 develop a minimum of one neurological symptom, with dysautonomia being one of them[7]. Other neurological consequences of COVID-19 infections, such as cerebrovascular events and confusion, have been well described thus far[8], but it is important to consider the atypical presentations, such as dysautonomia.
Our aim is to report an interesting case of a Paediatric patient with dysautomonia due to Shapiro syndrome in an effort to raise awareness of this entity and describe our patient's experience with different management strategies to date.

Methods

Clinical presentation, neurological examination, neuroradiological findings, natural history including treatment and outcome to early adolescence are described.

Results

We present a case of a now 12-year old girl with respiratory and temperature dysregulation since the age of 2. She first presented with episodes of pallor, hypothermia, bradypnoea, and apnoea during sleep and hypotonia. Investigations done at the time, including bloods and metabolic workup, were normal. MRI brain showed the presence of the corpus callosum. A trial of Pizotifen did not improve symptoms. She was subsequently fitted with a Reveal device and apnea monitor. Over the years, she has developed episodes of nocturnal hypothermia, hyperhidrosis, migraines, flushing and tachycardia.

Conclusion

These are an important constellation of symptoms to recognize as recent reports have identified dysautonomia as a manifestation of COVID-19[3,6-8].

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ROLE OF PROPRANOLOL IN THE MANAGEMENT OF COMPLICATED INFANTILE HAEMANGIOMAS

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Introduction:
Infantile haemangiomas are the most common vascular tumours of infancy. They can occur anywhere on the skin, mucous membranes & internal organs, and may vary in size from few millimetres to many centimetres. Although benign & generally self-limiting, some tumours are classified as high-risk as they can cause serious complications, e.g. large, rapidly-growing facial lesions may ulcerate, scar, & thus cause permanent *disfigurement*; lesions in the periorbital or periocular regions may cause *functional impairment*; CNS or spine lesions may cause *developmental anomalies*; deep visceral lesions in airways, liver, or GI tract may even cause *life-threatening complications*.

Method:
A comprehensive search of PubMed & EMBASE from January 2000 to May 2020 was made using 4 search items: infantile haemangiomas, complications, therapy, and propranolol. The search items were combined using the Boolean operator & cross-referenced with each of the treatment modalities found.

Results:
A meta-analysis of 18 RCTs & cohort studies (1265 children between 2 weeks to 9 years of age) evaluated the relative expected clearance rates of haemangiomas with oral propranolol vs oral corticosteroids vs placebo. The results demonstrated that oral propranolol had the largest mean estimate of expected clearance (95 percent, 95% Bayesian credible interval [BCI] 88-99), relative to oral corticosteroids (43 percent, 95% BCI 21-66) and placebo or observation (6 percent, 95% BCI 1-11).

Conclusion:
Oral propranolol (starting dose 0.5 to 1 mg/kg per day and then gradually increased to the target dose of 2 mg/kg per day) is the first-line agent of choice for the treatment of complicated & potentially complicating haemangiomas. The overall results with propranolol are generally promising enough that second-line agents (oral corticosteroids, vincristine, and interferon alfa) are rarely required nowadays. For ulcerated haemangiomas that may cause permanent disfigurement, oral propranolol therapy must be augmented with meticulous wound care and appropriate analgesia.

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CO-AMOXICLAV MONOTHERAPY FOR THE TREATMENT OF UTI IN CHILDREN: IS IT A SUITABLE OPTION WHILE AWAITING SENSITIVITIES?

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Aims

Urine culture may take up to 48 hours so the choice of empiric antibiotic therapy during this time is important. Children's Health Ireland (CHI) guidelines recommend the use of intravenous Co-Amoxiclav and Gentamicin for children <6 months of age and in all systemically unwell children (2). NICE guidelines recommend that for children >3 months old Co-Amoxiclav should only be used in combination with other antibiotics or if sensitivities are available (3). In children with upper UTI, HSE guidelines recommended that the local susceptibility data should be taken into account to guide the treatment where possible and that Co-Amoxiclav or Cefalexin may be used for upper UTIs (4). Therefore, we set out to examine the sensitivity of Co-Amoxiclav in children and adolescent patients with UTIs.

Methods

We examined 212 patients admitted with UTI between January 2018 and December 2019. Children with significant urinary tract abnormalities were excluded.

Results

In this cohort, 120 of 212 patients (56.6%) were female and 186 (87.7%) had E.coli uropathogen. Over half [112 of 212 (52.8%)] experienced UTI due to uropathogens resistant to Co-Amoxiclav. No significant association was observed between the sensitivity to Co-Amoxiclav and the age, gender, LOS, or the presence of recurrent or atypical UTIs ($p>0.05$). There was no statistically significant difference in Co-Amoxiclav sensitivities between children with normal radiological imaging and those with renal tract abnormalities detected on ultrasound scans, MCUG or DMSA. A review of sensitivities to alternative antibiotics demonstrated cephalosporin sensitivity in 94/109 (86.2%), gentamicin sensitivity in 43/50 (86%) and trimethoprim sensitivity in 142/209 patients (67.9%).

Conclusion

In conclusion, over half of children and adolescents with UTI have uropathogens resistant to Co-Amoxiclav. This highlights the importance of following the current guidelines in the management of UTI. Co-Amoxiclav as monotherapy should be considered only in the context of known sensitivities.

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Lower Limb Bruising associated with Montelukast in an Asthmatic Child

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An 11 year old male with asthma presented with a one month history of bruising to the anterior and posterior aspects of his lower limbs. There was no history of recent trauma and he was otherwise well with no history of any preceding viral illness. The patient had never experienced any issues previously and there was no family history of any coagulation disorders.

Examination demonstrated multiple painless ecchymoses covering the anterior and posterior aspects of both lower limbs (see image). There was no bruising elsewhere on the body and no associated lymphadenopathy, organomegaly or pallor.
His asthma was well controlled on regular inhaled corticosteroid and long-acting beta-agonist combination (fluticasone propionate/formoterol) as well as oral montelukast which he had been taking for the preceding 18 months.
Investigations demonstrated a normal haemoglobin, platelet count, prothrombin time and activated partial thromboplastin time. The case was reviewed by the Haematology team and there was no evidence of any haematological cause.
Montelukast was discontinued and within two weeks there was a significant improvement in the appearance of the bruising with resolution of spontaneous lower limb bruising occurring within a month.
Montelukast is a leukotriene receptor antagonist which is licenced for the treatment of asthma and is included in many national and international guidelines (1-3). It is generally well tolerated but has been associated with sleep disturbances. It has previously been associated with the development of bruising in adults (4) as well as the development of EGPA vasculitis. The mechanism leading to bruising is not fully understood but it is hypothesised that it may be related to an imbalance of the circulating leukotrienes leading to impaired platelet function (5).

This case serves to highlight that montelukast can cause lower limb bruising and should be included in the differential diagnosis of children presenting this way.

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RENAL TRACT IMAGING IN CHILDREN POST UTI- TAKING A SECOND LOOK
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Aims
UTIs are common in children and are a frequent cause for admission to hospital (1). Radiologic imaging of the renal tract is important to exclude any structural abnormalities such as vesico-ureteric reflux which may predispose to UTIs. Imaging is also used to identify potential sequelae of infection such as renal scarring. Numerous international guidelines exist and there is significant variation in imaging recommendations (2, 3). The aim of this study was to review the outcomes of children presenting with UTI and see if our data supports any particular imaging guideline.

Methods
A retrospective review of electronic medical records of all children presenting with confirmed UTI over a two-year period was conducted.

Results
220 children were identified. The mean age was 22.91 months and 125 (56.8%) were female. This was the first UTI in 190 (86.4%) and the most commonly identified uropathogen was Ecoli (87.3%). A normal renal ultrasound (RUSS) was seen acutely in 171/220 (87.3%) patients. Follow up DMSA scans were performed in 54 patients and 11/54(20%) were abnormal. Abnormal DMSA was associated with recurrent UTIs (p=0.001), abnormal MCUG (p=0.02) and abnormal RUSS (p=0.02). Approximately18 children had MCUG of which 11 (61%) were abnormal. Abnormal MCUG findings were associated with non-Ecoli uropathogens (p=0.02). Of 12 patients who had both DMSA and MCUG, 9 (75%) had abnormal MCUG and 5 (41.66%) had abnormal DMSA. Moreover, RUSS detected abnormalities in 8 of 9 cases (88.88%) of abnormal MCUG and in all five cases of abnormal DMSA.

Conclusions
The majority of children with first UTI that responds well to treatment will have a normal RUSS. Our findings support that further imagings such as DMSA and/or MCUG shoud be considered according to the availble guidelines. RUSS can identify the majority of children with renal tract structural abnormalities and scarring.

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General Paediatrics

OCCAM'S RAZOR HOLDS TRUE: A CASE OF ACUTE HAEMOLYSIS IN GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY CLOUDED BY THE COVID-19 HAZE

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Aims

To demonstrate the continued need to monitor the basics even in a COVID-19 era.

Methods

Clinical notes and investigations were collated.

Results

A 10 year old Asian boy presented with 1 day history of pyrexia, vomiting and jaundice. He tested COVID-19 positive four weeks prior to admission. He was previously well with no history of jaundice.

On admission, he had a normal haemoglobin (127 g/L), an elevated CRP (165 mg/L), a conjugated hyperbilirubinemia (total/direct bilirubin 229/46 umol/L) and a mildly elevated aspartate aminotransferase (70 U/L). He was treated with piperacillin-tazobactam and ursodeoxylic acid. Abdominal ultrasound showed biliary sludge. The possibility of Multisystem Inflammatory Syndrome in Children was raised. SARS-CoV-2 serology testing and echocardiography were performed.

At 18 hours post admission, his repeat Hb dropped acutely to 69 g/L and LDH was elevated (1428 U/L). Haemoloysis screen was performed. He was DCT negative and reticulocyte count was 139.3 x 10^9/L. His AST and bilirubin normalized by Day 2 of admission. His Hb dropped further to 59 g/L on Day 3 and folic acid was commenced. He remained haemodynamically stable and had no oxygen requirement. Blood transfusion was not clinically indicated. His Hb recovered to 81 g/L by discharge on Day 6. He was diagnosed with G6PD deficiency.

His infectious workup was negative for an extensive panel of viruses. It was retrospectively noted that he ate fava beans in school 4 days prior to admission and took high dose vitamin C. The trigger for haemolysis was likely multifactorial due to recent viral illness, fever, fava bean and vitamin C exposure.

Conclusion

It is important to monitor bloods closely in children with jaundice, and to consider common diagnoses during a time when clinicians are hypervigilant to COVID-19 complications, which include hepatitis[1], cholestasis[2] and autoimmune haemolytic anaemia[3].

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General Paediatrics

RECOGNIZING ACUTE DISSEMINATED ENCEPHALOMYELITIS (ADEM)

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Aim

To report a complex case presentation leading to the diagnosis of Acute Disseminated Encephalomyelitis and its management in a nine-year-old patient.

Methods

We describe the clinical presentation,investigations and outcome to date of our patient.

Results

A nine-year-old boy presented to the Emergency Department with temperature spikes of 40C ongoing for 3 days,lethargy with excessive sleepiness,irritability,phonophobia and sore throat.He had erythematous tonsils,dry cracked lips and lymphadenopathy with negative covid swab on two occasions.On examination,the patient had partial Kerning and Brudzinski sign with brisk reflexes,but no clonus and normal coordination suggestive of an upper motor pathology.Initial management was based on suspected meningoencephalitis with empirical treatment with intravenous ceftriaxone,aciclovir and azithromycin.Investigations included blood tests for autoimmune encephalitic screen,and serology for EBV,CMV,lyme,covid and mycoplasma.Extended viral screen on nasal pharyngeal swab (NPS) was negative.CSF analysis revealed lymphocytic pleocytosis,normal protein and glucose,bacterial and viral PCRs were negative,oligoclonal bands and MOG antibodies results are pending.The initial MRI Brain and spine revealed T2/FLAIR in the basal ganglia thus we considered meningoencephalitis,ADEM and metabolic disorders in our differentials.Given the initial clinical exam findings we proceeded down the treatment path of meningoencephalitis,but on progression the EEG illustrated focal generalized slowly of the posterior temporal regions bilaterally and with asymmetrical weakness in the right leg,shuffling gait and slurred speech the evolving diagnosis was ADEM[2,3].We performed repeat MRI brain illustrating multi-focal infra and supratentorial white matter T2/FLAIR hyperintensities consistent with ADEM.
Intravenous methylprednisolone was added for five days and discharged on a tapering course of prednisolone.The patient will be appropriately followed-up with a repeat MRI in three months[5].

Conclusion

This case marks the importance of a broad differential diagnosis and using evolving clinical presentation to re-scan to identifying the fundamental diagnosis.ADEM is a devastating disease and may have characteristics long-term consequences,thus high index of suspension should be considered in patient not improving[1,4].

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General Paediatrics

PARENTAL ANXIETY WHEN PRESENTING TO THE PAEDIATRIC EMERGENCY DEPARTMENT: A QUESTIONNAIRE BASED STUDY DURING A GLOBAL PANDEMIC.

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Aims
We aimed to qualify anxiety among guardians attending the emergency department (ED) seeking paediatric care. Additionally, we aimed to examine the impact COVID-19 is having on parental anxiety and how they access paediatric healthcare.
Methods
A 30-day, cross-sectional, convenience sample study was conducted during July 2020 at the paediatric ED of University Hospital Galway: a regional hospital with ~ 15,000 paediatric attendances per annum. All guardians accompanying a child to the ED fitting the inclusion and exclusion criteria were invited to participate. A pilot study assisted with standardizing the questionnaire. Parents completed a self-administered questionnaire, the Leeds Self-Assessment of Anxiety General Scale, a Visual Anxiety score, and questions specific to the effect COVID-19 had on their anxiety levels and ability to access care. Consent was provided allowing access to electronic medical records. Galway Research Ethics Committee granted the ethical approval and data were analysed using SPSS26.
Results
In total, 167 guardians were recruited with 10 subsequently excluded from analysis owing to incomplete consent, 129 (82.2%) of participants were the child's mother, with 28 (17.8%) identifying as the father. Fifty participants 31.8%, were between 36-40 years old, while, 41 (26.1%) between 41-45 years old and 35(19.7%) reported to be older than 45 years old, the younger age group less than 35 counted for 31(19.7%).
A small proportion of participants, 25(15.8%) reported pathological levels of anxiety, as measured with pooled Leeds Anxiety score of >6. There was no significant correlation between child's age and Leeds Anxiety levels, r =-0.085, p=0.34 95% CI[-0.09 – 0.26].
Significantly, 30(19.1%) participants reported delaying accessing paediatric care during COVID-19.
Conclusion
Overall there were low levels of anxiety reported, likely a reflection of illness type that presents during summer months. Examining characteristics of anxious parents with a larger sample would be worthwhile. Notably, the pandemic is impacting on delayed presentations to the ED with potential for more severe illness at presentation.

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General Paediatrics

BONE TUMOURS IN GENERAL PAEDIATRIC PRACTICE

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Aims: To report a case series of osteosarcoma.

Methods: A retrospective case series detailing 4 patients with biopsy-confirmed osteosarcoma in the paediatric population at UHL diagnosed between 2017-2019.

Results:

Case 1: 8-year-old female presented with worsening right ankle pain and limp for 4 weeks. A tender, swelling was evident over the right medial malleolus. Imaging revealed a right distal tibial diametaphyseal sclerotic mass, without metastasis. Biopsy confirmed osteosarcoma. Treatment was chemotherapy (EURAMOS-1 protocol) and a right below-knee amputation.

Case 2: 6-year-old female referred to the emergency department by her GP with 2-3 weeks of worsening left leg pain and limp. A hard lump was palpated at the distal left thigh. Imaging demonstrated lucent, sclerotic bone lesions at the distal femoral diaphysis with bone destruction and periosteal reaction. Osteosarcoma was confirmed on biopsy. Treatment consisted of chemotherapy (2 cycles of EURAMOS-1), with subsequent resection of tumour and prosthetic insertion.

Case 3: 14-year-old male athlete presented to his GP with progressive right leg pain. Trauma to the knee 2 months later caused significant pain and swelling. Imaging revealed tibial cortex periosteal reaction and heterogeneous cortical density, with local knee joint involvement. Biopsy confirmed right proximal tibia osteosarcoma. Bilateral pulmonary metastases were identified. Treatment commenced with EURAMOS-1 chemotherapy and a right above knee amputation.

Case 4: 12-year-old male presented with 5 days of swelling below his right knee, associated with limb weakness. Imaging revealed a 12x8 cm nodule in the right proximal tibia. Osteosarcoma was confirmed on biopsy, with pulmonary metastasis identified on imaging. Despite neoadjuvant chemotherapy (EURAMOS-1) and limb-conserving surgery, the neoplasm metastasised to the abdomen and pulmonary vasculature, causing thrombi requiring further surgery. The patient passed away 2 years following diagnosis.

Conclusion: The commonest childhood cancers are leukaemias and brain tumours. In our Paediatric centre, primary bone tumours are the most prevalent childhood cancer after haematopoietic malignancies.

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Display Poster Number 1
Medical/Education Management

CONTINUING MEDICAL EDUCATION DURING A PANDEMIC; ADAPTING TO THE TIMES AND PLANNING FOR THE FUTURE

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Introduction: From March 2020, as a result of WHO and Irish Government restrictions, the way in which Post Graduate Medical Education in Paediatrics was delivered had to be revised promptly and indefinitely.
In the Department of Paediatrics at UHL, a virtual teaching model was adopted using multiple different video platforms.
This study aimed to assess the strengths and weaknesses of this virtual teaching model from the consumer perspective in the aftermath of lockdown with a view to planning our Departmental Post Graduate Teaching Programme for 2020

Methods: A questionnaire (see attached) was circulated among all Paediatric Non –Consultant Doctors (NCHDs) of all grades. This was distributed during the first week of September- traditionally the start of the academic year
The survey included a free-text section to provide general feedback on their feelings towards this teaching model.

Results: A total of 22 of the 29 "Doctors in Training" working in our Department at this time responded to the survey. Of respondents, 45% reported some experience with virtual teaching prior to the COVID-19 pandemic. Advantages of virtual teaching included being able to log on when off site, e.g. on leave, post call (90%); finding the sessions easier to attend while on break (40%); easier to take notes (13%). No advantages to virtual teaching were reported by 9% of NCHDs.
Disadvantages included internet connection problems (90%), finding it harder to participate (77%) and easier to tune out (72%). 81% said their participation levels were reduced compared with face to face.
The majority of NCHDs surveyed (59%) do not favour continuing with either a hybrid or exclusively virtual teaching programme

Conclusion: Overall, trainees prefer the traditional face-to-face teaching model. However, given the ongoing world crisis, it would be pertinent to review the common challenges faced by virtual teaching programmes in order to maximise participation and value of educational sessions.

Display Poster Number 2
Medical/Education Management

MEDICATION PRESCRIPTION AUDIT IN THE PAEDIATRIC WARD IN WEXFORD GENERAL HOSPITAL

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Medication prescription is a very important part of the medical act. One little mistake can have serious consequences.

Our **aim** is to determine the compliance of the paediatric doctors with the local guidelines in prescribing medication.

Methodology We performed a prospective audit from 13/10/2020 to 19/10/2020 in Wexford General Hospital. We reviewed the medication prescription charts of the children admitted during that period of time, looking for the key points in prescribing medications according to the local guidelines.

Results
No of charts reviewed: 16.
Label Addressograph on every written page: 15 (94%)
Admission date recorded: 13 (81%)
Weight on admission: 16 (100%)
Date of the weight measurement: 14 (87%)
Allergy status noted: 10 (62%)
Prescriber's signature on the back of the chart: 75/86 (87%)
Medication dose in correct units (mg): 16 (100%)
Using the generic medication name: 37/48 (77%)
Intravenous fluids correctly charted 4/4 (100%)
Prescribing in capital letter: 17/53 (32%)
Ward noted 5 (31%)
Specified whether the chart is one of a sequence or not 6 (37%)

Conclusions The results showed that there is still place for improvement. We need to pay attention to certain areas like writing allergy or putting our signature in the table allocated from the back of the chart.
local guidelines in prescribing medications

Display Poster Number 3
Medical/Education Management

MANAGEMENT OF PAEDIATRIC ASTHMA IN THE COMMUNITY : A QUALITATIVE ANALYSIS FROM THE PARENTS' PERSPECTIVE

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Introduction

Asthma is the most common chronic disease of childhood yet it can be sub-optimally managed. (1) Ireland has the 4th highest prevalence of asthma in the world and the highest rate of asthma-related hospitalizations in Europe (2), with an estimated hospital burdne of 5000 cases per annum (3). The approach is often individual, with varying levels of success. There is an increasing move towards the provision of asthma care in General Practice.

Aims

To explore asthma management practices amongst parents of primary school aged children with asthma to identify pitfalls and difficulties in management practices.

Methods

Eight semi-structured telephone interviews were carried out on parents of children identified as asthmatic from two Cork GP practice lists, one urban and one rural. Interviews were recorded, transcribed verbatim and analyzed thematically.

Results

Key themes identified from the interviews were: 1) Uncertainty about management of the disease, particularly during exacerbations and the role of medication. 2) Variation and gaps in information, education sources varying, with a heavy reliance on anecdotes, social media and online sources. 3) There was heavy reliance on medication in long term management of asthma, but non-medical intervention seemed of lesser importance. 4) Management of emergency asthma situations provoked, in general, a panicked response. Only one parent had an up to date asthma action plan. 5.) Warning signs and triggers ranged vastly in the children but their parents had the ability to recognize prodromal, often non respiratory signs early. There was an overall lack of confidence amongst parents regarding asthma.

Conclusion

Clearer guidelines and evidence based education are needed to overcome barriers faced in asthma management in the home. Particular focus on education and health literacy sorrounding medication, emergencies, preventive measures in asthma control could improve the lack of confidence in managing the disease .

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Display Poster Number 4
Medical/Education Management

ONLINE NEAR-PEER EDUCATION AS PREPARATION FOR MEMBERSHIP OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND (MRCPI) EXAMINATIONS – A PILOT PROJECT WITH PARTICIPANT FEEDBACK

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Aims:
Our aim is to describe the organisation of a pilot, online near-peer education session for Paediatric trainees sitting their MRCPI part II written examination.

Methods:
Non-Consultant Hospital Doctors (NCHDs) working in Paediatrics in Ireland with recent experience of sitting their MRCPI examinations organised a single-day education session and mock examination for the MRCPI Part II written examination. An online feedback questionnaire was circulated to those participating in the education session after the session and before the examination. Participant baseline characteristics were collected as well as details regarding how trainees prepared for the Part I and Part II written examinations (resources used, where advice was sought etc). Feedback on the education session and interest in potential future education sessions was obtained.

Results:
The session was delivered 2-weeks prior to a sitting of the examination on a weekend in August 2020.

A total of 35 trainees participated in the training with 19 completing the questionnaire (54% response rate), 74% were in Paediatric Basic Specialist Training (BST), 21% were working in stand-alone positions and 5% were on the College of Physician/Surgeons of Pakistan Scholarship scheme (CPSP). Of respondents, 90% noted they received the *best advice* for preparing for examinations from either peers or near peers (Senior House Officer or Registrar colleagues), 85% of respondents rated the educational session as *good* or *excellent* with the remaining 15% rating it *average*. All respondents were either *interested* or *very interested* in both similar near peer online teaching for other RCPI examinations and similar near peer online General Paediatric teaching.

Conclusions:
There is a significant appetite for organised near-peer teaching amongst Paediatric trainees sitting MRCPI examinations in Ireland. We plan to organise online near peer education sessions for trainees that aims to improve their knowledge base, increases their confidence in independently managing common paediatric conditions and improves success in examinations.

Display Poster Number 5
Medical/Education Management

Consultant attitudes to NCHD less-than-full-time (LTFT) training in an Irish paediatric hospital

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Background:
Less-than-full-time (LTFT) training is increasingly popular worldwide (1), but remains in its infancy in Ireland. To further develop LTFT training, the attitudes and concerns of consultants must be considered. The aim of this survey-based research was to ascertain the attitudes of consultants to LTFT training, and to acknowledge potential barriers to LTFT training in Ireland.

Methods:
This study was a prospective cohort questionnaire-based study of all consultants (n=128) working in Children's Health Ireland at Temple Street. A novel 11-item questionnaire survey was developed (2-4). Methods to increase response rates were employed based on research by Jones et al (3).

Results:
The response rate was 35.9% (n=46). 70% were female. 9% had worked LTFT as an NCHD in Ireland, and 51% had worked with a LTFT colleague at some point. All felt that being a mother was an acceptable reason to choose LTFT training, 94% felt that fatherhood was an acceptable reason, and 74.3% felt that no justification was required. Most respondents stated that they would not have a negative percetions of a LTFT NCHD or consultant (82% and 91% respectively). Thematic analysis of the free-text questionnaire items revealed that advantages to the NCHD and team related to work-life balance, burnout, commitment to the job, fatigue, staff numbers, and productivity. Disadvantages for the NCHD and team related to training duration, involvement in clinical and non-clinical activities, career opportunities, perceptions by consultants, continuity of care, roster planning, and workload distribution.

Conclusion:
In conclusion, it is clear that in this Irish tertiary paediatric hospital, consultants have little experience with LTFT training and have some concerns about the implications of this pathway to training. Overall, however, the majority of consultant appear to be open to the expansion of LTFT training in Ireland. Further research is required in this area upon which a pathway of LTFT training can be designed and implemented for NCHDs.

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Display Poster Number 6
Medical/Education Management

DEVELOPING A NOVEL MULTI-DISCIPLINARY IN-SITU SIMULATION EDUCATION PROGRAMME FOR PAEDIATRIC EMERGENCY TRAINING FOR NCHDS, AT UNIVERSITY HOSPITAL GALWAY.

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INTRODUCTION: In the Emergency Department at UHG, we observed that the Paediatric team predominantly managed medical emergencies while our Emergency Medicine colleagues managed only surgical/trauma cases. Therefore, we developed a novel interdisciplinary education programme that utilises in-situ simulation to enhance training in management of Paediatric emergencies by NCHDs.
AIMS: In response to preparing NCHDs for a variety of Paediatric emergency scenarios, our programme aimed to share insights through practice and enhance the simulated education experience; by standardising the approach using a pre-brief/de-brief format, and improving interdisciplinary knowledge, communication and engagement, through preparation, role allocation & pre-briefing for participants.
METHODS: We conducted a series of interdisciplinary, in-situ simulations which involved a multidisciplinary response to a medical/surgical case. The scenarios were written by Specialist Registrars from both teams, with a standardised format/template. We implemented a weekly rota whereby the Paediatric team ran the surgical/trauma based cases and the ED team ran the medical based emergences, with facilitation by SpRs, supervision by both ED and Paediatric Consultants. Participants, who were pre-selected, were privy to scenarios/resources/guidelines beforehand. Considering restrictions, due to COVID19 outbreak, we implemented video sessions to reduce the number of observers present while extending education to the full complement of both faculties.
RESULTS: Based on pre/post-simulation questionnaires, over 70% of participants reported the simulations improved their skillset and they felt more confident in participating in future; 100% now felt better equipped to manage Paediatric Emergencies. Engagement in the video streaming was most encouraging, in an era of social distancing and virtual based education.
CONCLUSION: In conclusion, implementing a novel approach to an innovative and multidisciplinary education programme, through the modality of in-situ simulation, can enhance the learning experience and broaden the knowledge base, of NCHDs. We hope that our experience may be used as foresight by others in developing their own multidisciplinary in-situ programme.

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Display Poster Number 7
Medical/Education Management

CAN I HAVE YOUR NUMBER? A QUALITY IMPROVEMENT INITIATIVE.

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Introduction

Electrocardiograms (ECG) are dreaded by most paediatricians. As the tertiary cardiac referral centre in Ireland, an ECG email review service was implemented in 2014.
In recent years, increasing volumes of inappropriate emails were noted.
The service is provided in addition to existing demands in the department. A single review adds conservatively 15 minutes of additional work.
Concerns emerged that incomplete referrals were resulting in delayed appointments and potential clinical risk.

Methods

Four months of emails, August (A19), September (S19), October (O19) and November (N19) 2019 were reviewed.

Referral emails which were considered inappropriate included: out-patient department (OPD) requests, ECGs lacking clinical details/contact details, parental enquiries and follow up enquiries.

An automated email response was designed outlining the minimum acceptable criteria for review. This was then applied from O19
For O19 referring clinicians received the automated response and an additional email outlining why it was considered inappropriate.
From N19 only the automated email was sent.

Results

The total number of emails fell from 146 (A19) to 114 (N19).
Prior to the initiative 27 % (A19, S19) of emails were appropriate. Following the initiative this has increased to 32% (O19) and 40% (N19).
The number of inappropriate referrals fell from 44%(A19) and 45%(S19) to 40 % (O19) and 37% (N19).
The number of OPD request fell from 27 % (A19) initially to 12 % (N19).
The number of emails with inadequate contact details increased from 19% (A19) to 22% (N19).

Conclusions

The number of appropriate emails increased while overall, the number of inappropriate emails fell, particularly for OPD requests. Appropriate emails require less time to assess and reply, thus reducing staff time allocation.

Inadequate contact details remains a significant issue. We propose editing the automated response to highlight this and re-auditing the email request again following.

Display Poster Number 8
Medical/Education Management

PAEDIATRIC TRAUMA: A FIVE YEAR ANALYSIS OF SEVERE TRAUMATIC INJURY CAUSED BY FALLS GREATER THAN TWO METRES

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Aim

Injury is the leading cause of death and disability in children worldwide[1]. The Trauma Audit and Research Network(TARN) is the UK and Ireland's national model of major trauma and provides data, the injury severity scoring system(ISS) and the predictive model used to progress major trauma. Our aim was to use this data to provide an analysis of severe traumatic injury caused by falls in paediatric trauma in Ireland.

Method

Data was extracted from TARN over a five year period(2015-2019). All falls from height >2m were included.

Results

38 children were identified, 71%(n=27) were male. 74% had severe injuries (ISS>15). Four children had a poor Glasgow Outcome Score (moderate disability n=3, severe disability n=1). The highest incidence of ISS>15 occurred in the 1-5years group(56%), these patients had an overall incidence in the cohort of 71%(n=27). The majority of falls >2m occur at home(67%, n=25).

15 children presented with GCS<12, two had GCS 3. 34.2% of patients were intubated(n=13). The Probability of Survival (Ps) ranged from 46.7 to 99.8(average 94.2, median 98.6). 100% of patients survived until 30 days from time of injury.

Patients who were transported straight from the scene had an average time to presentation 1hr21min(28-192min). Patients transferred from peripheral hospitals(n=29, 76.3%) averaged a time from incident to arrival of 6hr 41min(97min-12hr 35min). 15 patients were admitted to ICU(39.5%) and the average length of stay (LOS) in ICU was 5 days(1–19 days). The average LOS for all patients was 13.5 days(1–52 days).

Conclusion

Ireland does not have a Trauma System or a paediatric Major Trauma Centre(MTC). It is expected that the new children's hospital will become the paediatric MTC, however integration into the adult trauma system and modelling specific for paediatrics is required. Our data provides information that can be used to optimise care of severely injured children in planning for the MTC in 2024.

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1. Trauma Audit and Research Network Annual Report of Severe Injury in Children: 2017-2018, published 2020.

Display Poster Number 9
Medical/Education Management

TRENDS IN PAEDIATRIC MORBIDITY AND MORTALITY AT UNIVERSITY HOSPITAL LIMERICK: A 5 YEAR REVIEW.

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Background: Morbidity and Mortality (M&M) meetings are an important facet of good clinical governance in institutions committed to maintaining and improving the quality of patient care. In 2015, the Department of Paediatrics, UHL established a Paediatric M&M. These meetings were designed to allow structured presentations of complicated Paediatric cases in a multidisciplinary forum, to facilitate open discussion in order to learn from complex cases and to identify areas of improvement. Morbidity is defined as all cases requiring transfer to a tertiary hospital and mortality as all cases who died under Paediatric care.

Aims: Our aim was to review the trends in Paediatric morbidity and mortality in our region across a 5 year period.

Methods: Medical charts and letters were analysed to ascertain the presentation, management and mode of transfer of each patient. Receiving teams in the Tertiary centres were contacted for further information. This data is then presented to the Paediatric Department at quarterly intervals by Paediatric trainees, with discussion on “human factors” and “system failures” when identified. Confidentiality and a “no blame” ethos are two key principles employed when shortcomings are identified.

Results: Each meeting was held on a quarterly basis, with the number of cases discussed ranging from 16-43 cases (mean = 35). The most common receiving specialities included PICU, Neurosurgery and Haematology/Oncology, with fewer transfers to specialties available within UHL. Approximately 1-4 deaths were recorded quarterly (mean = 3). Cases of mortality were predominantly attributed to life-limiting illness, sepsis, progression of illness (e.g. malignancy), with rare cases associated with trauma or sudden infant death syndrome.

Conclusion: An M&M meeting has been established to review complicated cases and deaths at our busy Regional Centre. Our results suggest that findings in relation to morbidity and mortality have remained consistent with no obvious seasonal trends, across a 5 year period.

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Medical/Education Management

Clinicians' and patients' experiences of paediatric telephone clinics during the COVID-19 pandemic

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Telephone clinics(TCs), a first-time initiative, enabled us to provide ongoing paediatric care during COVID-19. Established in adult services, they show promising results. Our aims were to evaluate the patient/parent and doctor experiences of paediatric TCs at TSCUH during COVID-19 and to inform on future improvement efforts.

We conducted a 2-minute telephone questionnaire with 78 randomly-selected respondents who had a TC for their child during a 3-week period in June 2020. 33 patients were from general paediatrics and 45 from specialties (Dermatology, Neurodisability, Neurology, Respiratory, Metabolic). An anonymised survey on clinician experience was performed with 47 clinicians(28 consultants, 19 NCHDs). Doctor training and risk management during TCs were also evaluated. Overall, 79% of parents agreed TCs could be implemented in their child's management. 90% of parents reported good communication and 89% were satisfied with the management and follow-up. Parents listed TCs as efficient and convenient, but their reservations included no physical exam and patient exclusion. Nearly half of clinicians had conducted >30 telephone clinics in three months since March 2020 with 55% finding them easier than face-to-face. 70% of doctors reported having the necessary skills for TCs with 94% agreeing they carry additional risks than face-to-face clinics. Interestingly, only 16% had ever received training for TCs with >65% expressing they would benefit from communication training. Clinicians found TCs efficient, saved on travel, allowed effective triaging and were suitable for follow-up patients. Negatives included their unsuitability for certain specialities, the lack of physical exam and in-person communication cues. 92% of doctors agree TCs have an important role after COVID-19. Our study illustrates that TCs are crucial in delivering future care in paediatrics, especially for follow-up patients and for time/travel efficiency. They provide mutual benefit to the clinician, parent and patients. However, as paediatric telemedicine is evolving and its implementation needs refinement, more work is needed.

MEDICAL EDUCATION DURING THE COVID-19 PANDEMIC: STRATEGIES TO MAXIMISE PAEDIATRIC CLINICAL EDUCATION

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Aims:
The COVID-19 pandemic causes major disruption to medical training worldwide[1] with more virtual learning and less clinical placement. A structured two-week teaching programme for RCSI 4th year medical students was implemented in our paediatric unit, maximizing quality learning while minimizing risk to students and patients.

Methods:
We assigned students to blocks of clinical activities in pods. Students participated in telephone consultations via speakerphone and followed local infection control guidelines (PPE, social distancing, daily temperature checks and symptoms checklist). Two part-time clinical tutors provided support to ensure strict adherence with the measures. Patient contact was limited to 15 minutes if at a distance of <2 metres and no more than four people could gather at the bedside. Large group hand-overs and teaching were changed during their programme to small groups with virtual Zoom support. At the end of the rotation they completed a questionnaire and their logbooks were assessed.

Results:
Two groups of six students participated. All students were satisfied with their induction and teaching schedule, and felt the schedule was adhered to often (n=7) or always (n=4). All students agreed they had adequate exposure to departmental teaching, clinical examination tutorials and independent history-taking. 92% felt they had adequate exposure to ward rounds, virtual clinics, newborn examinations, focused history-taking and case presentations. All students recorded the required ten signed histories and case presentation in their logbooks. They reported high levels of satisfaction and “good exposure to patients” during their rotation.

Conclusions:
This pandemic has presented various barriers to clinical education in paediatrics. Fewer patients are presenting[2], outpatient appointments are replaced by telephone calls and direct patient contact is limited. However, meaningful learning experiences can be facilitated through careful planning. We have demonstrated that it is possible to provide quality clinical education in paediatrics during the COVID-19 pandemic.

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Medical/Education Management

PARTICIPANT EXPERIENCES OF A SIMULATION-BASED PAEDIATRIC SEPSIS COURSE

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Aims

Simulation is an emerging area in medical education, and can be a valuable tool in paediatric training [(1-3)]. In this study I look to evaluate the participant-perceived efficacy of a simulation-based paediatric sepsis course.

Methods

During my time as simulation fellow in Croydon University Hospital, London, I designed and ran a simulation-based paediatric sepsis course. The course ran on three occasions between December 2019 and March 2020, and included four simulation scenarios, a case-based discussion and a skills session on intra-osseous needle insertion. Using the online tool SurveyMonkey, I designed a pre- and post-course questionnaire for participants, seeking to evaluate the participants' experiences and their perceived quality of the course. I collated and analysed the data from these questionnaires

Results

There were 15 participants across three dates, including eight nurses, six doctors and one midwife. All participants completed the pre-course questionnaire. Just 12 participants completed the post-course questionnaire.

Key findings from the data gathered include overall high levels of satisfaction, with the group rating the course as 4.67/5 for helpfulness. The participants rated their level of confidence in recognising paediatric sepsis after participating in the course as 4.25/5, an increase from 2.79/5 prior to the course, and their level of confidence in managing paediatric sepsis as 4.33/5, an increase from 2.71/5. Participants rated their confidence in inserting an intra-osseous needle as 3.33/5, an increase from 1.77/5.

Conclusions

Findings from evaluation of this feedback were generally very positive, suggesting that simulation may be a useful way of improving participants' skills in recognising and managing paediatric sepsis. Limitations include the small numbers involved, incomplete response to the post-course questionnaire, and the subjective nature of this means of evaluation. If I were conducting further studies, I would like to combine the questionnaire with a more objective means of measuring the course's efficacy, such as an assessed task before and after.

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Medical/Education Management

AIRWAY MANAGEMENT PSYCHOMOTOR SKILL IMPROVEMENT. THE ROLE OF IMMERSIVE REALITY

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This is a project done by a team of game design students from Technology University Dublin in conjunction with the paediatric department of St Luke's General hospital.
Aims:

- The purpose of the project was to create a virtual reality game to teach student doctors how to insert a laryngeal mask airway in all potential patients.
- Our goal is to improve on the current teaching methods by creating a fun and repayable experience of performing the procedure in virtual reality.
- We plan to use this current prototype to teach students the procedure.
- Our end goal is to have a portable end product where you only need a headset to play and learn.

Methods:

- The game currently consists of a testing level where the player can learn the controls
- There is a picture puzzle where the player has to put the steps of the procedure in order.
- There is a true or false quiz on the procedure.
- There is also an operating room level where you have to perform the procedure yourself.

Results:

- 3rd year postgraduate medical students from UCD feedback was
    - They enjoyed the game.
    - They understood the controls.
    - They were able to complete all steps.
- National Ambulance Service paramedic students and instructors feedback was:
    - They enjoyed the game.
    - They felt that it inspired more confidence in them.
    - the instructor said that he believed it would help with teaching the steps of the procedure.

Conclusion:
We have been told by people who are both teaching and learning the procedure that our project will improve the current method of teaching, especially with Covid-19 limiting hands on learning.

USING THE WRITTEN PLATORM: AN INNOVATIVE EDUCATION PROGRAMME DURING THE COVID-19 PANDEMIC

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Introduction/Aim

The COVID-19 pandemic has challenged delivery of medical education. While many centres explored videoconference platforms to deliver traditional lecture-based education, two Paediatric Emergency Departments (PED) in Ireland and England adopted a written chatroom-style model on the collaboration hub, Slack. A blended model of synchronous live moderated discussions, collaborative interhospital journal clubs and time-independent asynchronous 'on-the-go' education resources were delivered throughout the week.
Our aim was to develop, deliver and evaluate an innovative interhospital PED education programme of written synchronous and asynchronous education during the COVID19 pandemic.

Methods

To evaluate Slack-based education, staff (CHI at Crumlin, Dublin, Ireland and University Hospitals of Leicester, UK) were asked to complete a survey of Likert-rated questions on how valuable they found Slack-based learning and whether it should continue after the COVID-19 pandemic. Qualitative feedback was also collected.

Results

22 responses were collected. 21 (95%) reported Slack as a valuable education resource, with 22 (100%) wishing to continue using it after the pandemic (figure 2). Qualitative comments were extremely positive and engagement in teaching rose considerably compared to pre-pandemic levels, reflecting the accessibility of this platform.

Conclusion

Slack has proven to be a beneficial and viable method to provide interactive and ongoing education to busy EDs under considerable pressure. In contrast with audiovisual webinars, eliminating the spotlight of the camera and microphone has overcome barriers to participation, encouraging greater active engagement from learners, who report a feeling of safety and belonging. The flexibility to allow conversation threads to explore ideas in depth without distracting from the main session has enriched learning. The permanence of each session and ease in finding resources means learners and educators can reflect back on each session. Slack-based education has become a permanent model of learning that will outlast the COVID-19 pandemic in our departments.

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Medical/Education Management

EVALUATING THE QUALITY OF PAEDIATRIC MEDICAL DISCHARGE PRESCRIPTION COMPLETION IN A REGIONAL PAEDIATRIC CENTRE

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Aim:

While writing discharge prescriptions may be an everyday job as a physician, it is also potentially a fundamental source of medication errors.
In University Hospital Limerick(UHL), each prescription contains 3 pages— Instructions are given as follow: white is the patient's copy, pink is to be filed into patient's chart, and blue is to remain inside the prescription pad.
The aim of this audit is to determine the compliance of doctors in correctly completing discharge prescription process in our Paediatric Department.

Methods:

Retrospective data was obtained from discharge prescription pads in the two paediatrics inpatient wards(Rainbow and Sunshine wards)in UHL from April to June 2020.
Based on the results gathered, we conducted an educational session to reemphasise to doctors the importance of good prescription writing techniques and areas requiring improvements.
A re-audit was performed between July and September 2020 to close the audit loop.

Results:

In total 201 prescriptions were reviewed in the initial audit, and 266 in the re-audit.
Prescriber's name, Irish medical council number and signature were present in 97%, 92% and 99% respectively of the prescriptions initially. In the re-audit, prescriber's name was seen in 98% of the prescriptions, Irish medical council in 98% and prescriber's signature in 99%. Only 90% of the prescriptions for record purposes contained patient's identifiers.
Dates of prescription were documented in 96% of all prescription during the first audit, which declined to 90% in the re-audit. A total of 64% of the pink prescription pages were filed into patient's chart initially, with a slight improvement to 67% in the re-audit.

Conclusion:

Good prescription writing techniques helps to ensure safe medical practice. Our audit highlights some key areas of concern which require physician's attention during prescription writing in our department but overall the compliance with the discharge prescription process by paediatric medical teams is reasonable.

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Medical/Education Management

MANAGEMENT OF KAWASAKI DISEASE IN THE MID-WEST: A THREE-YEAR RETROSPECTIVE AUDIT

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Aims:

Kawasaki Disease (KD), first described by Dr. Tomisaku Kawasaki in 1967, is an acute febrile illness of unknown aetiology, predominantly affecting children under the age of 5. The American Heart Association (AHA) first published its guideline on the diagnosis, treatment and long-term management for KD patients in 2004, with a revised guideline published in 2017. The aim of this study is to audit the management of KD patients in University Hospital Limerick (UHL), as compared to the 2017 guidelines recommended by the AHA.

Methods:

A retrospective audit was performed on all paediatric patients diagnosed with KD between May 2017-June 2020 in UHL. Patients were identified through the HIPE discharge database, as well as patient transfer records.

Results:

There were eight patients identified with KD in our time-frame; showing equal gender distribution, with a mean age of presentation of 27.5 months. All patients received an echocardiogram (ECHO) during the acute phase; two of whom had a repeat scan in the same admission, and one received an ECHO 1-2 weeks following discharge. Patient's coronary arteries were quantitatively assessed based on Z-score. Five patients had a score of 1, two patients had a score of 3, and one patient was not quantified. All patients were treated with intravenous Immunoglobulin (IVIG) and Acetylsalicylic Acid; three patients received a repeat dose of IVIG. Two patients received additional corticosteroid treatment. Five of the eight patients had thromboprophylaxis following their initial treatment. In terms of follow up, three patients have been discharged and five receive regular out-patient review.

Conclusion:

This audit gives an overview of the management of Kawasaki Patients in UHL compared to the standards recommended by the AHA. Findings demonstrate that our practice is largely compliant with the recommendations established in the guideline.

Display Poster Number 1
Neonatal

LESS-INVASIVE SURFACTANT ADMINISTRATION (LISA) IN CAVAN GENERAL HOSPITAL

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Aims
To explore the feasibility of using LISA method in a level 1 (local) neonatal unit to administer surfactant in spontaneously breathing preterm infants on nasal CPAP (NCPAP) with respiratory distress syndrome (RDS).

Methods
Three infants with respiratory distress on NCPAP with a gestational age between 27–32 weeks received exogenous surfactant by two inexperienced and one experienced NCHDs closely supervised by an experienced consultant, using a LISA catheter and Accutronics video laryngoscope.

Results
Pulmonary surfactant was successfully administered quickly (40-60 seconds) to 3 (100%) out of 3 babies in a single first attempt without interruption of the NCPAP. Two out of three babies did not experience any complications in terms of direct trauma, long-term complications, need for intubation or ventilation, intraventricular haemorrhage or retinopathy of prematurity. One baby (a 27-week twin 2) developed Chronic Lung Disease.

Conclusion
Non-invasive NCPAP and surfactant is standard for the treatment of premature infants with RDS (1). Conventional ET intubation interrupts NCPAP and can result in invasive ventilation. LISA in spontaneously breathing infants on NCPAP is an alternative method for surfactant delivery and with video laryngoscopy can be done successfully in a Level 1 neonatal unit, even by inexperienced staff under supervision.

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Display Poster Number 2
Neonatal

Medical treatment for neonatal seizures: a systematic literature review.

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Neonatal seizures are the most common neonatal neurological emergency, and minimizing their effects is a desirable outcome. However, there is not a general consensus on the medical treatment to reduce or minimize neonatal seizures. The most common anti-seizure medication (ASM) currently used is Phenobarbital, although a clear understanding of seizure cessation and side effects of this drug has not been consistently demonstrated in clinical trials. Many other drugs are used as a second option. Our objective is to do a systematic review of the recent literature in the last 10 years of the medications available for effective neonate (birth-23 months) seizure cessation and short and long-term side effects of the medication using randomized controlled trials and controlled trials. A literature review was performed using PubMed, Medline, Embase and Cochrane library from January 1, 2010 to April 2020 to evaluate the effectiveness of ASM options, based on their association with seizure cessation, neurodevelopmental outcomes, and mortality rates on the key words: neonate, seizures, treatment and outcome. Seven randomized control trials and five controlled trials were included. Phenobarbital showed to be the superior ASM option to cause seizure cessation and reduce breakthrough seizures when compared to other ASMs. There is limited evidence to suggest any particular ASM is significantly better regarding long term neurodevelopmental outcomes and mortality rates. More randomized controlled trials need to be carried out to determine the most effective ASM in seizure cessation, short and long-term effects of seizures on neonates.

PULMONARY HAEMORRHAGE IN NEONATES: SYSTEMATIC REVIEW OF MANAGEMENT

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Background and aims: Pulmonary haemorrhage (PH) is an acute catastrophic event with a low incidence yet high mortality rate among neonates. We aimed to systematically review the management of PH.

Methods: A search was carried out of the PubMed, Embase and Cochrane databases according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Data was extracted on study design and size, patient demographics, primary and adjunctive treatment methods, and outcomes of treatment.

Results: Sixteen studies with 385 newborn infants were included, with significant heterogeneity regarding method of treatment. Primary treatment methods included surfactant (5), High Frequency Oscillatory Ventilation (HFOV) (3), epinephrine (3), coagulopathy management (2), intermittent positive pressure ventilation (IPPV), cocaine (1), and tolazoline (1). Adjunctive treatment methods include blood products (5), HFOV (3), increasing positive end expiratory pressure (PEEP) (3), vitamin K (3), surfactant (2), epinephrine (2), vasopressors (3), and the use of inotropes such as dopamine and digoxin (2). All five studies using surfactant as the primary treatment found it to be effective in inducing cessation of PH, improving oxygenation index measures and preventing recurrence and three found no association between surfactant treatment and death or long-term disability. Ventilatory support, epinephrine, tolazoline and management of coagulopathy were also all found to be effective primary treatments for PH.

Conclusions: Effective methods of managing pulmonary haemorrhage in the neonatal period included surfactant, ventilatory support, epinephrine, recombinant factor VIIa, haemocoagulase, endotracheal epinephrine, cocaine and tolazoline. Further understanding of the aetiology of PH will allow future prevention of PH.

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Display Poster Number 4
Neonatal

FOLLOW UP OF PATIENT WITH NEONATAL JAUNDICE AFTER DISCHARGE FROM A MATERNITY HOSPITAL – AUDIT

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Objectives: Jaundice occurs in most newborns. RCPI and AAP guidelines are followed in our hospital regarding the management of neonatal jaundice. As part of the newborn examination, risk assessment is carried out using the Bhutani nomogram to plan post-discharge follow up. The aim of this audit was to review the practice of post discharge follow up for neonatal jaundice.

Methodology: Retrospective chart review of babies followed up for neonatal jaundice after discharge from UMHL between 1st January 2020 and 17th January 2020.

Results: Thirty-eight babies (18% of all newborns) were followed up for jaundice over a 17 days period. During the initial hospital stay after birth, five babies received phototherapy for jaundice, 33 did not. There were a total of 73 post discharge reviews.

In the subgroup with no initial phototherapy, majority of the babies (79%) were in the low intermediate risk zone before discharging from inpatient care. 17 babies (52%) had one follow up visit, but one baby was reviewed seven times. Two babies had extended investigations for prolonged jaundice. The average follow up time was 6 days after birth (range between 4-16 days).

Only one baby required readmission for phototherapy for DCT negative jaundice, this baby already had received phototherapy during the initial hospital stay after birth.

Conclusion: Babies who are in the low and low intermediate risk zone on the Bhutani nomogram can routinely be followed up in the community to reduce hospital visits for the newborn infants and their families. Transcutaneous bilirubinometer in the community would be useful for this purpose. Checking rebound bilirubin in 8-12 hours post phototherapy may be useful as in this cohort 1 out of the 5 babies receiving initial phototherapy required readmission for jaundice.

AAP Clinical Practice Guideline. Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. Paediatrics 2004. RCPI guideline: Term infant with neonatal jaundice on the postnatal ward

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Neonatal

THE IMPACT OF PRELOAD ON LEFT VENTRICULAR THREE-PLANE DEFORMATION MEASUREMENTS IN EXTREMELY PREMATURE INFANTS

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Background: Left Ventricular (LV) deformation measurements using speckle tracking echocardiography (STE) is an emerging modality in premature infants. The impact of increased preload on LV deformation in three planes: longitudinal, circumferential and radial, warrant further study.
Methods: Infants recruited to the PDA RCT (ISRCTN 13281214) and survived to discharge were included with the cohort divided into infants who closed their PDA by Day 8 (Low preload, PDA Closed) and those who maintained ductal patency (high preload, PDA Open). Longitudinal, circumferential and radial strain and systolic strain rate (SRs) were measured at 36 hours, Days 4 & 8 and 36 weeks.
Results: 61 infants were included. The PDA open Group had a lower gestation (26.4 vs. 27.4 weeks, $p<0.01$) with a median PDA exposure of 30 days (vs. 2 days, $p<0.01$), and demonstrated echocardiography evidence of pulmonary overcirculation. There was higher LV longitudinal strain and SRs over the first 3 scans in the PDA Open Group. Circumferential strain was higher over the first 2 scans while circumferential SRs was higher at 36 hours. Radial Strain and SRs were only higher on Day 4.
Conclusion: An increased preload is associated with higher strain and systolic strain rate values in the premature population indicating that preload has a significant effect on deformation measurements in this population across all three planes.

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Neonatal

Time to First Passage of Meconium in Irish Born Healthy Term Infants: A Prospective Study

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Aims
To develop a validated reference for time to first passage of meconium in healthy, term, Irish-born infants and to evaluate associated maternal, perinatal and neonatal factors.
Methods
Prospective study, sample size estimation 700 to allow for estimation of influencing maternal/infant factors. Consenting mothers asked to record the precise time of infant meconium passage. Relevant obstetric and neonatal data obtained from the medical chart. Descriptive statistics were reported for categorical data as frequencies and percentages. Mean(SD) were reported for normally distributed continuous data, median[IQR] were reported for skewed data. Main outcome variable, Time to Meconium Passage, was skewed to the right. Non-parametric tests (Mann Whitney U and Kruskal Wallis) were conducted to examine difference in mean ranks between time of meconium passage and variables related to neonatal and obstetric factors. Spearman correlation computed to assess the relationship between time of meconium passage and variables including birth weight, Apgar scores & duration of labour. SPSS25 used for statistical analyses.
Results
Preliminary results 199 neonates, mean(SD) gestation 39(1.36) weeks. Median[IQR] time to passage of first meconium 5.95[9.33] hours, range 0 to 83; 96% passed meconium within the first 24 hours. 59% vaginal delivery, first feed within the first hour post-delivery, 64% breastmilk, 34% formula and 2% mixed. Difference in mean rank of meconium passage is 1.4 greater for babies born by normal delivery. However, the difference of 1.4 is not statistically significant p=0.869, concluding that the time of meconium passage mean rank and median was higher for normal delivery (100 & 6.3) in comparison to Cesarean section (99.2 & 5.3). Spearman correlation rho-value -0.15 and p=0.039, suggests a significant weak negative relationship between time of meconium passage and birth weight. As birth weight increases time of meconium passage decreases.
Conclusions
Preliminary results indicate a vast majority of Irish born neonates pass meconium in the first 24 hours. Potential differences may exist between birth weight and mode of delivery. Analysis and data collection are ongoing.

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Neonatal

Huddle Up and SAVE ME! Introducing Safety Huddles to NICU; lessons learnt and future directions

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Aims-
Huddles have been shown to improve patient safety. The RCPCH designed a Situation Awareness for Everyone (SAFE) collaborative to assist teams in establishing safety huddles. The Rotunda Hospital sponsored 4 NICU staff to attend monthly SAFE workshops from November 2019-July 2020. Our aims were to establish a culture of daily huddles, emphasise collaboration/collegiality, and improve patient safety through situational awareness.

Methods-
In the workshops, the groups used elements of Systems, Reliability, and Safety Theory to design a huddle script and identify areas for improvement.
The SAVE ME+ script compromises 7 domains- Positive experience in the last 24 hours (+), Staffing, Availability of beds, Ventilation safety, Expected admissions, Medication safety, and Empathy (Staff/Parent concerns).
During the implementation phase, daily huddles were introduced in the NICU from Monday to Friday. Run charts recorded frequency/duration of huddles, and days since last unplanned extubation and extravasation injury.
After six months the team analysed the run charts and issued a staff survey. PDSA cycles were used throughout all phases to adapt the huddles.

Results-
Between 13/01-13/03/20, huddles occurred on average 3/5 days per week. No huddles occurred between 16/03-30/04 due to social distancing. Between 04/05-03/07, huddles resumed with an average of 2/5 days per week. Huddles lasted on average 5 minutes. The longest recorded period without an unplanned extubation was 41 days, and 50 days for extravasation injury. 43 staff members completed the survey; 92% felt huddles improved patient care, and 93% felt more empowered in patient care. Suggested areas for improvement included huddle regularity and involving other departments.

Conclusion-
This initiative highlights the challenges and benefits of introducing safety huddles. The run charts demonstrated initial good uptake but significant fall-off after social restrictions were introduced. Despite this, improvements in staff collaboration and empowerment were noted in the survey. Once regular huddles are established, it will be possible to track changes in patient safety in a more meaningful way.

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Neonatal

COMMUNICU:ADAPTING DOCTOR-PARENT COMMUNICATION DURING COVID-19 RESTRICTIONS IN A TERTIARY NEONATAL UNIT

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Aims:
During the Covid-19 pandemic, our tertiary neonatal unit complied with visiting restrictions. We were cognisant these restrictions had a negative impact on both parent(s) and their neonate. During these short visit bonding with their neonate was prioritised. To develop a documented doctor – parent communication programme (DDPC) aimed at ensuring parents were consistently updated by phone on their neonate's progress, explaining test results, any further planned investigations and discharge planning.

Methods:
All neonates in the NICU at the National Maternity Hospital, Dublin between March 30th and June 7th, 2020 were eligible for inclusion. A Quality Improvement Project (QIP) incorporating the Plan DO Study Act (PDSA) methodology. We asked the doctors to contact the parent(s) to provide a complete medical update. Parent(s) also had the opportunity to ask questions. This was documented in the medical notes. We examined 10 random neonate's notes per day over a 5-day period to ensure compliance

Results:
At baseline, DDPC updates were 0%. Over 2 weeks this increased to 100%. In week 3, DDPC reduced to 78%. A daily update text message reminding staff raised DDPC to 100% in week 4. DPPC was maintained between 95-100% in weeks 5-10.

Conclusion:
We successfully introduced DDPC ensuring parent(s) were kept up to date while being able to focus solely on caring for their neonate during their visits. Parents were aware of their neonate's progress to date, any further investigations planned and the potential for discharge.

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Neonatal

UPTAKE OF THE PERTUSSIS VACCINE IN PREGNANT WOMEN IN THE NATIONAL MATERNITY HOSPITAL

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Aims: To identify the number of women who received the recommended Pertussis vaccine during their pregnancy in the National Maternity Hospital. To identify the number of women who received advice from the National Maternity Hospital during their antenatal visits about getting the vaccine from their GP.

Method: The electronic health record at the National Maternity Hospital was utilised to review patient charts and identify how many women were documented to have received the vaccine from their GP. All inpatients on the post- natal wards were included. The data was collected on two separate days: February 2020 (n=58) and October 2020 (n=67). 125 women were included in the study.

Result: 80 out of 125 women (64%) were documented to have received the Pertussis vaccination. All women (100%) were documented to have received advice at their antenatal clinic about the Pertussis vaccine.

Conclusion: Pertussis is a highly contagious respiratory infection primarily affecting children and is severe in infants less than 3 months of age.[1] In 2019, there were 165 cases of Pertussis in Ireland.[2] The mortality rate of infants less than 6 months is 4%.[1] The Pertussis Vaccine confers 75-90% protection, however the concentration of maternal antibodies is not thought to be sufficiently high to provide passive protection to their infant prior to the scheduled primary vaccinations. Pregnant women in Ireland are offered the vaccine from 16 weeks up to 36 weeks gestation in each pregnancy to protect against Pertussis infection in their infant.[1] Only 64% of the women in this study (n=125) received this vaccine despite 100% of them being advised to do so. The Pertussis vaccine is safe to administer during pregnancy.[3]Going forward, it is prudent to evaluate why only 64% chose to take the vaccine and identify strategies to improve this uptake rate.

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BROKEN NEC: CASE STUDY OF IDIOPATHIC SUPERIOR MESENTERIC VEIN THROMBOSIS IN A PREMATURE NEONATE

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Introduction: Neonates are the pediatric population at highest risk for development of venous thromboembolism, with a reported incidence rate of up to 2.4 per 1,000 live births.[1] Thromboses are most common in the femoral, axillary, and renal veins, in addition to the right atrium. Neonatal superior mesenteric venous thrombosis is a rare diagnosis which can mimic the clinical signs of necrotizing enterocolitis (NEC).

Case

A preterm female infant was born by emergency Caesarean section at 28 weeks' gestational age, weighing 760g. The indication was severe symmetrical intrauterine growth restriction and absent end diastolic flow. Her mother was an Irish 23-year-old primigravida, with a background of severe depression and smoking. APGAR scores were 5, 8 and 8. The neonate required continuous positive airway pressure (CPAP) from birth and one dose of artificial surfactant on Day 1. She initially required an umbilical arterial catheter (UAC) and umbilical venous catheter (UVC), which was later replaced by a Peripherally Inserted Central Catheter (PICC).

From Day 3 onwards, the infant displayed poor feed tolerance, associated with recurrent abdominal distension. She developed recurrent bilious gastric aspirates and vomiting. Enteral feed advancement was unsuccessful. Necrotising enterocolitis (NEC) was suspected and enteral feeds were held on multiple occasions. On Day 35, the abdomen appeared tense and shiny with dilated veins. Plain film abdominal x-rays revealed bowel distension. However they did not identify other radiological features of NEC or perforation, such as pneumatosis intestinalis or pneumoperitoneum. Coagulation screens were normal, following a haematology consult.

On Day 36, the infant's clinical condition rapidly deteriorated. She developed a grossly distended abdomen, associated with increased oxygen requirement and desaturations. She required ventilation, inotropic support and broad spectrum antibiotics. Due to haemodynamic instability, she remained unsafe for transfer to a tertiary centre.

On Day 37, she continued to deteriorate, displaying a poor response to treatment and supportive measures. Following discussion with her parents, ventilatory support was withdrawn and she passed away. Subsequent postmortem examination revealed idiopathic superior mesenteric vein thrombosis.

Discussion: Superior mesenteric vein thrombosis causes chronic, recurrent and progressive devitalisation of the small bowel wall. It is associated with pre-terminal neutropaenic sepsis and peritonitis.[2] It may be caused by an unidentified congenital thrombophilia.[3] However, no thrombophilia was identified in this patient or either parent.

Intravascular catheters are a major risk factor for neonatal venous thromboembolism. Other risks include prematurity, neonatal asphyxia, congenital heart disease, sepsis and maternal diabetes.[4]

A differential diagnosis for neonatal abdominal distension and bilious vomiting includes necrotising enterocolitis (NEC), intestinal malrotation and volvulus.[5]

Conclusion: In refractory cases of suspected NEC, venous thromboembolism should be considered. Abdominal x-ray findings are usually non-specific. However it can be a useful investigation to exclude bowel perforation or severe necrotizing enterocolitis. More specific investigations include Doppler ultrasound and CT angiography.[6]

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Clamping My Style: Case series of recurrent neonatal blood transfusions associated with immediate cord clamping

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Introduction: Delayed cord clamping offers a range of health benefits to neonates. Guidelines recommended delayed clamping even in preterm neonates, provided they are born vigorous and crying.[1] It is associated with increased haemoglobin, preventing neonatal anaemia.[2] Failure to delay cord clamping may necessitate recurrent neonatal blood transfusions.[3] Delayed cord clamping reduces the risk of parenteral nutrition associated liver disease, necrotising enterocolitis, and intra-ventricular haemmorhage.[4]

Case Series

Three extremely premature neonates were born at our hospital. All three were vigorous and crying at birth. However, the umbilical cord was immediately clamped at each delivery. The infants progressed to develop an array of morbidities.

The first infant was a male born by spontaneous vaginal delivery (SVD) at 23+4 weeks, weighing 630g. A maternal antepartum haemmorhage triggered premature labour. Mum received one dose of antenatal steroids and magnesium sulphate. APGAR scores were 6, 7 and 8. He required intermittent positive pressure ventilation (IPPV) at birth and was intubated at 30 minutes of life. He required five red cell transfusions during his neonatal admission. The initial transfusion was on Day 5 for anaemia of prematurity, haemoglobin (Hb) 11.1g/dL. He developed necrotizing enterocolitis, managed medically. He had two episodes of suspected late-onset sepsis. Cranial ultrasound revealed a left-sided Grade 3 intraventricular haemorrhage, with dilatation of the lateral ventricles.

The second neonate was born by SVD at 26 weeks. She cried spontaneously and was vigorous at birth. APGAR scores were 8 and 9. She required IPPV at birth. On Day 11, she required a red cell transfusion for anaemia, Hb 10.8. She required two further three red cell transfusions during her NICU admission. She developed parenteral nutrition associated liver disease. This was characterised by a persistent elevated direct bilirubin. On Day 14, she developed Klebsiella pneumonia.

The third baby was a female born by emergency Caesarean section at 27+6 weeks, weighing 670g. Mum had pre-eclampsia and reversed end-diastolic flow. She had received one dose of antenatal corticosteroids. APGAR scores were 8, 9 and 9. She only required continuous positive airway pressure (CPAP) at birth. The neonate developed anaemia of prematurity, as her haemoglobin dropped to 11.2g/dL on Day 6. She required four red cell transfusions over six weeks.

Discussion: Non-adherence to delayed cord clamping may cause chronic anaemia in preterm neonates. Multiple transfusions compound the risk of acute transfusion-related reactions. These include fever, haemolysis and anaphylaxis.

Transfusions are an independent risk factor for parenteral nutrition associated liver disease. Transfusions also have an immunosuppressive effect, increasing the risk of pneumonia and late onset neonatal sepsis. Transfusion-related alloantibodies increase the lifelong risk of organ transplant rejection.

Delayed cord clamping is associated with a decreased risk of intraventricular haemorrhage. Among four-year-old children, it is correlated with improved fine motor and social development.

Conclusion: Blood transfusions in preterm neonates should be avoided where possible. Delayed cord clamping provides a practical, non-invasive method to prevent neonatal anaemia and transfusions. Clinical knowledge and communication between neonatal and obstetric teams is fundamental to optimising patient care.

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Neonatal

Crazy Taxy: Case report of Heterotaxy Syndrome with Polysplenia

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Introduction

Heterotaxy syndrome is a rare congenital defect. Its incidence is approximately 1 in 10,000 live births. It affects the anatomical position and function of visceral organs. Its clinical signs and symptoms are highly variable.[1] Antenatal and postnatal investigations and management should be tailored to each individual.

Case

A female infant was born at 39+3 weeks' gestation by elective Caesarean section, weighing 3.62kg. APGAR scores were 9 at 1 minute and 10 at 5 minutes. She did not require neonatal resuscitation. She was admitted to NICU for further investigations.

Mum was a 34-year-old Irish primigravida, with ulcerative colitis in remission. Antenatal ultrasound at 13 weeks' gestation suggested total situs inversus. At 21 weeks, ultrasound revealed a midline liver and a right-sided stomach. Antenatal foetal echocardiogram visualised an azygous continuation of the inferior vena cava (IVC) and possible left atrial isomerisation.

Postnatal abdominal ultrasound confirmed a midline liver and gallbladder. The stomach and multiple splenules were visualised in the right upper quadrant. An upper GI contrast excluded intestinal malrotation. A blood film identified Howell Jolly bodies, indicating functional hyposplenia. ECG showed normal sinus rhythm with no heart block. Echocardiogram displayed a small VSD, an azygous continuous of the IVC, but no left atrial isomerisation. Genetic micro-array detected no abnormalities. Lymphocyte count was normal.
The infant was initially kept NPO, pending investigations. Enteral feeds were introduced on Day of Life Two. Phenoxymethylpenicillin prophylaxis was prescribed indefinitely because of functional hyposplenia. The patient was discharged on Day Eight. Outpatient follow-up is planned with Neonatology, Cardiology and Immunology.

Discussion: Situs inversus is genetically heterogenous, with variable inheritance patterns. A differential diagnosis should include Heterotaxy Syndrome and Kartagener's Syndrome (primary ciliary dyskinesia).[2] Antenatal echocardiogram identifies potentially life-threatening cardiac anomalies. Some neonates may require pacemaker insertion for congenital heart block.[3] Serial antenatal ultrasound is recommended to exclude hydrops fetalis.

Abdominal ultrasound and blood film are essential to assess splenic function. Asplenia or polysplenia poses a higher risk from encapsulated organisms, such as *Streptococcal pneumoniae*. Lifelong phenoxymethylpenicillin and five-yearly pneumococcal vaccination is necessary to prevent sepsis or meningitis.[4]

Conclusion: Heterotaxy Syndrome is rare, complex congenital disorder. Antenatal investigations are essential to determine foetal viability and inform neonatal management. Antenatal counselling should be performed, outlining a postnatal management plan. A multidisciplinary team approach is recommended postnatally. Neonates may require long-term subspecialty follow-up.

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Neonatal

A BENCH-TOP COMPARISON OF THERMOMETERS USED IN NEWBORN INFANTS

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Objective: We wished to determine the accuracy of thermometers used to measure temperature in newborn infants.

Method: We measured the temperature of a waterbath [Lauda Aqualine AL5] with 3 types of thermometer [Microlife MT-1931 (MT), Welch Allyn SureTemp Plus 692 (WA), Phillips Intellivue 9Fr rectal probe (PHIL)] at 0.5^{o}C increments between 32.5 – 38.5^{o}C. Values measured were compared to a control [Brannon, LO-Tox liquid filled thermometer]. We recorded the time to display steady state temperature.

Results: MT most closely approximated the control temperature [mean (SD) difference <0.1 (<0.1) ^{o}C] and displayed a reading at mean (SD) time of 29 (2) seconds. Used in "predictive" (default) mode, WA differed from the control by a mean (SD) of 0.6 (0.3) ^{o}C, displaying a temperature in 15 (3) seconds. This device consistently overestimated temperature. In "continuous" mode, the mean (SD) difference was <0.1 (<0.1) ^{o}C at 5 minutes. PHIL differed from the control by mean (SD) 0.4 (0.2) ^{o}C, and consistently underestimated temperature.

Conclusion: Thermometers that are commonly used to measure temperature in newborn infants may underestimate hypothermia. A prospective study in newborn infants is needed.

A PROSPECTIVE IN VIVO COMPARISON OF THERMOMETERS USED IN NEWLY BORN VERY PRETERM INFANTS

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Background:
Hypothermia is an independent risk factor for mortality in preterm infants. 89% of level 2 and 3 neonatal units in Ireland record the admission temperature of very preterm infants at the axilla with a Welch Allyn SureTemp (WA) thermometer. We compared the temperature measured in very preterm infants with 2 thermometers, at different sites.

Methods:
We measured the temperature of infants < 32 weeks' gestation on admission to the neonatal intensive care unit (NICU). We measured rectal temperature with the Microlife MT-1931 (MT) thermometer (MT-R). We also measured axillary temperature with MT (MT-A), and with Welch Allyn SureTemp Plus 692 in "predictive" (default) (WAP-A) and "continuous" (WAC-A) modes.

Results:
We studied 54 infants [mean (SD) GA 30 (3) weeks]. The number and proportion of infants identified as hypothermic on NICU admission differed according to device, mode and site of measurement [MT-R – 29 (54%), MT-A – 30 (59%), WAP-A – 3 (6%), WAC-A – 24 (55%)]. WAP-A readings over-estimated MT-R by ≥0.5°C on 37/53 (70%) occasions. MT- A and WAC-A differed from MT-R by ≥0.5°C on 14/51 (28%) and 12/44 (28%) occasions respectively, with both devices under- and over-estimating temperature equally. Correlation between device, mode and site compared to the gold standard (MT-R) was poor.

Conclusion:
The temperature measured in very preterm infants differs according to the thermometer used and the site of temperature measurement. The Welch Allyn Suretemp, used in default mode at the axilla (WAP-A), may not be suitable for detecting hypothermia in this population.

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A PROSPECTIVE STUDY OF CORE TEMPERATURE FROM DELIVERY TO NICU ADMISSION IN NEWLY BORN VERY PRETERM INFANTS

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Background:
Hypothermia is an independent risk factor for mortality in very preterm infants.[1] In 2015, the Neonatal Task Force of the International Liaison Committee on Resuscitation (ILCOR) recommended waiting at least 1 minute after birth before cord clamping (CC) in uncompromised preterm infants.[2] At our tertiary maternity hospital we aim for cord clamping ≥60 seconds. The effect of this change in practice on the temperature of very preterm infants has not been quantified. We aim to describe change in infant temperature from the shortly after birth to NICU admission.

Methods:
We measured the temperature of infants < 32 weeks' gestation at 3 time points: T1 – on arrival to the resuscitation trolley in the delivery room (DR); T2- before leaving the DR; and T3 – on admission to the neonatal intensive care unit (NICU). We measured rectal temperature on each occasion with the Microlife MT-1931 (MT) thermometer (MT-R).

Results:
We studied 54 infants [mean (SD) GA 30 (3) weeks]. The mean (SD) rectal temperature fell with time [T1 – 36.8 (0.7)°C, T2 – 36.6 (0.7)°C, T3 – 36.4 (0.8)°C], while the proportion of infants with hypothermia (rectal temperature < 36.5°C) increased over time (T1 – 27%, T2 – 37%, T3 – 54%). Infants placed in a polyethylene bag (PB) before the cord was clamped had a higher admission temperature than those placed in a PB afterwards [mean (SD) 37.2 (0.9)^{o}C versus 36.2 (0.7)^{o}C].

Conclusion:
The rate of hypothermia in very preterm infants' has increased at this hospital since 2013 (6% vs 54%). Infants that were placed in a PB before the cord was clamped had a higher mean admission temperature compared to those that were not. A randomised trial examining the effect of applying warming adjuncts before CC on temperature is warranted.

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Display Poster Number 16
Neonatal

A REVIEW OF PLATELET TRANSFUSIONS PRESCRIBED TO NEONATES ADMITTED TO NICU IN 2019

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Aims

Platelet transfusion is commonly carried out in thrombocytopaenic infants to prevent bleeding. The PlaNeT-2 trial supports a threshold of $25x10^9$/L to guide administration of platelets. Policy in our hospital dictates that platelet transfusions are absolutely indicated at a platelet count of $\leq 25x10^9$/L or 25-50 $x10^9$/L under consultant guidance. We aim to assess adherence to local transfusion guidelines and best available evidence.

Methods

Records of all neonates admitted to NICU who received platelets in 2019 were retrospectively reviewed. Pre and post transfusion platelet counts were recorded, along with any significant bleeding events and the presence of sepsis, NEC or IVH.

Results

21 infants received platelet transfusions in 2019, with 11 receiving multiple transfusion. This represents a total of 57 transfusions; 68% were issued in the setting of a platelet count of 25 $x10^9$/L or less, 16% to those with platelet counts between 25-50 $x10^9$/L and 5% were prescribed to those with a platelet count of $50x10^9$/L or higher. 22 transfusions were part of multiple transfusions administered to correct persistent thrombocytopaenia. 1 infant had Neonatal autoimmune thrombocytopaenia. 9 infants had an IVH, of which 2 were identified following transfusion. 9 infants had NEC, with 1 case identified post transfusion. 14 infants had blood culture positive sepsis, 3 of which were identified after a transfusion. 6 infants experienced significant bleeding events other than IVH. Of those with a platelet count greater than 25 $x10^9$/L, 4 had IVH or other documented bleeding events.

Conclusion

Recent evidence favours an absolute threshold of 25 $x10^9$/L as an indication for platelet transfusion. Our centre adhered to transfusion guidelines in two-thirds of cases, with the remainder being transfused at levels above the absolute threshold, with a small minority receiving transfusion above $50x10^9$/L. Going forward, we should ensure closer adherence to the latest evidence, and perform re-audit on an annual basis.

Display Poster Number 17
Neonatal

Palliative Care Within Neonatology - Staff Perspectives in a Tertiary Unit

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Aims

Neonatal Palliative care (NPC) is a growing clinical subspecialty. This study discusses the knowledge and attitudes amongst doctors regarding the provision of NPC in a tertiary neonatal unit. Specifically, their experience and training to date, their confidence in the clinical NPC delivery and the perceived boundaries to the provision of quality NPC.

Methods

An anonymous survey of paediatric doctors (n=25) working in the Rotunda in October 2019 consisting of 18 NCHD's and 7 consultants was performed.

Results

Fifty-six percent of NCHDs had experience of providing care for patients with life limiting conditions and 44% (n=8) of NCHD's reported feeling comfortable providing NPC. Thirty-three percent (n=6) of NCHD's and 86% (n=6) of consultants had received specific training in palliative care.

Seventy-eight percent of NCHD's reported communication with parents as challenging. For consultants the biggest perceived challenge was management of nutrition & hydration (57%). When asked about the prescribing of pain medications & sedation 39% (n=7) of NCHDs and 86% (n=6) of consultants stated that they felt confident.

The main perceived barriers to providing quality NPC were training & education (28%), communication deficits (28%) and hospital infrastructure (44%), specifically, doctor to patient ratios and suitable spaces to provide care and family privacy. Only 1 responder, a consultant, considered the current training approach sufficient. Notably, only 14% of consultants felt that trainees received enough support and opportunities for debriefing.

Conclusion

Our results highlight that NCHDs are not fully comfortable in NPC situations. We demonstrated that NCHDs wish to receive more NPC training to ensure readiness to handle such momentous and difficult situations in a caring and sensitive manner. This may be achieved by including NPC education in hospital induction programs, attendance of NCHD's at palliative care team meetings and the development of a specific BST & HST NPC curriculum.

Display Poster Number 18
Neonatal

Shining the light on the postnatal Transcutaneous Bilirubin clinic – less is more

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Introduction: 60% of term and 80% of pre term infants develop jaundice within the first week of life (1). Untreated very high bilirubin levels can have devastating neuro-developmental sequelae. Transcutaneous Bilirubinometers (TcB) are a reliable non-invasive method of predicting total serum bilirubin in newborns.(2). The Bhutani nomogram has shown to reduce the incidence of severe hyperbilirubinemia in term infants (3).
The aim of the study was 2 fold:
(1) to review and restructure the existing Senior House Officer (SHO) led TcB clinic and
(2) to reduce unnecessary visits into the hospital in the current pandemic

Methods:
A retrospective chart review was carried out of patients called back to the SHO led TcB clinic over a 7 day period in October 2020. Data was collated looking at gestational age, mode of feeding, birth weight, Bhutani nomogram risk group, TcB, Serum bilirubin level, treatment received and outcome.

Results:
19 infants were recalled to TcB clinic: 9 were male and 10 were female. Mean gestational age was 38+4 day. Mean birth weight was 3.376Kg. Mean day of life at discharge was 2.4 days. 14/19 (73.6%) were Low Intermediate Risk (LIR).5/19 (26.3%) were High Intermediate Risk (HIR); 2 infants were DCT +ve and received phototherapy prior to discharge home.The 5 HIR infants had serial TcB in clinic until levels normalised and never required further phototherapy. Of the LIR group 11/14 brought back to the clinic, none needed phlebotomy or phototherapy. Of note, all 19 infants had at least one risk factor for hyperbilirubinemia.

Discussion:
TcB at discharge helped identify 5 babies in the HIR group who warranted further investigation. None of the babies initially identified in the LIR group required intervention at any stage, yet accounted for 17 representations to the hospital. Further rationalising of infants with a LIR TcB for jaundice could reduce unnecessary hospital visits.

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AN UNUSUAL CASE OF AN EROSIVE CUTANEOUS LESION OVER THE SPINAL REGION OF A TERM NEONATE.

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Aims: To report a case of an unusual erosive cutaneous lesion over the spinal region of an otherwise well neonate.

Methods: We describe the clinical presentation, investigations, management and possible differentials.

Results: We present a term baby girl with a lesion over her spinal region noted at birth. The antenatal history revealed maternal gestational diabetes mellitus requiring insulin. Maternal history was relevant for hyperthyroidism managed with Neo-Mercazole (Carbimazole). Maternal thyroid function tests (TFTs) were normal in the antenatal period. Thyroid stimulating hormone (TSH) receptor antibodies were positive. There was no other relevant family history. A vigorous term baby girl was born via vaginal delivery following induction with no associated trauma or septic risk factors. A well-circumscribed erosive deficit in the skin was noted over the lower thoracic/upper lumbar spinal region measuring 3 x 1.5cm in diameter. No exudate or hair tuft was present. There were no other cutaneous findings. Examination was otherwise normal. The tissue viability team reviewed and managed the lesion with silicone foam dressing. Cranial and spinal ultrasound scans were normal. A working diagnosis of aplasia cutis congenita (ACC) was made. ACC is the congenital absence of skin most commonly affecting the scalp but can affect any body part[1]. It has been associated with maternal Carbimazole use in pregnancy [2]. Follow up over a two-month period revealed healing of the lesion. The patient subsequently developed a haemangioma at her left lower eyelid at 6 weeks old and was referred to the haemangioma clinic. This raised the possibility that the spinal lesion was a haemangioma that developed in utero and regressed.

Conclusion: We describe an unusual erosive cutaneous lesion over the spinal region of an otherwise well neonate. Differential diagnoses include a less common presentation of ACC and a regressed haemangioma.

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Lithium use in pregnancy: what do we know about Toxicity and Neonatal Abstinence Syndrome (NAS)?

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Introduction: Lithium use is discouraged in pregnancy due to its risk of teratogenicity. Its usage is required for some women and needs careful monitoring. Studies have shown that lithium is used in as few as 0.01% of pregnancies**Invalid source specified.** leading to a deficit in knowledge about toxicity and withdrawal for these babies.
Recent research reports that the incidence on congenital defects associated with lithium is lower than previously thought. This may lead to increased use as seen in The Netherlands where lithium is a first line treatment for management of bipolar disorder in pregnancy**Invalid source specified.**.
Maternal lithium use during pregnancy also has the potential to cause toxicity and possible neonatal abstinence syndrome (NAS).
Aims: To determine the current knowledge and management for lithium toxicity and NAS.
Methods: We performed a literature review of lithium use in pregnancy to determine the knowledge base and practices for managing toxicity and NAS.
Results: There is limited literature on this topic. The serum half-life of lithium in babies is prolonged, averaging 68-96 hours (adult value: 10-20 hours)**Invalid source specified.**. Neonates are at high risk of toxicity due to the fluctuating metabolism of lithium during pregnancy. Neonatal toxicity is reported to be dose-related **Invalid source specified.** and persisting up to 1-2 weeks after birth, however there is no reported maternal or foetal level that is associated with toxicity**Invalid source specified.**.
Babies are potentially at risk of NAS. This is not reported in the literature and no pharmaceutical treatment has been identified for treating withdrawal symptoms if this occurs. Studies have shown that babies exposed to lithium have higher incidence of re-admission to hospital within 4 weeks of birth. This could relate to NAS**Invalid source specified.**.
Discussions: Further research is required. We need to identify modes of risk-stratifying which babies are at risk of toxicity and NAS and devise treatment guidelines.

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AN AUDIT OF ADHERENCE TO LOCAL PRESCRIBING GUIDELINES FOR CEFOTAXIME USE IN A TERTIARY NEONATAL UNIT

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Aims

Cefotaxime is a third-generation cephalosporin with broad spectrum activity against gram positive and gram negative aerobic and anaerobic bacteria[1].
Indications for use in our unit are:
1. neonatal meningitis/sepsis caused by gram negative organisms
2. Empiric treatment of early onset sepsis if gram negative meningitis is suspected
3. Severe conjunctivitis [2]
Aims of our audit were to review over an 18 month period, cefotaxime use in our neonatal unit and assess compliance with local prescribing guidelines.

Methods

We accessed K2 data for neonates who received cefotaxime from January 2019 to June 2020. We then conducted a retrospective chart analysis, collecting data on the indication for use and the demographics of patients. We correlated this with lab evidence of positive microbiology and sensitivities.

Results

We reviewed 41 charts including 45 incidences of cefotaxime use. Patients spanned a wide range of gestational ages: 15 (36.6%) <30 wks, 11 (26.8%) 30-36 wks and 14 (24.1%) >37 wks.
In majority of cases (73%) cefotaxime was commenced within the first week of life, 24.4% on DOL 1.
Duration of treatment was between 1-28 days with an average of 5 days.
3 (6.6%) patients received cefotaxime monotherapy at commencement while 42(93.3%) received a combination of other antimicrobials, most commonly gentamicin (77.7%), benzylpenicillin (57.7%), vancomycin (22.2%) and acyclovir (13.3%).
Only 22 (48.8%) cases of cefotaxime use had an indication consistent with local antimicrobial guidelines.
In 23 (51.1%) cases cefotaxime use was outside of guidelines. Noted examples included late onset sepsis, respiratory pathology and bowel pathology. These patients were often very unwell and on multiple antimicrobials as per consultant decision.
Lab sensitivity to cefotaxime was available in 11 (24.4%) cases with E Coli most commonly isolated.

Conclusions

Cefotaxime prescribing in the neonatal unit must be carefully monitored to ensure compliance with local guidelines and promote appropriate antimicrobial stewardship. Our audit shows frequent deviations from guidelines in clinical practice.

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Display Poster Number 22
Neonatal

NEONATAL SEIZURES CURRENT AND FUTURE TREATMENT OPTIONS – A NATIONAL QUALITY IMPROVEMENT SURVEY IN THE REPUBLIC OF IRELAND

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Introduction: Seizures are the most common neurological manifestation in the neonatal period. Phenobarbitone (PB) has remained the first-line medication for decades. New research has highlighted concerns regarding long-term cognitive and motor impairment associated with its use. Comparatively, Levetiracetam (LEV) is a second-generation anti-epileptic drug increasingly used in clinical practice. Thus far no studies have identified negative long-term side effects.

Aims: To determine the current scope of national practice and preferences regarding treatment of neonatal seizures. We hypothesize that significant variability exists between preferences for first and second-line medications.
Results of this study together with the literature review of the most recent evidence will guide the development of national guidelines for treatment of neonatal seizures to provide the best quality of care that is standard nation-wide.

Methodology: We developed a survey of current practice and preference which was distributed via e-mail to clinicians involved in the care of neonates diagnosed with seizures. Clinicians included were Neonatologists, Neurologists and General Paediatricians from all levels of care in the Republic of Ireland.

Results: A total of 100 surveys were distributed and 40 responses were received (40%). 92.5% (n=37) of the responders uses PB as first-line treatment while only 7.5% (n=3) prefer LEV as first-line treatment. Regarding the proposed first-line emergency drug in the developing guidelines majority answered PB (45%, n=18) while LEV was proposed by a minority group (17.5%, n=7).

Conclusion: As observed, PB is the first-line drug and the preferred method for ongoing treatment of neonatal seizures. However, there is rising preference for the use of LEV as second-line drug and also as maintenance treatment.

After analysis of this study and extensive literature review, it is this group's opinion that PB should remain the medication of choice to treat neonatal seizures and this will reflect in the upcoming guidelines.

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A FATAL CASE OF CONGENITAL VARICELLA SYNDROME WITH POSTNATAL REACTIVATION OF VARICELLA ZOSTER VIRUS.

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Aims:
We are highlighting a very rare case of Congenital varicella syndrome (CVS). CVS is caused by a highly contagious herpes virus, occurring in ~1-5 per 10,000 pregnancies[1]. It is linked to primary maternal varicella zoster infection in the first twenty weeks of pregnancy. Signs and symptoms vary with the stage of fetal development[2].

Methods:
A male neonate born at 32+5 weeks with normal Apgar scores, had growth restriction (weight 1.5kg (<0.4th centile), head circumference 28.6cm (9th centile)). Primary maternal varicella infection occurred in the second trimester; however, this was not disclosed and routine maternal varicella serology is not checked in our hospital. Signs at birth included: microcephaly, microphthalmia and subtle indurated, erythematous areas on the extremities.

Results:
He required intubation on day 1 with unsuccessful attempts to wean. Subsequently neutropenic sepsis and coagulopathy developed within the neonatal period. His chest x-ray revealed bilateral pneumonitis. Initial investigations did not reveal a source. Due to the severity of sepsis of uncertain aetiology, whole blood and bronchial washings for viral PCR studies were sent on day 12. Diagnosis of postnatal reactivation of CVS was confirmed with positive real-time PCR (rt-PCR) result in serum, CSF and respiratory secretions for Varicella Zoster virus (VZV) DNA. Further images identified cerebral abnormalities, ventriculomegaly, seizures, chorioretinitis and hepatic calcifications. Contact tracing of other infants and identifying those requiring VZV immunoglobulin prophylaxis was conducted. Despite three weeks of intravenous acyclovir, VZV persisted in the CSF. With an extremely poor prognosis, care was withdrawn and sadly our patient died on day 43 of life.

Conclusions:
This case highlights the importance of VZV vaccination for sero-negative women of childbearing age. A safe and effective vaccine could eliminate this life-threatening condition[3]. Also, viral aetiologies should be considered in a critically ill neonate[4]. Palliative care measures require a collaborative team effort to ensure parents are fully involved with this journey.

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REVIEW OF THE NEONATAL MANAGEMENT OF BABIES BORN TO MOTHERS WITH HEPATITIS B POSITIVE SEROLOGY.

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Aims:
Approximately 200-300 Hepatitis B surface antigen (HBsAg) positive women give birth in Ireland per year[1]. Hepatitis B virus (HBV) poses a serious risk, particularly with high maternal levels of HBV DNA or if Hepatitis B e antigen (HBeAg) positive[2]. Perinatal transmission can be prevented in approximately 95% of infants by early active and passive immunoprophylaxis[3]. We aim to evaluate adherence to the 'Rainbow Clinic Guideline 2015 Preventing Perinatal Transmission'[4].

Methods:
A retrospective review of mother's with HB positive serology between August 2015- February 2019. Data was collected from charts and laboratory database.

Results:
Fifty-one mothers had positive HB serology. Cases were excluded if no liveborn birth or inability to access records. A total of 28 mothers were included. 26 mothers were HBsAg positive and 2 were HBsAg negative but Anti core antibody (Anti-HBc) positive. In the HBsAg positive group, 23 babies had documentation of having a bath post-delivery. 24 babies received the vaccine and immunoglobulin (unable to locate documentation for 2 cases). Both babies whose mothers were HBsAg negative but Anti-HBc positive, were bathed and received vaccination but not immunoglobulin. Of the 26 vaccinated, the batch number was documented in 19 (73%) and expiry date in 9 (35%).
Only 12 babies (43%) had the 8-month follow-up serology testing. All 12 were HBsAg negative. Ten were Anti-HBs (surface antibody) positive. One was non-immune but no further test results were found. One had Anti-HBc tested which is not the correct test.

Conclusion:
Where all documentation was available for review the initial management was appropriate. Follow up serological testing needs further improvement. Ongoing education of this guideline is needed[5]. Missed follow up may render a delayed diagnosis or delayed recognition of vaccine non-responders.
Recommendation: To improve follow-up a further audit has been commenced. An algorithm to simplify the guideline will be implemented. Another suggestion is a reminder letter for the 8-month serology test for parents and general practitioners.

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A UNIQUE CASE OF CHROMOSOME 13

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AIMS: By presenting this case of Ring Chromosome 13, we aim to make of positive contibution to the literature of an extremely rare genetic disorder. We hope to illustrate with this case report a somewhat unique presentation of Ring Chromosome 13, with a concomitant Tetralogy of Fallot, and also highlight that the phenotype of this genetic disorder may be more benign than is traditionally described in the majority of literature.

METHODS: On the basis of antenatal findings of intrauterine growth restriction, conventional karyotyping of an amniotic fluid sample was performed and revealed a diagnosis of Ring Chromosome 13. Following the patient's birth, array CGH (comparative genetic hypbridization) analysis of DNA was performed. The patient was followed up developmentally by neonatology 3 monthly from discharge until 16 months of age.

RESULTS: Our patient was a non dysmorphic female infant born via SVD at term, with extremely short stature, low birth weight and microcephaly. A loss of approximately 6.1Mb was detected in the long arm of chromosome 13 at band 13q33.3-q34 was found on array CGH analysis. She was also found to have a Tetralogy of Fallot (surgically repaired at 5 months of age). By the age of 16 months, the patient had made impressive progress on her developmental milestones.

CONCLUSION: The diversity of the phenotypes in Ring Chromosome 13 has resulted in a variety of fascinating and unique cases in the literature. This patient's most notable features pertaining to her genetic syndrome was her extremely short stature and significant microcephaly. Her presentation and developmental course thus far illustrates a favourable outcome of Ring Chromosome 13, embodying a milder phenotype of this particular rare genetic disorder. This case report will also show the importance of including the diagnosis of ring chromosome syndromes such as Ring Chromosome 13 in our differential diagnosis when evaluating a fetus/baby for Intrauterine Growth Restriction.

1. Towards New Approaches to Evaluate Dynamic Mosaicism in Ring Chromosome 13 Syndrome Cristian Petter,1,2 Lilia Maria Azevedo Moreira,2,3 and Mariluce Riegel4,5 1SARAH Network of Rehabilitation Hospitals, Salvador, BA, Brazil 2Post Graduate Program in Genetics and Biodiversity, Universidade Federal da Bahia, Salvador, BA, Brazil 3Genetics & Society Program, Universidade Federal da Bahia, Salvador, BA, Brazil 4Medical Genetics Service, Hospital de Clínicas de Porto Alegre, Porto Alegre, RS, Brazil 5Post Graduate Program in Genetics and Molecular Biology, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil 2. N. J. Martin, P. J. Harvey, and J. H. Pearn, “The ring chromosome 13 syndrome,” Human Genetics, vol. 61, no. 1, pp. 18–23, 1982. 3. P. H. Su, C. P. Chen, Y. N. Su, S. J. Chen, L. L. Lin, and J. Y. Chen, “Smallest critical region for microcephaly in a patient with mosaic ring chromosome 13,” Genetics and Molecular Research, vol. 12, no. 2, pp. 1311–1317, 2013 4. https://www.rarechromo.org/media/information/Chromosome%2013/Ring%2013%20FTNW.pdf 5. Mechanisms of ring chromosome formation, ring instability and clinical consequences Roberta S Guilherme, 1 Vera F Ayres Meloni,1 Chong A Kim,2 Renata Pellegrino,3 Sylvia S Takeno,1 Nancy B Spinner,4 Laura K Conlin,4 Denise M Christofolini,5 Leslie D Kulikowski,6 and Maria I Melaragno1 6. Transmission of ring chromosome 13 from a mother to daughter with both having a 46,XX, r(13)(p13q34) karyotype Jirair K Bedoyan 1, Leigh Anne Flore, Aziz Alkatib, Salah A Ebrahim, Erawati V Bawle 7. Kosztolanyi G. 1987. Does ‘‘ring syndrome'' exist? An analysis of 207 case reports on patients with a ring autosome. Hum Genet 75:174–179 8. GATA4 Loss-of-Function Mutations Underlie Familial Tetralogy of Fallot (Yang et al) First published: 02 September 2013 9. Somatic mutations in the GATA6 gene underlie sporadic tetralogy of Fallot Ri-Tai Huang , Song Xue , Ying-Jia Xu, Yi-Qing Yang Department of Cardiothoracic Surgery, Renji Hospital, Shanghai Jiaotong University School of Medicine, Shanghai 200127, P.R. China, Department of Cardiology, Shanghai Chest Hospital, Shanghai Jiaotong University School of Medicine, Shanghai 200030, P.R. China, Department of Cardiovascular Research, Shanghai Chest Hospital, Shanghai Jiaotong University School of Medicine, Shanghai 200030, P.R. China November 20, 2012 10. https://www.nature.com/scitable/topicpage/microarray-based-comparative-genomic-hybridization-acgh-45432/ 11. Ring chromosome D (13) associated with multiple congenital malformations E Niebuhr, J Ottosen 12. Quantitative Monitoring of Gene Expression Patterns with a Complementary DNA Microarray Mark Schena(1), Dari Shalon(1), Ronald W. Davis(2), Patrick O. Brown 13. Two Cases with Ring Chromosome 13 at either End of the Phenotypic Spectrum Çakmaklı S.a • Çankaya T.a • Gürsoy S.b • Koç A.d • Kırbıyık Ö.d • Kılıçarslan Ö.A.a • Özer E.c • Erçal D.b • Bozkaya Ö.G.b 14. Interstitial Duplication and Distal Deletion in a Ring Chromosome 13 with Pulmonary Atresia and Ventricular Septal Defect: A Case Report and Review of Literature Fang Xu, PhD, Autumn J. DiAdamo, BS, Brittany Grommisch, BS, Peining Li, PhD

Day 10 to 14 Haemoglobin Testing in Direct Coombes Test Positive Infants: A Change in Practice in the COVID Era

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AIMS:
To demonstrate that we are appropriately assessing for low Haemoglobin (Hb)/anaemia due to haemolysis in Direct Coombes Test (DCT) positive babies at Day 10-14 of life by only testing DCT positive babies who 1) required phototherapy or 2) had mothers who did not receive anti D during pregnancy. This is in accordance with a change in practice from March 2020 formulated in response to the onset of COVID-19, to reduce the possibility of COVID transmission from unnecessary clinic visits.

METHODS:
By using the Electronic Medical Record (EMR) we assessed all the DCT positive babies in a 6 month period from 01/03/20 to 31/08/20 to assess whether they were being followed up in compliance with the new protocol. We also analyzed all DCT positive patients from the previous 6 month period (01/09/2019 to 29/02/2020) to assess whether the number of patients coming back to the outpatients department had decreased.

RESULTS:
Of 120 DCT positive babies followed up using the new criteria, 40 (33%) attended for Haemoglobin testing. Of these 11 attended in violation of the new criteria. 80 babies (67%) did not attend for follow up. Of these 31 did not attend in violation of the new criteria. 100% of these babies had a Hb above 10mg/dl. Overall the rate of compliance with the new critetria was 65%. In the 6 months prior to the change in practice, of 109 DCT positive babies, 86 (79%) attended for follow up.

CONCLUSIONS:
This audit revealed a fundamental error in the implementation of the new criteria. Primarliy, many babies that were DCT positive, Rhesus positive, received no phototherapy and did not require/receive antiD during pregnancy were not followed up. If the guidelines had been followed correctly the number of babies who should have attended would have been 60 (50%) still significantly reduced from 79% using the old criteria.

Clinical Practice Guidelines: Anaemia The Royal Children's Hospital, Melbourne Coomb's Test - Guideline for the Management of Baby with a Positive Coombs' Test, Leeds Teaching Hospitals NHS Trust 2017 Guidelines on transfusion for fetuses, neonates and older children Helen V. New1,2, Jennifer Berryman3 , Paula H.B. Bolton-Maggs4 , Carol Cantwell2 , Elizabeth A. Chalmers5 , Tony Davies6 , Ruth Gottstein7 , Andrea Kelleher8 , Sailesh Kumar9 , Sarah L Morley10, Simon J. Stanworth11 on behalf of the British Committee for Standards in Haematology 1 NHS Blood and Transplant; 2 Imperial College Healthcare NHS Trust, London; 3 University College Hospitals NHS Trust; 4 Serious Hazards of Transfusion, NHS Blood and Transplant, Manchester/TTF member; 5 Royal Hospital for Sick Children, Glasgow; 6 NHS Blood and Transplant, Manchester; 7 St. Mary's Hospital, Manchester/University of Manchester; 8 Royal Brompton Hospital, London; 9 Mater Research Institute, University of Queensland, Australia; 10Addenbrookes Hospital/NHS Blood and Transplant, Cambridge; 11Oxford University Hospitals NHS Trust/NHS Blood and Transplant, Oxford. Neonatal jaundice National Collaborating Centre for Women's and Children's Health Commissioned by the National Institute for Health and Clinical Excellence, May 2010

NEONATAL COVID-19 SURVEILLANCE: A NATIONAL IRISH SURVEY

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Background: Despite apparently good clinical outcomes in neonates with Coronavirus Disease 2019 (COVID-19) to date, previous adverse experiences of neonatal infectious disease outbreaks in Neonatal Units (NUs) have led to strategies to minimise neonatal exposure to COVID-19.

Aims: We sought to determine COVID-19 surveillance measures in place in NUs in Ireland. We also aimed to record COVID-19 isolation and visitation policies in place in these units.

Methods: A structured telephone survey was conducted with senior clinical staff in each of the 19 Irish NUs during September 2020.

Results: The response rate was 19/19 (100%). A fixed COVID-19 surveillance policy was in place in 13/19 (68%) NUs. No unit had a universal screening policy for admissions. Selected screening took place in most, with 17/19 (89.55%) screening newborns of COVID-19 positive Mothers, and 14/19 (73.7%) screening newborns of Mothers who had a COVID-19 swab pending. Every NU isolated infants whose Mother was COVID-19 positive or had a swab pending. Regarding transfers, 5/19 (26%) screened incoming transfers, and 3/19 screened on transfer out. COVID-19 swab results were available in under 3 hours in 11/19 NU's, with 2/19 (10%) having an expected swab result time of greater than 24 hours. A minority, 6/19 (31.6%), routinely investigated babies with late-onset pyrexia or respiratory symptoms for COVID-19. All 19 units (100%) altered their visitation policy to limit exposure. At the height of restrictions, 6/19 (31.6%) allowed time-limited maternal visits only, 2/19 (10%) allowed time-limited parental visits, and 10/19 (52%) allowed unlimited maternal visits only. At the time of surveying, 13/19 (68.4%) had removed/eased visiting restrictions in some way.

Conclusion: The results show similarities across Irish NUs in terms of COVID-19 surveillance, but disparities in the degree and nature of implementation. This suggests a National Guideline would be appropriate in assisting units in policy making going forward.

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Neonatal Pulse Oximetry Screening in Ireland: A Local and National Perspective

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Aims: Pulse oximetry screening (POS) is a simple, effective method of detecting critical congenital heart disease (CHD)[1,2]. Antenatal screening for CHD is not available for 23% of Irish mothers[3], making its role even more crucial . A criticism of POS is the potential to generate unnecessary delays, testing or parental anxiety[4,5]. Our aim was to assess whether this was the case locally, and our levels of compliance. Nationally, there is no consensus on test procedure and what is considered a normal result. We surveyed Irish maternity units to assess practices.

Methods: Retrospective chart review of 675 new-born infants born in June 2020. Infants previously admitted to the neonatal unit were excluded. Data collected include demographics, compliance, number of positive results, and actions taken. A survey of staff at 19 Irish maternity units using written and phone interview formats was conducted.

Results: Average gestation was 39.1 weeks and birth weight 3.41kg. 105 (15.6%) of 675 infants were excluded due to previous admission to the neonatal unit. 99.1% had their saturations checked prior to discharge. 97% had a post-ductal saturation of 97% or greater, which we considered normal. Of those with saturations <97%, 100% had saturations between 95-96%. Besides repeat pulse-oximetry, no additional tests or admissions were generated. There were no parental-refusals. Survey response rate was 89%. 100% of units had introduced POS, between 2006 to 2016. The majority of units (64.7%) used 95% as acceptable, 17.65% used 96%, and 17.65% used 97%. 17.65% routinely performed pre and post ductal saturations. Of the units surveyed 59% had no access to echocardiography locally.

Conclusion: POS was well-tolerated and compliance was excellent. However, a cut-off of 97% resulted in a positive test in 3% requiring re-test which is above reported standards[2]. Nationally there is no consensus in practice. We advocate the development of a national framework to maximise true positive results.

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Neonatal

A PROSPECTIVE AUDIT OF NEONATAL INTUBATIONS IN A PERIPHERAL PERINATAL UNIT

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Aims:

Endotracheal intubation remains the most common method for establishment and maintenance of a secure airway for the purpose of invasive ventilation or administration of surfactant in new born infants. The aims of our audit were to prospectively assess intubation practices within the neonatal unit in Cavan General Hospital. The audit aimed to identify areas for improvement, particularly in relation to training of staff on the use of video-laryngoscopy.

Methods:

We designed a single page audit proforma tool to be completed by the relevant clinician soon after the intubation procedure. All neonates intubated in Cavan GeneralHospital from August 2019 to June 2020 were included.All details were sourced from the intubation proforma.

Results:

There were a total of nine new born intubated within the 11 months audit period. Three were term (>3.5kg) and six preterm (weight 1.0 – 2.2kg). Four intubations were elective and five were emergencies. A conventional laryngoscope was used in three intubations, an Acutronic video laryngoscope was used in three and a Mcgrath video laryngoscope was used in three intubations. Four attempts at intubation were made on one occasion, three attempts on two occasions, two attempts on one occasion and one attempt was made on five occasions. A Lowest heart rate of <40 /min was observed during one intubation. A lowest O2 saturation of <50% observed on one occasion. Chest compressions were required in association with two emergency intubations. Bradycardia preceded the intubation attempt in both cases. A pneumothorax occurred in association with one emergency intubation. There were no significant complications associated with any of the four elective intubations.

Conclusion:

As expected, the number of endotracheal intubations being performed in our unit is small.Within our service we have found the Acutronic and McGrath video laryngoscopes to be an improvement on the standard laryngoscope in terms of ease of intubation and for training and documentation purposes.

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Frequency of multidrug resistant organisms in neonatal intensive care unit of a tertiary care hospital and outcome

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Background: Neonatal sepsis is leading cause of morbidity and mortality in intensive care settings. Over past few years, there has been emergence of multi drug resistant organisms in neonatal intensive care units leading to increased hospital stay and mortality worldwide.
Objective: To evaluate frequency and outcome of neonates with multidrug resistant isolates.
Methods: This is a descriptive study. All the neonates with multidrug resistant isolates from June 2013 to June 2018, were included in the study. Data was collected by reviewing medical records of these neonates.
Results: Total of 152 neonates with multidrug resistant organisms were included in this study. Majority (60%) were males. About 50% patients were at term. About 70% were referred from outside health facilities . Blood culture was positive in 55% patients followed by Endotracheal tube/ tracheal cultures 49%, pus swab 12.9%, urine 8.5% and CSF 3.9%. Commonly isolated multidrug resistant organisms were as follows: Acinetobacter (31%), Klebsiella Pneumoniae (30%), Pseudomonas (9.8%), E.Coli (9.2%), VRE (7.8%) and MRSA (3.2%). Resistance pattern was as follows: Penicillin 92%, Cephalosporin 85%, Carbapenem 56.5% and Colistin 3.5%. Radiologically confirmed pneumonia was seen in 118(77%) patients. Out of 152 patients 103 (67.7%) required mechanical ventilation. Ninety one (59.8%) patients were discharged, 36(23.6%) expired and 24(15.7%) referred to other facility/left against medical advice.
Conclusion: Multidrug resistant organisms in neonates are a major concern with challenge for initial empiric therapy. Emergence of Carbapenem and Colistin resistance is a serious concern.

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The Curious Case of Uncontrolled Sugars: a case report highlighting two paediatric patients

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Patient X (PX) was born by LSCS, following a turbulent pregnancy to a teenage primagravida, with labile sugars throughout. Her past medical history was notable for T1DM, hypothyroidism and obesity. Multiple attempts were made to admit this mother to hospital in an attempt to achieve normoglycaemia. Antenatally, PX was noted to be large for dates.

PX was born at 35 weeks gestation, weighing 5.02 kg (>99th centile). His postnatal course was stormy, requiring intubation and ventilation, treatment of severe PPHN, high dextrose infusions to maintain normoglycaemia, and transfer to a PICU for MDT input.

As the registrar involved in his care since delivery and who helped arrange his transfer to PICU, this case highlighted a number of important points to me – namely that there are two paediatric patients involved. The first being PX, who highlightsthe effects of maternal hyperglycaemia throughout pregnancy. His weight, his inability to maintain normoglycaemia as a neonate, and severe PPHN all contributed to his prolonged NICU/PICU stay. In addition to this, hyperglycaemia in early gestation has been proven to be linked with congenital cardiac disease1,2. PX was no exception, with postnatal Echo suggesting coarctation.

The second patient, and perhaps overlooked, is his mother. She was diagnosed with T1DM at 10 years. As a member of the Travelling Community, a marginalized group, any illness is sometimes seen as a source of shame and often ignored. Throughout her teens, glycaemic control was labile, with poor compliance, highlighting the challenges faced by Paediatric Endocrinologists in looking after patients through teenage years.

Ultimately, this case highlights the importance of maintaining normoglycaemia, with an emphasis on adequate education for teenagers and expectant mothers, with the ultimate aim of reducing the risk to growing foetus(es).

Persistent Pulmonary Hypertension of the Newborn - PPHN; T1DM – Type 1 Diabetes Mellitus.

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AUDIT ON COMPLIANCE OF DAY 2 CHECKS AND CENTILE CHARTS IN NEWBORN BABIES ADMITTED TO SCBU, ST LUKE'S HOSPITAL, KILKENNY

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Aim To study compliance of day 2 checks and centile charts in SCBU to improve patient care.

Methods Charts were identified from SCBU admission and discharge book. 22 babies were admitted between 19th June 2019 to 22nd September 2019. All 22 charts were selected for audit. Our standard was hospital's Day 2 newborn examination template and Neonatal Centile Charts.

Results Day 2 exam template was present in 21/22 charts (95%). However, it was complete in only 12 (57%). Centile charts were present in 10/22 charts (45%), out of which 6 were complete and 4 were incomplete.

Conclusion We recommended to produce and implement a checklist containing centile chart and day 2 template to be filled out before baby is discharged from SCBU by NCHDs doing the discharge letter. After implementation of checklist we will re-audit in three months time.

1- https://www.rcpch.ac.uk/resources/growth-charts 2- St Luke's hospital's Day 2 newborn examination template 3- https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/child-health-and-wellbeing/newborn%20exam.pdf

HOW LOW IS TOO LOW? DETERMINING THE INCIDENCE OF SYMPTOMATIC HYPONATRAEMIA SECONDARY TO MATERNAL PERIPARTUM HYPONATRAEMIA- AN UNSOLVED PROBLEM.

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INTRODUCTION: In Northern Ireland regional obstetric guidance [1] advises paediatricians should be informed when infants are born to mothers with serum sodium ≤129mmol/L. However, there is no current guidance on the management of these infants. Practice is variable with infant sodium checked between 12-24 hours old, or not at all. A literature review [2-12] found 9 case reports of neonatal seizures secondary to isolated hyponatraemia. All occurred within 6 hours of delivery, with maternal sodium range 107-124mmol/L, and neonatal sodium range 108-126mmol/L.
METHOD: In RJMH we used retrospective case analysis to review the data of infants >35 weeks' gestation born to mothers with Sodium ≤129mmol/L (18hrs pre delivery, until 8hrs post-partum). From March 2018-2020 96 such cases were identified, and data collected for each infant including clinical features, investigations, results and management.
RESULTS: In 39/96 cases, infant serum sodium was checked. 9 had serum sodium ≤129mmol. 12 infants were treated for hyponatraemia; 9 (Na 123-131mmol/L) received oral supplementation and 3 (Na 123-129mmol/L) were admitted to NICU and received intravenous fluids. 2 of these cases presented clinically (prior to blood sampling) with hyponatraemic seizures with no other cause identified. Both were ≤ 8hrs of life with maternal sodiums of 123mmol/L and 127mmol/L. Standard investigations (including lumbar puncture) were performed and seizures treated with anticonvulsants; both infants recovered well.
CONCLUSION: Neonatal hyponatraemia secondary to maternal hyponatraemia does occur and can cause neonatal seizures. However, these events are rare, occur early(<12hours) and are associated with a very low maternal sodium. These infants would not be identified by current practice of testing at 12-24 hours of life. We have used our data as part of a quality improvement project to develop a guideline identifying infants at risk of symptomatic hyponatraemia whilst reducing unnecessary investigations in asymptomatic, low risk infants of mother's with mild hyponatraemia.

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A RAPID GLUCOSE INFUSION RATE (GIR) TOO FOR INFANTS WITH HYPOGLYCAEMIA

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The GIR is used as a clinical tool used in the assessment and management of the glucose requirements of infants with hypoglycaemia.

A limiting factor is the time needed to perform the calculation.
The formula involved requires multiplication, division, conversion of grams to mgs, and 24 hours to minutes. It is prone to human error, particularly in the middle of a busy ward round. Concentration, accuracy and experience are required.

The challenge is compounded when one needs to calculate combinations of oral and IV glucose intakes.

On foot of these limitations we propose the use of a GIR chart.
The chart facilitates the immediate read-off of both the IV and Oral glucose components. It takes approximately 10 seconds. The chart is based on a model previously published in the Journal of Perinatology[1].

It is helpful in tracking the GIR in the infant with increasing glucose requirements. It facilitates an orderly stepwise incremental increase in glucose intake by 1-2mgs/kg/min
It is also useful during the weaning process when the infant's glucose requirements is reducing and the switch is being made from IV glucose to oral feeds.

Table to quickly calculate glucose infusion rates in neonates, R Chwoning and DH Adamkin, Journal of Perinatology, 23 April 2015

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Audit of ISBAR communication Between Midwives to Paediatric SHOs during On Call hours

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Aims: This closed-loop audit investigated the use of ISBAR communication in emergency situations.

Methods: Both audit cycles were performed prospectively- Cycle 1 during Q2 of 2019 and Cycle 2 during Q2 of 2020. Consults accepted included any urgent pager communication by midwives in the Delivery Suite or Theatre to the neonatal senior house officer (SHO). The sample size was 40 for each cycle. A checklist of 9 questions and/or details was designed using the ISBAR format. Copies of this checklist were kept with the SHO during their on-call shift, and contemporaneously checked off when receiving pager communication from the midwife. Baseline use of the ISBAR tool, without any intervention, was measured in the first cycle of the audit. For Cycle 2 an educational session regarding the ISBAR tool was delivered by the Paediatric team. Additionally, copies of the ISBAR checklist were placed at phone-side in each delivery room and operating theatre as a reminder for communication.

Results: In the initial audit cycle, the weakest area for communication was communication over the phone. Phone communication improved significantly following IBSBAR communication education and the use of ISBAR checklists at the phone side. In cycle 2, 67.5% of midwives introduced themselves by name, compared to 15% during the initial cycle. Location and type of delivery were mentioned 100% and 92.5% of the time, respectively, compared to 95% and 85% of the time in cycle 1. Gestation and urgency level were communicated 32.5% and 87.5% of the time, respectively, compared to 12.5% and 25% in cycle 1.

Conclusion: In emergency situations where time is critical the use of ISBAR checklists significantly improves communication.

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MEDICAL MANAGEMENT OF BABIES BORN WITH TRISOMY 21 IN THE COOMBE WOMEN AND INFANTS UNIVERSITY HOSPITAL

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Aims : To determine compliance with accepted guidance on the medical management of Trisomy 21 in The Coombe Womens and Infants University Hospital, and to evaluate for variations in practice in our management of these infants.

Methods: Infants were identified using a pre-existing database of babies born with congenital anomalies. We retrospectively reviewed charts of infants identified with a diagnosis of Down Syndrome. The chosen population included babies born between the period January 2018 – September 2019. Sample size was 45 babies. We used the Coombe's audit tool to collate out data.

Results: The total number of charts was 42 (n=42), 7 charts were N/A regarding questions of the audit because: 1 baby passed away, 3 babies were transferred to other hospitals. The final number of charts audited was 38. 31 (82%) had their centiles plotted in the appropriate Down syndrome chart. 35 (92%) had the guthrie card completed, 38 (100%) had an echo done within 6 weeks of life after birth. 36 (95%) were referred to cardiology regardless of the premilinary echo findings. 34 (98%) had eye examination and ophthalmology referral done. One important thing to note here that the eye exam done at the hospital is usually the exam done at newborn discharge check, not a formal ophthamological review. 35 (92%) were referred to early intervention team and a local Down syndrome clinic/Paediatrician.

Conclusion: The compliance was more than 70% in most of the areas covered by the standard guidelines.

Medical Management of Children And Adolescents With Down Syndrome In Ireland, https://www.downsyndromelimerick.ie/index.php/docs?download=3:medical-guidelines-for-children-with-down-syndrome

NEONATAL TRANSPORT WORKLOAD ASSOCIATED WITH BABIES BORN IN NON-MATERNITY HOSPITALS

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Introduction:
There is only one tertiary maternity hospital co-located with a tertiary hospital in the Republic of Ireland, therefore pregnant women who require tertiary subspecialist or ICU care may deliver in a non-maternity hospital if it is deemed safest. Since 2015, the National Neonatal Transport Programme (NNTP), with obstetric teams from maternity units, attend deliveries outside maternity hospitals on request and subject to team availability. This study aimed to quantify workload associated with non-maternity deliveries attended by the NNTP.

Methods:
A retrospective review of NNTP records over a five year period (January 2015 to December 2019). Similarly, all neonatal transports from non maternity hospitals for the same period, as reported on the NNTP's national neonatal daily activity census, were also reviewed.

Results:
Of the 2885 transports completed by the NNTP between January 2015 and December 2019, there were 33 (1.1%) cases identified where the NNTP team attended for maternal reasons in a non-maternity hospital.

All births were by caesarean section. Median gestation at birth was 35 weeks, median birthweight 2.79kg. Median APGAR score at one, five and ten minutes were 9 (range 2-10), 9 (range 5-10) and 9 (range 8-10) respectively.

12.5% (n=4) babies were transferred following intubation and assisted ventilation, 41% (n=13) babies were transferred on nasal CPAP.

81% babies (n=26) had an intravenous cannula inserted and were transferred on IV fluids. Two babies had formula feeding commenced and one baby breastfed prior to transfer to the neonatal unit.

The median time spent on the transport was 3 hours and 26 minutes (range: 1 hour 35 mins to 5 hours 10 minutes).

Conclusions:
This is the first known quantification of the neonatal workload associated with births attended by a neonatal team in non-maternity hospitals in the Republic of Ireland.

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INFANTS BORN TO MOTHERS WITH COVID-19 DURING PREGNANCY: THE FIRST FOUR MONTHS OF THE PANDEMIC

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Aims: The neonatal outcomes following a COVID-19 infection in pregnancy are only beginning to emerge[1, 2]. Our aim was to describe the outcome of infants born to women with SARS-CoV-2 PCR detected during pregnancy in the Rotunda Hospital.

Methods: This was a retrospective review of the first four months (1st March to 1st July 2020) of the COVID-19 outbreak in Ireland (n=26). Ethical approval was obtained.

Results: The median gestational age (GA) at diagnosis of maternal SARS-CoV-2 was 36+6 weeks. Twelve (46%) were detected more than 14 days before delivery. Four women (15%) were from Ireland's Roma community, a vulnerable group disproportionately affected by COVID-19[3].
The median GA at birth was 39+3 weeks, although 6 (23%) were preterm. Seven (27%) required admission to the Neonatal Unit, three for prematurity and four for non-COVID neonatal problems. Two infants were tested for SARS-CoV-2 (one due to excessive nasal congestion and one following discharge), both were negative and remained well.
As per National Guidelines, infants routinely roomed-in with their mothers in a designated COVID ward if mothers were symptomatic, < 14 days from symptom onset/positive test. Mothers were allowed to breast feed, with strict hand hygiene and a maternal face mask[4]. Nineteen infants (73%) received breast milk during their hospital stay. 65% were followed up in clinic (routine postnatal issues) or by phone (4-8 weeks post discharge); none had developed suspected or confirmed COVID-19.

Conclusion: These figures provide some reassurance regarding the neonatal outcomes, and the postnatal guidelines in place in our hospital. There was a high rate of prematurity, similar to the UK(26%)[1] and US study(17%)[2]. As we approach further surges of COVID-19, we must continue to monitor the incidence of preterm birth and evaluate the outcome of infants following maternal infection early in gestation, the effects of which are unknown.

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THERMAL CARE OF VERY PRETERM INFANTS IN THE DELIVERY ROOM: A NATIONAL SURVEY

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Aims:
Hypothermia in newly born very preterm infants is an independent risk factor for death[1]. Maintaining normal body temperature in preterm newborn infants is a vital aspect of delivery room (DR) care[2]. There are no national guidelines on thermal care for very preterm infants in Ireland. We aim to describe the provision of thermal care in level 2 and 3 neonatal centres in Ireland.

Methods:
We performed a survey of all level 2 and level 3 neonatal units in Ireland in October 2020.

Results:
Nine centres (90%) participated in the survey (89% ROI, 11%NI). Five respondents (56%) were advanced nurse practitioners (ANP) and four (44%) were clinicians. All centres (100%) use a radiant warmer, hat and a plastic bag/wrap in the DR for infants born <32 weeks' gestation. Three (33%) routinely use an exothermic mattress and two (22%) use warmed humidified gases.
The time to cord clamping (CC) varied across centres; Six (67%) aim for CC after 60 seconds, two (22%) aim for 45 seconds and one (11%) responded that time to CC is led by obstetric staff. Thermal care is not routinely initiated before CC in any centre. Six centres (67%) routinely measure the ambient temperature of the DR and three (33%) routinely measure infant temperature in the DR. All centres measure axillary temperature on admission to the NICU; eight (89%) use the Welch Allyn Suretemp and one (11%) uses an electronic digital thermometer. Eight (89%) perform umbilical catheter insertion on an open table under radiant heat and one (11%) use a closed incubator accessed via portholes.

Conclusion:
We report a variation in practice amongst level 2 and 3 neonatal centres. Further research is necessary to determine best practice for thermal care in the delivery room, with particular attention to the provision of thermal care before CC.

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The role and validity of diagnostic biomarkers in Late-onset neonatal sepsis

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AIMS: Sepsis remains a leading cause of mortality in the neonatal population, and currently, there is still no consensus on an accurate biomarker that can aid prompt diagnosis. This review focuses on studies investigating biomarkers for late-onset neonatal sepsis specifically. We discuss the current evidence for traditionally used biomarkers and present recent developments on more novel markers.

METHODS: Suitable articles were selected from Pubmed, Embase, Medline, Cochrane handbook of systematic reviews and ScienceDirect.
Inclusion criteria: Studies published from 2010-2020.
Exclusion criteria: Animal model based studies.
Key words in search strategy: Late-onset neonatal sepsis + biomarkers + diagnosis.

RESULTS AND CONCLUSION: Evidence is growing increasingly weak for commonly studied biomarkers such as CRP and PCT. Markers such as Serum Amyloid A and Neutrophil CD64 whose levels rise more rapidly post onset of infection compared to CRP. Moreover, this review found that the more novel biomarkers discussed such as Presepsin and Endocan may show superior and more promising potential as diagnostic markers. However, larger studies, over multi-centers are deemed essential to ascertain the ideal biomarker.

NEONATAL SEPSIS: CURRENT INFORMATION AND HOW WE ARE DOING?

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Aims:
Early neonatal sepsis is defined as sepsis within the first 7 days of life. There is an incidence of 0.1-1.2/1000 live births, with variation between populations. A significant reduction in GBS sepsis is recognised with introduction of intrapartum antibiotics. Predisposing risk factors include PROM, previous GBS sepsis, chorioamnionitis, prematurity and inadequate intrapartum antibiotics. The aim of this audit is to compare adequate and inadequate treatment of GBS +ve and PROM mothers and subsequent neonatal outcomes with consideration of the EOS calculator.

Methods:
The study cohort consists of 114 neonates born at St John of God Midland between January and March. It is a retrospective review of all neonates screened, with clinical data and results from Australian Clinical Labs, Infomedix and iSoft.

Results:
Of all 114 neonates screened, all were screened with a CRP and 68 with additional blood cultures. Results demonstrated two positive growths and two presumed cases of chorioamnionitis with no growth. 50% of those screened were treated until Mid-February, where-after there was an increase likely secondary to changeover. Amongst those screened, 66% were empirically treated and 24% treated following a CRP rise. Insufficient antepartum antibiotics (<4 hours) was a notable issue. Only 8% of GBS +ve women received adequate antibiotics and 24% were treated inadequately. Similarly, in PROM only 44% received adequate treatment despite inpatient management for > 4 hours pre-delivery. All 15 neonates born to inadequately treated mothers, were screened, two treated for CRP rise and two treated for additional risk factors.

Conclusion:
This audit highlights the importance of documentation, with inclusion of rupture of membrane and antibiotic administration times, gathering data required for the EOS calculator and liaising with obstetrics to ensure timely administration of antibiotics. We can reduce screening and treating of neonates by optimising antepartum management or use of the EOS calculator.

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SUPPRESSION OF NEONATAL ERYTHROPOESIS FOLLOWING MULTIPLE INTRAUTERINE TRANSFUSIONS; A CASE REPORT.

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Aims:
The treatment of severe haemolytic disease of the new-born with intrauterine transfusions (IUT) is a widely accepted therapeutic intervention. However, there is a paucity of data on the subsequent impact of multiple IUTs on foetal and neonatal erythropoiesis. Our aim is to add to the literature in presenting a case of a late pre-term neonate who presented with postnatal transfusion dependency in the neonatal period.

Methods:
Initial data was collected during the inpatient stay. Further information was gathered at various outpatient appointments.

Results:
The infant's fetal anaemia was treated with two IUTs for presumed red cell alloimmunisation. He required subsequent red blood cell transfusions (20 mls/kg) at a corrected gestational age of 38+4, 39+5 and at 43+5 for ongoing anaemia (Hb level <7.5g/dL) with a failure to demonstrate sufficient erythropoiesis until the third transfusion (nidus of reticulocyte count 4.0 x10 ^{9}/L). The infant did not have any transfusion related reactions. A full work-up for prolonged neonatal anaemia was performed including; parvovirus serology, TORCH screen, adenosine deaminase level and red cell aplasia panel. This did not yield any positive findings.

Discussion:
Results from a recent study demonstrated that suppression of the compensatory neonatal erythropoiesis can occur following treatment with IUT in haemolytic disease of the new-born. The risk is greater following serial IUTs when bone marrow suppression occurs(1). Subsequently, infants have an increased requirement for RCC after birth due to their prolonged anaemia. EPO may reduce the need for RCC by stabilising Hb levels(2).

Conclusion:
The mainstay of antenatal treatment of foetal anaemia due to red cell alloimmunization is (serial) IUT. Whilst at least one top-up transfusion for late anaemia is required during the first 3 months of life in up to 80% of infants with HDN treated with IUT(3), awareness of potential transfusion dependency is important in managing these infants.

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Title CONTAMINANT BLOOD CULTURE IN NEONATAL ICU

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Introduction: Neonatal sepsis is an important cause of mortality and morbidity among neonates. contamination of blood cultures can occur leading to false-positive results. This causes challenges in determining whether the organism represents a true infection requiring treatment, and often results in unnecessary treatment and increasing healthcare costs from prolonged hospital stays, additional tests and prolonged antibiotic treatment. The suggested acceptable rate for blood culture contaminants is 2%– 3%. We performed a retrospective audit evaluating the rate of blood culture contaminants in our unit to compare local practice to international recommendations.

Result: We identified 355 blood cultures. 11 grew an organism, of which 6 (1.69%) were felt to be contaminated samples. Coagulase negative staphylococcus accounted for 66% (4/6) of all blood culture contaminants. Of the 6 contaminated samples, all babies had a repeat sent, none of which had a growth. All 6 also received a longer course of antibioticsfrom the standard 36 hours to up to 5 days while waiting for results of the repeat sample.

Conclusion: Our audit has shown the rate of contaminated blood cultures in our neonatal unit falls just within the recommended rate of 2%–3%. However, babies who had a contaminated sample required a prolonged course of antibiotics while waiting for repeat tests. Contaminated blood cultures often grow normal skin flora suggesting poor hand hygiene, ineffective skin cleaning and poor venipuncture techniques as the main causes. .Our audit also showed 33% of the contaminant blood culture was taken for very sick babies or taken after difficult peripheral line insertion.

Recommendations: By improving education and adherence to a sterile venipuncture technique, the contamination rate could further be reduced thereby resulting in fewer babies receiving unnecessary tests and improved antibiotic stewardship.

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EXAMINING THE DEVELOPMENTAL OUTCOMES OF VERY LOW BIRTH WEIGHT INFANTS AT 2 YEARS CORRECTED AGE

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Aims:
To examine the developmental status of premature, very low birth weight infants by utilising the Bayley Scales of Infant Development, 3rd edition (BSID-III). Then to correlate this information with inpatient morbidities to assess for possible predictors of developmental outcomes. Furthermore, to determine steps that can be implemented to improve or modify this service as a predictor of these outcomes.

Methods:
This is a retrospective observational cohort study. Data was gathered, using the Vermont Oxford Network, on 519 infants born between 2010 and 2015, with a birth weight of 401g to 1500g and/or a gestational age of 22+0 weeks to 29+6 weeks. It was analysed with IBM SPSS Statistics 24.

Results:
Of the 519 infants studied, 338 (65.1%) were tested with BSID-III and 181 (34.9%) were not tested or their scores were unknown. 97 (18.7%) infants were fully examined with BSID-III, whilst 241 (46.4%) were only partially tested. Pearson correlations carried out yielded weak relationships between the five primary elements of BSD-III, birth weight, gestational age, and several relevant morbidities. These correlations indicate that certain variables, particularly birth weight and gestational age, however weakly, have an influence on BSID-III scores[1], which illustrates that as birth weight and gestational age increase then BSID-III scores improve.

Conclusion:
BSID-III is an important tool in the prediction of developmental delay[2]. Whilst this study only showed weak correlations between BSID-III scores, low birth weight, gestational age, and other important variables, if the number of babies getting tested can be improved upon and other issues resolved, then BSID-III may prove essential as an identifier of infants who need to be prioritised.

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EFFECT OF GESTATIONAL DIABETES ON NEONATAL MYOCARDIAL DEFORMATION AND LEFT VENTRICULAR ROTATIONAL MECHANICS

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Background & Aims: Infants born to mothers with gestational diabetes mellitus (GDM) have impaired myocardial performance and are at risk of pulmonary hypertension (PH). Myocardial deformation and left ventricular (LV) rotational mechanics remain relatively unexplored in this population. We aimed to assess LV and right ventricular (RV) function in GDM infants and compare them to healthy controls.

Methods: We studied 40 infants with maternal GDM and 40 infants of healthy mothers. Echocardiograms were carried out over the first 3 days after birth to measure LV and RV function using speckle tracking echocardiography (STE), LV rotational mechanics and pulmonary vascular resistance (PVR).

Results: GDM infants had a lower gestation at birth and a thicker septal wall, a higher LV eccentricity index (indicating septal bowing) and a higher PAATi (indicating higher PVR). GDM infants had lower LV strain, systolic and early diastolic strain rates, lower RV strain and early diastolic strain rates. By day 3 of age, GDM infants had higher twist, torsion and higher LV twist and untwist rates. GDM status was an independent predictor of LV and RV function and pulmonary vascular resistance ($p=<0.01$).

Conclusion: GDM results in important changes in LV and RV function in addition to increased pulmonary vascular resistance. Decreased LV strain rate (marker of impaired contractility) in combination with LV diastolic dysfunction will lead to elevation of LV end diastolic pressure and consequent increase in LA pressure. High LA pressure may impinge pulmonary venous drainage causing increased PVR and high RV afterload in the GDM cohort. Infants of GDM mothers have higher LV twist and torsion (driven by an augmentation of counter-clockwise apical rotation). The increased LV torsion found in GDM infants may be a compensatory mechanism to maintain normal cardiac performance in the face of impaired longitudinal function.

CTRL C: INVESTIGATING NCHDS DOCUMENTATION IN ELECTRONIC HEALTHCARE RECORDS. A QUALITATIVE STUDY.

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Aim: This is a quality improvement initiative looking at the documentation practices amongst NCHDs in a tertiary referral neonatal where an electronic patient record is in use.

Background: Clinical notes are an integral part of patient care. Effective continuity of care relies on the accuracy and quality of documentation. The introduction of electronic healthcare records allows duplication of information between notes. Duplicated erroneous data is detrimental to patients. It can negatively impact decision making and once copied can be difficult to identify and rectify.

Methods: An anonymous survey assessing NCHDs behaviours and attitudes when writing notes was distributed. Ten consecutive inpatient charts were also reviewed and analysed for differences in word count between the admission note and subsequent notes. Data from both aspects were analysed

Results: Admission notes average word count was 522 and difference in word count between it and a later note was 157. The survey response rate was100% (n=18) All respondents reported the use of the copy and paste function in the electronic charts. This was usual practice for 38.8% (n=7). The same number 64.7% (n=8) reported changing the font but not necessarily the content of their notes. The clinical background and working diagnosis were the most likely segments to be copied. Most respondents (83.33%,n=15) were more likely to copy from the previous days' note rather than the admission note. Time saving was the most likely reason for using the copy and paste function (44.44% ,n=8). Notes were most likely to be copied in HDU and SCBU.

Conclusion: Our units have a high rate of note duplication. Precise and accurate documentation is an integral part of patient care. This should be a part of formal induction for doctors as they navigate a newly digitalised healthcare system.

SIGNIFICANCE OF PLACENTAL SWAB IN DIAGNOSING VERTICAL TRANSMISSION IN SARS-COV-2 POSITIVE MOTHERS.

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Aims: Currently, there is limited date on the effects of COVID-19 on pregnancy and neonatal outcome. This literature review aims to investigate the possibility of fetal vertical transmission in COVID-19 positive pregnant mothers by diagnosing through placental swabs.
Methods: The search terms 'pregnant COVID-19 positive mothers', 'fetal vertical transmission' and 'placental swabs' were used. 11 papers were selected for this review.
Results: his literature review comprises 45 COVID-19 positive pregnant women whose placentas and neonates were also analysed by RT-PCR for the presence of SARS-CoV-2. 43 neonates were successfully delivered primarily via caesarean section out of 45 expectant mothers (96%). 2 mothers did not deliver due to severe preeclampsia and a miscarriage both occurring in the second trimester. 3 neonates tested positive for SARS-CoV-2 (7%). We report no neonatal mortality after birth and no maternal mortality. 8 female's placentas tested positive for SARS-CoV-2 out of a total of 45 tested (18%). Of these 8, 2 cases of SARS-CoV-2 were identified in the maternal, neonatal and placental tissue.
Conclusion: After reviewing multiple studies and investigating the nature of placental physiology in SARS-CoV-2 positive mothers we conclude that there is no concrete evidence of vertical transmission occurring between mother and infant. However, there are inconsistencies across the different papers used for this review and further research investigating the effects of COVID-19 on pregnant women by using RT-PCR to test the mother, placenta, vaginal fluid, breast milk and infant for SARS-CoV-2 at various stages of transmission is urgently needed.

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FOLLOW UP OF NEW-BORNS WITH ABNORMAL TSH ON GUTHRIE TEST

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Aims: Congenital hypothyroidism (CH) is a preventable cause of mental retardation. With the introduction of a national screening programme for CH, new-borns with CH are detected early before clinical manifestations are evident. This enables thyroxine replacement to be instituted, ideally within two weeks of birth, thus reducing the risk for cognitive problems. We conducted an audit to check compliance with European Society of Paediatrics guidelines for CH in new-borns with abnormal TSH found on screening with Guthrie test.

Methods: A retrospective audit of Guthrie Record Book with abnormal TSH results between June 2012 and May 2017 was carried out. Patient records were obtained and analysed.

Results: 33 patients had abnormal TSH results on Guthrie testing during this period. M:F was 1.5:1. Incidence was 6:3500. 24 out of 33 (72%) screening tests were inconclusive. On the other hand, TSH was elevated in 9 (28%) and all of them were subsequently confirmed as having CH on venous blood testing. Out of the 24 inconclusive cases, only 1 (4%) was confirmed as having CH on venous testing. Hence, there were 10 (30%) confirmed cases of CH in total. Causes of hypothyroidism in these cases included following: Anatomical defects in 2 (On life-long treatment), Dyshormonogenesis in 3 (Treatment given, followed by a successful off-treatment trial in 2 out of 3), Transient hypothyroidism in 4 (No treatment given), Other causes in 1 (No treatment given).

Conclusion: Screening and treatment of CH in our hospital are generally in line with the national and European society standards. The off-treatment trial was successful in the majority of patients with dyshormonogenesis

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RISK FACTORS FOR NEONATAL STROKE: A SYSTEMATIC REVIEW

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Aims: Neonatal stroke, a subcategory of Perinatal Stroke, is stroke which is diagnosed after birth and on or before the 28th postnatal day. We aimed to conduct a systematic review of risk factors for neonatal stroke.

Method: A comprehensive search of MEDLINE, Embase and Cochrane was performed, including Arterial Ischaemic Stroke (AIS), Cerebral Sinovenous Thrombosis (CSVT) and Haemorrhagic Stroke. The review was conducted according to PRISMA guidelines (PRISMA 2009). Two review authors independently examined the full text records to determine which studies met the inclusion criteria and evaluated risk factors for Neonatal Stroke. Data from eligible studies was extracted. Odds ratios and 95% confidence intervals were calculated.

Results: 29 papers were included for analysis after screening. Male sex (OR 1.52), maternal infection during pregnancy (OR 4.45), Primiparity (OR 1.43), Placental Pathology (OR 15.28), SVD requiring Instrumentation (OR 3.09), Emergency C-section (OR 4.318), Prolonged/Non-Progressing Labour (OR 2.43), and Apgar score of < 3 at 1 and < 7 at 5 minutes (OR 44.73 and 88.37 respectively) were identified as risk factors.

Conclusion: These findings support established risk factors for Neonatal stroke. However, these risk factors are also associated with neonatal encephalopathy. Thus, in addition to guiding early detection and intervention, this highlights the overlap in the definitions of neonatal stroke and neonatal encephalopathy.

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Display Poster Number 1
Sub-Specialty

PSYCHOLOGICAL MORBIDITY AMONGST PANDEMIC SURVIVORS – A LITERATURE REVIEW

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Aims Infectious disease outbreaks have been an emerging concern over the centuries due to their high mortality rates, socioeconomic and psychological effects. The prevalence of psychological morbidities amongst survivors tend to last well beyond the resolution phase. Coronavirus Disease 2019 (COVID-19) is the latest pandemic outbreak with over 188 countries affected and 953,989 deaths globally. A future pandemic outbreak remains a tangible possibility, and preparations to minimise its effects on physical health and socioeconomic well-being need to be considered. In addition, psychological disorders need to also be kept in consideration. The aim of this literature review is to explore the relationship present between psychological morbidity and pandemic outbreaks amongst survivors by analysing a number of relevant research papers.

Methods A Science Direct and Google Scholar search was conducted using the keywords *"psychological morbidity"* OR *"psychological effects"*, *"pandemic"* OR *"infectious disease outbreaks"*, and *"survivors"*. Articles were deemed acceptable if they were in the English language, were full text articles, and included an abstract. The search was limited to the years 2005-2019 and to only articles which explicitly investigated the long-term psychological impacts on pandemic survivors. Articles on the current COVID-19 pandemic were excluded.

Results A total of 12 papers was examined. 6 articles explored psychological morbidity amongst SARS survivors. 4 articles covered the Ebola crisis of 2013-2016 and 2 articles investigated the psychological effects of the MERS outbreak. Posttraumatic stress disorder, depression, anxiety and stigmatization were the most explored symptoms of psychological morbidity amongst survivors.

Conclusion From this literature review it is clear to see that psychological morbidities are prevalent amongst pandemic survivors. These psychological sequalae can last for many months post resolution. Given the dearth of literature available on the long-term psychological morbidity on the general population, this review is useful in highlighting the need for further study.

Display Poster Number 2
Sub-Specialty

MACROPHAGE ACTIVATION SYNDROME (MAS) AS THE FIRST MANIFESTATION OF JUVENILE SYSTEMIC LUPUS ERYTHEMATOUS

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Aim: Juvenile systemic lupus erythematosus (jSLE) is multisystemic autoimmune disease, associated with multiple autoantibodies. Macrophage activation syndrome (MAS) is a rare condition that may complicate SLE in up to 5%.

Methods: A literature review was conducted. The clinical notes and investigations were reviewed and collated.

Results: We report a healthy 12-year-old Asian girl, who presented with a prolonged history of fever, dry cough, weight loss and malaise. She has no skin rash or arthritis. Physical examination revealed mild conjunctivitis and splenomegaly. Her father was recently diagnosed with lupus nephritis. Blood tests revealed pancytopenia (WBC1300/cm3, ANC 470/cm3, Hb 94mg/dl, plts 109,000/cm3), transaminitis (ALT 299 u/l, AST 842 u/l), hyperferritinemia (35,171 ng/ml), high LDH (2743 u/l) and triglyceride (4.77 mmol/l), high ESR (65 mm/hr), low complements (C3 0.32 g/l, C4 <0.08 g/l), CRP (<5 mg/l) and coagulation screen (PT 10.7 sec, PTT 43 sec, Fibrinogen 1.47 g/l). She had an elevated protein: creatinine ratio of 83.6 mg/mmol (<3.4). Infectious work up was unremarkable. A diagnosis of evolving MAS was suspected however her auto-immune panel followed which was positive for ANA (1/160 homogeneous), anti-dsDNA (62 u/ml), anti-Sm (54 u/ml), anti-SSA (11 u/ml), and anti-RNP (22 u/ml) antibodies and a low positive cardiolipin antibodies. A bone marrow biopsy excluded malignant infiltration but was not conclusive for MAS. A clinical diagnosis of SLE with MAS presentation was agreed. She commenced on intravenous methylprednisolone (30 mg/kg/day) for three days followed by oral prednisolone (1-2 mg/kg) and subcutaneous anakinra (IL1 RA). She improved dramatically and remained on daily anakinra and a tapering corticosteroid regime.

Conclusion: Our case highlights the importance of early recognition and treatment of MAS, a potentially fatal complication of auto-immune disorders. Bone marrow biopsy can be negative for classical features of MAS and doesn't exclude it. MAS as a presenting feature of JSLE is rare and there are approximately 20 cases to date reported in the literature.

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Display Poster Number 3
Sub-Specialty

A Case Report of chronic non-bacterial osteomyelitis (CNO) in an infancy

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Aim: to present a case of chronic non-bacterial osteomyelitis (CNO) a rare sterile, inflammatory bone disorder in children. Rarely reported in infancy, findings raise concern for a systemic auto-inflammatory condition.

Methods: The patient, clinical notes and investigations were reviewed and a literature review conducted.

Results: We describe a six week old male patient, born to non-consanguineous Indian parents presenting with fever and irritability. Examination revealed decreased right arm movement and swelling on the right scapula, otherwise normal physical findings. While initially normal, he developed anemia (Hb 70mg/dl), Leukocytosis (WBC 19500/cm3), thrombocytosis (PLTs 813,000/cm3), transaminitis (AST 80 u/l, ALT 63 u/l) and high inflammatory marking (CRP 157 mg/l, and ESR 99 mm/hr). Normal renal function, negative cultures and broad infectious screening including COVID 19 & TB. Humeral and cell mediated immunity normal. MRI revealed myositis on shoulder muscles and osteomyelitis of the right scapula. Symptoms and inflammation persisted despite 6 weeks antibiotic treatment. Repeat MRI showed expansion of the right scapular lesion and new expansion of the left 5th, 10th and 11th ribs with myositis. Bone marrow aspiration was normal. Bone biopsy showed ' the appearance of very actively re-modelled bone…soft tissue shows skeletal muscle which is quite extensively infiltrated by fibrous tissue … sampled vessels do not show features of vasculitis.'
Given his age and findings auto-inflammatory disease was considered. 407 gene panel was negative for known DIRA (IL1RA) and Majeed syndrome (LPIN2) genes. Results of patient and parental whole exome sequencing pending. The patient was started on naproxen (10 mg/kg twice daily) with significant improvement in his symptoms and normalizing of inflammatory markers within days. Repeat MRI is scheduled and consideration is being given to adding anti – IL1 blockade despite negative genetics to date.

Conclusion: We highlight this rare presentation in infancy of CNO with concern for underlying novel auto-inflammatory disease in an infant with prolonged fever and bone swelling responding to non-steroidal anti-inflammatory.

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Display Poster Number 4
Sub-Specialty

ALL IRELAND CONGENITAL HEART NETWOTK- PROSPECTIVE REVIEW OF ACTIVITY IN CORK UNIVERSITY MATERNITY HOSPITAL (CUMH) OVER 1 YEAR

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Background

The All Ireland Congenital Heart Network advocates a hub and spoke model of care. Paediatricians with expertise in Cardiology (PEC) are being appointed in paediatric centres outside of Childrens Health Ireland, Crumlin. The aim is to provide diagnostic services for children with suspected congenital cardiac disease as close to home as possible. The first PEC was appointed in Cork in 2019.

Aims

To quantify neonatal cardiology activity in CUMH during the first year of PEC access.

Methods

Data was collected prospectively in all patients undergoing echocardiography in CUMH from January 2019 to January 2020.

Results

A total of 268 echoes were performed on 193 patients. Premature infants (< 37 weeks gestation) accounted for 19.6% (n=38) of patients, and 26% (n= 69) of total echos performed. The primary indication for referral amongst term infants was presence of a murmur 45% (n=87), followed by cyanosis/ intermittent desaturations 20.7% (n=40), dysmorphism 19.6%, congenital anomaly 5.7% (n=11), tachypnoea 5.2% (n=10), and hypotonia 2.6% (n=5).

Congenital cardiac disease was identified in 58.5% (n= 113) of referrals. Three infants had previously diagnosed congenital cardiac disease on antenatal scans. Nine infants (5%) had pulmonary hypertension identified as a cause for symptoms.The most frequently found lesions in infants (N=193) were PDA 25.6% (n=50), VSD 15.6% (n=30), and ASD 11.2% (n=22). Other lesions were aortic stenosis (n=6, 3%), pulmonary stenosis (n=5, 3%), AVSD (n=3, 2%), cardiomyopathy (n=4, 2%), tetralogy of fallot (n=3, 2%). Single cases of coarctation, anomalous pulmonary venous drainage, Ebsteins, and TGA were also identified.Cardiac intervention was required in 24 infants, 12.2% of referrals (5.6% catheter and 6.6% surgery).

Conclusion

Hub and spoke models of care can reduce hospital transfers/ families travelling to CHI, as almost 200 neonates received diagnostic cardiac services locally in CUMH. Over 1 in 10 (12.2%) of infants referred required cardiac intervention.

Display Poster Number 5
Sub-Specialty

CASE REPORT OF X-LINKED IGSF-1 GENE DELETION ASSOCIATED WITH CENTRAL HYPOTHYROIDISM AND MACROORCHIDISM.

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Aims: We report a boy with X-linked IGSF-1 gene deletion and his clinical course to-date.

Methods: Retrospective chart review.

Results: A 16-year-old boy was initially referred to Paediatric Endocrinology(2011) at 7-years-old with obesity and subsequently diagnosed and treated for acquired central hypothyroidism. Despite high body habitus, appetite was poor and inter-mingled with behavioural issues associated with Autism Spectrum Disorder(ASD). There was overgrowth(consistently $\geq 98^{th}$centile for both weight and height) but Tanner staging was under-developed excepting for macroorchidism (>25ml bilaterally by 15-years).

Investigations: Thyroid function test at presentation: Free T4(FT4)8.7pmol/L and Thyroid Stimulating Hormone(TSH)4.69mUL. All other blood-work was normal. TSH became persistently suppressed (TSH<0.03mUL from 2012 and TSH<0.01mUL from 2019). FT4 remained within normal limits. His MRI brain&pituitary was normal and testes were normal albeit large. Microarray(2012) showed a small deletion on long arm of X-chromosome of unknown significance. Trio whole exome sequencing(2018) found the maternally-inherited-deletion incorporated IGSF-1 gene recently discovered to cause X-linked syndrome of central hypothyroidism, macroorchidism and macrosomia. Extended puberty work-up showed normal Inhibin-B(194pg/mL) and Anti-Müllerian hormone(46.50pmol/L) but low Luteinizing Hormone(0.7IU/L), Follicle Stimulating Hormone(6.1IU/L), Testosterone(4.48nmol/L) and Prolactin levels(<13mU/L).

Discussion: There are 8 distinct mutations and 2 deletions of the IGSF-1 gene; all ultimately impair trafficking to cell surface. The associated central hypothyroidism is due to impaired TRH signaling but the mechanism of macroorchidism is unknown. Auxology shows BMI>25, >+2SD above population reference. Biochemistry did not show metabolic syndrome. Most had normal pubertal hormone levels but low serum prolactin. Untreated, there is high risk of profound neurodevelopmental delay and adverse cardiometabolic risk(profound hypothyroxinaemia). Little else is known and accumulating data is valuable in recognizing unique clinical sequelae.

Conclusion: This a unique easily-missed case: Central Hypothyroidism, Obesity and Macroorchidism. In Paediatric Endocrinology, referrals for obesity aim to out-rule underlying endocrinological pathologies; this is another genetic condition to add. We hope our case contributes to the literature on IGSF-1 in Paediatrics.

Sun, Y., Bak, B., Schoenmakers, N., van Trotsenburg, A. S., Oostdijk, W., Voshol, P., Cambridge, E., White, J. K., le Tissier, P., Gharavy, S. N., Martinez-Barbera, J. P., Stokvis-Brantsma, W. H., Vulsma, T., Kempers, M. J., Persani, L., Campi, I., Bonomi, M., Beck-Peccoz, P., Zhu, H., Davis, T. M., … Bernard, D. J. (2012). Loss-of-function mutations in IGSF1 cause an X-linked syndrome of central hypothyroidism and testicular enlargement. Nature genetics, 44(12), 1375–1381. https://doi.org/10.1038/ng.2453

Display Poster Number 6
Sub-Specialty

FACTORS THAT INFLUENCE FAMILY AND PARENTAL PREFERENCES AND DECISION MAKING FOR UNSCHEDULED PAEDIATRIC HEALTHCARE-SYSTEMATIC REVIEW

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Aims: A systematic review was conducted to establish the factors that influence parents' decision making when seeking unscheduled healthcare for their children. The systematic review question was "What are the factors that influence the decision making of parents and families seeking unscheduled paediatric healthcare?"
Method: Five databases (CINAHL, PubMed, SCOPUS, PsycInfo, EconLit) and four grey literature databases (Proquest, Lenus, OpenGrey, Google Scholar) were searched. The titles and abstracts of 3746 articles were screened and full-text screening was performed on 177 of these articles. Fifty-six papers were selected for inclusion. Data relating to different types of unscheduled health services (namely primary care, the emergency department and out-of-hours services) were extracted. A narrative approach was used to synthesise the data.
Results: Several factors were identified as influencing parental preferences and decision making when seeking unscheduled healthcare for their children. Studies identified pre-disposing factors such as race, ethnicity and socioeconomic status (SES) as impacting the healthcare-seeking behaviour of parents. Unscheduled healthcare use was often initiated by the parent's perception that the child's condition was urgent and their need for reassurance. The choice of unscheduled service was influenced by a myriad of factors including: waiting times, availability of GP appointments, location of the ED, and the relationship that the parent or caregiver had with their GP.
Conclusion: This study identified a number of factors that can influence parental preferences and decision making when seeking unscheduled paediatric healthcare. Policy and planning initiatives do not always reflect how patients negotiate the health system as a single entity with numerous entry points. Altering patients' behaviour through public health initiatives that seek to improve, for instance, health literacy or reducing emergency hospital admissions through preventative primary care requires an understanding of the relative importance of factors that influence behaviour and decision making, and the interactions between these factors.

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Display Poster Number 7
Sub-Specialty

PREDICTIVE VALUE OF LUNG BIOPSY, IN THE PAEDIATRI DOWN SYNDROME POPULATION, FOR DETERMINING THE UTILITY CARDIAC SURGICAL REPAIR

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Aim
It is currently unknown if lung biopsies taken from children with Down Syndrome (T21), who require cardiac surgery, aid in discriminating between survivors and non-survivors. Therefore, the aim is to determine the association between lung histopathology and post-operative clinical course in children under 1-year old with T21 following cardiac repair surgery.

Methods
Study participants were identified through a retrospective review of multiple databases. Any child with a diagnosis of T21, who underwent a lung biopsy while having cardiac surgery in their first year of life in Children's Health Ireland at Crumlin were eligible for inclusion. The retrospective study timeline spanned five years, from 2014 to 2018. We compared pathologies reported on lung biopsies to clinical outcomes. Secondary outcomes were investigated. They included comparisons between clinical outcome and feeding methods, oxygen dependence, sildenafil use and assisted ventilation at measured intervals.

Results
Nineteen patients met the inclusion criteria. Twelve of the nineteen patients were still alive at six months follow-up; one was lost to follow up and six had died. Pre-procedural data indicates that of the non-survivors none were fed orally, 83.3% were oxygen dependent, 66.7% were on sildenafil, and 66.7% were intubated. The median number of pathologies reported on lung biopsy of both survivors and non-survivors was three.

Conclusions
With three pathologies being identified as the median number in both survivors and non-survivors at the six month follow-up point, it suggests that based on our data lung biopsy was not able to discriminate between long term survivors and non-survivors. The risks versus benefits of lung biopsies in this setting should be considered. Further focused qualitative assessment of the histopathological samples are pending.

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Display Poster Number 8
Sub-Specialty

OMALIZUMAB FOR THE TREATMENT OF SEVERE ALLERGIC ASTHMA IN CHILDREN – A CASE SERIES

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AIMS: Omalizumab is a monoclonal antibody which targets immunoglobulin E (IgE). It is approved as an add-on therapy for children with severe allergic asthma. Assessment of endotype and phenotype is necessary to correctly identify those patients who are most likely to respond. Two children have been commenced on omalizumab by the respiratory department in Children's Health Ireland (CHI) at Tallaght. This report aims to outline their background, management, and outcomes. It demonstrates the difficulties faced by this cohort and the positive impact targeted biological therapy can have.
METHODS: We performed a literature review on biological therapies in paediatric asthma and reviewe the charts of the two children.
RESULTS: Both children were categorised under the T2-high asthma endotype with phenotypic assessment consistent with severe allergic asthma. They showed marked improvement in their symptoms following initiation of omalizumab, with a significant reduction in the number of asthma exacerbations, use of systemic corticosteroids, and unscheduled healthcare interactions. FEV1 has been proposed as an outcome endpoint in the literature; however, neither of these patients demonstrated an improvement in FEV1.
CONCLUSION: This case series indicates that a combination of both subjective and objective measures are needed in order to assess response and efficacy for biological therapies. The phenotype most likely to respond to omalizumab has been identified as severe asthma with clinically relevant allergic sensitisation(s), multiple atopic comorbidities, and high serum eosinophils and total IgE. Evidence supports the role of omalizumab in treatment-resistant allergic asthma in the paediatric population. The steroid-sparing effects are especially important in this cohort. There is a significant number of children with asthma attending CHI at Tallaght. However, only two children have been commenced on biological therapy – an indication of the control that can be achieved with standard therapies. Comprehensive stepwise care and education remain the bedrock of asthma management.

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Display Poster Number 9
Sub-Specialty

AN AUDIT OF JUNIOR MARSIPAN GUIDELINE USE IN CHILDRENS HEALTH IRELAND AT TEMPLE STREET

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Introduction:

The mortality of patients with Anorexia Nervosa (AN) is 6 times higher than the general population, the highest of all psychiatric conditions[1,2]. For adolescents with AN, this figure rises to 10 times that of their peers.

The causes of death from AN are commonly physical, with one-third dying from cardiac dysfunction as a result of starvation[3]. Profound electrolyte disturbance is another potentially life-threatening complication[4]. Potential long-term sequelae include amenorrhea, osteoporosis, cerebral and myocardial atrophy[4].

The Junior MARISPAN (Management of Really Sick Patients under 18 with Anorexia Nervosa) Guideline provides a structured framework for risk assessment of patients with AN[5]. Our aim was to ascertain if the introduction of this guideline improved the recognition of medical instability in these patients.

Methods:

A retrospective chart review of patients admitted in 2014 and 2019.

Results:

2014: n=9: Orthostatic vitals were recorded in 11.1% and BMI in 66.7%. Urinalysis was performed in 22.2% and 28.6% of females had a documented last menstrual period (LMP). Continuous cardiac monitoring occurred in 11.1%, ECG in 55.6%. 88.9% were referred to dietetics. 100% had bloods and a Psychiatry referral.

2019: n=9: Orthostatic vitals and BMI were recorded in 88.9%, urinalysis in 55.6% and continuous cardiac monitoring in 77.8%. 100% had a documented LMP, bloods, ECG, Psychiatry and Dietician review.

Discussion:

This audit highlights a significant improvement in the screening for medical complications, in particular cardiac dysfunction and amenorrhoea. We postulate these improvements are due to the introduction of and regular education on the Junior MARISPAN Guideline introduced in 2016. A cross hospital guideline on the acute management of patients with AN was introduced this year in line with the HSE Model of Care for Eating Disorders[6]. Ongoing education and audit is required to ensure a safe, standardised and evidence-based approach to the management of these sick patients.

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Display Poster Number 10
Sub-Specialty

ICE ICE BABY: PREVALENCE OF HYPOTHERMIA IN INFANTS LESS THAN 5000 GRAMS ADMITTED TO A PICU

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Aims:
Hypothermia in neonates is associated with increased morbidity and mortality. The aim of this study was to determine the prevalence of hypothermia in young infants admitted to a paediatric intensive care unit (PICU).

Methods:
This was a retrospective cohort study of infants with an admission weight of less than 5000 grams admitted to a PICU from January to October 2020. The primary outcome was temperature on admission. Temperatures were stratified according to the World Health Organization classification of hypothermia. We assessed for the presence of sedation and the source of admission: theatre, ward/emergency department (ED), transport service (Irish Paediatric Acute Transport Services or National Neonatal Transport Services) or referring hospital transfer.

Results
71 neonates were included in the study. Median weight was 2810 grams (IQR 955) and median age was 16 days (IQR 35.5). 38 (54%) were normothermic (36.5-37.5°C), 17(24%) were mildly hypothermic (36-36.5°C) and 12(17%) had moderate hypothermia (32-36.5°C). No neonate suffered severe hypothermia (<32°C).
12 of 16 theatre patients (75%, p = 0.045), 11 of 39 of transport service patients (28%, p=0.006,) and 6 of 9 ward/ED patients (66%, p=0.3) were hypothermic. None of the patients transferred by referring hospitals (p=0.008) suffered from hypothermia. 12 of 25 infants receiving sedation were hypothermic on arrival (p = 0.03).

Conclusions:
There is a high prevalence of hypothermia among infants admitted to the PICU. Initial data suggests admission from theatre or a transport service and receipt of sedation may be risk factors however further work is needed to see if these correlations persist on multivariate analysis. This study does highlight the need to evaluate what processes can be optimized to attempt to protect this vulnerable population from hypothermia.

Display Poster Number 11
Sub-Specialty

SLEEP DISORDERED BREATHING IN INFANTS WITH CONGENITAL IDIOPATHIC BILATERAL LARYNGEAL PARALYSIS; A CASE SERIES.

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Aims:
Congenital Idiopathic bilateral laryngeal paralysis (CIBP) is a rare and potentially life-threatening condition1. The association with sleep disordered breathing (SDB) and CIBP is poorly defined within the current literature2. Herein we describe a cluster of 3 patients from March-August 2020 who presented to an Irish tertiary paediatric hospital, detailing their clinical course and respiratory management insights from their treatment.
Methods:
A retrospective chart review was conducted at a single tertiary centre of three patients presenting to CHI Crumlin from March-August 2020. Overnight oximetry (OO) and polysomnogram (PSG) data were evaluated along with clinical outcomes and non-invasive ventilation requirements.
Results:
Three term infants, all female, presented on day one of life (mean age 20 hours) with a combination of hoarse cry, stridor, increased work of breathing, poor feeding, hypoxia and/or hypoglycaemia. All patients were transferred, self-ventilating, to a tertiary centre on day of life 3-4. Microlaryngoscopy performed following admission demonstrated bilateral vocal cord paralysis in each patient. OO showed a mean oxygen desaturation index of 14.2 (range 5-26), PSG data demonstrated an obstructive sleep apnoea pattern with mean OAHI of 38.8 (range 28.5-49, N=2). All patients were treated with CPAP, which was well tolerated, with mean pressures of 8cmH20 (range 6-10). Patients one and two discontinued CPAP at 8 and 11 weeks respectively. The third patient remains on nocturnal CPAP at seven months following supraglottoplasty for severe laryngomalacia.
Conclusions:
Though CIBP is a rare and potentially life-threatening condition the presence of SDB as a co-morbidity should not be underestimated. This case series demonstrates that the addition of a respiratory sleep assessment is a key part of patient care. The natural history of CIBP trends towards symptom improvement over time. This study illustrates that CPAP can be used an effective bridge for the treatment of SDB until symptom resolution in those with CIBP.

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Display Poster Number 12
Sub-Specialty

CAMHS Referrals During a Pandemic: A Prospective Review of Referrals by Paediatricians to the Child and Adolescent Mental Health Services

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Background/Aims:
CAMHS (Child and Adolescent Mental Health Services) is a specialist service for children under 18 years with mental health difficulties [1]. The service, accessed through referral to a regional specialist team, is essential for the mental health of young people and often, their safety.
The aims of this project were to determine the origin of referrals to CAMHS in the Paediatric Department of a regional hospital, the age and gender demographics of patients referred and their length of stay.

Methods:
For a four month period between June 2020 and October 2020, a central logbook of all referrals to CAMHS was kept by Paediatric Doctors in compliance with GDPR regulations for records of this kind. Patient ID number, date of birth, date of referral to CAMHS and origin of referral were documented. The presenting complaint of patients and working diagnosis were omitted for confidentiality purposes.

Results:
During the audit period, 31 referrals were made to CAMHS. We have demonstrated that referrals from in-patient settings slightly supersede Emergency Department referrals (54.8% vs 45.2%). The gender demographics show a striking prevalence of mental health issues in females (65%) vs males (35%). Ages of children ranged from 4-15 years, with the mean age at 13.45 years. The length of stay ranged from 0 to 11 days, with a mean of 1.35 bed-days used.

Conclusion
It is evident from our data thus far, that the demand for CAMHS is significant in our region and places pressure on ED and inpatient wards, to ensure 24-hour care for children with mental health needs. A Paediatric inpatient ward is not a suitable location for a child with an acute mental health need.

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Display Poster Number 13
Sub-Specialty

AN AUDIT OF PARACETAMOL INGESTIONS IN A TERTIARY PAEDIATRIC EMERGENCY DEPARTMENT

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Introduction: Ingestions are a common presentation to the paediatric emergency department (ED). During the early stages of the COVID-19 pandemic, there was perception among staff of an increase in paracetamol ingestion presentations. Paracetamol ingestions range from accidental ingestions in small children to deliberate self-harm. The current guidance used in Irish paediatric EDs is to take blood samples at 4-hours post ingestion for paracetamol levels, liver function tests, a coagulation screen and bicarbonate if the estimated ingestion is 75mg/kg or more (1). The aim of this audit was to demonstrate whether bloods were being taken unnecessarily in children who did not meet the estimated ingestion threshold.

Method and sample: Presentations were audited between 27/04/2020 to 29/06/2020 at Children's Health Ireland at Crumlin. All presentations with "ingestion", "calpol" or "paracetamol" in the triage note were selected. 34 patients were excluded for ingestions that did not involve paracetamol. 21 patients that met the criteria remained.

Results: 21 patients in total presented with paracetamol ingestions. The average weight of a child presenting was 24.8kg and the average dose ingested was 168.66mg/kg. Altogether 3 patients (14%) presented with estimated ingestions of less than 75mg/kg, and of these 2 patients had bloods taken. One patient was administered activated charcoal in the ED. Three patients in total were admitted, one for the administration of N-Acetylcysteine and two for observation and safety concerns.

Conclusion: Whenchildren present to the ED, estimation on the maximum amount ingested is always calculated, often an overestimation.Of the audited sample, 3 patients did not meet the criteria for phlebotomy, but 2 had phlebotomy performed. In order to address inappropriate phlebotomy these results have been highlighted to the department and will be included in clinical induction for NCHDs going forward. It would be pertinent to re-audit practices again in 6 months time to check for increased compliance.

1. Toxbase – Poisons information database

Display Poster Number 14
Sub-Specialty

TWO YEARS POST-INTRODUCTION OF CENTRALLY-FUNDED FLASH GLUCOSE MONITORING IN PAEDIATRIC TYPE 1 DIABETES: A REGIONAL CENTRE'S EXPERIENCE

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Introduction: The *FreeStyleLibr*e Flash Glucose Monitoring system (FGMS) continuously measures glucose concentration in the interstitial fluid. It was approved under the Community Drug Scheme in Ireland from 1st April 2018 for all children ≥4 years with Type 1 Diabetes (T1D) using intensive insulin regimens.
We explored the effect of FGMS introduction on our paediatric clinic cohort, including engagement of patients with technology, compared to the rest of our patient cohort who did not opt to use FGMS.

Methods: Over a two year period, HbA1c at quarterly intervals from 3 months pre to 24 months post introduction of the FGMS were examined. Data were extracted from 'Libreview'.

Results: Of 235 patients, 108 patients (46%) commenced using FGMS; 58 (54%) male and 50 (46%) female. Thirty two (30%) were using continuous subcutaneous insulin infusion (CSII) and 76 (70%) injectable regimes. Mean HbA1c in the cohort initially improved across the study period from 8.2±1.1% at 3 months prior to 7.6±0.9% at 9 months post-initiation, but had reverted to 8.4±0.8% at 2 years(FGMS) Vs 8.2±1.5% in the non-FGMS cohort (p=0.4). Technology engagement increased, with 34 downloading data at 1 year and 52 (48%) at 2 years. Scans per day increased from 6.0 to 7.1 (p=0.42) and percentage usage increased from 55% to 63% (p=0.22)

Conclusion: Improvement was demonstrated initially in mean HbA1c over time, however no difference was demonstrated in HbA1c of cohorts at 2 years post-initiation. Engagement with uploading data was initially low. This increased during 'lockdown' although didn't translate to improved glycaemic control.

Display Poster Number 15
Sub-Specialty

TO REVIEW A TERTIARY PAEDIATRIC KETOGENIC DIET (KD) SERVICE, MEASURING ADHERENCE TO GUIDELINES FOR BIOCHEMICAL MONITORING AND PATIENT EXPERIENCE

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All paediatric patients on the KD since the service was established at CUH in 2016 were included. To assess biochemical monitoring, results were obtained from iSoft iLab Laboratory Information Management System and compared to ILAE guidelines (1). Carer experience was assessed using locally-devised questionnaires and recurring themes highlighted.
Seventeen patients were included. 7 were male. Mean age was 10 years (SD±3.7). Most common diagnoses were tuberous sclerosis (n=5) and GLUT-1 deficiency (n=2). 12 caregivers completed the anonymous questionnaire. Prior to commencing the KD, 50% were unaware of its use in epilepsy. 75% (9/12) thought it would be very difficult or strict. With KD, 33% (n=4) noticed improved concentration and 25% (n=3) perceived their children to be more active. 40% (5/12) experienced a reduction in seizures and 30% (4/12) had seizure cessation. 25% (3/12) reported no benefit. Side-effects reported included weight gain (25%), low mood (17%) and abdominal pain (17%). Regardless of outcome, all those surveyed would recommend the KD to other families.

82% had baseline FBC, U&E, LFT and acylcarnitine prior to commencing treatment. 76% had baseline coagulation, 71% had lipids, 65% had glucose and 53% had baseline carnitine. As treatment progressed biochemical monitoring became less consistent with U&E and LFTs checked in 69%, at three months and in 44-46% thereafter. 50% had three-month lipids and this fell to between 33-38% subsequently. Vitamin D was checked in 38% at three and six months and 33% six-monthly thereafter. Patients only had half the recommended biochemical monitoring.

We highlight the potential benefits of the KD in patients with refractory epilepsy with 70% experiencing improved seizure control. Caregivers were content with both the service and the outcome. Follow-up monitoring of patients could be improved.

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Display Poster Number 16
Sub-Specialty

SUCCESSFUL IMPLEMENTATION OF NETWORK MEDICINE (NM) IN A TERTIARY PAEDIATRIC EMERGENCY DEPARTMENT

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Introduction

The SARS-CoV-2 pandemic poses ongoing significant challenges to the delivery of healthcare[1]. These challenges have been met with flexibility and strategic thinking by healthcare professionals. In order to ensure continued high quality of care, novel strategies have been pursued. One such example pertains to the introduction of NM in our ED through use of the 'Siilo' application which facilitates confidential sharing of clinical data.

Throughout the pandemic, trauma and orthopaedics have continued to represent a significant burden of presentations to our ED. The majority need same day review or follow-up in outpatients(OPD). In order to comply with government advice on physical distancing, we needed an innovative solution to manage these patients and provide safe, timely care. We introduced NM to our ED in March 2020.

A system of injury referrals and management was created, reducing the number of face-to-face consultations. Clinical details and radiology images are uploaded by ED clinicians, with real-time management and follow-up advice from orthopaedics.

Aim

To determine if NM provides a safe alternative in the on-going provision of paediatric trauma and orthopaedic care.

Methods

A single-centre retrospective cohort study of all children with trauma and orthopaedic presentations to the ED between March and June 2020.

Results

1,014 children were identified. 33% were referred to OPD. In the same time period in 2019 there were 2,765 children; the majority (70%) were referred to OPD. This represents a 37% reduction in outpatient referrals. No adverse outcomes were reported by healthcare professionals or patients.

Conclusion

Network Medicine is a cost-effective, user-friendly and safe management alternative for children with trauma and orthopaedic presentations to the paediatric ED.

The pandemic continues to evolve and provide challenges in the delivery of medicine. In our department this re-invention in care delivery was an alternative borne out of necessity. However given the successful outcomes, NM will continue to have a role to play well into the future.

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Display Poster Number 17
Sub-Specialty

THE INCIDENCE OF FORAMEN MAGNUM OR SPINAL STENOSIS IN CHILDREN WITH ACHONDROPLASIA PRESENTING TO A TERTIARY REFERRAL CENTRE IN IRELAND

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Aims:

Achondroplasia is the most common inherited skeletal dysplasia [Incidence 1:20,000 live births[1]]. Cervical medullary compression due to Foramen Magnum Stenosis [FMS] affects 5-10% of these children with an estimated risk of death of 7.5% in the first year of life. Spinal stenosis can lead to long term paralysis, continence or mobility issues. This retrospective audit sought to summarize whether the clinical cohort attending our service have issues with FMS or spinal stenosis and to ascertain the need for routine surveillance in this population.

Methods

A single-centre retrospective audit was undertaken of all children with achondroplasia attending the MDT clinic at the Centre for Rare Paediatric Bone Disorders which commenced in August 2019. Scan reports and outcomes were ascertained by reviewing the NIMIS database and patient medical records.

Results

There are currently 25 children [M:F 13:1] with Achondroplasia. Nineteen patients (76%) have had neuroimaging at some stage of life. Twelve had evidence of a degree of FMS [48% of total population]. Four patients have required foramen magnum decompression [n=2 presentation in respiratory arrest at 4 and 11 months respectively, n=1 due to apnoea symptoms, n=1 incidental finding]. Both children with respiratory arrest had issues with apnoea, had not had a MRI scan prior to the event and in both cases the apnoea event was sustained during a car journey. Three children have documented spinal stenosis but all are asymptomatic and have not required intervention.

Conclusion

The high incidence of FMS in the population would justify early screening and a surveillance guideline has been created based on this audit. The multidisciplinary team also advocate the use of lie flat car seats in young infants with Achondroplasia and the inclusion of standardised clinical questions on apnoea symptoms when children with Achondroplasia attend for neonatal or paediatric review.

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Display Poster Number 18
Sub-Specialty

Neurological Involvement in Children with Hemolytic Uremic Syndrome: A National Review

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Objective

STEC-HUS is the most common cause of acute renal failure in the pediatric population and Ireland has the highest rate of verotoxigenic *E.Coli* in Europe.[1–5] Neurological involvement has been reported in up to 53% of all types of HUS[6] and is associated with high mortality (up to 30%), long-term physical disability, neuropsychological and cognitive issues.[6] We aim to establish a true incidence of neurological involvement in STEC-HUS and to describe its clinical presentation, management and outcome.

Methods

A retrospective chart review of all children aged ≤16 years with STEC-HUS in Children's Health Ireland (CHI) Dublin, Ireland from 2005 to 2018 was conducted. Laboratory confirmation of STEC infection was required for inclusion. Neurological involvement was defined as encephalopathy, focal neurological deficit and/or seizure activity. Data on clinical presentation, management and outcome were gathered for all children.

Results

There were 240 children with HUS identified, of which 202 had evidence of STEC infection. Neurological involvement was identified in 21 (10.3%). Seizures were the most common presentation (71%). In the *Neurological Group*, 19 patients (90.5%) were treated with either plasma exchange or Eculizumab. Of the 20 surviving patients with neurological involvement 18 (85.7%) made a complete neurological recovery. Complete renal recovery, defined as the absence of proteinuria or hypertension and a normal eGFR, was achieved in 89.6% of the *total group*. There was a significant difference in proportion of patients achieving renal recovery between groups; a higher proportion of patients in the *neurological group* had long-term renal sequelae (12% vs 3.8%, $p<0.001$). One patient died from multi-organ failure.

Conclusions

We present a large cohort of patients with confirmed STEC-HUS, and have identified the true incidence of neurological involvement (10.3%). Neurological involvement in STEC-HUS is associated with good long-term outcome (complete recovery in 85.7%) and a low mortality rate (4.7%).

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Sub-Specialty

A RARE CASE OF PLEURAL EFFUSION IN CHRONIC RENAL FAILURE

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Introduction:
Peritoneal dialysis (PD) is an effective renal replacement therapy for children with end stage renal disease. Pleural effusions and hydrothorax are known, but rare complications of PD, occuring in 2% of chronic PD patients[1]. Dialysate usually crosses defects in the diaphragm resulting in pleural effusion[2]. Patients present with cough, shortness of breath, reduced ultrafiltration[3]. We present a case of a 3 year old girl on PD with an asymptomatic presentation of pleural effusion.

Case Report:
Three year old girl with ESRF, had a PD catheter inserted in June 2020 and started on PD in July 2020. PD prescription was 30ml/kg, six cycles, over 10 hours at night. She had a solution dwell of 300ml.
Four months following catheter insertion, she was scheduled for routine chest xray as part of pre-renal transplant work up. *This demonstrated significant elevation of the right hemidiaphragm and lung compression due to effusion. US Abdomen performed same day demonstrated a pleural effusion in the right hemithorax.* There were no respiratory symptoms at the time of the xray. Her oxygen saturations were normal.
The patient was admitted, last bag fill was drained and xray repeated the following day. This showed the pleural effusion had reduced in size, with only a small amount of pleural fluid still visible.
A third chest xray was carried out following administration of intraperitoneal contrast via the peritoneal catheter. The contrast was visible within the peritoneal cavity but remained beneath the hemidiaphragms, no pleural contrast was identified.
In this case, the pleural effusion resolved over one day, following removal of the peritoneal fluid and the patient remained asymptomatic. As such, it was decided not to proceed with further investigations. PD was discontinued and patient was commenced on haemodialysis.

Conclusion:
Pleural effusion and hydrothorax are rare in children on PD. Treatment often involves cessation of PD and transition to haemodialysis[4], as seen in this case.

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CONGENITAL HYPOGONADOTOPIC HYPODONADISM TYPE 14 - A NOVEL VARIANT OF WDR11.

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Case report:

Presentation:
The patient was referred to the paediatric endocrinology team for significant hypogonadism, aged 6. After two right orchidopexies, testes were 3ml on the right, and <1ml on the left, with a stretched penile length of 2.8cm (<10%). Moreover, the patient weighed 37kg (>99.6%), and was 123cm tall, with a BMI of 24.5 (>99%).

Investigations:
Numerous diagnostic tools were reported as normal including: Inhibin-B, Anti-Mullerian hormone, testosterone and androstenedione, and an MRI brain. However, an LHRH stimulation test inferred a gonadotrophin deficiency, with decreased levels of LH and FSH. While, a HCG stimulation test, demonstrated basal ratios similar to a 5-a-reductase deficiency, but was paired with a normal stimulated ratio. Finally, whole exome sequencing (WES) uncovered a novel genetic variant of WDR11. Specifically: WDR11 c.3235G>A; p.Ala1079Thr.

Treatment:
Testosterone replacement was commenced, and successfully induced puberty.

Discussion:
HH is a disease affecting the HPG axis, manifesting in absent or delayed puberty. The clinical variants of HH is expansive, including abnormal MRI findings, difficulty in inducing puberty, anosmia, hearing loss, adrenal hypoplasia and renal agenesis among others. WDR11 mutations on 10q26 are pathognomic for HH type 14. While this mutation can't denote an obvious clinical singularity, features potentially unique include: childhood obesity, normal MRI results, micropenis, numerous orchidopexies, and the induction of puberty

Conclusion: We describe a novel and undescribed genetic variant of congenital hypogonadotropic hypogonadism (HH). Despite extensive endocrine testing, this case report highlights the diagnostic utility of WES in Paediatric Endocrinology.

WD protein that interacts with transcription factor EMX1, is mutated in idiopathic hypogonadotropic hypogonadism and Kallmann syndrome.

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DAX-1 gene give rise to both X-linked adrenal hypoplasia congenita and hypogonadotropic hypogonadism. Nature. 1994;372(6507):672-6.

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Sub-Specialty

AUDIT OF REFERRALS TO CORK UNIVERSITY PAEDIATRIC CARDIOLOGY CLINIC

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AIMS: The all island congenital heart network aims to facilitate diagnostic services for children as close to home as possible. Cork University Hospital (CUH) was the first 'spoke' in their Hub and Spoke model developed outside of Dublin. The aims of this audit were to assess the indications for referral.

Methods: Prospective data collection of all referrals over a 1 month period in June 2020. Indication for referral and referrer details were collected.

Results: A total of 92 referrals were received over 1 month. The majority of referrals were for assessment of murmur; 59% (54/92). Palpitations, chest pain and collapse all had similar numbers of referral and comprised 19.6% of referrals in total. Family history accounted for 8.7% of referrals and 2 referrals were received for assessment pre stimulant medication.

Referrals were received from the neonatology department in Cork University hospital (39%), GP (27%), and paediatric consultants in South Southwest group hospitals (24%).

Conclusion: Indications for referral are similar to referrals received in Children's Health Ireland when compared to their audit in 2014. Referrals are received from multiple sources and allow for children to receive diagnostic services closer to home.

ARGININOSUCCINATE LYASE DEFICIENCY DECOMPENSATION: PRESENTATION OF A 23-YEAR OLD MALE AND THE IMPORTANCE OF INTER-SPECIALTY COLLABORATION IN MANAGING COMPLEX CASES

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AIMS

We aim to highlight the effectiveness and challenges of multidisciplinary (MDT) and inter-hospital collaboration in the management of adult patients with metabolic syndromes.

METHODS

We extracted data from medical records and laboratory results. Collateral history and consent was taken from the family.

RESULTS

A 23-year old male presented to the ED of an University hospital with a one-day history of nausea and vomiting. He was pale, fatigued, and required a wheelchair. He has a background of argininosuccinate lyase deficiency(ASLD), moderate global developmental delay and is non-verbal. His ammonia was 289umol/L (18-72umol/L), urea level 0.6mmol/L (2.5-7.8mmol/l), with serum amino acids showing glutamine 1018umol/L(415-694) and arginine 49(21-138umol/L)The clinical impression was of decompensated ASLD secondary to dehydration. He required a high level of care and admission to the High Dependency Unit. The goals of treatment were to down-titrate ammonia levels using the scavenger medication sodium phenylbutyrate, and intravenous arginine to control the urea cycle. It was essential to ensure he was not in caloric deficit by using intravenous 10% dextrose and lipids.
An MDT approach was taken, with involvement from speech and language therapists, dietitians, pharmacists, occupational therapists, physiotherapists and anaesthetics. The patient attends Temple Street Hospital, whose input guided clinical management. Treatment was not without difficulties - lipaemic blood samples due to lipid infusions prevented accurate results, and sourcing specialised medications was challenging. Patient management was optimised through MDT input and inter-hospital collaboration.

CONCLUSION

Proactive and cohesive management of paediatric metabolic syndromes means that more patients are living well with these conditions. As our case illustrates, general physicians need to be aware of the challenges of managing patients with decompensated metabolic syndromes in adulthood, and the importance of involving their interdisciplinary colleagues nationally to provide individualised management plans. Metabolic syndromes can no longer be seen solely as paediatric syndromes.

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Sub-Specialty

THE MANAGEMENT OF SPASTICITY IN CEREBRAL PALSY; A LITERATURE REVIEW

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AIMS:
To evaluate the literature on available interventions for the management of spasticity in cerebral palsy, determining those with a strong evidence base and, exploring alternative treatment modalities which may not be typical to standard care.

METHODS:
A literature review was performed using the PubMed database. Initial search terms yielded 396 papers. Papers which met the following criteria were included; randomised controlled trial study, study participants aged 0-18 years, published from 01/01/2000 – 06/02/2020 and accessible via Trinity College Dublin online library.
The final count for discussion was 67 papers.

RESULTS:
The interventions assessed can be split into four main categories: physiotherapy, pharmacological, surgical and other. The total number from each category was 15, 23, 1 and 26, respectively.

CONCLUSIONS:
Management of spasticity in children with cerebral palsy is complex, and there are numerous treatments available. However, none are able to produce long-term symptom remission. Botulinum-A Toxin treatment has the best evidence base. Physiotherapy and splinting/casting require higher-grade supportive evidence. Multidisciplinary input has shown to be the best approach. Regardless of modality, it is important that treatment remains patient centred, and evidence based.

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Sub-Specialty

MULTIORGAN DYSFUNCTION SCORING SYSTEMS IN CHILDREN

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Background and Aims
Multiple organ dysfunction syndrome (MODS) is “the progressive, potentially reversible dysfunction of two or more organ systems following acute, life-threatening disruption of systemic homeostasis”. Numerous scoring systems are utilised to assess severity and predict outcomes of MODS in paediatric patients. The aim of this systematic review was to identify and compare such scoring systems.

Methods
1163 papers were identified using MEDLINE and EMBASE databases. Inclusion criteria for studies were; patients under the age of 18 years, and the utilisation and assessment of efficacy of a scoring system to predict prognosis in MODS. Following evaluation, 32 papers were included in the final review.

Results
11 scoring systems were identified in the final 32 studies. Paediatric Logistic Organ Dysfunction score (PELOD) was found to be quick and easy to calculate and higher scoring correlated with mortality risk. The Pediatric Risk of Mortality score (PRISM) correlated with the development of disseminated intravascular coagulation and was found to be a useful predictor of outcome in oncology patients with MODS. The Paediatric Sequential Organ Failure Assessment score (pSOFA) strongly predicted prognosis in children with sepsis-related MODS and an extra-renal modification of SOFA demonstrated the largest predictive power of outcome in children with MODS receiving continuous renal replacement therapy.

Conclusions
Particular scoring systems have an increased discrimination ability in specific circumstances, however, an inadequate quantity of evidence is available to provide distinct indications for each system. Further evaluation of paediatric scoring systems is imperative to ensure appropriate management of paediatric patients with MODS.

EXPLORING THE ATTITUDES AND EXPERIENCES OF ADOLESCENTS WITH TYPE 1 DIABETES TOWARDS TRANSITION OF CARE

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Introduction

Transition from adolescence to adult care is very challenging for most patients. Without appropriate appointments and education, adolescents can get lost to follow up within one-year of transitioning to adult care[2]. Loss to follow-up can increase risks of adverse short and long term diabetes-related complications, with healthcare contacts mainly limited to crisis-based management[1].

Aims

The purpose of this study was to evaluate the patient's perspective of the process of transition from paediatric to adult-based diabetes services in the Mid-West region of Ireland.

Methods

We implemented a new transition clinic at University Hospital Limerick with the collaboration of paediatric and adult endocrinology teams. Seventeen patients consented to participate in a qualitative assessment study and completed questionnaires before and after the transition clinic.

Results

In terms of medical management, patients had a good understanding of hypoglycaemia and insulin dose adjustment principles, but were least comfortable with carbohydrate counting. Patients self-ranked their knowledge on driving and sexual health with a diagnosis of diabetes as poor, in comparison to understanding effects of alcohol and smoking on diabetes.

Conclusion

Overall, 56% of respondents felt more confident in moving to adult-care and 100% of attendees found attending the transition clinic helpful with the transition process. Furthermore, this study demonstrates the need for structured education prior to transitioning, and the importance of building strong partnerships between adolescents, their families and the adult diabetes services.

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Sub-Specialty

CONGENITAL MYASTHENIC SYNDROME: A NEW GENE VARIANT.

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An 11 week-old boy presented with feeding difficulties and failure to thrive. He was born by normal delivery with birth weight 3.04 kg. There were no antenatal concern or polyhydramnios. He had respiratory distress after birth and was on nCPAP for 12 hours. Parents described him as a messy slow feeder, who drooled and could take 60 minutes to finish a (3oz) bottle. He had no history of apnea or symptoms of aspiration. There was no family history of miscarriages or early neonatal death. He was less active at 11 weeks than his siblings, but development otherwise appeared normal.His head circumference was on the 15th centile and weight was < 0.4th centile. He had mild truncal hypotonia, reduced limb movements and a weak cry, but was alert, cooing and following. He had normal limb tone and power with brisk reflexes. He had mild facial weakness but no ptosis. Systemic examination was normal. MRI brain, karyotype and metabolic testing for amino acids profile, very long chain fatty acids and lysosomal enzymes were normal. A Tensilon test was negative.

He was reviewed regularly and noted to have gross motor delay. He sat after 10 months and stood at 22 months. He had a weak cough and gag reflex with some facial, bulbar and shoulder muscles weakness. Ptosis was noted at five years of age, which appeared to improve following sleep. Neurophysiology revealed an abnormality in neuromuscular junction transmission during EMG. A search for a genetic myasthenia revealed a heterozygous variant of his RASPN gene at c.264 (Asn88Lys) inherited from one parent and a novel variant at c.1195 (Cys399Ser) inherited from the other. He commenced Pyridostigmine at the age of five and has made excellent progress. He is now twelve and continues to manage his myasthenia very well.

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Sub-Specialty

THE UTILITY OF ROUTINE EEG IN THE DIAGNOSIS OF NON-EPILEPTIC ATTACK DISORDER IN CHILDREN

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Background:

Non-epileptic attack disorders (NEAD) consist of non-epileptic seizures that superficially resemble epileptic seizures but without ictal electrical discharges in the brain[1]. The "gold standard" for diagnosis is a clear history, supported by video-telemetry (VT) to capture events[2,3]. Capturing an event is very important and allows the question of whether this event is an epileptic seizure or not to be simply answered[2]. Waiting for VT to confirm a diagnosis of NEAD can often lead to unnecessary delay as this investigation often encounters long waiting times.

Aim:

Determine the capture rate of a typical event during routine EEG testing in children referred with a suspicion of NEAD.

Methods:

Retrospective review of EEG referrals over a one-year period to a tertiary paediatric neurology department (Jan 2019-Dec 2019). EEG reports were reviewed on all children where the referral indicated a suspicion of non-epileptic attacks. Data collected included whether an event was captured, if it was their typical event and the type of EEG involved.

Results:

There were 834 referrals for EEG in 2019. There was a suspicion of non-epileptic events in 22(3%) referrals during this period. Regarding these referrals (n=22), the mean age was 13 years old(range 8-16years) and 73% were female. Majority of EEGs were routine EEG recordings lasting 1 hour in duration (routine EEG 19;amb EEG 0;VT 3). 74%(14/19) of routine EEGs captured a typical event. Inter-ictal EEGs were reported as normal in 17 cases (89%).

Conclusions:

Routine EEG is a readily available investigation that captured an event in 74% of cases in our cohort. Capturing non-epileptic attack events is crucial for correct diagnosis and also for full understanding and acceptance of the diagnosis. Routine EEGs are more accessible, leading to faster identification of the correct management plan, thus avoiding un-necessary use of anti-epileptic medications and other investigations[2].

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Sub-Specialty

THE CLUE IS IN THE CRACKLES - A DIAGNOSIS OF NEUROENDOCRINE CELL HYPERPLASIA OF INFANCY (NEHI)

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Background and Aims:

Childhood Interstitial Lung Disease (chILD) is a heterogeneous group of disorders characterised by the presence of three of the following four criteria: respiratory symptoms, respiratory signs, hypoxaemia and diffuse abnormalities on computed tomography (CT)[1]. Neuroendocrine Cell Hyperplasia of Infancy (NEHI) is a form of chILD with typical findings on CT of ground glass opacities most prominent in the right middle lobe and lingula[2]. The exact aetiology is unclear, however familial cases are described[1].
Our aim is to report the case of an infant with NEHI.

Methods:

We describe the clinical presentation, management and outcome to date of our patient.

Results:

A previously well, five month old girl presented with a two day history of irritability, cough, coryza and reduced feeds. On examination she was tachypnoeic with mild intercostal and subcostal recessions and bibasal crepitations. Her extended viral screen showed rhino/enterovirus. Due to ongoing oxygen requirement a chest x-ray was performed which showed focal airspace opacification in the right middle and lower lobes. She received antibiotics for likely secondary bacterial infection and required continuous positive airways pressure (CPAP). She was noted to have an ongoing oxygen requirement three weeks later resulting in a respiratory consultant review. On examination she was tachypnoeic at 80-100 breaths per minute with mild recessions and intermittent fine crepitations on auscultation. A high resolution CT Thorax showed bilateral confluent groundglass opacification in the upper lobes, right middle lobe and lingula with confluent peripheral groundglass opacification and foci of confluent consolidation/atelectasis at the lung bases bilaterally. These findings in association with her clinical picture provided a diagnosis of NEHI. She has an ongoing baseline oxygen requirement of 0.5L/minute. Formal genetic studies for surfactant protein deficiency are in progress.

Conclusion:

Being a rare disorder, NEHI can be difficult to diagnose. Our case adds to the available literature on this unusual condition.

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Sub-Specialty

REVIEW OF MICROBIOLOGICAL TESTING OF DIARRHEAL ILLNESS IN A REGIONAL PAEDIATRIC DEPARTMENT

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Aims

Acute gastroenteritis (AGE) is the second most common cause of paediatric medical hospital admission1. Our aim was to describe current epidemiological trends of bacterial stool infection amongst children attending our paediatric department with AGE.

Methods

We performed a retrospective review of microbiological stool testing practices on patients with diarrheal illness attending our regional paediatric department. The study time period was based on one epidemiological season; from 1 September 2018 to 31 August 2019. Results of over 1,400 paediatric stool samples tested for viral, bacterial and parasitic infection were reviewed, and duplicate results removed.

Results

230 pathogens were identified on 217 positive stool samples. The most common stool pathogen was found to be rotavirus (n=76, 8.9%), followed by norovirus (n=59, 6.9%). Nearly 50% of diarrheal episodes were tested for both viral and bacterial pathogens, with 68.2% negative for both, 20.1% positive for viral pathogen(s) only and 11.4% positive for bacterial pathogen(s) only. There were no cases of viral and bacterial co-infection identified and only one case of parasitic (cryptosporidium) and viral (Rota- and astrovirus) co-infection identified.
22 patients were positive for Vero-toxigenic Escherichia coli (VTEC) and seven for Clostridioides difficile. On chart review, the most common symptoms of VTEC infection included diarrhea (40.9%), blood in stool (31.8%) and vomiting (36.4%). Two patients with VTEC infection had acute appendicitis requiring surgery. One patient with VTEC developed Haemolytic Uraemic Syndrome (HUS), requiring transfer to a tertiary Paediatric centre and subsequent dialysis.

Conclusion

This study provides a valuable insight into current trends in paediatric gastroenterology in Ireland. Further improvements could be adopted, including local guidelines for paediatric microbiology stool testing and pathogen-specific management pathways.

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Sub-Specialty

DUODENAL ATRESIA PRESENTING AS EXTRACARDIAC MASS ON ECHOCARDIOGRAPHY

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Aims

Case report of an unusual presentation of duodenal atresia in a baby with antenatal diagnosis of trisomy 21.

Methods

Retrospective review of medical and surgical notes, imaging and imaging reports.
Parental consent obtained regarding publishing video of echocardiogram and xray images.

Results

CXR post NG insertion: Enteric tube tip is in the stomach. Slightly bell-shaped thorax with narrow transverse diameter superiorly. Mildly increased linear opacities in the perihilar regions.
Echo: Moderate ASD secundum. Mass in multiple views adjacent to left atrium, extracardiac.
US Chest: distended oesophagus with large volume gastro-oesophageal reflux.
Repeat Echo: Moderate ASD secundum. Mass adjacent to LA seen again but smaller- post feed and images reviewed with paediatric radiology at time - seen to pass to stomach.
XR Abdomen: large double-bubble sign in the upper abdomen indicating duodenal atresia or duodenal web. Meconium evident in the colon on the left side.
Contrast study: Appearance consistent with duodenal obstruction, possibly secondary to a duodenal web that is now causing complete obstruction.
US spine and renal both normal.

Conclusion

Baby with antenatal diagnosis of Trisomy 21 presents with mild reflux symptoms. Chest xray confirms position of nasogastric tube but cannot outrule congenital cardiac disease. Echocardiogram then shows atrial septal defect secundum but also unusual extracardiac mass adjacent to left atrium. Mass thought to represent high volume gastro-oesophgeal reflux, seen to be connected to the stomach. Persistent vomiting in the following days leads to suspicion of intestinal obstruction. Abdominal xray shows classic double bubble sign. Baby is transferred to tertiary centre and undergoes laparotomy, duodenoduodenostomy and ladd procedure. Baby is currently doing well and feeding 100% PO with nil issues.

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Sub-Specialty

THE IMPACT OF THE COVID-19 PANDEMIC ON NEW PRESENTATIONS OF CHILDHOOD CANCER IN IRELAND

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COVID-19 has impacted many aspects of healthcare, following the first case in the Republic of Ireland was confirmed on the 29/02/2020. Nationwide lockdown commenced on 12/03/2020 during which paediatric hospital presentations drastically declined.[1] We present data related to new diagnoses of childhood malignancies during the COVID-19 pandemic in Ireland.

Methods:
Data was taken from a pre-existing departmental database of patient with newly diagnosed malignancies. The months between January and September 2020 were included, and compared to the same time frame in 2017 to 2019. March and April were of particular interest as they corresponded with the initial lockdown period in Ireland.

Results:
Between January and September 2020, there were 114 patients with newly diagnosed malignancies. In March and April 2020 there was a total of 13 new diagnoses, compared to 23, 32 and 33 respectively in 2017, 2018 and 2019 during the same period.
Over the 36 months analysed, the average monthly rate of newly diagnosed malignancies was 13. There were 7 new diagnoses in March (46% below average), and 6 in April (53% below average). In both March and April 2020, there were 2 new diagnoses of haematological malignancies, 60% below the monthly average (4.94).
In May and June there were a total of 33 new diagnoses, compared to 18, 20, and 25 respectively in the same period in 2017, 2018 and 2019.

Conclusion:
This analysis provides a snapshot of cancer presentations during the pandemic in Ireland. It represents all diagnoses in the Republic of Ireland, as ours is the sole paediatric cancer referral centre. Further evaluation is needed to confirm whether this reduction in new presentations can be attributed to the coronavirus pandemic, which we believe it the most likely cause. We also hope to assess these presentations, and those in succeeding months, to determine whether patients presented with more severe or later stage disease.

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Sub-Specialty

EXPANDED NEWBORN BLOODSPOT SCREENING FOR INBORN ERRORS OF METABOLISM IN NORTHERN IRELAND: THE PROGRESS AND PITFALLS

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Aims: Newborn screening (NBS) via dried bloodspot card is practised internationally however the conditions screened varies widely. In March 2020 Northern Ireland (NI) introduced UK expanded NBS with three additional metabolic disorders; isovaleric aciduria (IVA), maple syrup urine disease and glutaric aciduria type 1. We describe the challenges with our first screen-positive IVA cases.

Methods: Infant A was born at 32 weeks in June 2020. NBS flagged possible IVA with C5 3.2µmol/L (screening cut-off <2µmol/L). The infant was stable in a district general NICU. Second tier testing was sent urgently and advice was given on managing potential decompensation.

Infant B was born at term in September 2020 and went home bottle feeding on day one. C5 on day 5 NBS was 5.98µmol/L. She was admitted to the regional metabolic centre for assessment and confirmatory tests, being discharged the next day with an emergency regime.

Results: Further history revealed that infant A's mother commenced pivmecillinam just prior to delivery. This is an established cause of false positive IVA NBS due to the formation of pivaloylcarnitine, which is isobaric with isovalerylcarnitine meaning they cannot be distinguished from each other using the simple screening method of flow injection analysis tandem mass spectrometry. Further C5 isobar testing in England differentiates these, creating time delay in excluding IVA.

Infant B showed a strong pivaloylcarntine peak on isobars (90%), again excluding IVA. Multiple antibiotics were given during pregnancy but it was initially difficult to establish that pivmecillinam was prescribed in the days leading up to delivery.

Conclusions: There is no IVA in NI. Pivemecillinam causes IVA NBS false positives and should be sought in the maternal history. These cases highlight the fine line between the undeniable benefits of early detection and treatment through NBS, and the burden of additional testing, medicalisation and stress from false positives.

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Sub-Specialty

Kuvan® testing in neonates with a new Phenylketonuria(PKU) diagnosis: Assessment of response, dietary outcomes and compliance with national testing guideline

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Aims
Phenylketonuria (PKU) incidence in Ireland is 1/4500 live births. The mainstay of treatment is dietary phenylalanine (Phe) restriction. Kuvan® (sapropterin dihydrochloride), the only EU approved medication for PKU, has been reimbursed in Ireland since July 2019. National guidance recommends that all infants with abnormal newborn bloodspot screening (NBS) for PKU should be admitted for a Kuvan® response trial. We undertook a review to assess Kuvan® responsiveness (defined as a reduction in Phe >30% from baseline) and dietary outcomes in this cohort, as well as compliance with national testing guidelines.

Methods
Retrospective chart review of neonates with abnormal screening for PKU on NBS since the availability of Kuvan® in Ireland (August 2019-October 2020).

Results
Thirteen infants were included. Eight (62%) had a Kuvan® response trial. Four (31%) had a sibling with PKU. Four of the five infants not tested (38%) were born during the initial COVID-19 restrictions on hospital admissions and one did not meet the testing criteria(Phe>360umol/L). Mean age of admission for all patients was 6.75 days with high-risk screened siblings admitted earlier, 4.25days vs 9.25 days. The correct dose of Kuvan® was administered in 100% of cases. 100% of Phe concentrations required to assess Kuvan® response were taken, with 92% taken at the recommended time-points. Five (63%) were responsive to Kuvan® with a mean decrease in Phe of 42.6% (31-70%). Mean length of hospital stay was 3.5days(1-7). Adherence to Phe monitoring post-discharge was 75% for the first month and 66% from the second month onwards. As expected, Kuvan® responsive infants tolerated more natural protein at all follow-up time points.

Conclusion
Response to Kuvan® at 63% was higher than previously reported international cohorts (29%-41%). Compliance with the national testing protocol was good. Close follow up is essential and ensuring adherence to weekly Phe monitoring is an area for improvement.

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Sub-Specialty

INHERITED RICKETS – A CLINICAL REVIEW OF PRESENTATION, DIAGNOSIS AND OUTCOMES IN A TERTIARY PAEDITRIC SETTING.

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Inherited Rickets are metabolic bone diseases affecting young children due to genetic disorders of parathyroid hormone (PTH), 1,25 $[OH]_2$ Vitamin D or Fibroblast Growth Factor 23 (FGF23) resulting in abnormal calcium or phosphate levels. Early detection and normalized biochemistry have been shown to reduce morbidity and improve long term outcomes. Late detection or poor management results in skeletal deformity, need for Orthopaedic intervention and increased occurrence of enthesopathies and arthritis in adult life.

Aims:
The Inherited Rickets multidisciplinary clinic at the Centre for Rare Paediatric Bone Diseases was commenced in October 2019. This review describes the clinical characteristics of patients attending the service in the first 12 months and highlights important features to aid early diagnosis for general paediatricians.

Methods:
This is a descriptive review of all patients referred to the clinic over the first 12 months of existence. The review establishes the clinical standard of care and allows benchmarks to be set for future clinical assessment.

Results:
A total number of 12 children (M:F 4:8) have attended the service. The age at presentation for the underlying condition ranged from 0-36 months. All attendees have a confirmed genetic diagnosis including X-linked hypophosphataemic rickets [n=8], Hypophosphataemic rickets due to other causes [n=2] and Vitamin D dependent rickets [n=2]. All patients are of Irish, Caucasian descent. All patients diagnosed under 12 months had an affected parent [n=2] or older sibling [n=3]. The commonest presenting feature in the non-familial group was bowed lower limbs followed by dental anomalies (delayed primary dentition or abnormal enamel). Radiological findings of rickets including metaphyseal fraying and widening of the growth plates were noted in all cases.

Conclusion:
Inherited rickets while rare, can present subtle clinical presentations. Early diagnosis and treatment is vitally important to prevent subsequent co-morbidities and referral to specialized services for multidisciplinary care.

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Sub-Specialty

REVIEW OF THE PAEDIATRIC RFERRALS TO PALLIATIVE CARE SERVICES IN THE HSE MID-WEST REGION FOR CHILDREN WITH LIFE LIMITING CONDITIONS.

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Aims:

Palliative care (PC) for children with life limiting conditions (LLC) is a holistic approach to care, from diagnosis to throughout their life[1]. It focuses on enhancing quality of life and supporting the family. A collaborative approach between Paediatric and PC services is essential to provide seamless care[2]. The prevalence of children with LLC in our region is ~32 per 100,000[3]. We aim to review the service and establish needs for children with LLC attending both Paediatric and Specialist PC services.

Methods:

A retrospective review of Paediatric PC consultations between January 2013- September 2020.

Results:

Of a total of 52 patients; 3 are receiving care, 2 discharged and 47 have died. The cohort ranged from 1 month to 17 years; ~29% less than 1 year old. Using the ACT (Association for Children's Palliative Care) group classification; 12 children were in Category 1, 19 in category 3 and 21 in category 4. 17% had malignant conditions. The reason for initial referral to PC services included end of life (EOL) care for 40 patients and symptom management for 12. An advanced care plan was made in 58% of cases. 62% died at home, 34% in hospital, one in residential care and one in a children's hospice. One patient passed away from sudden unexpected death at home. 60% had community and 31% had in-hospital PC services. Nursing services included specialist PC (77%), Jack & Jill (39%), HSE (29%), Irish Cancer Society (35%) and Enable Ireland (21%).

Conclusion:

EOL care for all children should be through sustainable, feasible and equitable services[4]. Families value the presence of consistent, skilled professionals who are familiar with their child. Out of hours support is indispensable[5]. The diverse range of ages and conditions within our cohort alone highlight the importance of collaboration with constant education of staff to ensure the highest quality of care and support[6].

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Sub-Specialty

Second-Line Management of Acute Severe Asthma in Children: A Consensus

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Aims: Asthma is a chronic obstructive respiratory disorder characterised by immune and structural phenotypes. If classified as clinically 'severe', acute exacerbation of asthma requires urgent intervention in intensive care.
Where necessary to escalate beyond agents used in mild to moderate exacerbations, second-line agents provide a rapid onset of additional, effective bronchodilation. Globally, there is significant heterogeneity in clinical practice, with up to 3 second-line agents and 30 different drug regimens used widely.
This systematic review of primary research, clinical perspectives and international guidelines, seeks to establish the level of regional and international consensus on appropriate second-line management in acute severe asthma.

Methods: Recommendations were extracted from Irish, British, North American and Australian guidelines on asthma management. A sensitive PubMED string extracted primary research, reviews, and letters using Covidence, a Cochrane reviewing platform, with a PRISMA flow. Clinical trials and secondary sources were independently searched.

Results: 8 guidelines were extracted from 13 regional and international bodies. 24 studies were included from systematic review.

Conclusion: Guideline review underlined a paucity of consensus on second-line agents to manage acute severe asthma. Current evidence suggests intravenous magnesium sulphate is pharmacologically safe and more efficacious across paediatric cohorts than adults. A dosage of 50mg/kg (max3g) infused over 20-30 minutes is preferable to intravenous salbutamol, nebulised magnesium sulphate, and aminophylline, due to superior efficacy and minimal adverse events. Despite rigorous research, consensus is poorly reflected globally in practice. Asian, South American, and Eastern European nations have clearer guidelines and consensus than Ireland, UK, USA and Australia, possibly reflecting a response to unique resource pressures. Further studies to risk stratify patients by clinical and biochemical phenotyping are vital to maximising therapeutic efficacy. Regarding Magnesium Sulphate, large RCTs also raise questions about appropriate dosage, route of administration and evaluation of its 'cost-effectiveness'. Building evidence would allow clinicians to achieve consensus on the most appropriate, safe and efficacious second-line management of acute severe asthma in children.

References: Please contact author directly

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Sub-Specialty

THE PATHWAY TO USE OF THE KETOGENIC DIET FOR INFANTILE SPASMS: A FIVE YEAR REVIEW OF CURRENT PRACTICE

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AIMS

Infantile spasms(IS) is an age-dependent epileptic encephalopathy characterised by clusters of epileptic spams, associated with a specific electroencephalogram(EEG) pattern called hypsarrhythmia, and frequently developmental regression. Infantile spasms are associated with poor neurodevelopmental outcomes and increased epilepsy risk[1,2]. Well-established treatments include Prednisolone and Vigabatrin[3]. Evidence for other treatment options, particularly the ketogenic diet (KD), has emerged recently[4,5]. There is currently no national/departmental guideline for treatment initiation and subsequent management of IS. We undertook a review to identify current practice amoung our IS cohort in order to inform a new departmental protocol.

METHODS: Five year (2015-2020) retrospective review of IS cases referred to our centre. Clinical records, EEG and neuroimaging reports were reviewed**.**

RESULTS: 39 infants were included. An aetiology was identified in 72% of cases; Trisomy 21(n=10), cerebral malformations(n=7), and Tuberous Sclerosis(n=3) the most common reasons. Median age of spasm onset was 6 months 13 days(2months&28days-33 months). At presentation, 49%(n=19) had classical hypsarrhythmia on EEG and 38%(n=15) had regressed. The most frequent first-line medication was Prednisolone(62%,n=24), followed by Vigabatrin(28%,n=11). Prednisolone was successful in 50%(n=12)and Vigabatrin in 36%(n=4). Overall spasms resolved in 87%(n=34). 13% of infants(n=5) progressed to the KD. Three of these infants had cerebral malformations, one had Trisomy 21 and one had Tuberous Sclerosis. Median time between IS onset and KD commencement was 16 months 5days (12months&25days-42 months). Mean number of AEDs prior to KD was 7(4-10). KD was successful in 40%(n=2), with a 50% spasm reduction in a third child. There were no reported side-effects on the KD.

CONCLUSION: Although numbers are small, the KD showed good efficacy and tolerability in refractory IS. There is often a long-time to KD initiation with multiple anti-epileptics failed prior to its use. The KD should be considered earlier for refractory IS. A clinical pathway may aid KD initiation in appropriate cases.

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Sub-Specialty

CHILDHOOD EPENDYMOMA MISDIAGNOSED AS RHINOSINUSITIS. NOT ALL HEADACHES ARE EQUAL.
A CASE REPORT.

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Brain tumours are the second most frequent cause of childhood malignancy.The peak incidence of paediatric brain tumour manifests during the second half of the first decade.Ependymomas are a rare group of glial tumour arising from ependymal cells lining the central canal of the spinal cord and ventricle of the brain.They account for less than 10% of CNS tumours.

We report a 9-year-old boy with ependymoma of the fourth ventricle who was initially diagnosed as rhinosinusitis. An MRI of the brain and whole spine was performed and it showed a fourth ventricle mass with obstructive hydrocephalus. We performed a posterior fossa craniotomy and tumour excision and he required ventriculoperitoneal shunt placement postoperatively.

A comprehensive history and physical exam with reference to ependymoma should be followed with MRI brain or CT in urgent cases. An imaging of the whole spine is required in all cases as dissemination along the cerebrospinal fluid occurs in up to12% of cases at the time of diagnosis. Paediatric ependymomas has a relatively poorer prognosis than other brain tumours, with a five-year overall survival rate of 50% to 64%.

Childhood brain tumours remain a challenge to treat, and surgical resection remains the gold standard in the treatment of ependymomas. Due to the high rate of shunt placement after surgery due to obstructive hydrocephalus, telovelar approach may be a better alternative. More studies are required to evaluate the role of chemotherapy in pediatric ependymomas.

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Sub-Specialty

EFFECTIVENESS OF ORAL FOOD CHALLENGE AT PROMOTING INCLUSION OF EGG INTO DIETS OF EGG ALLERGIC CHILDREN

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Aims: We have previously demonstrated that home introduction of egg to children with mild to moderate egg allergy, using the Irish Food Allergy Network(IFAN) Egg ladder, is safe[1,2]. We have, however, offered hospital based oral food challenges(OFC) to cases of previous egg anaphylaxis or those with ongoing reluctance to introduce in the home setting. We recently carried out OFC at the HSE care facility at City West, which were high-throughput, resource-intensive. This audit evaluates the reaction rate and severity of egg OFC during this initiative and the effectiveness of subsequent home introduction.

Methods: All patients who passed a baked or whole egg OFC at CHI, City West between Sep7th and Oct15th were provided with written and verbal advice regarding home introduction, on discharge. Families received a follow up phone call 2-8wks later to evaluate progress.

Results: 11.11% (27/474) of OFC were to egg products; 24 to baked and 3 to whole egg. The median age was 5yrs(range 1-17yrs). Overall OFC reaction rate was 28%(134/474) with a reaction rate of 11.1%(3/27) to egg products. The overall incidence of anaphylaxis was 5% with no cases of anaphylaxis to egg. Symptoms in all 3 egg reactors were mild abdominal only. 95.8% (23/24) had initiated home introduction of egg by follow up, with 21/24 giving egg at least 3 times/wk. 61.9% (13/21) of those with negative OFC to baked egg, had advanced one or more steps on the IFAN Egg Ladder[2].

Conclusions: The experience of a hospital based OFC was effective at promoting continued inclusion of baked and whole egg into diets of egg allergic children. However, the reaction rate for egg based OFC was markedly lower than both the overall rate and published OFC reaction rates, questioning the need for inclusion in future resource intensive ventures.

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Sub-Specialty

THIAMINE, BIOTIN AND THE LAZARUS EFFECT

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Aim: To report the first documented case of thiamine metabolism dysfunction syndrome 5 (episodic encephalopathy type) in Ireland

Methods: We describe the clinical presentation, investigations and outcome to date of our patient.

Results: A 17 months old boy of refugee status, Kurdish descent and consanguineous parents presented to Sligo Regional Hospital with a five-day history of persistent non-bilious vomiting, increasing lethargy and ataxia. He was admitted and treated as encephalitis. Over the course of admission, his condition deteriorated, an MRI brain listed differentials that included Wernicke's Encephalopathy and he was transferred to Children's Health Ireland at Temple Street. On arrival he was difficult to rouse and irritable, was not visually identifying, had poor head control, but otherwise normal tone and power. Subsequently he was transferred to PICU due to hypertension and bradycardia.

Prompt urine organic acid (UOA) analysis showed marked ketosis and increased tricarboxylic acid (TCA) metabolites possibly indicating a mitochondrial disorder or a vitamin responsive disorder. He was commenced on Thiamine 100 mg BD and Biotin 10 mg OD. Over the next 48 hours there was marked improvement clinically and complete resolution of the TCA metabolites in urine, suggesting<ins cite="mailto:Joanne.Hughes" datetime="2020-10-19T10:20"> </ins>a possible diagnosis of thiamine pyrophosphokinase (TPK) deficiency. A novel homozygous variant in TPK1, c.224>A p.(Ile75Asn), was identified on whole exome sequencing in keeping with thiamine metabolism dysfunction syndrome 5 (episodic encephalopathy type). On his one month outpatient follow-up there were no further episodes or notable co-morbidities, his UOA remained normal. He remains on thiamine and biotin. His parents were found to be heterozygous carriers of the above mutation.

Conclusion: This marks the first documented case of a thiamine metabolism dysfunction syndrome 5 in Ireland and the 22nd reported case globally. It also highlights the importance of considering vitamin supplementation in cases of childhood encephalopathy of unclear aetiology.

STUDY OF PARENTAL EXPERIENCE AFTER ATTENDING WITH A CHILD FOR PAEDIATRIC FORENSIC EXAMINATION

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Background: A paediatric forensic medical examination is recommended for children where there has been a disclosure or concern about child sexual abuse(CSA) (1,2). Attending for paediatric forensic examination can be a stressful experience for parents and children. There maybe misinformation about the purpose of the examination and the procedure itself which leads to confusion and possibly unnecessary anxiety.
Aims: To describe the experience of parents and their child attending a clinic for paediatric medical examination after a disclosure of CSA. The data collected will inform the content and format of information we will provide families prior to the clinic in the future. The information collected will identify areas for service improvement.
Methods: Anonymous questionnaires were sent out to parents/legal guardians of children who attended the clinic over a 6-month period. A stamped addressed envelope was provided to return the questionnaire. The questionnaire contained open and closed questions. The parents were included if they consented and had sufficient English to complete the questionnaire.
Results: Ten of twenty-seven questionnaires were returned (37.5% response rate). All respondents were female. Ten girls and one boy were represented in data collected. Two of ten of parents referred to clinic did not feel the procedure at the clinic was fully explained to them by the referrer. Parents report fear, anxiety about the examination but also understand its importance. Most parents six of ten (60%) are not fully prepared for the examination despite 70% of parents reporting they received enough information.
Conclusion: Paediatric forensic medical examination causes fear and anxiety for parents attending with their children. Parents are poorly prepared for the examination. Further work to improve the knowledge of paediatric forensic medical examination among the agencies who refer to the clinic is needed. The information needs of parents vary therefore we will seek to provide information in different formats.

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Sub-Specialty

ASSESSING THE IMPACT OF COVID-19 PUBLIC HEALTH STAGES ON PAEDIATRIC EMERGENCY ATTENDANCE

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Aims: This study outlines the impact of COVID-19 on paediatric emergency department (ED) utilisation and assesses the extent of healthcare avoidance during each stage of the public health response strategy.
Methods: With the assistance of on-site system managers, anonymised clinical and demographic data were extracted from the electronic patient records of all children aged under 16 attending three paediatric EDs and an urgent care centre (UCC) in Dublin(referred to as Dublin), and two mixed adult/paediatric EDs located in regional cities (Regional),Limerick and Cork. This represents approximately 48% of national annual public paediatric ED attendances, are analysed to determine changes in characteristics of attendance during the three month period following the first reported COVID-19 case in Ireland, with reference to specific national public health stages. Ethical approval has been granted by the COVID-19 National Research Ethics Committee, established by the Minister of Health in Ireland to deliver an expedited review process for COVID-19 research (ref: 20-NREC-COV-034)
Results: ED attendance reduced by 27–62% across all categories of diagnosis in the Delay phase and remained significantly below prior year levels as the country began Phase One of Reopening, with an incident rate ratio (IRR) of 0.58. The decrease was predominantly attributable to reduced attendance for injury and viral/viral induced conditions resulting from changed living conditions imposed by the public health response. However, attendance for complex chronic conditions also reduced and had yet to return to pre-COVID levels as reopening began. Attendances referred by general practitioners (GPs) dropped by13 percentage points in the Delay phase and remained at that level.
Conclusion: While changes in living conditions explain much of the decrease in overall attendance and in GP referrals, reduced attendance for complex chronic conditions may indicate avoidance behaviour and continued surveillance is necessary.

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Sub-Specialty

LUMACAFTOR/IVACAFTO THERAPY AND ITS IMPACT ON GLUCOSE ABNORMALITIES IN PAEDIATRIC PATIENTS WITH CYSTIC FIBROSIS – A RETROSPECTIVE OBSERVATIONAL STUDY

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Aim: To investigate the effect of treatment with CFTR modulators on glucose metabolism and insulin secretion in paediatric patients with cystic fibrosis (CF).

Methods: An observational, retrospective, single-centre study analysed the OGTT and HbA1c values of 34 paediatric patients with CF before and after commencing CFTR modulator therapy. The impact of between 5 and 92 weeks of clinically indicated CFTR modulatory therapy on glucose tolerance in these patients with either normal glucose tolerance, impaired GT or CFRD was evaluated. The data of our study population was obtained from the Cystic Fibrosis Registry of Ireland. Additional parameters of BMI, growth centiles and lung function were also analysed pre and post CFTR modulator therapy. The data of 34 patients was investigated, 4 with impaired glucose tolerance, one with cystic fibrosis related diabetes and 29 with normal glucose tolerance.

Results: There was no statistically significant difference between OGTT levels pre and post commencement of CFTR modulators. Median HbA1c pre commencement was 38, post mean was 37 (p value 0.08). A statistically significant improvement was seen in FEV1, weight and BMI values, results which mirror previously reported data in clinical trials of CFTR modulators.

Conclusions: This small study could not demonstrate that treatment with CTFR modulators had a consistent impact on glucose metabolism & insulin secretion. Some improvements in metabolic status of CF patients have been seen in other larger studies. Further adequately powered studies are needed to evaluate the impact of CFTR modulators on abnormalities in glucose tolerance and their potential in delaying, or eventually, preventing development of cystic fibrosis related diabetes, one of the most common extra pulmonary co-morbidities associated with CF.

Display Poster Number 44
Sub-Specialty

Congenital Junctional Ectopic Tachycardia in the local Paediatric Emergency Department: A Case Report

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Congenital junctional ectopic tachycardia (CJET) is a rare but serious tachyarrhythmia which presents in the early neonatal or infancy stage. It carries a high rate of morbidity and mortality, and is often incessant and refractory to common first-line treatment options. We present a case of a 14 day old neonate who presented to the local Paediatric Emergency Department with a fast heartbeat and 1 day of poor feeding reported by her parents. She had a persistent tachycardia at 300 beats per minute, which was not responsive to initial cardioversion attempts with Adenosine and Amiodarone. She was transferred to the tertiary Paediatric Cardiology centre, where a trial of Ivabradine and Propranolol successfully cardioverted her to normal sinus rhythm. A diagnosis of CJET was subsequently made by the Paediatric Cardiologist for this neonate. This report explores how this case was managed in a peripheral Paediatric Emergency Department, and delves into the current literature surrounding treatment options for this uncommon diagnosis.

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Sub-Specialty

PAEDIATRIC GRAVES' DISEASE: A CASE REPORT

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Introduction:
Graves' disease is the most common cause of hyperthyroidism in children and adolescents, accounting for more than 95% of cases with an overall incidence of 0.9 per 100,000[1]. It is precipitated by excessive thyroid hormone production, caused by anti- thyrotropin receptor antibodies (anti-TRAb).
Graves' disease is usually managed initially with the anti-thyroid drug (ATD) carbimazole. However, only 20-25% of young people achieve remission after a 2-year course of ATD treatment[2]. Definitive management involves either surgery (total thyroidectomy) or radioactive iodine (RAI). Both options render the patient hypothyroid, necessitating life-long thyroid hormone replacement.

Case:
We present the case of a 14-year-old girl with Type 1 Diabetes who presented with exophthalmos and weight-loss. Examination revealed a smooth goitre and hypertension. Biochemistry confirmed thyrotoxicosis, with fT4 of 47 and TSH of <0.01. Anti-TRAb antibodies were elevated. Treatment with carbimazole and atenolol was commenced. The patient failed to respond to standard medical management, with persistence of her symptoms and deteriorating glycaemic control. Despite maximal carbimazole dosing (60mg total daily dose) and excellent compliance, she remained thyrotoxic. 15 months after the initial diagnosis the patient underwent a thyroidectomy. Her post-operative course was complicated by hypocalcaemia and inevitable hypothyroidism.

Conclusion:
Graves' disease is a rare entity in paediatrics. Children and young people tend to have more severe disease that requires prolonged treatment[3]. Management options are limited, and controversies exist regarding optimal treatment. An informed discussion ought to be had with the patient and family at diagnosis, highlighting the fact that spontaneous remission is uncommon and definitive treatment with RAI or surgery may ultimately be required.

1. LaFranchi S. Treatment and prognosis of Graves' disease in children and adolescents. UpToDate. 2020. 2. Cheetham T. Graves' disease. Paediatrics and Child Health. 2019; Volume 29(Issue 7): Pages 316-320. 3. Azizi F. Long-term Methimazole Therapy in Juvenile Graves' Disease: A Randomized Trial. PubMed. 2019.

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Sub-Specialty

AN AUDIT OF THE SCREENING AND MANAGEMENT OF DYSLIPIDAEMIA IN A REGIONAL PAEDIATRIC TYPE 1 DIABETES POPULATION

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Background and Aims:
Individuals with Type 1 Diabetes have a significantly increased risk of morbidity and mortality from cardiovascular disease compared to the general population. Onset of atherosclerosis has been demonstrated in childhood, with cholesterol deposition playing an important role in atherosclerosis initiation. The ISPAD guidelines were refined in 2018 and describe current recommendations for the management of dyslipidaemia in paediatric type 1 diabetes.
We aimed to audit dyslipidaemia screening and management in our paediatric Type 1 Diabetes population compared with ISPAD guidelines.

Methods:
Data were collected prospectively on all paediatric type 1 diabetes patients in the service over a period of three years (n=229). We measured the proportion of patients who were appropriately screened for dyslipidaemia based on age (≥ 11) or family history. We also calculated the mean delta LDL for our patients with multiple LDL measurements. We then compared our management with ISPAD guidelines on dyslipidaemia.

Results:
Of our cohort of 229, 158 were aged ≥11 years. Of these, LDL was measured in 108 (68%). 15 (10%) had total cholesterol measured without LDL, while 35 (22%) had no lipids checked. Family history of hypercholesterolaemia or early CVD was documented on two occasions. 57 patients had LDL checked once, 6 of these patients had abnormal results with no repeat LDL after at least one year. The average delta LDL-C of the patients with multiple measurements was +0.13 mmol/L. 48 patients met the criteria for referral to a dietician for specific cholesterol education, however, only 12 patients underwent this counselling. Following a trial of diet and exercise, 16 adolescents met criteria for treatment with a statin however none are currently on treatment.

Conclusions:
Our audit suggests that the screening and management of dyslipidaemia is suboptimal in our population. We aim to introduce several quality improvement measures prior to re-auditing.

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Parental atopy and risk of atopic dermatitis in the first year of life in the BASELINE birth cohort study

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Background
Genetic factors are strongly implicated in the aetiology of atopic dermatitis (AD). Previous studies examining the effect of parental atopy have predominantly used parent-reported eczema outcomes for offspring.

Objective
To assess the association between parental atopy and development of AD in the first year of life.

Methods
A secondary data analysis of the Cork BASELINE* Birth Cohort study was performed. Parents reported personal history of atopic disease at two months. Infants were examined for signs of AD by trained healthcare professionals at six and 12 months. Variables extracted from the database related to skin barrier function, parental history of atopy, and AD outcomes. Statistical analysis was performed to adjust for potential confounding variables.

Results
1,671 children had data on AD status available at six and 12 months. Prevalence of AD was 18.0% at six months and 14.8% at 12 months. Following adjustment for potential confounding variables, the odds of AD were significantly higher among children who had a parental history of AD or asthma. Odds ratios following multivariable analysis were 1.57 (1.09-2.25) at six months and 1.66 (1.12-2.46) at 12 months for maternal AD; 1.90 (1.28-2.83) at six months for paternal AD; 1.76 (1.21-2.56) at six months and 1.75 (1.16-2.63) at 12 months for maternal asthma; and 1.70 (1.19-2.45) at six months and 1.86 (1.26-2.76) at 12 months for paternal asthma. Paternal AD at 12 months and parental rhinitis were not associated with increased AD.

Conclusion
Parental AD and asthma were associated with increased risk of objectively-diagnosed AD in offspring in this contemporary cohort.

*BASELINE - Babies After Scope: Evaluating the Longitudinal Impact Using Neurological and Nutritional Endpoints

OUR BABY OI COHORT - HOW EARLY TREATMENT AND MULTIDISCIPLINARY CARE ARE CHANGING THE OUTCOMES OF SEVERE RECESSIVEE OSTEOGENESIS IMPERFECTA

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Aims:
Autosomal recessive 'traveller' osteogenesis imperfecta (OI) is linked to mutations in the LEPRE1 gene (type VIII OI). Biallelic mutations in the LEPRE1 gene account for almost half of recessive OI and are regarded as severe and life limiting. However, our experience through managing our cohort with early bisphosphonate treatment, respiratory intervention and multidisciplinary care does not reflect this outcome.

Methods
A retrospective review of known children with type VIII OI attending a specialised tertiary paediatric service in the past 12 years was performed. All have confirmed genetics with an Irish traveller background.

Results
There are six affected children (3 male, 3 female) ranging in age from 10 weeks to 12 years. Five children were identified antenatally with two delivered by elective C-section while four were vaginal deliveries [two spontaneous, two induced]. All families have a history of paediatric deaths due to recessive OI. All six display hallmark features of the condition with wormian bones, multiple rib and long bone fractures and long tapered digits. Bisphosphonates were commenced at less than three months of age. None require regular analgesia. Support with non-invasive ventilation is assessed in all cases [five have required non-invasive ventilation at varying ages]. All are linked with our multidisciplinary team and local early or school intervention services. Emergency admissions for care are less than one per year per child. Subjectively, orthopaedic intervention has fallen despite the increased numbers over time which may be related to treatment or better MDT care. All are following a similar developmental trajectory and are socially engaging with happy demeanours.

Conclusion
Our cohort of six children are responding positively to a collaborative MDT approach. While this is a severe skeletal dysplasia, a presumption of lethality can compromise early postnatal care whereas prompt bisphosphonate and MDT intervention is clearly improving long term outcomes.

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To Eat Or Not to Eat: Do Patients Reintroduce Peanuts Following A Successful Oral Food Challenge?

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Aims

Peanut allergy affects approximately 1% of children, c.20% may resolve during childhood. Oral food challenge (OFC) is used to assess resolution of peanut allergy in select patients. Following a successful challenge, parents are advised to reintroduce peanut on a regular basis, often three times per week, especially in children who had definitive prior peanut allergy, now resolved. The aim of our study was to assess compliance with these recommendations.

Methods

A retrospective chart review was performed of all paediatric OFCs conducted in University Hospital Galway from January 2018 to April 2019. For all successful OFCs, a telephone questionnaire was carried out in 2020 to collect information on compliance with dietary advice. Data were collected, anonymized and analysed using Microsoft Excel. Ethics granted via UHG ethics department.

Results

In total 65 OFCs were completed during the study period, 33 (51%) successful challenges; 27 (82%) took part in our follow up questionnaire. Dietary compliance with eating peanut three times per week was assessed, only 7 (26%) adherent with recommendations.
Of the 65 OFCs, only 18 had documented clinical peanut allergy; 8 (44%) passed their OFC representing true resolution of their allergy; 3 of 8 reported regularly peanut consumption. Among successful challenges, 23 (70%) without prior exposure to peanut, main indication for OFC being evidence of peanut sensitisation in the setting of other food allergy or eczema. Of these 17 took part in our follow-up questionnaire and only 4 (24%) taking peanut in their diet. Common reasons for poor dietary compliance including ongoing parental or child anxiety towards the tested allergen and a dislike of peanuts.

Conclusions

Majority of OFCs performed to rule out peanut allergy. Most children and parents are non-compliant with advice following a successful challenge. Risk remains for resensitization following successful OFC in previously allergic individuals.

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Sub-Specialty

EXPANSION OF THE PHENOTYPE OF *ANKRD11*-RELATED KBG SYNDROME IN A BOY WITH SEVERE EPILEPTIC DYSKINETIC ENCEPHALOPATHY

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Background: KBG syndrome (OMIM 148050: KGB the initials of the first three patients described) is an autosomal dominant syndrome first described in 1975, and is characterized by specific neurobehavioural, dental, craniofacial and skeletal anomalies and short stature. Since identification of the gene responsible for KBG syndrome (*ANKRD11*) wider phenotypes are beginning to emerge. Here, we describe a child, whom following a lengthy period of diagnostic investigation, was diagnosed with mutation in *ANKRD11* with a markedly severe previously undescribed neurological phenotype.

Case: A normally developing boy was referred at four months of age with jittery movements but otherwise normal development. Follow up at nine months showed developmental regression and ongoing jerk-like movements. Initial EEGs showed findings consistent with an epileptic encephalopathy with ongoing tonic seizures and epileptic spasms. His phenotype evolved over the years to Lennox Gastaut syndrome with largely tonic seizures requiring multiple AEDs, and eventually VNS insertion which brought about the most significant improvement of his seizures and EEG findings. Early dyskinetic movements have progressed to a jerky choreoathetoid extrapyramidal movement disorder. Previous extensive neurometabolic and imaging investigations, including prior research exome sequencing were unremarkable. Repeat trio exome sequencing at 12 years identified a pathogenic de novo frameshift mutation in *ANKRD11*, the gene responsible for KBG syndrome. His current dysmorphic profile is typical for KBG syndrome.

Discussion: *ANKRD11* encodes ankyrin repeat domain 11, essential for gene regulation, and plays an important role in neurogenesis and neuronal specification. While there is variability in the phenotypes affected by *ANKDR11* KBG syndrome, epilepsy is not usually markedly severe. We have not identified any individuals with severe extrapyramidal dyskinesia in combination with severe early onset and ongoing epileptic encephalopathy, which expands the phenotype of *ANKRD11*-related KBG syndrome.

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IMPLEMENTATION OF VALIDATION FORM TO REDUCE PAEDIATRIC CARDIOLOGY OUTPATIENT WAITING LISTS: A QUALITY IMPROVEMENT INITIATIVE

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Aims:
There is high demand for paediatric cardiology outpatient services at both national and regional level, and as such, extensive waiting lists exist. The aim of this quality improvement project was to examine existing outpatient referrals at University Hospital Limerick (UHL), and through implementation of a validation form, reduce the waiting list.

Methods:
A list of outstanding patients to be seen by paediatric cardiology was compiled, together with their referral letters. A validation form was designed. Parents were contacted and asked whether their child had been seen by cardiology; where had they been seen if applicable and whether or not they still required an appointment. If parents were not contactable, the child's GP was called. The data from these validation forms was then compiled and analysed.

Results:
A total of 117 pre-existing cardiology referrals amounted between 2015 and 2020. The patient list was divided according to year of referral: 2015 (n=46), 2017(n=1), 2018 (n=11), 2019 (n=23) and 2020 (n=36). Validation revealed that 20 patients had been seen elsewhere, and a further 10 no longer desired an appointment. An additional 6 patients were ≥18 years signifying adult service involvement. This totalled a 31% (n=36) reduction in the number of children waiting to be seen. The most significant reduction of 67% (n=31) occurred within the 2015 group. Murmurs accounted for 60% of referrals. Paediatricians were responsible for the majority of referrals at 78%, with neonatologists and GPs accounting for 9% and 13% respectively.

Conclusion:
It is evident that there is a substantial requirement for paediatric cardiology services at a regional level. This validation process has led to a 31% decrease in outstanding referrals. The outcome of this validation is more efficient patient care, with improved access to paediatric cardiology services.

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A CONFIRMED CASE OF DEFICIENCY OF ADENOSINE DEAMINASE 2 (DADA-2): THE FIRST CONFIRMED CASE TO DATE IN AN IRISH CHILD

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Aim: Deficiency of Adenosine Deaminase 2 (DADA-2) is a recently identified, autosomal recessive auto-inflammatory disease resulting from mutations in the *ADA2* gene. First described in 2014, over 60 disease-associated mutations have now been identified. DADA-2 is typically characterised by early-onset polyarteritis, strokes and hypogammaglobulinaemia. DADA-2 has potential to be misdiagnosed as polyarteritis nodosa due to similar clinical features. We report the first paediatric case of DADA-2 in the Republic of Ireland**.**

Methods: A literature review was conducted. The clinical notes and investigations were reviewed and collated.

Results: A three-year old male presented with an eight-week history of a rash and a two-week history of daily fevers. He had associated abdominal pain, lethargy, arthralgias and weight loss. Examination revealed an erythematous macular rash on his trunk and limbs and palpable lower limb nodules.
A full blood count, renal, liver, coagulation profiles, ferritin, CK and LDH were normal. His erythrocyte sedimentation rate and c-reactive protein were elevated (22 mm/hr and 27 mg/L respectively). An extensive infectious work-up was negative. ANA, ANCA and ENA were negative. Immunoglobulins and serum ACE were normal. Serum amyloid A was elevated (78.7 mg/l).

A bone marrow biopsy, slit lamp assessment, ECHO and abdominal ultrasound were unremarkable. A skin biopsy showed superficial perivascular lymphocytic infiltrates and a brisk arteritis of a small/medium-calibre arterial vessel consistent with a diagnosis of polyarteritis nodosa. CT angiography and conventional angiography showed no evidence of vasculitis. Genetic testing revealed two variants in gene ADA2 (C.140G>C;p.Gly47Ala and C.873C>T;p.Ser291Leu) and diminished enzymatic activity in keeping with a diagnosis of DADA-2. He was treated with oral prednisolone and adalimumab and has had a significant clinical response to date.

Conclusion: This case outlines the clinical phenotype of a genetically confirmed case of DADA-2. This is the first known paediatric case of DADA-2 in the Republic of Ireland. Our case should prompt physicians to consider genetic testing for DADA-2 in patients presenting with features of a systemic vasculitis , in particular polyarteritis nodosa.

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MUCOPOLYSACCHARIDOSIS TYPE 1 (MPS1, HURLER SYNDROME) PRESENTING WITH ACUTE RESPIRATORY FAILURE – A DIAGNOSTIC DILEMMA

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Background: The diagnostic challenges in two patients with MPS1 who presented with acute respiratory failure with distinct clinical features.

Case 1: A 9 month old female referred with coarse facial features, lumbar kyphosis, bilateral hip dysplasia, developmental delay and sensorineural hearing loss. She had previously presented with bronchiolitis following an apnoeic event. She required invasive ventilation for 5 days. She had atretic pulmonary arteries and aortic insufficiency on echocardiogram. Further work up revealed cloudy corneas and moderate obstructive sleep apnoea requiring CPAP.

Case 2: A 16 month old male was admitted to PICU with necrotising pneumococcal pneumonia. He was noted to have developmental delay, sensorineural hearing loss and mild mitral regurgitation on echocardiogram. Additional clinical features included mild hepatomegaly and coarse facial features.

Work up for both of these cases revealed increased urinary glycosaminoglycan/creatinine ratio at 267 and 106 respectively (reference 1-33 mg/mmol creatinine) and marked deficiency of iduronidase A activity at 0.1 (reference 10-50 umol/g/h) consistent with the diagnosis of MPS1 or Hurler Syndrome. Genetic analysis was also performed.

Discussion: Acute respiratory failure in the setting of an acute illness may be seen in young infants with MPS1 due to underlying airway obstruction (1) and/or restrictive lung disease. These cases highlight the diagnostic dilemma in lysosomal storage disorders, such as MPS1. These are gradually progressive diseases where the clinical course is variable and features may not be obvious in the neonatal period (2). The underlying pathogenic variants, biochemical patterns and differing glycosaminoglycan load in the body may lead to a later diagnosis (3). The presence of distinctive clinical findings with multi-organ involvement as described in the above cases should point the clinician's suspicion towards the possibility of an overarching diagnosis such as MPS1. Timely diagnosis and treatment is essential to reduce disease burden and premature death and to improve treatment outcome (4).

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Sub-Specialty

NEONATAL HYPERKALAEMIA: A RARE CAUSE OF PSEUDOHYPOALDOSTERONISM TYPE 1

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Case Report:

A 7-day-old term female, born to consanguineous parents of Syrian ethnicity, presented with 15% weight-loss and decreased feeds. She was severely dehydrated with CRT 3 seconds and sunken fontanelle. She had unvirilized female genitalia.

Investigations revealed hyponatreamia (Na 120mmol/L), hyperkalaemia (K 8.9 mmol/L), metabolic acidosis (pH 7.30, BE -8.3, HCO3 17.9), glucose 3.8mmol. ECG revealed tented T-waves. She was resuscitated with IV fluids and received calcium gluconate, insulin and nebulised salbutamol to treat hyperkalaemia. Sodium bicarbonate was commenced to correct metabolic acidosis.

Initial working diagnosis was congenital adrenal hyperplasia (CAH) or aldosterone synthesis defect. Renal ultrasound revealed left hydroureteronephrosis adding transient pseudohypoaldonsteronism (PHA) to the differential. She was unresponsive to hydrocortisone and fludrocortisone, remaining hyperkalaemic/hyponatraemic and dehydrated with high sodium requirements of 30-40mmol/kg/day. Results revealed normal 17-OH Progesterone and urine steroid profile, elevated aldosterone (55620pmol/L) and renin (>100mmol/L/hr) levels. Given the poor clinical response to treatment, persistent electrolyte disturbance, with raised renin/aldosterone levels, a diagnosis was made of PHA type 1.

Discussion:

PHA Type 1 is a rare disorder characterised by mineralocorticoid resistance due to absent receptors. Frequently misdiagnosed as CAH, it manifests as neonatal salt wasting, shock, hyperkalaemia, hyponatraemia, and metabolic acidosis, despite raised aldosterone/renin levels. Primary (genetic) PHA1 has two clinical phenotypes; systemic PHA1 is an autosomal recessive variant caused by epithelial sodium channel (ENaC) mutations (SCNN1) leading to systemic salt loss from lungs, kidneys, colon, sweat/salivary glands. Renal PHA1 is a milder autosomal dominant variant caused by mineralocorticoid receptor mutations in the kidney (NR3C2) causing renal salt loss. Secondary (transient) PHA1 is due to temporary aldosterone resistance in infants with urine infection complicating urinary malformations. Given her severe presentation, SCNN1 genetics were sent to confirm systemic PHA1. PHA1 should always be considered in any neonate presenting as CAH to avoid delayed diagnosis and adverse outcomes.

Manipriya, R. et al (2018). 'Rare causes of hyperkalaemia in the newborn period: Report of Two Case of Pseudohypoaldosteronism Type 1', Indian Journal of Nephrology, 28(1), 69-72.

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Sub-Specialty

A 'GRAVE' CLINICAL COURSE IN A CHILD ALLERGIC TO CARBIMAZOLE

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Aims: Grave's disease is the most common cause of thyrotoxicosis in children. Management is challenging and all therapeutic options (anti-thyroid drug therapy, radiotherapy, surgery) may be complicated by relapse or adverse effects. We highlight the challenges of managing thyrotoxicosis in a young girl whose clinical course was complicated by a severe carbimazole allergy.

Methods:The clinical case of a young girl with Grave's disease is described.

Results: A 13-year old girl presented with an 8-week history of anxiety and low mood. Clinical examination was remarkable for tachycardia, resting tremor, sweaty palms, brisk tendon reflexes and a smooth large goitre. Investigations suggested severe thyrotoxicosis secondary to Grave's disease (TSH <0.01 Mu/L; ref 0.1-5.0, FT4 73 pmol/L; ref 10-22, FT3 10.8pmol/L; ref 2.6-4.9, and strongly positive TRAB and TPO antibodies). Carbimazole(0.73mcg/kg/day) and propranolol were commenced. After initial clinical and biochemical improvement, on day 15 of carbimazole treatment, she developed a significant urticarial rash, dermatographism, oedema of her limbs and arthralgia, with a resulting inability to weight bear. The severity of her reaction warranted high dose fexofenadine, cetirizine and prednisolone. Even with high dose antihistamines, symptoms persisted. Radioiodine and surgery were unsuitable therapeutic options, given the size of her goitre and the severity of thyrotoxicosis. Second line medical therapy with propylthiouracil(PTU), carries a black box warning for idiosyncratic often irreversible liver failure, limiting its use in the paediatric population to special circumstances. In the absence of a viable alternative, after careful counselling, low dose PTU was cautiously prescribed, whilst closely monitoring liver function. The patient responded well and is clinically and biochemically euthyroid without side effects on low dose PTU.

Conclusion: Therapeutic options for managing acute severe Grave's disease are limited when drug allergy arises. Second line treatment was effective and well tolerated by this patient. Ongoing careful monitoring is required.

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TWO LITRES A DAY WILL LEAD THE DOCTOR'S ASTRAY!

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Aims: Primary adrenal insufficiency is rare in children, with the majority of cases caused by genetic disorders. Autoimmune aetiologies are less common than in adults. We highlight the importance of considering adrenal insufficiency as a potential cause of hyponatraemia in children, who present atypically.

Methods: The clinical case and biochemistry of a young boy with an atypical presentation of Addison's disease is described.

Results: A 13 year old boy presented with a 3-week history of malaise, fatigue and occasional vomiting. Clinical examination was remarkable for pallor, but he was euvolaemic and well grown. Initial investigations showed significant hyponatraemia (sodium 118mmol/L; ref 133-145), with normal urea and electrolytes, serum glucose and venous blood gas. Additional work up revealed low serum osmolality (255mmol/kg; ref 275-295) and increased urine osmolality (581mmol/kg) and a working diagnosis of SIADH was made. Initial management (pending results) included fluid restriction with sodium improving to 130mmol/L after 12 hours. Work-up for SIADH included lumbar puncture, CT brain, abdominal ultrasound, chest x-ray (all normal) and morning cortisol (129nmol/L). Initially, his symptoms improved. However, over a 12 hour period he became acutely unwell with vomiting, headache and hypotension. Given the low morning cortisol and high urinary sodium, adrenal insufficiency was considered and hydrocortisone was administered with immediate improvement in symptoms. Over the subsequent 48 hours, pigmentation of his nipples developed. Further investigations confirmed inadequate cortisol response to synacthen, high baseline ACTH (1930ng/L), markedly elevated plasma renin (31nmol/L/hour) and positive adrenal antibodies, confirming Addison's disease. He responded to glucocorticoid and mineralocorticoid replacement therapy with complete resolution of symptoms. Subsequently, it emerged that the patient had been drinking an excess of 2 litres per day prior to presentation, which likely exacerbated hyponatraemia and masked hypovolaemia at presentation.

Conclusion: Addison's disease can present atypically and early recognition is critical to good outcomes.

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AN UNUSUAL RADIOLOGICAL APPEARANCE OF OESOPHAGEAL VARICES IN A PAEDIATRIC CYSTIC FIBROSIS CASE

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AIMS: To present an uncommon presentation of para-oesophageal varices through routine imaging in a paediatric patient with cystic fibrosis, which led to prompt treatment and avoidance of a life-threatening bleed.

METHODS: We obtained consent from the patient and her parents to carry out a chart review and report. A literature review was carried out to identify similar radiological findings.

RESULTS: AF was admitted with an acute infective exacerbation of cystic fibrosis. She was known to suffer from severe CFLD. Initial chest X-ray (CXR) showed diffuse consolidation. Follow up CXR identified a focal bulge at the level of T10/11, initially thought to be related to the paravertebral tissues. Spinal X-rays showed a “paraspinal soft tissue from T8 [to] T11 bilaterally”. MRI of her thoracic spine then identified the paraspinal shadow as secondary to varicosities surrounding the descending thoracic aorta. An OGD was carried out with six varices identified and four bands placed. While AH did not suffer serious variceal bleeding, this rapid deterioration has necessitated referral for liver transplantation.

CONCLUSION: Para-oesophageal varices are a rare, potentially underdiagnosed finding on CXRs in paediatric patients with CFLD. Features of paraoesophageal varices visible on CXR, were analysed by a retrospective cohort study of 352 adult patients with radiologically proven portal hypertension NOT due to CFLD by Ishikaka et al (12). Radiological features of paraoesophageal varices were visible in 17 cases (4.8%), with 13 (3.7%) presenting as posterior mediastinal mass shadows (5 right-sided, 5 left-sided and 3 bilateral). We were unable to find any report of a similar presentation in a paediatric CF cohort.

This case illustrates an uncommon radiological finding in a paediatric CF cohort. It is important for clinicians to recognise this incidental finding as it represents the opportunity for earlier recognition and management of severe paraoesophageal varices.

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Sub-Specialty

KETAMINE USAGE IN A PAEDIATRIC EMERGENCY DEPARTMENT

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Aims

The therapeutic actions of ketamine are dose related. At lower dosages an analgesic/sub-dissociative state is described, with dissociation occurring at higher therapeutic doses. The "dissociative state" is a trance-like state characterised by profound analgesia, sedation, amnesia and immobilisation whilst preserving airway reflexes, spontaneous respiration and cardiovascular stability. The aim of the study was to assess the indications, patterns and effects of ketamine administration in a paediatric ED.

Methods

A retrospective observational study to identify patients who received ketamine in the ED from 2012 to 2019 using the Misuse of Drugs Act records book. Demographics, indications, dosage and adverse events were extracted. Ketamine used for emergent intubation in the critically unwell was not included. The departmental sedation registry data was cross referenced.

Results

145 patients received ketamine. The median age was 3 years (IQR 0.5-18). 100 (68.9%) were male. Dissociative ketamine (DK) only was used in 139 (95.8%) patients. The three most common DK procedural indications were wound repair (33.8%), CT scan (30.3%) and fracture/joint manipulation/reduction (12.4%). Sedation was successful in 100% of cases. The duration of DK effect was median of 60 minutes (IQR 43). The majority were intravenous (99.3%) with 1 receiving intramuscular DK. Initial DK IV dosage ranged from 0.5-1.8mg/kg. 30 (21.6%) patients received additional IV DK. 78 (56.1%) patients fasted a minimum of 2 hours prior to sedation. The ED consultant was the sedationist in 92.8% cases and was present at all ketamine administrations. 15 (10.8%) cases of sedation had an adverse event. 92 (66.2%) patients were discharged home with follow-up. A combination of initial sub-dissociative ketamine (SDK) then DK was used in 2 (1.3%) patients. 4 (2.8%) patients received SDK only. SDK IV dosage ranged from 0.25-0.4mg/kg.

Conclusion

Ketamine is a safe sedation agent in our ED and is used infrequently as analgesia.

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AUDIT OF SUCCESSFUL SESAME SEED HOME INTRODUCTION POST NOVEL ORAL FOOD CHALLENGE INITIATIVE.

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Aims: The CHI allergy team recently created a model for performing large numbers of simultaneous open, oral food challenges (OFC) (up to 18 at one time) at the City West HSE Care Facility. OFC is the gold standard for diagnosis or refutation of food allergy[1][2]. Home-introduction post successful OFC maintains immune tolerance, and improves quality of life. Reported rates of home introduction of food allergens however, are only between 68 and 82%. Rates are food-specific and dependent on instruction provided[3]. Home introduction of sesame seed has not previously been evaluated. The purpose of this audit was to evaluate the effectiveness of home introduction of sesame seed, post successful OFC at CHI at City West.

Methods: All patients who passed a sesame seed OFC at CHI, City West between Sep7th and Oct15th were provided with written and verbal advice on discharge. Families received a follow up phone call 2-8wks later to enquire about home introduction.

Results: 39 of a total of 474 challenges performed during the 6-week initiative were to sesame seed. Average age was 8.4yr (range 3-16yr). 21(53%) reacted so ongoing avoidance was advised. 1 refused to eat. 17(45%) were suitable for home introduction. 16/17 families were contactable for a follow-up phone call of which 15(94%) reported having introduced sesame seed. Only 1 family delayed introduction due to parental illness. 9(60%) were eating 3 times/wk as advised. 5(33%) were only eating twice/wk and 1 patient was eating once/wk. All families not following guidance reported benefiting from the follow up phone call.
Conclusions: This audit shows a rate of home introduction higher than that internationally reported post OFC. It indicates effective communication of instruction in an environment of high patient flow. Instruction regarding more regular introduction could be improved. Follow up phone calls have reinforcing benefit.

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MALARIA RAPID DIAGNOSTIC TESTING IN THE PAEDIATRIC EMERGENCY DEPARTMENT

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Aims

Microscopy of blood films for Plasmodium parasitemia is the mainstay of malaria diagnosis (1). There is a lack of consensus on the number of blood films required to safely rule out malaria in febrile paediatric patients (2). Currently, little is known about the utility of malaria rapid diagnostic tests (RDTs) in the pediatric emergency setting. This study aimed to determine whether malaria RDT alone can safely rule out malaria in the paediatric ED setting.

Methods

Inclusion criteria for the study were patients under age 15 presenting to the Children's Health Ireland at Crumlin (CHI) ED between 2016 and 2017 with fever and recent travel to a malaria endemic region. Data was retrospectively collected using patient charts and online medical records. JASP statistical analysis software was used to calculate descriptive statistics.

Results

34 patients were identified as satisfying inclusion criteria and receiving a Carestart malaria RDT and blood film. 27 negative and 7 positive malaria RDT results were obtained. Of the 27 negative RDT results, 1 was found to be positive by blood film (false negative). Of the 7 positive RDT results, 1 was found to be negative by blood film (false positive). Sensitivity and specificity of the malaria RDT was 85.71% and 96.3%, respectively. Positive and negative predictive values were 23.14 and 0.15, respectively.

Conclusion

Overall, the sensitivity and specificity of the malaria RDT were found to be high. Due to low sample size at CHI, it is difficult to discern the clinical relevance of the findings. These findings will be included in a multi-centre study, pooling data from approximately 1200 pediatric malaria screens in the UK and Ireland. This will elucidate whether current gold standard diagnostic procedures can be improved to prevent patient inconvenience, without sacrificing quality of care.

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Sub-Specialty

IMPLEMENTING A PUBLIC HEALTH SURVEILLANCE PROGRAM IN A SPECIALIST PAEDIATRIC DENTISTRY UNIT: SUCCESSES AND CHALLENGES OF STAFF ENGAGEMENT.

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Aims: Emergency Dental Treatment Centres were established in March 2020 in response to the impact of Covid-19 on dental practice. From August 2020 these centres started to resume some of their normal activity. In August 2020 Public Health Scotland initiated a program covid-19 surveillance in asymptomatic patients attending for dental care. This program was open to all patients over the age of 5 with capability to consent.
This study aimed to identify barriers to providing swab tests for patients in Paediatric Dentistry Department.

Methods: After a start-up period of 6 weeks, Dental Core Trainees, dental nurses, specialty registrars and senior clinicians (specialist paediatric dentists and consultants) completed a questionnaire anonymously via Microsoft forms. In response to issues raised multiple small changes were implemented to break down barriers and increase the number of swabs taken and the department's contribution to the project.

Results: 167 patients have attended the paediatric dental department since data collection began on 14/9/20. 25 patients were deemed inappropriate due to being under the age of 5. For 55 patients, the treating clinician decided that asking may be detrimental to the patient's treatment due to anxiety. Of the remaining 87 patients, the majority were not asked to participate. Perceived barriers to asking patients included; forgetting to ask the patient, worrying about adding extra anxiety to the patient, time taken to complete the swab and junior members of staff not feeling confident to remind the senior clinician.

Conclusion: There are many perceived barriers to implementing a public health testing program in a paediatric dental department. Although some of these are very real, others can be broken down - this has been done through multiple interventions and small changes in the department.

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Sub-Specialty

An Overview of Paediatric Medium Chain Acyl-CoA Dehydrogenase -Deficiency (MCADD) Patient Cohort in Ireland

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Aim: To study nutritional status, recommended maximum fasting time and carnitine supplementation in MCADD patients in Ireland.

Methods: A retrospective chart review was conducted on all paediatric patients (aged 0 -18 years) with MCADD in Ireland. We collected data for various characteristics, including age, BMI, carnitine level at the time of diagnosis, current BMI, maximum fasting time and carnitine supplementation regimen.

Results: We studied 24 patients (7 Males, 17 Females). They were diagnosed during 1st week of life to 5 years of age. Four patients (16.6%) were diagnosed via Newborn Bloodspot Screening Programme. One patient is overweight and 2 are obese (12.5%; all males). There were no undernourished patients. Three patients (12.5%) were advised a shorter fasting time than local guidelines recommend, among these, 2 patients were < 1 year of age and 1 patient was < 2 years of age. At diagnosis free carnitine level was low in 13 patients (54%). It was normal in 10 patients (42%) and was unknown in 1 patient. Twenty patients (83%) are on carnitine supplement (8 -70mg/kg/day). Current carnitine level was low in 3 patients (12.5%) and 2 of them were on carnitine supplement (28-33 mg/kg/day). Current carnitine level was normal in 21 patients (87.5%) and 18 of them were on carnitine supplement (8-70 mg/kg/day). Dose related side effects were not documented.

Conclusions: Dietetic department is doing a commendable job as overweight/obesity incidence in MCADD population despite higher carbohydrate intake is 12.5% versus Irish paediatric overweight/obesity incidence of 16% [1]. For all patients we should recommend maximum fasting time as per local guidelines. There should be uniformity in prescribing carnitine supplement and we should enquire side effects of carnitine in future clinic visits. We will re-audit after implementing these changes (uniform maximum fasting time and carnitine supplement prescription regimen) in a year's time.

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Sub-Specialty

Single-Centre Experience of Chronic Peritoneal Dialysis Catheters in Children

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Aims

Chronic peritoneal dialysis (CPD) remains the most common dialytic modality used to manage paediatric patients with end-stage renal disease.[1] Despite CPD being a well-established mode of therapy, infection remains a leading cause of morbidity in children, with peritonitis representing the most significant complication. [2] ISPD guidelines recommend the use of a double-cuffed, silicone catheter.[3] This study was conducted to evaluate our centre's experience of CPD patients and ascertain our complication rates.

Methods

A retrospective chart review was performed of all patients ≤16 years undergoing CPD between January 1st 2010 – December 31st 2019 at CHI Temple St. Chart review was used to ascertain demographic data, catheter data, and data pertaining to complications experienced.

Results

A total of n=24 patients fit the inclusion criteria. 13/24 (54%) were male and 11/24 (46%) were female. The median age at catheter insertion was 10.2 (IQR 4.6-13.3). The median time on dialysis therapy was 65 weeks (IQR 35.3-90.48). All patients received antibiotic prophylaxis and a double-cuffed silicone catheter. The leading indications for CPD were CAKUT in 58.3% and HUS 20.9%. 18/24 patients experienced a complication. 13/24 (54%) experienced migration. 5/24 (20%) patients had a documented episode of leakage. 13/24 patients underwent revision of their catheter. 8/24 patients experienced a catheter-related infection, 6 of which were peritonitis (of which 3 were eosinophilic), with the remaining 2 accounting for site/tunnel infection.

Conclusions

Peritoneal dialysis is a safe and efficacious therapy for children with end stage renal disease when carried out under the care of skilled experts, with regular multidisciplinary outpatient review.

The most concerning complication of CPD is bacterial peritonitis, our incidence of this was 12.5%, with the international standard being 16%.[4] Our incidence of leakage was slightly higher than that of the international average. We plan to use this information when compiling a care bundle for our CPD patients.

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