BILIOUS VOMITING, THINK OUTSIDE THE BOX: CASE REPORT OF LATE PRESENTATION OF CONGENITAL DIAPHRAGMATIC HERNIA IN A 7 MONTH OLD INFANT

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Congenital diaphragmatic hernia is a rare cause of bilious vomiting presentation in children. Its diagnosis requires broadening of thinking and considering rare differential diagnoses.

This case is of a 7 month old girl who presented with one day history of bilious vomiting and poor oral intake. This happened on a background of uneventful pregnancy ended with an elective caesarean section and what seems to be absolutely normal first 6 months of life with normal weight gain and no complaints.

Physical examination was unremarkable. X Ray of the abdomen, as part of the work up for the pesentation, revealed bowel loops in the left hemithorax, which was the key to the diagnosis. The blood investigations were normal. The child progressed to undergo a surgery with successful repair of the hernia.

This shows the importance of carying out a structured clinical approach in terms of history taking, examination and investigation in a comperhensive way that covers most, if not all, of diagnoses, including the rare ones.

WHEN SWEET IS NOT SO SWEET

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Sweet's syndrome (SS) also known as acute febrile neutrophilic dermatosis, is characterised by fever, marked neutrophilia, tender, erythematous skin lesions with distinct histological findings. SS is a rare in the adult population, even rarer in the paediatric, with less than 100 paediatric cases reported worldwide[1,2]. SS is associated with Inflammatory Bowel Disease (IBD).

Our case is a 3-year-old boy who presented an eight day history of intermittent pyrexia, diarrhoea, generalised abdominal pain, reduced intake and oral ulceration. He had mild dehydration and extensive ulceration of his hard palate and buccal mucosa.

His initial FBC displayed a marked leucocytosis/ neutrophilia, thrombocytosis, elevated CRP with a normal haemoglobin and bioprofile. He was commenced on broad spectrum antibiotics and acyclovir. He remained intermittently pyrexial and rapidly developed painful, erythematous, cutaneous lesions on his upper limbs and face. The neutrophilia and thrombocytosis persisted. Faecal calprotectin was elevated.

A punch biopsy of his skin lesions yielded the diagnosis of histiocytoid Sweet's Syndrome. He was commenced on prednisolone, with a prompt resolution of pyrexia, improvement in lesions and overall form. He was transferred to a tertiary hospital on a planned steroid regime for further investigations re possible IBD. Combined endoscopic and histology at that time, did not support definitive IBD. His concurrent steroid use likely influenced these findings. At follow up, an altered bowel habit and raised faecal calprotectin persisted. A repeat endoscopy supported the diagnosis of IBD unclassified, eighteen months after his initial presentation with Sweet's Syndrome.

There is a rise in the incidence of early onset IBD in Ireland[3]. Whilst the most common dermatological manifestations associated with IBD are erythema nodosum and pyoderma gangrenosum, this case illustrates that a more unusual dermatological condition i.e. SS, occurring in a 3 year old boy heralded the onset of IBD.

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UTILITY OF HIP XRAY DONE AT 6 MONTHS OF LIFE FOR DIAGNOSIS OF DEVELOPMENTAL DYSPLASIA OF HIPS

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Aim: Developmental Hip Dysplasia is general term for infantile hip instability, dislocation, or shallowness of hip socket[1]. Current guidelines in Wexford General Hospital (WGH) include an x-ray of the hips at 6 months of life as part of screening for DDH[2]. Selection criteria for screening includes positive family history in first degree relatives, breech presentation, unstable lie after 36 weeks of gestation or positive exam[1]. Hip x-ray is done in conjunction with an ultrasound of the hips at 6 weeks of life in Waterford Hospital. The aim is to review the incidence of DDH and of alternate x-ray finding that may require follow-up[2].

Methods: Children were identified who have had hip x-ray done between October 2020 to December 2020, and categorised according to their risk factors. Reviewed each x-ray report and noted the findings, and reviewed the follow-up and management in each case.

Results: 95 patients were advised to have x-ray at 6 months. Out of these 95 patients, 77 attended WGH. There were 16 cancelled appointments, of which 07 did not attend, 08 attended in another hospital and 01 rescheduled. Furthermore, of those who had their x-ray in WGH, 55 were girls and 45 boys and 38 had a positive family history. Moreover, there was only 1 case diagnosed of DDH with normal hip ultrasound and 13 were advised a follow up x-ray in 3 months.

Conclusion: Hence we can conclude that hip ray has significant role in diagnosis of DDH and other ossification abnormalities in infants with risk factors.

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A SMILING CHILD WITH A SMOOTH BRAIN

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Aims

To illustrate that some children with lissencephaly can be able to smile socially, roll-over, sit, reach for objects,walk with varying degrees of assistance, depending on the severity of the syndrome.

Methods

A 19months old girl has been referred by her GP at 10months of age with microcephaly, delayed milestones and poor tone.Her head circumference was below the 0.4th centile. She was born full term,by SVD,her birth weight was 3.1 Kg, Apgar scores were 9 and 10.She was microcephalic at birth (0.4th centile) and her investigations showed negative urine for CMV and negative TORCH screen.
On examination she had dysmorphic features,she was microcephalic with prominent forehead and convergent strabismus.Her neurological exam showed central hypotonia,increased lower limb tone, bilateral lower limb hyperreflexia and upgoing plantar reflexes.

Results

With respect to her gross motor, she was not walking or crawling,she could sit unsupported (c-shaped spine) at 16months and started to commando crawl at the same age.For her fine motors skills, she was holding her bottle,reaching and grasping,transferring objects with a good pincer grip but unable to build 3 block towers. Her speech included 6-7 words. Socially she was smiling and waving bye-bye.
Her baseline bloods were normal.A MRI brain showed an abnormal brain with evidence of bilateral symmetrical smooth cortical thickening, particularly noticeably in the insular regions with mild cerebellar hypoplasia. Genetics identified heterozygous pathogenic variant in the TUBA1A gene. The result was consistent with a diagnosis of autosomal dominant lissencephaly type3.

Conclusion

Lissencephaly is a rare brain disorder that can result in severe physical and intellectual disability.It is genetic in origin but may also be caused by viral infection or insufficient blood supply to the foetal brain early in pregnancy. Microcephaly develops in all patients with lissencephaly. The diagnosis is made at birth or soon after by ultrasound, CT or MRI.Genetic testing may confirm it. The prognosis is often poor,therapies are symptomatic and supportive.

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FISH TALES

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Aims:
To assess impact of the 1700 litre fish tank in the emergency department waiting-room on child and parental anxiety levels while attending department.

Methods:
Questionnaires were distributed on check-in over four day period in the paediatric emergency department. This excluded category 1 and 2 patients who bypassed the waiting-room. Pictorial Faces Anxiety Scale[1] was used to quantify child anxiety levels pre-hospital and again in the waiting-room, across three age categories. We assessed level of interaction with tank and its occupants, perceived impact on anxiety and whether the fish tank impacted perception of the hospital. Participants were invited to leave specific comments and suggestions.

Results:
235 questionnaires were returned, [90 1-5year olds, 78 6-10year olds, and 68 11-16year olds]. Overall children were subjectively mild-moderately anxious pre-hospital. 94% parents reported the tank helped child's anxiety while in the waiting-room. 204 of 235 parents reported reduction in their own anxiety levels as direct result of the fish tank. 90% report that the waiting room fish tank positively impacted their child's impression of the emergency department and hospital, with largest impact in 6-10 year olds group. 91% of 1-5 year olds & 92% 6-10 year olds engaged with tank. For children reportedly drawn to particular colour fish, the blue fish won across all age groups, with yellow fish in second place.

Conclusion:
An overwhelmingly positive response was seen across all age groups with reported alleviation in child and parental anxiety as result of the fish tank. The fish tank has a positive impact on children with sensory needs, with many parents commenting specifically on the positive sensory impact of the tank for their child with ASD or intellectual disability. The consistency of the permanent fish family seems to provide distraction, comfort and sense of familiarity for children; in turn alleviating anxiety for families who attend our emergency department.

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SCHOOL-BASED INTERVENTIONS PROMOTING FOOD AND NUTRITIONAL LITERACY IN CHILDREN AGED 4 TO 13: A LITERATURE REVIEW

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Aims: School-based nutrition focused interventions encourage children to engage with the guiding principles of a healthy diet. Using the strategies provided by these interventions, children may develop healthy long-term habits. To aid in further developing 'Healthy Heroes', a recently piloted school-based intervention, this review explores the literature for the characteristics and effectiveness of worldwide school-based interventions in increasing total fruit and/or vegetable consumption, positive attitudes towards fruits and/or vegetables and/or nutrition-related knowledge in children aged 4 to 13.

Methods: Several databases were reviewed for relevant studies published between 2000 and 2021. To be included, interventions had to be school based, conducted in children aged 4 to 13, target the outcome measures of interest, and have an intervention duration and follow-up period less than or equal to one year. Primary outcomes of interest included: total fruit and/or vegetable consumption, attitudes towards fruits and/or vegetables, and/or nutrition-related knowledge. Studies were reviewed according to intervention type: educational, environmental, or multicomponent.

Results: Twenty studies were included in this review; eight education, six environmental and five multicomponent interventions. One intervention compared the effectiveness of an environmental versus educational intervention. The evidence suggests that environmental and multicomponent interventions can increase total fruit and/or vegetable consumption and positive attitudes towards fruits and/or vegetables. These interventions had most effect on older, female children who previously consumed little to no fruits and/or vegetables. Educational and multicomponent interventions increased nutrition-related knowledge.

Conclusion: To have significant effects on the three outcome measures of interest, school-based interventions should consist of both an environmental and educational component. The evidence compiled in this review suggests that incorporating a peer-modelling and rewards system to the 'Healthy Heroes' program may aid in the development of positive and sustained effects on the outcome measures of interest.

OUTPATIENT INITIATION OF PROPRANOLOL IN THE TREATMENT of COMPLICATED INFANTILE HAEMANGIOMA

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Background: Establishment of a dedicated infantile haemangioma (IH) clinic improved access and earlier initiation of propranolol treatment in the Mid-West[1]. National guidelines recommend criteria for outpatient initiation of propranolol in the treatment of complicated infantile haemangiomas (IH). Previous audit highlighted the need to increase outpatient initiation of propranolol to comply with these guidelines.

Aims: Assess compliance with national guidelines on outpatient initiation of propranolol.

Method: Retrospectively analysed IH patients commenced on propranolol from October 2019 to Jan 2021.

Results: Sixteen patients were identified (F:M, 3:1). Indications included facial disfigurement 38% (n=6), ulceration 44% (n=7), vital structures 6% (n=1), multiple IH 6% (n=1) and segmental 6% (n=1). GPs referred 38% (n=6), Neonatologists 25% (n=4), ED 19% (n=3), Pediatricians 13% (n=2) and Ophthalmology 6% (n=1). Mean age of commencement of propranolol was 24 (sd+/-15) weeks**.** Prior to propranolol treatment, 56% (n=9) failed topical treatment. Mean starting dose was 1.97mg/kg/day representing 81% (n=13) compliance with national guidelines. Mean peak dose was 2.3mg/kg/day representing 93.75% (n=15) compliance. Propranolol was initiated as an outpatient for 50% (n=8),this represents a 14 fold increase in the OPD initiation of propranolol in comparison to previous audit where 3.6% (n=1/28) commenced treatment as an outpatient. 44% (n=7) commenced propranolol as an inpatient, this was indicated in 86% (n=6) with one admission due to parents' preference. One patient commenced propranolol on the dayward due to borderline weight. All patients responded to propranolol. No major adverse events were reported on outpatient initiation. Overall compliance with guidelines on setting for initiation of propranolol was 94% (n=15/16).

Conclusion: Excellent compliance with national guidelines on the outpatient initiation of propranolol. Audit has supported enhanced outpatient-based infantile haemangioma service, so vital in the current climate.

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ROIFMAN SYNDROME; A DESCRIPTION OF FURTHER RADIOLOGICAL FEATURES – CASE SERIES OF TWO IRISH BROTHERS

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Aims

Roifman syndrome is a rare recessive disorder, also known as spondyloepiphyseal dysplasia-retinal dystrophy-immunodeficiency syndrome (OMIM #616651) and is caused by mutations in the RNU4ATAC gene. To date, less than twenty cases have been published worldwide.

Methods

We present the cases of two Irish brothers with a heterozygous mutation in the RNU4ATAC gene found on whole exome sequencing. Their findings include an immunodeficiency, requiring immunoglobulin therapy, and skeletal dysplasia. Radiological review of the brothers' imaging had previously considered Roifman syndrome, but the features were felt to be more in keeping with mucopolysaccharidoses (MPS) despite negative investigations for this, and had not yet been documented in Roifman syndrome.

Results

As well as the previously documented findings of immunodeficiency and skeletal dysplasia, new radiological features, in particular bullet-shaped vertebrae with anterior central beaking (often seen in MPS) as well as delayed ossification of talar bone, calcaneal bone and the distal phalanges are here described as part of Roifman syndrome.

Conclusion

Further description of this rare syndrome may aid diagnosis in future cases.

Pertussis Vaccination Boosters In Later Adolescence And Adulthood – Protection For The Vulnerable Infant.

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Background:
Pertussis is a highly contagious bacterial disease seen across all age groups and widely underdiagnosed. Infants, accounting for 90% of deaths, are more likely to present with complications including apnoea, cyanosis and convulsions. The WHO estimates up to 40 million cases annually, resulting in 200,000- 400,000 deaths. An estimated 1-2% of cases ever appear in official statistics. In Ireland, pertussis vaccinations are scheduled until age 12 and since 2013, to pregnant women. We hypothesise further vaccinations in adolescents and young adults would be beneficial and reduce transmission to infants.

Methods:
A literature review was undertaken using pubmed and HSE resources surrounding pertussis vaccination and epidemiology. It yielded 47 relevant sources.

Results:
The majority of reported Irish cases are in children under 10. Across the literature, there is significant underestimation of cases, particularly in adults. Introduction of maternal vaccinations reduces maternal transmission to infants by 80% up until 2 months and 31% at 2-6 months. Despite maternal vaccination introduction, current available HPSC Data shows cases rose yearly from 2014 to 2017, up to 265. The transmission route shifts from primarily the Mother, to siblings and other adults. Pertussis vaccination immunity reduces over time. The estimated mean antibody titres fall below protection threshold as early as 3-4 years post-vaccination. Several studies highlighted significant pertussis transmission in adolescents in Europe even with current vaccine schedules. Locally thie incidence is 7.9/1000 adolesence. Purdy et al estimated vaccination in late adolescence in the US could reduce cases by 1.8 million over 10 years, saving $1.6 billion.

Conclusion:
The research suggests that despite vaccinations, waning immunity from pertussis contributes towards transmission. Further research surrounding contact tracing of pertussis should be considered to understand the actual burden of disease in Ireland. The benefit of vaccine boosters in adolescents and adulthood should be further evaluated to help break the chain of transmission of pertussis.

SEEING THE BIGGER PICTURE: A CASE SERIES OF PAEDIATRIC CHEST X-RAYS IN A PERIPHERAL HOSPITAL

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Introduction

The importance of history-taking and clinical examination in reaching a diagnosis is clear, but investigations are warranted when further assessment of a patient is required. Chest x-ray is one such investigation, and the support of radiology colleagues in assessing these images is essential. The following case series looks at three patients in a peripheral centre where CXR was critical in making the correct diagnosis.

Case 1

A 10-week old infant presented with a one-day history of increased work of breathing. On examination, a moderate work of breathing was noted with reduced SpO2 of 83%. A diagnosis of bronchiolitis was made, and the patient was admitted for supportive therapy. There was minimal improvement during admission. CXR was performed, and a radiological diagnosis of congenital lobar emphysema was made. Transfer to a tertiary centre was followed by a lobectomy.

Case 2

An 18-month old infant presented to ED following an episode of floppiness and unresponsiveness while in their cot. Initial history and examination suggested a diagnosis of breath-holding, but CXR showed right-sided air trapping and foreign body aspiration was raised as a concern by the radiology department. The patient remained clinically well but was admitted and booked for bronchoscopy, which revealed two small pieces of peanut which were subsequently removed.

Case 3

A 10-week old infant presented with a two-week history of progressive lethargy and feed intolerance with mildly reduced SpO2. Differential diagnoses included reflux or respiratory tract infection. CXR performed in the ED showed significant cardiomegaly, and clinical examination showed a soft systolic murmur and split second heart sound. Transfer to a tertiary centre was arranged, and a diagnosis of dilated cardiomyopathy with 13% EV was made.

Conclusion:

These cases demonstrate the value of plain-film x-ray in establishing diagnosis in paediatric cases, and highlights the importance of having access to expert radiology opinion in peripheral paediatric centres

A RARE CASE OF MALROTATION AND MIDGUT VOLVULUS IN A YOUNG CHILD WITH CYSTIC FIBROSIS

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Background

Midgut volvulus is a life-threatening complication caused by small bowel malrotation that leads to obstruction and ischemia. About 75% of all midgut volvulus cases occur within the first year of life, the majority of which are in the first month [1] . Older children tend to present with chronic symptoms: intermittent vomiting, chronic diarrhoea, and vague abdominal pain, often leading to multiple presentations with signs of malnourishment [2]. Acute presentations in young children are rare [3].

Case Report

We present the case of 4 year-old girl with a background of Cystic Fibrosis (homozygous delta F508 mutation) who presented to the Emergency Department(ED) with a brief 12 hour history of acute abdominal pain and non-bilious vomiting. On arrival she shocked: with cool peripheries, prolonged capillary refill time (3 seconds), and tachycardia (170bpm). She was lethargic with a distended abdomen. She received two 20ml/kg fluid boluses in the ED and was commenced on intravenous antibiotics (metronidazole, gentamicin and co-amoxiclav). An abdominal x-ray was performed which demonstrated an inconclusive bowel gas pattern (non-dilated, coiled bowel loops, lower abdomen gas-free). A nasogastric tube was sited draining brown aspirates. Urgent surgical review was requested following which an upper GI contrast study was performed demonstrating no passage of contrast beyond the second part of the duodenum. The patient proceeded directly to theatre where an exploratory laparotomy identified malrotation with volvulus. An extensive bowel resection and anastomosis was performed. The patient was admitted to PICU post-operatively where she recovered well and successfully transitioned to ward level of care.

Discussion

Midgut volvulus is a surgical emergency that can quickly lead to bowel necrosis, sepsis, and death. Prompt diagnosis is therefore crucial. Our case was unusual given the patient's age and acute presentation with older children typically following a more protracted course. It is therefore important that clinicians consider this rare but time-critical diagnosis when presented with a child displaying signs of shock and abdominal distension.

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RESPIRATORY ADMISSIONS BEFORE AND DURING THE COVID-19 PANDEMIC - A SINGLE CENTRE EXPERIENCE

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Aims: Respiratory tract diseases are a major cause of morbidity and mortality in children. The aim of this study was to compare rates of respiratory illness requiring hospitalisation in 2019 (pre COVID lockdown in Ireland) and 2020 (during COVID lockdown in Ireland).

Methodology: Data from medical admissions was retrospectively collected from the emergency department admissions book of a Tertiary Paediatric Hospital in Dublin. This study focused on the months of September, October and November in 2019 and 2020. The documented reason for admission in each case was noted, these were transcribed and grouped into categories. Reasons for admission under the category of respiratory included: bronchiolitis, lower respiratory tract infection, upper respiratory tract infection, wheeze, stridor and exacerbation of asthma. Rates of admission in this category were compared from 2019 versus 2020.

Results: 1040 admission were included in the study. Of these, 620 were in 2019 and 420 in 2020. This alone shows a decrease of 32% in the rate of admissions to Temple Street Children's hospital during COVID-19 restrictions. Of the 620 admissions across September, October and November 2019, 265 were attributed to respiratory illnesses (42.77%). In the same time period of 2020, only 67 admissions were attributed to respiratory causes (15.95%). This shows a dramatic decrease in the number of paediatric respiratory illnesses requiring hospital admission.

Conclusion: The SARS-CoV-2 pandemic related social restrictions dramatically interfered with the seasonality of childhood respiratory illnesses. This was reflected in the unexpected reduction in the number of hospitalizations in the paediatric population during this period. This study raises serious questions and concerns regarding paediatric immunity to respiratory illnesses and begs the question: will we experience a more severe respiratory season in 2021?

THE YIELD OF THE FOLLOW-UP SKELETAL SURVEY IN CHILDREN UNDERGOING AN ASSESSMENT FOR PHYSICAL CHILD ABUSE.

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Aim

Follow-up skeletal (FSS) survey enhances detection of occult fractures and clarifies equivocal findings. FSS is now considered a standard of care. The yield of FSS was reported as high as 5-25% in a systematic review (RCPCH, 2020).

The aim of this study was:
1. To determine whether patients who had an initial skeletal survey (ISS) for evaluation of physical abuse had a FSS.
2. If the FSS has added clinical data that support the diagnosis of physical abuse.

Methods:

We carried out a retrospective study of all skeletal surveys carried out from June 2020 to June 2021 at CHI Crumlin and Temple Street Hospitals. We analysed patient demographic data, indication for ISS, result of ISS, and whether FSS was done and the interval between the ISS and FSS and whether FSS findings resulted in a diagnosis of physical abuse.

Results:

Fifty-one patients had an ISS performed for evaluation for possible physical abuse. Median age was 7 months (IQR: 2-15). Gender of patients involved is comparable. Thirty-three patients (65%) had normal ISS, and 18 patients (35%) had an abnormal ISS with skull fractures 8/18 (45%) upper limb fractures 6/18 (33%), lower limb fractures 4/18 (22%). Seventy-five percent (38/51) of patients who had an ISS had a FSS done. The FSS was done after a median interval of 13 days from the ISS (IQR: 11-14), No occult or healing fracture was found in the FSS in any of these patients. Findings on the initial skeletal survey were, clarified in 2/18 patients (11%).

Conclusion:

Compliance with follow-up skeletal survey was met in the majority of this patient group in the recommended time interval, however, it failed to provide additional information of occult or healing fractures. Possible reasons include the high numbers with almost two-thirds of patients with normal ISS, in addition to the small sample size.

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Re-audit of Hip Surveillance in Paediatric Cerebral Palsy patients at the Enable Ireland Service Galway

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Background: Approximately $^{1}/_{3}$ of children with cerebral palsy (CP) experience hip displacement (1). Progressive hip displacement can result in pain, impaired function and ultimately dislocation. Programs worldwide have demonstrated the efficacy of hip surveillance, in preventing hip displacement in children with CP (2). Our aim is to investigate whether the implementation of hip surveillance has enhanced the care provided to CP patients in the Enable Ireland services in comparison to previous audits.

Methods: 58 patients identified on the Enable Ireland Galway database with a primary diagnosis of cerebral palsy. Data regarding frequency of hip X-rays and GMFCS level collected. SPSS used to analyse and compare to 2019 audit.

Results: 83% of participants had a hip X-ray performed in this audit compared with 62.5% in the 2019 audit. However only 34% had received recommended quantity of hip x-rays based on their age and GMFCS level.

Conclusion: Implementation of the CPUP guidelines in this centre between audits regarding percentage of patients having screening x-rays has improved. We anticipate as part of the development of disability services in Galway, implementation of the motor and tone management pathway and availability of specialised occupational therapy and physiotherapy services will further improve the surveillance programme, providing x-rays at fixed age periods for each child. Planned re-audit in 2 years' time.

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ESTABLISHING A NEW PEDIATRIC RAPID ACCESS CLINIC TRIAGING SYSTEM AT PORTIUNCULA UNIVESITY HOSPITAL

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Introduction:
Rapid access clinic (RAC) is a service that was established to receive GP referrals and other services for patients who need to be reviewed within 30 days and they are not critically unwell. The purpose of this audit was to improve the efficiency of RAC practice at PUH by establishing an active pediatric triage system which we adopted from CHI Crumlin pediatric triage referral.

Target group patient: 0-16 years

Methods: we conducted a retrospective study; Data was collected from 60 patient's medical records over a period of 3 months. we looked into the referral forms and analyzed the data in terms of age, presenting complaints and time waiting until seen in RAC.

Result: Sample revealed that 46.9% of patients referred were less than 1 year, 25% of patients aged (1- 5 years), 21.9% aged (5-12 years). There is a significant difference in our RAC practice when compared to the standard practice in Crumlin and this is mainly in regards to the criteria of referral. The main symptoms presented to RAC at PUH were Gastrointestinal problems (18.8%), developmental issues & Hip concerns were (15.6%), Feeding issues, Head size & shape concerns were (9.4%) and others were approximately <30%. Abdominal pain was the single most presenting symptom. It is worth to mention that all the above symptoms do not require RAC assessment. Out of the referrals that have been triaged as a rapid access 40.6% has been seen within 30 days however 53.4% have-not been seen within the 30 days.

Conclusion: Overall, our study revealed that there is no well-structured RAC referral system in place in PUH which has led to several inappropriate referrals that may well burden the service thereafter we implemented a new active pediatric triage referral system in the hospital
Rapid Access Referral list of Crumlin Hospital

IS IT ACUTE OTITIS MEDIA OR A SERIOUS FORGOTTEN DISEASE?

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Abstract Text

Aims: Acute otitis media and URTI are common presentations that are usually managed supportively, a similar presentation with potentially severe comorbidity is elucidated for clinicians to be vigilant about.

Methods: A five-month-old girl previously well. Seen by GP for fever up to 39 °C and left post-auricular swelling for 2 days with her ears sticking out. Left otitis media was the initial impression when oral amoxicillin was commenced. Temperature did not settle despite antipyretics and antibiotics thus she was referred to local hospital A&E. No vomiting, diarrhea or coryzal symptoms. She was able to feed but less than usual, irritable and off form. Unremarkable antenatal, perinatal history and up to date with her vaccinations.

Results: Clinical examination revealed a swelling behind her left ear pushing the external auditory meatus out and injected left tympanic membrane and rest of systemic examination was unremarkable. Her C-reactive protein of 257 mg/dl, white cell count 22,000. Urine was positive for nitrites with leukocytes of >200/µl. Started on IV antibiotics. Urine, blood cultures, chest XR and US abdomen unremarkable. CT brain detected acute mastoiditis and superficial post auricular abscess with intracranial extension. MRI revealed same findings with small posterior fossa abscess, sigmoid sinus thrombosis with extension to internal jugular vein and temporal bone erosion. Incision and drainage of the abscess was performed (culture subsequently grew Fusobacterium necrophorum) along with left grommet tube insertion. Discharged home (after 3 weeks of IV antibiotics) on anticoagulant with further outpatient follow up.
In conclusion, Lemierre disease is a serious disease with high mortality and morbidity if overlooked or lately detected. It can present as acute otitis media or sore throat. Thus, red flags detection and institution of IV antibiotics is crucial, these include persistence of symptoms despite treatment, septicemia or pneumonia indicators, atypical lateral neck pain or neurological findings.

Pooled general paediatric outpatient referral triage. Audit of outcomes from the CAT clinic

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Background: Primary care outpatient referrals are an integral part of the paediatric pathway of care but have historically been dealt with on a piecemeal case-by-case basis. In order to optimise care a pooled referral triage system was put in place in 2019 to allow for streamlined triaging of referrals and better data capture on the timing, nature and triage outcome of these referrals including redirection/rejection.

Methods: Data from 3 months of referrals were processed as an initial sample January 2021 to March 2021 constituting 204 referrals. Presenting complaint, patient demographics and outcome were analysed. Triage outcomes were analysed and compared to a previous audit in 2019.

Results: The largest reason for referral was for growth/nutritional concerns (18.1% versus 8% in 2019). Following this was recurrent UTIs/enuresis (11.8% versus 4%), constipation/encoparesis (10.8% versus 10.5%), behavioural/developmental (9.3%), musculoskeletal (8.8% vs 0%) and recurrent abdominal pain (7.4% vs 8%). Overall 46.1% of referrals were listed as routine, 12.6% rejected, 18.0% redirected and 21.8% were listed as urgent. Rejection +redirection rates were highest in the musculoskeletal category with 33% and 28% respectively. The lowest rejection/redirect rates were neurological (8%). The highest rate of referrals listed as urgent were for lymphadenopathy (55.5%), headache (33.3%) and craniofacial (40%). Compared to the previous audit there has been a relative increase in growth/nutritional concerns and enuresis/UTIs. The emergence of increased musculoskeletal referrals is noteworthy.

Conclusion: Primary care referrals to general paediatricians continue to be largely constituted of concerns with growth/nutrition, enuresis, constipation, and musculoskeletal, abdominal pain, UTIs, continence and neurological symptoms. A large percentage of musculoskeletal referrals were deemed inappropriate and either rejected or redirected. While certain patterns have remained constant (e.g. constipation) others issues have become more prevalent since the onset of pandemic with certain issues such as growth potentially related to reduced health care interaction.

VACCINE HESITANCY AMONG EXPECTANT MOTHERS AT UNIVERSITY HOSPITAL WATERFORD

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Background

Vaccination is a lifetime investment and the backbone to maternal and child health. Public confidence in vaccination has been waning globally.Vaccine hesitancy was named as one of the WHO top ten threats to Global Health in 2019.[1] A European survey in 2008-2009 indicated that almost a fifth of parents had doubts about vaccinating their child.[2]

Aims

We aimed to assess the level of vaccine knowledge and levels of vaccine hesitancy among expectant mothers attending UHW and explore reasons behind this.

Methods

We devised a short questionnaire and distributed this to expectant mothers attending antenatal clinics in UHW. All data obtained was anonymous. Questions were formulated to assess parent's knowledge, attitudes and concerns regarding routine childhood vaccinations and their intention to vaccinate or not vaccinate.

Results

At interim analysis, 45% of respondents were in their first pregnancy. Of those with previous children 79% were fully vaccinated, 9% had avoided some vaccines and 12% had not vaccinated their children.
Only 69% of all mothers surveyed reported no vaccine related concerns, 18% reported concerns but planned to vaccinate, while 10% expressed a reluctance to give certain vaccines and 3% did not intend to vaccinate. 23% of respondents reported concerns with vaccine side effects. 19% had concerns with autism. 74% of respondents used HSE sources for information on vaccine, 10% reported using social media and 35% sought information on google.

Conclusion

Vaccine hesitancy is a continuum between vaccine acceptance and vaccine refusal. Vaccine hesitant parents may be reluctant or refuse some or all vaccines. Health care professionals have an important role to play in promotion of vaccine acceptance and should be confident in engaging in pro-vac conversations with parents in a non-judgmental fashion. We hope that information gathered in this survey will guide future teaching and communication modules to UHW health providers.

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TYPICAL VERSUS ATYPICAL CASES OF CONGENITAL HYPERTROPHIC PYLORIC STENOSIS OVER A 2.5 YEAR PERIOD IN ST.LUKES HOSPITAL, KILKENNY, IRELAND.

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AIM : Study on congenital hypertrophic pyloric stenosis cases from 2018 - 2021, St luke's Hospital Kilkenny. To compare typical Versus atypical cases with help of age, sex, clinical presentation, biochemical changes and abdominal ultrasound.

METHODS : Retrospective study done by collection of charts from HIPE with the diagnosis of congenital hypertrophic pyloric stenosis. Patient charts were pulled for comparison of age of presentation, signs and symptoms, blood gas and ultrasound of abdomen.

RESULTS: Total number of 12 cases of pyloric stenosis were diagnosed over a period of December 2018 to July 2021. On breaking down of the total number of cases the following was observed:
2018: **1** case, 4 weeks old, bloody vomiting.
2019: **1** case, 6 weeks old, non bilious projectile vomiting after feeds since 3 weeks of age.
2020: **4** cases, (first case:4 weeks old, second presentation to paeds) (second case: 6 weeks old, projectile vomiting for 3 days and family history of pyloric stenosis) (third case:5 weeks old, multiple vomiting(fourth case:9 weeks old, preterm, 1 week vomiting with blood and family history of pyloric stenosis)
2021: **6** cases, (first case: 7 weeks old, bloody vomiting, second, third and fourth cases: 2 weeks old, projectile vomiting) fifth and sixth cases : 4 weeks old, projectile vomiting.

CONCLUSION: From the above study, out of the 12 cases, one female and the rest were males. 7 out of 12 cases presented in 2021.
Atypical presentation: 3 cases presented with blood in vomit, 2 with hypovolemic shock, 1 was ex preterm, 3 presented at 2 weeks, 1 presented at 9 weeks, 2 had family history of pyloric stenosis in sibling, rest were of typical presentation.

Blood gas: 1 presented with pH: 7.65, 2 presented with pH between 7.49-7.54, 2 presented with HCO3: 72, 48 respectively, the rest between 25 to 32.
Abdominal US: Pyloric thickness 4mm to 6mm, length between 22mm to 29mm.

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MATERNAL DIETARY PREFERENCE CAN IMPACT INFANT HEALTH AND DEVELOPMENT: A CALL TO ACTION

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AIMS:

Foetal and infant neuro-development is a complex process. Vitamin B12 is an important nutrient which assists in normal neurological development. Infant B12 deficiency in most cases, results from a maternal deficiency. Maternal causes may be divided into a deficient maternal diet or maternal pernicious anaemia in a breastfeeding infant. Women on a vegetarian or vegan diet may have low B12. Vitamin B12 deficiency is a rare but treatable cause of failure to thrive and development delay, particularly in the breastfeeding infant. We report a 6 week old male, breastfeeding infant who presented with lethargy, poor feeding, weight loss and concern regarding arrest in development.

RESULTS/ (Case presentation):

A 6-week old infant presented with history of increasing lethargy, poor feeding, weight loss, and concerns regarding development. Examination was concerning for axial hypotonia, with significant head lag. Full blood count revealed neutropenia. Maternal dietary history prompted measurement of B12 which was significantly low, with a raised homocysteine and a high urinary methylmalonic acid (MMA) on urine. His mother was supported regarding adequate nutrient requirements whilst breastfeeding and was started on oral B12 supplementation. The infant was managed with intramuscular injections of B12.

CONCLUSION:

Vitamin B12 deficiency in infants, although rare, is important to recognise because treatment can prevent severe developmental delay with neurologic sequelae. In order to prevent vitamin B12 deficiency, health care providers caring for pregnant and breastfeeding mothers and their infants should include a full dietary history and consider vitamin B12, particularly in vegetarian or vegan mothers. Prevention includes dietary supplementation for mothers and their breastfeeding infants who are at risk.[1] Mothers who have particular dietary preferences that may affect their children's health should receive targeted information. The first 1000 days model is ideally placed to ensure that adequate growth and neurodevelopment is supported by a healthy maternal and infant diet.

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SUBLINGUAL IMMUNOTHERAPY COMPLIANCE IN THE PAEDIATRIC POPULATION AT CORK UNIVERISTY HOSPITAL

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Background: Sublingual Immunotherapy (SLIT) is becoming an increasingly popular choice of treatment for allergic rhinitis (1) . Cork University Hospital (CUH) is the regional paediatric allergy centre in the Munster Region (Ireland). This study looked in detail at the paediatric Population commenced on SLIT within 2011 to 2020 inclusive, assessing demographic characteristics and compliance in this cohort.

Methods: A retrospective chart review was conducted focusing on the population who were commenced on SLIT in the paediatric allergy and pulmonology services in CUH.

Results: A sample of 72 patients were commenced on Immunotherapy in CUH between the defined timeframe, with information gathered on a total sample of 67 patients. Compliance rate within the total sample who underwent SLIT was 79.1% (53 patients completed), with 20.8% (14 patients) failing to complete the treatment. Children over 10-years old had a statistically significant higher proportion of completion in contrast to those under 10-year (P-value=0.041).

Conclusion: CUH population have a good compliance with SLIT comparable with other cohorts. Decreased compliance is associated with the number of SLIT treatments, age of patient, co-morbid asthma and antihistamine use. This study gave us unique insight into the population undergoing SLIT in a large regional centre in Ireland. By gathering this information we could assess our compliance compared to international rates and add to the ever-growing literature surrounding Sublingual Immunotherapy.

1. Lemberg M et al. Sublingual versus subcutaneous immunotherapy: patient adherence at a large German allergy center.Patient Prefer Adherence. 2017;11:63-70

AN EXPLORATORY SURVEY OF REFERRAL PATTERNS AND CLINICIAN KNOWLEDGE OF COMMUNITY PSYCHOSOCIAL SERVICES

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Aims: Community and voluntary services fill an enormous gap in the provision of psychosocial support to patients, as either an adjunct or an alternative to statutory medical services. The aim of this study was to ascertain doctors' knowledge of services providing psychosocial support to children and adolescents in Cork, explore barriers preventing referral and review frequently encountered issues, to inform the development of a directory of local psychosocial services.

Method: In September 2021, a novel ten item questionnaire was circulated amongst medical staff in Cork University Hospital.

Results: Thematic analysis of free-text questionnaire items on 24 completed surveys revealed common issues encountered requiring referral for psychosocial support included mental health issues (14), anxiety (6), challenging behaviour (5), autism supports (4), complex needs support (4), eating disorders (4).
While most respondents could accurately name support services for patients with mental health concerns (19) and eating disorders (12), there was poor knowledge of services for those seeking advice regarding sexual health, sexual assault, and LGBTQI+ services.

71% of doctors felt unfamiliar with the local services available, and only 16% felt 'very confident' or 'extremely confident' in referring patients.
When exploring barriers preventing referral, 79% of respondents reported unfamiliarity with local services, 17% reported lack of time during the consultation, 8% reported feeling uncomfortable and 8% lack of interest on part of parent, 4% outlined fear of offence.
Despite this, 95.8% respondents outlined that clinician knowledge of local support services as being either 'very important' or 'extremely important', with 29% of those surveyed referring patients on a daily or weekly basis.

Conclusion: There is a clear deficit of knowledge amongst staff regarding services providing supplementary psychosocial support. Collaboration with such organisation enhances the quality of care provided to children and families. A directory of local community and statutory psychosocial services has been developed.

AN AUDIT AGAINST THE CHILDREN'S HEALTH IRELAND (CHI) GUIDELINES FOR THE MANAGEMENT OF ANOREXIA NERVOSA ADMISSIONS

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Aims: To assess if the current CHI guidelines for the management of AN are being followed within the first days of admission. The objective is to assess where quality improvements could be made to reduce delays in patients receiving initial investigations and consultations.

Methods:
All patients admitted with an Eating Disorder between February-August 2021 were included. Data was anonymised and stored on a password protected excel spreadsheet, with each data entry recognisable only by a unique patient identifier code. Ethical exemption was obtained from the hospital Ethical department.

Results: N=19. 100% of charts had a documented risk assessment tool. This was not fully complete in all cases, 6 charts did not have a %Median BMI included. There was only one case in which Psychiatry and Dietician referral were not completed within the first working day. All admissions had an ECG within the first day. 60% of patients had no urinalysis for specific gravity documented. Compliance with initial routine blood investigations was 100%. All admissions had a documented plan for the ward. 66% of these included continuous cardiac monitoring for 48 hours. Similarly 66% requested orthostatic heart rate and blood pressure monitoring four times daily. The number of times they were actually documented varied from one to three times daily in 46% of cases. Bed rest was part of the documented ward plan for all admissions. 46% did not request dry weight to be taken the next morning. 60% had Vitamin D charted, of this only 33% had the correct dose. Re-feeding bloods were requested for all admissions.

Conclusion: Our results show mixed adherence to the guidelines and have highlighted a number of areas in which improvements are necessary. Use of a proforma and education sessions may improve compliance. We aim to re- audit in 6 months time.

INFANTILE HAEMANGIOMA OF THE PALATAL MUCOSA: A CASE SERIES

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Aims:

Infantile haemangioma are found mainly in the head and neck region and are considered benign vascular growths. However, a minority may cause serious complications depending on their location and size, necessitating early intervention. The use of propanolol for complicated haemangiomas was identified in 2008[1] We report two cases of infants with palatal haemangiomas necessitating propranolol use.

Methods:

Case 1: 7-week-old formula-feeding female admitted with feeding difficulties, hoarseness, irritability and fever. An intra-oral examination revealed an erythematous macular, demarcated lesion on soft palate and left uvula and an ulcerated lesion on hard palate. A nasogastric tube was placed due to feeding impairment. Specialty consultations with Dermatology and ENT confirmed diagnosis of a soft palate haemangioma, prior to initiation of propranolol.

Case 2: 10-week-old breast-feeding male admitted with feeding difficulties. Intra-oral examination, revealed an ulcerated pedunculated mass visible on left hard palate. A nasogastric tube was placed to support feeding. A Dermatology specialist review confirmed diagnosis of hard palate haemangioma prior to initiation of propranolol.

Results:

Case 1: MRI - Moderate diffuse enhancement of soft palate and uvula lesion. Narrowing of posterior nasopharynx and oropharynx. Oral propanolol duration: 18 months.

Case 2: MRI - well defined soft tissue mass left side hard palate. Oral propranolol treatment duration 8 months, discontinued on parental request, lesion no longer visible.

Conclusions:

An intra-oral haemangioma presenting as a soft tissue mass may be overlooked or could be mistaken for other diagnoses. Awareness of this differential is important to ensure a timely diagnosis and early treatment aided by specialty consultations. The response to oral propranolol in both cases, prevented further functional disability and complications and was well tolerated. These cases highlight the importance of a thorough examination of the oropharynx when infants present with feeding difficulties.

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A SURVEY EXPLORING THE IMPACT OF VIRTUAL CLINICS ON PAEDIATRIC PATIENTS WITH TYPE ONE DIABETES DURING THE COVID-19 PANDEMIC

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Aims

Due to the COVID-19 pandemic we have rapidly altered how we practice medicine, without compromising patient care. The National Paediatric Diabetes guideline (1) recommends three monthly follow up in paediatric patients with type one diabetes. We introduced virtual telephone consultations, alternating with in-person reviews with the diabetes team every three months. Our aim is to assess the impact of virtual clinics on our patients and their families.

Methods

We performed an anonymous survey amongst 50 paediatric patients with type one diabetes attending our service. Surveys were completed either on paper in clinic or online via SurveyMonkey with informed consent. We explored patients' opinions regarding the advantages and disadvantages and whether they wished to continue with this practice. Patients were required to have attended our service at least one year prior to the COVID-19 pandemic outbreak in March 2020.

Results

Two thirds of patients wished to alternate virtual telephone clinics with in-person consultations and felt it had a positive impact on their child's diabetes. Advantages include less time off work/school, as well as a reduction in travel time/cost and risk of infection transmission. Interestingly, one quarter stated that virtual clinics reduced their child's anxiety levels as they were unaware of the consultation. The two most common reasons for preferring in-person visits included having a physical assessment performed by the team and a HbA1C level checked.

Conclusion

There are multiple advantages and disadvantages to virtual consultations. It is important to recognise this practice may not be suitable for every patient. However, when individualised to each patient, it can be rolled out on a more permanent basis, reducing the workload for the diabetes team and stress for patients and their families.

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PERFORMING MRI UNDER SEDATION IN THE PAEDIATRIC POPULATION: DOES IT WORK?

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Aim

Oral sedation is a safe technique that allows patients to tolerate uncomfortable procedures without the risks associated with general anaesthesia(GA). Paediatric MRI with sedation was commenced in Portlaoise in July 2019. We aim to explore the success of this initiative.

Methods

Our oral sedation protocol followed Children's Health Ireland guidelines(1). Patients were given chloral hydrate as the sedative of choice. Patient selection was based on clinician judgement of whether they were unlikely to tolerate MRI without sedation, for example those with autism spectrum disorder(ASD). MRI was considered successful if the radiographer was able to achieve satisfactory diagnostic images. Limited MRI was outlined as those in which patient movement obscured details and evaluation of patient images was limited.

Results

Over a six-month period, nineteen paediatric MRIs were performed under oral sedation, from 13months to 12years11months. Of these 19, 10 had a successful MRI. Four(21%) were initially unsuccessful, one had a successful MRI brain on second attempt and another tolerated a CT brain under oral sedation. Almost one third had a limited study: one patient required a repeat MRI under GA in the tertiary centre. One third had 50mg/kg of chloral hydrate, a further third required a top-up dose to 80mg/kg or 2g. Those that were unsuccessful ranged between 40-72mg/kg. 60% of unsuccessful/limited studies occurred in patients with ASD/behavioural issues, developmental delay and cerebral palsy. One quarter of patients with neurodisability/developmental delay had a successful MRI.

Conclusion

The introduction of oral sedation with MRI has been overall positive. Half underwent a successful MRI and one third a limited study. This reduced referrals to the tertiary hospitals, the need for CT, wait-times, and risks/complications associated with GA. It is difficult to predict which patients will require maximum dose of sedation. Patients with neurodisability/developmental delay are more likely to have an unsuccessful/limited study.

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INITIAL VBG & LACTATE MEASUREMENT ON FEBRILE CHILDREN PRESENTING TO ED/PAU

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Aims:

Early recognition and timely intervention leads to improved outcomes in sepsis. Elevated initial lactate levels in children with suspected sepsis has been associated with increased mortality(1). We wanted to assess if lactate levels were being measured in our patients who presented to ED or PAU with pyrexia. Secondly, to educate and endorse routine lactate measurement as part of our septic work up.

Methods:

6 month retrospective review of lactate measurement from febrile children (Temp >38C) admitted from ED/PAU (September 2020 – February 2021). Medical and lab records were accessed to ascertain lactates.

Results:

There were 51 patients included, 55% were male, 82% had phlebotomy and all were admitted. Only 30.9% (n=13) had a lactate taken, mean level was 2.2 (range 1.1-4). The Patient with lactate of 4 was diagnosed with sepsis. None of the VBGs were acidotic. 53.8% of the lactate samples were taken in PAU vs ED.

Conclusions:

Lactate measurement is currently not being routinely undertaken on patients with pyrexia. Both Paediatric and ED teams have similar rates of lactate sampling. This can be an important prognostic tool for this cohort and is advised as part of the HSE National Sepsis Programme (NSP)(2). Education sessions have taken place to highlight, encourage and endorse lactate measurement as part of our triage bloods in febrile patients. A re-audit of this data will take place later in the year to complete the audit cycle.

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BLOOD PRESSURE MEASUREMENT ON CHILDREN PRESENTING TO ED/PAU IN UHW

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Aims:

The standard triage practice is to ideally obtain BP in all patients, regardless of acuity or age. BP is important in sepsis recognition and as an overall marker of systemic well-being. Unfortunately despite the clinical importance of this vital sign it is often omitted or deemed unreliable on initial assessment. We wanted to review the current practice of BP measurements in our patients presenting to ED and PAU in University Hospital Waterford.

Methods:

Retrospective chart review from January to March 2021.
Included in this audit are patients presenting to ED and PAU with different presenting complaints, including those who presented with undifferentiated fever.
Patients were age stratified as follows: 0 - 6 months, 6 months to 5 years, 5 to 16 years.

Results:

There were 50 patients charts reviewed in this study. In total, 18 Patients (36%) had their BP Recorded.
BP Recording was 0 (0%) in Patients aged < 6 months.
BP Recording was 5 (18%) in Patients aged 6 months - 5years
BP Recording was more common 13 (92%) in Patients aged 5 years and above.
BP Recording was done in only 2 (12%) patients presenting with fever.

Conclusion:

The Present Audit demonstrates that BP Recording in Paediatric age groups in the ED and PAU is not being carried out routinely, especially in the children under 5.
Blood pressure measurement is more difficult in this age group and readings are likely to be falsely high in crying toddlers. Doppler BP monitoring may be more accurate and should be considered in the infants where cuff size and reproducibility pose a challenge. It is important that appropriately sized cuffs are available and promotion and education of nursing staff is paramount to ensure a higher yield of blood pressure measurements on children presenting to our hospital. BP is a key vital sign which may point to impending decompensation in acute illness or a diagnosis of chronic disease.

CHARACTERISATION OF IMMUNE RESPONSES IN MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN (MISC)

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Aims: Multisystem Inflammatory Syndrome in Children (MISC) or PIMS-TS develops in school age children who were previously infected with acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or were in contact with someone infected by this virus. The syndrome is a multi-systemic inflammatory reaction affecting many organs. We aimed to study the changes in the systemic immune response in children.

Methods: MISC patients (n=8, age 5-13 years) and healthy subjects (n=14, 5-15 years) were recruited. Innate immune cells were analysed by flow cytometry for CD11b (cell activation and migration) and Toll-like receptor (TLR)-4 (recognition of endotoxin/lipopolysaccharide/LPS) in neutrophils (CD66b+) and subpopulations of monocytes (CD14/CD16) stimulated without/with LPS. Changes in different subpopulations of lymphocytes (CD3+, CD19+, CD56+, CD4+, CD8+, TCR Vdelta 1+, TCR Vdelta 2+) were also evaluated.

Results: CD66b+ neutrophils and monocytes from the MISC patients had significantly increased CD11b expression with LPS compared to the controls group. No difference between MISC patients and controls was seen for TLR4 expression in neutrophils or monocytes. Subpopulations of monocytes determined by CD14 and CD16 expression, had decreased expression of TLR4 on non-classical monocytes in the MISC group compared to controls. We found no significant changes in the expression of both markers when comparing the other subpopulations. Major changes were seen in total numbers of baseline lymphocytes subpopulation with a significant decrease in CD3+ and NK cells (CD56+), and increased B cells (CD19+) in the MISC patients compared to controls.

Conclusion: Increased CD11b on neutrophils and monocytes, increased B cells and reduced T and NK cells could be factors contributing to the multi-system immune response in MISC. Further studies at cellular and molecular level are required to understand the mechanism driving the syndrome and to identify potential immunomodulatory therapies.

CASE STUDY: THE PALE CHILD

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Introduction

Iron deficiency is the most widespread nutritional deficiency, and a leading cause for disability.

Case Study

A 3-year old girl presented to the Paediatric Decision Unit with a 2-month history of pallor and decreased energy. She had no other systemic symptoms. Her mother complained that she was a 'picky eater.' To compensate, she had a substantial amount of milk daily.
She had no significant history: she had been a well child previously, developmentally appropriate for age. She had no family history of anaemia.

On examination, she had marked pallor and tachycardia (148bpm). Surprisingly, the rest of her systemic examination was normal. She had no signs of congestive cardiac failure (CCF) and no signs suggestive of vitamin deficiency.

As she was profoundly pale and tachycardic, blood tests were performed aimed at diagnosing anaemia and possible secondary causes. These included a full blood count (FBC) and blood film; haemoglobinopathy screen, iron studies and inflammatory markers. This was aimed at differentiating two common causes of anaemia: iron deficiency and thalassemia, as well as less common causes such as chronic inflammatory states. Her results were: FBC showed profound microcytic, hypochromic anaemia, with a haemoglobin level of 1.7 g/dL; MCV 52.9; RCC 1.53; MCHC 21.0. By using the Mentzer index, iron deficiency anaemia was diagnosed (low MCV and low RCC, index=34.5, therefore >15). This diagnosis was later supported by iron studies and peripheral smear (microcytic hypochromic pencil cells).

She was admitted for blood transfusion, oral iron supplementation and dietary advice.

Conclusion

Despite low haemoglobin she had no CCF due to the chronicity of her condition, and shift in her 2,3-DPG levels and oxygen-dissociation curve. Knowledge regarding various clinical presentations of iron deficiency is key to diagnosis. Alternative treatment options include intravenous iron therapy. Further research is required into long-term effects of this therapy and residual hyperferritinaemia.

ANALYSIS OF AETIOLOGICAL INVESTIGATION OF CHILDREN WITH PERMANENT CHILDHOOD HEARING IMPAIRMENT REFERRED TO PORTIUNCULA UNIVERSITY HOSPITAL.

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Aims: Children with permanent childhood hearing impairment (PCHI) in Ireland are identified via the National Universal New-born Hearing Screening Programme, which celebrates its tenth anniversary this year. Such children require aetiological investigation in order to initiate appropriate medical and educational interventions. Our study aimed to review outcomes of aetiological assessment of patients with PCHI undertaken at Portiuncula University Hospital (PUH). These investigations are conducted in accordance with the British Association of Audio vestibular Physicians (BAAP) guidelines[1].

Methods: A retrospective chart review of patients referred to the Department of Paediatrics at PUH for aetiological investigation of confirmed PCHI over a ten year period, was conducted. Data collected included details of audiological diagnosis, investigations, aetiological diagnosis and assistive hearing equipment.

Results: 30 patients were identified, 6 of which had unilateral PCHI (3 mild/moderate, 2 severe/profound, 1 unclassified), 24 had bilateral PCHI (15 mild/moderate, 5 severe/profound, 4 unclassified). The most frequently performed investigations were genetic testing for GJB2 mutation and GJB6 deletion (86.6%) and congenital infection screening (93.3%). Investigation of this cohort resulted in 4 confirmed diagnoses (2 GJB6 deletions, 1 GJB2 mutation, 1 CATSPER2-STRC deletion), 2 potential diagnoses awaiting outcome including aminoglycoside exposure as well as the discovery of 1 incidental renal anomaly.

Conclusions: Aetiological assessment successfully established diagnoses in 13.3% of our cohort. Of the investigations undertaken, genetic testing proved particularly high yield in terms of confirming underlying causes of PCHI in this group. Continued adherence to aetiological guidelines is needed alongside further guidance to support early CMV detection in order to provide appropriate medical treatment early to improve hearing outcome of affected individuals.

1. British Association of Audiovestibular Physicians. Guidelines aetiological investigations into unilateral/bilateral permanent childhood hearing impairment. April 2015; Available from: https://www.baap.org.uk/documents-guidelines-pathways-and-clinical-standards.html

ALVEOLAR LYMPHANGIOMA

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Aim

The main aim for this abstract is to create awareness about Alveolar lymphangioma which is a benign but relatively rare condition which is found mainly in the oral cavities of black infants with a definite predilection for males (2:1 male-to-female distribution).
Dentists practicing in Ireland are now aware of this condition due to its racial specificity. Up till now three cases have been reported in Irish journal of dental association, two in black neonates (2009) and one in an Irish white neonate (Jun/Jul2020).

Method and Background

In Midland regional hospital portlaoise a male baby, born uneventfully via spontaneous vaginal delivery at 40+5 weeks of gestation to a 33 years old African woman.His physical examination was normal apart from two small mucinous cystic swellings on the lingual aspect of alveolar ridges at the level of molars bilaterally. Following a normal neonatal course in the hospital, the baby was discharged home breastfeeding well, with a follow up review arranged.
Upon follow up presentation he was being referred to the Dentistry department in Crumlin Hospital and was diagnosed as Alveolar lymphangioma.

Result

After being diagnosed on clinical findings as Alveolar lymphangioma no investigation was being done and upon periodic monitoring opted by dentist these cyctic swelling were dissolved at the age of 6 months with interfereing child's wellbeing.

Conclusion

Alveolar lymphangioma represents a developmental malformation of lymphatic vessels and generally are regarded as hamartomas.The aetiology is unknown, but probably involves developmental factors.The clinical presentation, though distinctive, nonetheless shows some similarity to several other conditions and can be misreported as dental lamina cyst of newborn, mucocele and congenital epulis of the newborn.Clinical photographs listed beside are strongly suggestive of lymphangiomas of the alveolar ridge.Alveolar lymphangiomas have been reported to be resolved within the first 6 ½ months of life as was the resolution of lesions in our case.

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BLACK HAIRY TONGUE (LINGUA VILLOSA NIGRA)

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AIM

Black hairy tongue is rare harmless and self-resolving oral condition in which tongue looks like a dark, furry appearence.

Method

A 5½ year old child presented to MRHP with maternal concern of noticing black discolouration of tongue which was not affecting feed and health. On examination obvious blackish discolouration of tongue centally noted and diagnosed by dermatology as LINGUA VILLOSA NIGRA.

Conclusion

Although Black hairy may look alarming but it does not cause any health problem and is usually painless it resolves by eliminating possible causes of contributing factors and practicing good oral hydiene.

INCIDENCE OF PAEDIATRIC HAEMOLYTIC URAEMIC SYNDROME IN THE MIDWEST REGION

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Haemolytic Uraemic Syndrome (HUS) is a condition characterized by triad of haemolytic anaemia, thrombocytopenia and acute kidney injury (AKI). Ireland is reported to have high incidence of HUS. Incidence rates are reported as 1.5-2.2 per 100,000 worldwide and HUS is estimated to eventuate in 7-10% of children who contract VeroToxin-producing E.Coli (VTEC). HUS potentially cause serious complications (seizure and renal failure) and is the leading cause of AKI in the European paediatric population.

This study aims to estimate the incidence of paediatric HUS over the preceding decade in the Midwest region, describe presenting features and analyse for prognostic markers amongst our cohort.

We performed a retrospective study on children<16 years old, admitted with HUS to University Hospital Limerick (UHL) from 1st Jan 2010 to 31st Dec 2020. Data were collated using Excel, with parametric data assessed using the students t-test and categorical data with the Chi-squared test.

Nineteen children were treated for HUS, inferring a regional incidence rate of 1.7 per 100,000. VTEC was isolated in 14/19(74%); 11/14(79%) were non-O157-serotype.Mean urea and creatinine were 20.6±13.9mmol/L and 155.4±119.5 µmol/L respectively. 17/19(89.5%) was transferred for tertiary-level nephrology care,of which 7/17(41%) required dialysis.

Despite the regional rural hinterland, the incidence rate of HUS was not higher than average in our population. Dialysis was necessary in 41% of this cohort and degree of AKI at diagnosis did not predict its necessity.
Regardless of initial Hb level, nearly all needed RCC transfusion. We observed a good prognosis, with complete recovery in all our cohort.

1.Canpolat, N. (2015) "Hemolytic uremic syndrome", Türk Pediatri Arşivi, 50(2), 73-81. 2.Shiga toxin/verocytotoxin-producing Escherichia coli (STEC/VTEC) infection - Annual Epidemiological Report for 2018 [Internet]. European Centre for Disease Prevention and Control. Available from: https://www.ecdc.europa.eu/en/publications-data/shiga-toxin-verocytotoxin-escherichia-coli-aer-2018 3. Report of the Scientific Committee of the Food Safety Authority of Ireland 2019.Resources and Publications | The Food Safety Authority of Ireland [Internet]. Available from: https://www.fsai.ie/resources_publications.html 4.Population and Migration Estimates April 2020 - CSO - Central Statistics Office. Available from:https://www.cso.ie/en/releasesandpublications/er/pme/populationandmigrationestimatesapril2020/

QUALITY IMPROVEMENT: INTRODUCTION OF A STANDARDISED PROFORMA FOR ASSESSMENT OF ACUTE ABDOMINAL PAIN IN A REGIONAL IRISH PAEDIATRIC UNIT

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AIMS

- To assess whether documentation improved following the introduction of a standardised proforma for paediatric patients presenting with acute abdominal pain to the Paediatric Decision Unit.
- To explore NCHDs' attitudes towards the use of a standardised proforma in assessing acute abdominal pain.

METHODS

Retrospective data was obtained via chart review of the most recent twenty patients presenting to our Paediatric Decision Unit with acute abdominal pain, analysing documentation of the History of Presenting Complaint and Systemic Examination. A standardised proforma was then introduced, to be completed by the NCHD assessing the child. Prospective data was obtained on the subsequent thirty patients presenting with acute abdominal pain. The retrospective and prospective data were compared for differences in quality and quantity of documentation.

Surveys were carried out amongst paediatric NCHDS to explore their attitudes towards the use of standardised proformas in acute settings, using a five-point Likert scale. These attitudes were assessed prior to and three months after introduction of the standardised proforma for acute abdominal pain.

RESULTS

The presence of vomiting, diarrhoea, fever, tenderness and rigidity were consistently well documented in both retrospective and prospective cohorts. Introduction of the proforma significantly increased documentation rates of anorexia (65% to 93.3%), URTI (45% to 96.7%), abdominal distension (35% to 96.7%), bowel sounds (40% to 96.7%), ambulation (15% to 83.3%), pain analogue scale (20% to 90%), the SOCRATES tool (30% to 96.7%), and parental response to pain (30% to 83.3%).

Following introduction of the proforma, there was an increase in NCHDs who felt proforma use improved the quality of patient care (62% to 90%). There was a significant decrease in those who felt proformas increased NCHD workload (62% to 16%).

CONCLUSION

The use of a standardised proforma increased documentation of many aspects of the history and physical examination. The use of a proforma is acceptable to NCHDs.

PERPLEXING HAEMATURIA IN A SCHOOL AGE CHILD; A CASE REPORT

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Aim

To report a case of recurrent unexplained frank haematuria in an otherwise well 6 year old boy with a background of pyelonephritis aged 3 and no other significant personal or family history.

Methods

We describe the clinical presentation, examinations findings, results of haematological, microbiological and radiological investigations, treatment and outcome in our patient.

Results

Following a urinary tract infection in April 2021, our patient experienced recurrent frank and microscopic haematuria over approximately five months. He was admitted to hospital twice for investigations, which were unremarkable. Haematological investigations confirmed normal FBC, U+E, CRP, ASOT, C3, C4, ANA. Mid stream urine and throat swab showed no infection. His initial renal ultrasound was normal**.**
In August, he was readmitted with frank haematuria, dysuria, hesitancy, vomiting and right flank and right iliac fossa pain. Haematological investigations were normal except for a neutrophilic leucocytosis (15.48 $x10^9$). Mid stream urine showed blood without infection. An abdominal xray showed 3 opacities in the right hemipelvis consistent with calculi. A repeat renal ultrasound and a CT scan of kidneys, ureters and bladder identified two right-sided ureteric calculi with associated hydroureter and hydronephrosis. Distal right ureteric dilatation was also reported suggesting obstruction at the vesicoureteric junction caused by either a nonradiopaque calculus or other pathology.
His initial treatment included intravenous antibiotics, rehydration and analgesia. Ultimately, he underwent successful cystoscopy, stone extraction and JJ stent insertion under the specialist urology team. Upon full resolution, he will undergo JJ stent removal. Further haematological and calculus analyses are underway to investigate potential underlying aetiology.

Conclusion

Paediatric urolithiasis is a relatively uncommon but important cause of haematuria in children. As in this case, symptoms can be dynamic and non-specific in nature leading to diagnostic uncertainty and delay. Thorough evaluation with early diagnosis and treatment can prevent the development of sinister sequelae including renal damage or failure

INTERMITTENT INTUSSUSCEPTION IN A CHILD WITH NEWLY DIAGNOSED COELIAC DISEASE: A CASE PRESENTATION

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Summary
This case describes the history of a 2 year and 11 month old boy who presented with a three week history of non-bilious vomitting, non-bloody diarrhoea, lethargy and subjective weight loss.
Initial investigations revealed a strongly positive Anti-Tissue Transglutaminase Antibody (>128U/ml) and microcytic anaemia (haemoglobin 9.9g/L, MCV 67.5fL).

Abdominal Ultrasound revelealed an 8cm x 3cm jejunal small bowel intussusception with an echogenic mass in the distal end of the intussuscepticum, likely representing a lymph node or polyp.

The patient's condition was initally stable and he was managed locally. Following the introduction of a gluten free diet, the patient continued to experience symptoms of vomitting and diarrhoea. Repeat abdominal ultrasound was performed after three weeks that confirmed ongoing, intermittent intussusception. The child was trasnferred to a tertiary centre for specialist review and consideration of pneumatic or other reduction, ultimately no intervention was required and his symptoms resolved.

Repeat ultrasound at five months post introduction of gluten free diet showed complete resolution of intussusception.

Discussion
There is a statistically significant increased risk of intussusception after a diagnosis of coeliac diagnosis (OR 1.95; [CI 95% 1.01 – 3.77]). There is no association between intussusception and the future development of coeliac. Evidence does not support routine antibody testing for coeliac disease in any child presenting with intussusception. [1]

Prospective studies have reported subclinical intussusception in 25% of children with newly diagnosed coeliac disease. Of these, 95% involve the small bowel. After commencing a gluten free diet; spontaneous resolution of the intussception occurs in: 65% in 7 days, 84% in 14 days and 92% within 28 days. In this study, no patients required surgical or hydrostatic reduction of the intussusception.[2] The case we have described and the related literature both suggest that children with coeliac disease and intussusception will not usually require radiological or surgical intervention. [2]

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THE CURIOUS CASE OF THE CALCIFIED KIDNEY

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Aims

Xanthogranulomatous pyelonephritis (XGP) is a rare chronic form of pyelonephritis, seldom seen in the paediatric population, whose aetiology is not yet fully understood. Our aim was to highlight this condition in children, as the signs and symptoms are vague and non-specific, leading to delays in diagnosis.

Methods

A eight year old boy known to have poor weight gain and persistent iron deficiency anaemia, refractory to oral iron supplements and healthy diet, was admitted for further investigations. His physical examination was unremarkable apart from pallor, an innocent murmur, and low weight (0.4^{th} – 2^{nd} centile). Blood tests were normal except for raised inflammatory markers and microcytic hypochromic anaemia with normal ferritin. His urine microscopy revealed pyuria, but there was no history of fever, abdominal pain or urinary symptoms. He was commenced on antibiotics and underwent ultrasound, followed by CT imaging.

Results

Renal ultrasound revealed multiple large echogenic foci throughout the sinus of the right kidney, and his subsequent CT scan showed severe multifocal coarsening and hypoenhancement, with markedly delayed nephrogram, perinephric oedema of 1 cm depth, and associated multifocal nephrolithiasis, suggestive of XGP. Following a DMSA scan, which showed no functional renal tissue within the right kidney, he underwent a right sided nephrectomy.

Conclusions

XGP remains a rare childhood disease, requiring a high index of suspicion to aid in prompt diagnosis and management. Regular assessments of patients with anaemia and faltering growth, looking for characteristics linked to this condition such as flank pain, urinary symptoms, unexplained fever, along with persistently elevated inflammatory markers and poor response to iron treatment, should lead to a faster diagnosis. With early intervention and prompt management, these children recover well, with no reported cases of recurrence in the paediatric population.

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TRIMETHYLAMINURA (FISH ODOUR SYNDROME): A SOCIALLY IMPACTING DISEASE

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Aims

Primary trimethylaminuria, also known as fish odour syndrome, is a rare, autosomal recessive disorder caused by a mutation in the FMO3 gene. This results in an absence or deficiency of flavin monooxygenase 3, responsible for oxidising trimethylamines formed in the intestine into trimethylamine oxide, an odourless substance excreted in urine. Deficiency in this enzyme results in large bodily excretions of trimethylamine, resulting in an unpleasant odour. Our aim is to highlight this rare condition in children, which can have a significant psychosocial impact.

Methods

A 4 year old boy was referred to our paediatric clinic due to concerns about a foul or fish like odour noted by his parents, which would come from his body for several days following the consumption of any white fish. He had an uneventful neonatal period, was delivered at 39+3 weeks, had normal development, and no other medical concerns. He was also known to our metabolic colleagues who performed a number of investigations to try and confirm the suspected diagnosis of trimethylaminuria.

Results

Urine tested for:

1- Free Trimethylaminuria: Creatinine – 837.5umol/mmol (<7.7umol/mmol)
2- Trimethylaminuria-N-Oxide: Creatinine - 2umol/mmol (<119umol/mmol)

TMA-N-Oxide in the urine/total combined Trimemthylaminuria + TMA-N-Oxide = 0.24% (>92%)
Result indicating a severe form of Trimethylaminuria

Conclusion

Trimethylaminuria can have a significant impact on a child's sense of self-esteem and confidence, resulting in numerous mental health issues and social anxiety if left unrecognized. While there is currently no cure for this condition, swift diagnosis and implementation of treatment can help to relieve some of the symptoms associated with it. Using more acidic soaps, regular laundering of clothes, and a reduction in dietary marine fish can all be beneficial. Dietician and psychological support are also essential, and the use of certain antimicrobial has been shown to be effective in certain cases.

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A Case Report: Dermatological Infection Associated with Communal Wetsuit Hire

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Background: The purpose of this paediatric case report is to investigate the association between dermatological infections and shared, hired wetsuits for water sport activities. A 13-year-old boy attended the emergency department with a 3/52 history of a bilateral, non-healing soft tissue infection on the extensor surfaces of his elbows.

Case presentation: The patient had spent the previous weeks surfing in the west coast of Ireland using a communal wetsuit. The initial symptoms included intense pruritus affecting both elbows with a progressively worsening papular rash. Upon presentation, the lesions were pustular, centrally ulcerated, and erythematous with surrounding eschar. A papular rash spread proximally to the triceps regions, with additional lesions on his lower back. The patient was vitally stable, afebrile, and systemically well. There was no recent history of viral infection or any associated illness. No history of trauma, animal or insect bite and no sick contacts.
The infection worsened despite 2/52 treatment with antibiotics in primary care (1/52 PO Augmentin followed by 1/52 of PO Flucloxacillin). The patient was admitted, the lesions swabbed, and treatment begun with IV Tazocin and IV Flucloxacillin, following a dermatological diagnosis of an impetiginized pseudomonas folliculitis.

Conclusion: This case looked at the possible association between communal-use wetsuits and dermatological infection, however further data is needed to confirm the overall, long-term risk. Additionally, aiming to improve working practices in the water sports industry, regarding sanitising hired equipment, may help to reduce any infection risk.

WHAT ARE THE VIEWS OF THE IRISH POPULATION TOWARDS VACCINATION? A MIXED-METHODS SYSTEMATIC REVIEW TO UNDERSTAND VACCINE HESITANCY IN IRELAND

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Aims: Vaccine hesitancy is defined as the delay in acceptance or refusal of vaccination despite the availability of services and is affected by factors such as complacency, confidence and convenience. It is a complex threat to population health worldwide. The aim is to understand why people in Ireland accept or decline vaccination which will help to develop strategies to address vaccine hesitancy.

Methods: A systematic review was performed, searching three online databases (PubMed, EMBASE, CINAHL Plus) from inception to 2021. Relevant search terms were used to identify studies about the opinions of Irish people regarding vaccination. Studies were screened by title and abstract followed by full-text screening and a quality assessment. A convergent integrated approach for a mixed-methods systematic review was undertaken.

Results: The search identified 5551 records and 47 articles were included. The studies ranged across 39 years, multiple vaccine types and different subgroups (healthcare workers, parents, adolescents, over-65s, pregnant women and other subgroups deemed high-risk for vaccine-preventable diseases). The most common vaccine type was the influenza vaccine. The most common subgroup was healthcare workers. Nine themes were identified that influence vaccine uptake or non-acceptance; knowledge of vaccine-preventable diseases, knowledge of vaccines and misinformation, fear, duty of care, influence of healthcare professionals, influence of peers, convenience, cost and autonomy.

Conclusion: This review suggests that common opinions arise amongst the population of Ireland towards vaccination, irrespective of vaccine type, subgroup or time. Increased knowledge about vaccine-preventable diseases and vaccines appears to increase vaccine acceptance. Individuals are positively influenced by healthcare workers and their peers, and believe they have a duty of care to themselves, their family or their patients (for healthcare workers). Conversely, poor knowledge, misinformation and fear can drive decisions to decline vaccination. Further research into certain subgroups (parents and adolescents) along with researching demographic determinants in Ireland is recommended.

IMPLEMENTATION OF FOOD ALLERGEN CHALLENGES IN A SATELLITE CENTRE

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Background: Oral food challenge (OFC) is the definitive diagnostic test in food allergy. Access to OFC is poor in Ireland, with long waiting times for families. CHI has recently appointed 1.5 extra Full-time Equivalent (FTE) allergists. National Treatment Purchase Fund (NTPF) funding has been obtained to decrease OFC wait times.

Aim & Objectives: To assess outcomes of the first OFCs performed in the Day Ward at CHI Connolly, supported by newly appointed allergy staff, the general paediatric service and Urgent Care Centre.

Methods/Intervention: New, site-specific care pathways were developed. Routine clinical data were collated prospectively by Allergy CNS at the time of OFC, using a new CHI-wide OFC data collection form.

Results/Findings: 64 open OFCs were completed in a weekly session from February to mid-July 2021. Median age was 7.5 years, evenly split male:female. Most OFCs (56%) were to peanut. 25 patients had reacted to the relevant food before but had decreasing or equivocal spIgE-based tests (group 1). 25 had never eaten the food but had positive SPT or SpIgE tests (group 2). 26 (40%) of OFCs were positive, 11 in group 1, 12 in group 2. 6 children (9%) had anaphylaxis, 6 were treated with IM adrenaline with 1 child needing 2 doses. 38 patients had negative food challenges, the majority (16, 42%) to peanut.

Conclusions: OFC has been established in a day case setting outside a base CHI hospital and is operating well with high staff and patient satisfaction. The positive oral food challenge rate was initially higher than in comparable Irish settings which may have been due to start-up bias or a residue from the clearance of lower risk OFCs in Citywest in 2020 but this has settled to below the national rate of 50% over time. We hope to continue to increase patient numbers attending for OFC, particularly for antibiotic delabelling.

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MESENTERIC ADENITIS SECONDARY TO SARS-COV-2 INFECTION, A TESTICULAR TORSION MIMIC

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Aims

This is a case report of a male pre-adolescent who presented with signs and symptoms in keeping with a testicular torsion, who ultimately was diagnosed with acute SARS-CoV-2 infection.

Methods

A 10 year old male presented to the ED with abdominal pain and pyrexia. The pain was most severe in the RIF, sudden-onset, dull and aching in character. The patient reported a headache the evening previous, relieved with paracetamol, and no other symptoms. Otherwise, he had been well, with no other symptoms, and no sick contacts.
On examination he was tachycardic, but otherwise vitally stable. He had RIF and subrapubic tenderness and guarding. His right testes was not palpable in the scrotum. Systemic exam otherwise was unremarkable.

Results

Initial investigations showed a normal WCC and CRP. A SARS-CoV-2 PCR was also requested, given he was febrile on presentation.
He underwent scrotal exploration to out-rule testicular torsion. Intraoperatively there was no torsion of the right testicle, an orchidopexy was performed as the testicle was not fully descended. As no cause for his pain was identified, he also had an abdominal US, which didn't visualise the appendix, but showed multiple enlarged lymph nodes. His pain improved with analgesia.
The next morning, his SARS-CoV-2 PCR showed a positive result with a high CT value, 35, which was repeated the next day and had reduced to 18, in keeping with an acute infection. Infection control (IC) precautions while awaiting the test result ensured there were no staff close contacts.

Conclusion

Given the positive viral result and US findings, the diagnosis in this case was mesenteric lymphadenitis, likely secondary to acute COVID-19. This case highlights the importance of appropriate IC precautions while awaiting viral testing results, and also adds to the variety of non-respiratory, atypical manifestations of paediatric COVID-19.

Primary Raynaud's phenomenon in a young infant.

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Aims:

Primary Raynaud's phenomenon (PRP) is rare in the paediatric population and secondary causes must be considered. Most cases are primary RP. PRP can be prominent throughout the family. Whilst the prevalence in children peaks at 12-14 years PRP can present at all ages. In cases of Primary Raynaud's phenomenon, it is important to exclude secondary causes.

We report a case of primary Raynaud's phenomenon in a 13-month-old boy. His mother first noticed the classic triphasic colour changes at 6 months of age.

Methods:

We reviewed the patient in the clinic and followed up their investigations retrospectively.

Results:

On exam his femoral, brachial, and peripheral pulses were palpable. Auscultation of the heart revealed no murmurs or added sounds.

He had blood sampling performed for various tests including antinuclear antibodies (ANA), connective tissue disease (CTD)screen, thyroid function test (TFTs), vitamin D, full blood count (FBC), renal, liver and bone profiles. All of these blood results were within normal range.

We did not perform an echocardiogram or nail-fold capillaroscopy and we are following him up closely in our outpatient clinic. He may potentially be diagnosed with primary Raynaud's phenomenon.

Conclusion:

Initial management is cold and changes in temperature avoidance coupled with warming techniques. In this sense the initial management steps of PRP are relatively simpler. However, a secondary cause must always be excluded. These could include conditions such as acrocyanosis, congenital heart disease and hypothyroidism. We will follow up this case as there are interesting cases in the literature concerning rarer causes of Raynaud's phenomenon.

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THE RISK OF SERIOUS BACTERIAL INFECTION IN THE WELL NEONATE AND YOUNG INFANT WITH HISTORY OF FEVER

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AIMS

Well appearing neonates and infants up to 90 day presenting to the emergency department with a history of documented fever and are afebrile in triage represent a dilemma.Most of the guidelines advise to take parental perceptions of fever seriously, but does not address this particular scenario directly.The clinical practice varies widely.In this literature review we aim to estimate the risk of serious bacterial infection (SBI) in this population compared to well appearing neonates and infants who are febrile in triage.

METHODS

PUBMED search using the terms:(NEONATE) AND (HISTORY OF FEVER).We included studies that compared the risk of SBI in neonates and/or infants up to 90 days who were febrile in triage versus the ones who presented with history of a documented temperature of >=38 at and were afebrile in triage.

RESULTS

854 search results were obtained. The titles were screened, and then the abstracts.7 studies were relevant, all were cohort studies. Only 4 studies met the inclusion criteria.2 studies were excluded because they included neonates and young infants who had tactile fever, with no measured temperature. One study was excluded because there was no comparison group. There were no review articles addressing the question.2425 well neonates and young infants presented with history of documented fever and were afebrile in triage, out of them 271 had SBI, the risk is 11%.On the other hand,5200 well neonates and young infants presented with fever in triage, out of them 778 had SBI, the risk is 15%.

CONCLUSIONS:

SBI risk in well appearing neonates and young infants who present with history of documented fever and are afebrile in triage is significant at 11%.This risk is only slightly lower than the population who are febrile in triage, the risk being 15%.It is difficult to justify treating the two population differently given the only slight risk reduction.

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REVIEW OF ACUTE ASTHMA MANAGEMENT IN A REGIONAL PAEDIATRIC UNIT

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Aims:

A review of the assessment, treatment and follow up of patients presenting with acute exacerbation of asthma to the Paediatric Decision Unit in a regional Irish hospital.

Methods:

We prospectively collected data on 25 patients aged >2 years of age presenting to our Paediatric Decision Unit with acute onset of wheeze.

The data collected included demographic data, clinical assessment using the Asthma Assessment Inventory, identification of high risk variables, treatment strategy on presentation and on discharge, and follow up arrangements.e

Results:

Of the 25 patients analysed, 21 had a final diagnosis of viral induced wheeze or asthma; other discharge diagnoses included mycoplasma pneumonia and anxiety. 6 had previously been referred to our asthma outpatient clinic, 4 of which had already acutely attended our Paediatric Decision Unit twice that year.

14 were assessed using the Asthma Assessment Inventory. 16 had an identifiable trigger for their exacerbation. 22 patients were aware of their diagnosis of asthma and 18 had good symptom recognition. 14 did not have an asthma action plan, and 3 had excessive bronchodilator usage prior to presentation.

All patients received salbutamol either nebulised or inhaled, 13 received steroids within an hour and 12 received oxygen. 17 had inhaler technique reviewed and 14 were discharged with a written asthma action plan. 2 were advised to monitor the peak flows and 6 were advised to monitor the number they could count to in one breath. 5 received a call from the asthma nurse and 13 had follow up planned in the asthma clinic within 3 weeks.

Conclusions:

This review of practice highlighted strengths and weaknesses of asthma management in our department, for the purposes of improving the quality of asthma care our service provides.

CASE REPORT: CHIARI MALFORMATION PRESENTING AS HEADACHES ASSOCIATED WITH LAUGHTER

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This is the case of a 5 year old boy, referred to our out-patient department with a one year history of headaches associated with laughter.

This patient experiences sudden onset generalised headaches of variable severity, associated predominantly with laughter, and once with shouting. They have not occurred with coughing, sneezing, straining or bending over. The pain is described as a tightening sensation around his entire head, which may be associated with pallor, nausea, gagging, or generalised weakness. His reaction to the pain is to grasp his head with both hands and sit or lie on the floor. The pain lasts for several seconds then subsides, with return to good form afterwards. These headaches have not interfered with schooling or hobbies, including soccer and GAA. At the time of initial assessment, they were occurring daily.

Neurological examination was unremarkable.

This was investigated with an MRI brain, which revealed Chiari Type 1 Malformation, with cerebellar tonsillar herniation 19 mm below the foramen magnum.

This patient was referred to a tertiary neurosurgical service for further management. At the time of their review, his headaches had reduced in frequency although were increasing in severity. His parents are currently keeping a diary of headache frequency, severity and precipitants, and he will be followed with serial MRI Brain and Whole Spine.

The natural history of symptomatic Chiari Type 1 Malformations managed conservatively is improvement in headaches and nausea for many patients (37-40% and 89% respectively),1 with paediatric patients more likely to show improvement than adults.2 The decision to offer neurosurgical intervention is based on symptoms and neuroimaging.3 Neurosurgical management options include decompression with or without duraplasty.4 Neurosurgical management carries a complication rate of 8%, most commonly nervous system related, anaemia or respiratory distress.

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BACK IN THE HUDDLE: A POST-COVID-19 EXPERIENCE OF RE-ESTABLISHING HUDDLE

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Aims

RCPCH introduced the Situation Awareness for Everyone (SAFE) initiative in 2013. As part of this the Safety Huddle was developed to increase situational awareness on the ward, early recognition of deteriorating patients and encourage a proactive ward culture to mitigate risk.
The SAFE initiative has been used in University Hospital Galway (UHG) paediatric department since June 2019. During COVID-19, our Huddle was curtailed due to social distancing requirements. Our aim was to safely re-establish the Huddle, audit its use and provide re-education.

Methods

Following re-introduction of the Huddle, we audited its use in the paediatric ward of UHG over a period of three weeks using the standardized Huddle Observation Tool. Re-education sessions are organized for staff to promote the efficient use of the Huddle.

Results

Twelve weekday safety Huddles were audited. The mean duration of Huddle was eight minutes. On average, it started nine minutes late. A clear leader was usually identifiable (11/12) and a patient list was always used to structure the Huddle. The topics due for discussion were covered to varying degrees – PEWS (5/12), “watchers” (3/12) and family concerns (2/12). Each day, Huddle had a mean of nine attendees including CNMs (11/12), nurses (12/12), SHOs (9/12), registrars (11/12) and allied health professionals (5/12). 6/12 Huddles were deemed to have an inappropriate environment or multiple distractions during the meeting. All Huddles were deemed to have a strong collaborative culture.

Conclusion

We identified key areas for improvement including multidisciplinary team attendance, efficient timing and key discussion topics including PEWS and family concerns. We are currently undergoing a re-education process to maximize effectiveness of the Huddle.

VACCINE HESITANCY ON THE POST-NATAL WARD: A CROSS-SECTIONAL SURVEY

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Aims

Vaccine hesitancy (VH) is defined as 'delay in acceptance or refusal of vaccines despite its availability'. Validated outcome measures have been developed to measure VH[1]. These measures include multi-question surveys, however their length makes their use impractical in the post-natal ward setting. Our aim was to create an assessment tool that could be used in the post-natal ward setting to correctly identify those mothers who are least likely to vaccinate their infants. If the tool is shown to be valid, we plan to develop targeted interventions in an attempt to increase vaccination uptake in this cohort.

Methods

We developed a single-item questionnaire assessing response on a 6-item Likert scale. A cross-sectional survey was subsequently performed on the postnatal ward in Wexford General Hospital over a four-month period. Mothers were approached at the time of the new-born examination and invited to complete the questionnaire. Unpaired T-tests and chi-squared tests were used for statistical analysis.

Results

A total of 598 live births occurred during the study period. 21 were excluded as per our exclusion criteria. Of the eligible 577 mothers, 429 (74%) were approached. Of these, 15 (3%) did not consent to participate. Therefore, 414 mothers completed the questionnaire. Thirty-eight (9%) gave VH responses. Those with VH responses were significantly younger (mean age 29 vs 32 $p<0.01$). VH was more likely in first-time mothers (53% vs 37%) and less likely in those who completed tertiary education (50% vs 60%), though this did not reach statistical significance in this sample size.

Conclusions

This study is, to our knowledge, the first reported assessment of VH in the post-natal ward setting. 97% of eligible mothers that were approached completed the questionnaire suggesting that the questionnaire is an acceptable assessment tool. A minority of mothers gave VH responses. VH was significantly associated with younger age.

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IMPROVING OUTCOMES FOR CHILDREN LIVING IN HOMELESSNESS: A SCOPING REVIEW

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Aims
Ireland has seen a marked rise in childhood homelessness in the past decade. The negative impacts of homelessness on the health and development of young children are well described and can have lifelong consequences. However, less is understood about the role and efficacy of interventions to mitigate such adverse effects. The aim of this review is to explore the evidence for interventions targeting young children living in homelessness and to identify gaps in the literature.

Methods
Using the PRISMA-ScR checklist, we performed a systematised scoping review of the literature, to identify original research evaluating interventions for families with children in the vulnerable developmental stage of 0-6 years living in homelessness. Online databases PubMed and Medline were used and each paper was assessed for quality and relevance. The initial search yielded 3,277 papers; 21 papers were ultimately deemed to meet inclusion criteria.

Results
Three-quarters of included studies were conducted in North America, with no studies from Ireland. Housing supports and subsidies were the most commonly studied interventions; some papers focused on parenting supports, case management or other wrap-around services, while others described support bundles incorporating two or more of the above. Only one study focused on a direct intervention for the child, and this was primarily targeted at an older age group. Papers employed a broad range of outcome measures, including housing status, family unification, parenting skills and stress, and scoring on standardised tools for child mental health, development and behaviour. Outcomes were varied, likely reflecting the broad range of interventions and study designs.

Conclusions
There is a paucity of high-quality research evaluating targeted supports for young children experiencing homelessness during their developmentally vulnerable early years. There is a need to expand the evidence base in this area to inform policies in response to the burgeoning problem of childhood homelessness.

EXPLORATION OF PAEDIATRIC MORTALITY IN THE MIDWEST REGION OF IRELAND

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Aim

The death of a child (sudden or expected) is a tragedy for the parents, the extended family and the community.[1] In Ireland, there are currently little data readily available on the circumstances and causes of death in children after the age of one year.[2]
The aim of this study was to collate data available on the demographics and causes of paediatric mortality in the MidWest region of Ireland over a six-year period.

Methods

Ethical approval was obtained from the Research Ethics Committee of the University Limerick Hospital Group. Data on children aged 0 to 18 who had passed away between 01/01/2015 to 31/12/2020 were collated from multiple sources, including the regional mortuary records, records kept by the CNC for children with life-limiting conditions and the remembrance services.

Results

A total of 160 children were identified as having died in the region during the timeframe specified, of which 54% were male. Neonatal deaths accounted for 58 cases (21 IUD/stillbirths), with 102 occurring post-neonatal discharge. Mean age of the cohort who died post-natally was 7.5±6.7 years, with 41 children dying at home, 33 in the ED and 18 in a ward/ICU setting. “Anticipated”deaths comprised 46% (n=47), with specialist CNC involvement. Post-mortem examinations were carried out in all neonatal deaths and in 52% of post-natal deaths. Most prevalent causes of death in the community were neuro-degenerative conditions, SIDS, congenital disorders, suicide, trauma and oncological disease. Overall, a cause of death was not available for 26 cases (16%); overall mortality rate was 0.13%, with under-5 mortality calculated at 1.1 per 1,000 live births (national rate 3.3 in 2019).

Conclusions

Gathering data regarding paediatric mortality remains quite challenging. We support the institution of a National Paediatric Mortality Registry to streamline data collection and identify potentially modifiable causes of death in the paediatric population.

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PARENTAL PERCEPTIONS REGARDING THE IMPACT OF HOUSING ON CHILD HEALTH

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Introduction

Childhood poverty is linked with low birth weight, physical and mental ill-health, and under-employment. We aimed to assess parental perceptions regarding the impact their housing situation, in particular homelessness, had on their child, and to explore healthcare utilisation trends.

Methods

We performed a cross-sectional survey in a tertiary paediatric emergency department in Dublin.

Results

From 01/11/2020-08/01/2021, 312 questionnaires were completed, with homeless parents (n=14) accounting for 4.5%.

Compared to the non-homeless cohort, homeless children were less likely to be Irish (White Irish: 30.8% vs 78.9%; Traveller: 15.4% vs 2%; Black: 23.1% vs 4.1%; Asian: 7.7% vs 4.8%; p<0.001). They were more likely to report their housing impacted their ability to keep a GP (23.1% vs 1.5%, p=0.002), scheduling difficulties as reasons for incomplete vaccination (15.4% vs 1.8%, p=0.031), and less likely to be completely vaccinated (71.4% vs 92.4%, p=0.024).

Median homelessness duration was 13 months (IQR: 3.8-27), comprising emergency accommodation (85.7%), direct provision (7.1%), and staying with family (7.1%).

Compared to the non-homeless, homeless parents were more likely to report feeling unsafe at home (35.7% vs 3.4%, p<0.001) and larger people to bedroom ratios (3 vs 1.33, p<0.001). They were less likely to have cooking (85.7% vs 98.6%, p=0.027), indoor play (35.7% vs 94.4%, p<0.001), or outdoor play facilities (42.9% vs 90%, p<0.001).

Compared to non-homeless, homeless parents were more likely to feel their housing situation negatively impacted their child's play (64.3% vs 17.5%, p<0.001), social development (71.4% vs 14.1%, p<0.001), education (58.3% vs 10.7%, p<0.001), physical health (45.5% vs 11.7, p=0.007), and mental health (61.5% vs 12.6%, p<0.001).

Conclusion

Travellers and non-Irish ethnicities were over-represented in homelessness. Homeless parents were more likely to report their living situation negatively impacted their child's play, development, education, physical health and mental health. These results demonstrate the significant impact of homelessness on all aspects of childhood.

COPYING CLINIC LETTERS TO PARENTS: A SURVEY OF ATTITUDES AND UNDERSTANDING

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Aims: The Integration of Care Program for children in Ireland states that children and families should be at the centre of service design[1]. Duplication and fragmentation of services should be avoided. This is especially important for children with disability who may attend multiple services. One way to improve parent empowerment and communication between services is to ensure parents receive a copy of clinic letters. At our community paediatric centre clinic letters are routinely copied to the family. This is not standard practice across Ireland. Our aim was to evaluate parental attitudes towards receiving copies of clinic letters and to assess understanding of the letters.

Methods: We invited parents of children with moderate-severe neurodisability who attended for medical review by a consultant to respond to a survey which provided feedback on clinic letters. The survey was posted out to their home address.

Results: Response rate was 13/27 (48%). Twelve out of 13 responses reported receiving a copy of the letter. All 12 who received the letter found it helpful. Twelve reported that it provided them with updated information, 11 found that it improved communication with other medical teams and therapists, 10 felt it help them advocate services for their child. Nine understood 'all' of the letter, 3 understood 'most' of the letter. All 13 respondents indicated that they would like to receive future correspondence.

Conclusion: This survey indicated that parents who received a copy of their child's correspondence found it helpful and it improved their understanding of their child's medical needs. Self-reported understanding of the letters was high. Communication appeared to be improved between medical teams and health and social care professionals. Family-centred care is a core value of the Integrated Care Programme and the National Model of Care for paediatrics so we would encourage all paediatricians to include families' in future clinical correspondence.

1. National Clinical & Integrated Care Programmes. (2017) Integrated Care Programme for Children. Available at https://www.hse.ie/eng/services/publications/clinical-strategy-and-programmes/icpchildren2017review.pdf

RELOCATION, RECONFIGURATION AND COVID PANDEMIC ON ACUTE PAEDIATRIC PRESENTATIONS IN A SINGLE SITE

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Background: The COVID-19 pandemic has impacted the paediatric presentations to acute care settings, and different patterns have emerged. Initial reduction in utilisation of these services can be attributed to public health measures (school/childcare closures, travel restrictions) as well as reluctance for parents to access healthcare during this time. Our services temporarily relocated for five months, to enhance the ability for our colleagues in adult medicine to deal with COVID-19. Our services reconfigured after the relocation, due to the loss of general paediatric surgical cover on site.

Aims: To describe the pattern of children presenting to our department during the COVID-19 pandemic. We also look at how services have changed in our department as a result of relocation and reconfiguration of services.

Methods: This study was carried out as secondary data analysis for the larger multisite EPISODES[1] study. Clinical data was retrospectively collected from the electronic health care record for all children under 18 years who presented to our department between January 2018 and September 2021. Data collected included age, sex, selected diagnoses, referral source and outcomes.

Results: There were 94,351 presentations from 01/01/18 to 31/09/21. When comparing the presentations in 3rd quarter of the years 2018, 2019 and 2021 there were 7094, 7148 and 7098 presentations respectively. This differed from the presentations in the 1stquarter; 2018 had 7729 (100%), 2019 had 9054 (117%), 2020 had 6256 (81%) and 2021 had 3174 (41%) presentations. A large increase in mental health presentations was demonstrated in 2021 as well as a diagnosis of appendicitis.

Conclusion: We present a unique data set detailing the effects of relocation and reconfiguration on acute paediatric services during a pandemic. After the abrupt closing of our department, communication with the public and key stakeholders during service reconfiguration were integral to the gradual reinstatement of our adapted services.

1. Epidemiology, severity and outcomes of children presenting to the emergency departments across Europe during the SARS-CoV-2 pandemic – the EPISODES study, Principal Investigator: R. Nijman, Imperial College London, https://doi.org/10.1186/ISRCTN91495258

INVESTIGATION AND MANAGEMENT OF THE LIMPING CHILD IN A REGIONAL PAEDIATRIC EMERGENCY DEPARTMENT

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Aims

To review the investigation and management of children presenting with non-traumatic limp to the Paediatric Emergency Department in Our Lady of Lourdes Hospital Drogheda

Methods

A retrospective review of medical records of children presenting to the Emergency Department in Our Lady of Lourdes Hospital Drogheda with a presenting complaint of non-traumatic limp over a 12 month period. Patients were identified using the integrated patient management system. Records were reviewed to identify the presence or absence of red flag symptoms or signs, investigations performed, diagnosis and follow up plan on discharge.

Results

Thirty-one patients meeting the inclusion criteria were identified. Ages ranged from 18 months to 14 years. All red flag symptoms were asked about and documented in 5/31(16.1%) patients
An adequate examination including joint and gait examination was documented in 14/31(45.1%). Red flag symptoms were present in 15/31 (48.3%) patients. Blood tests were performed on 24/31(77%) patients. Hip X-ray was requested in 21/31(67.7%). Follow up was arranged in 9/31(29%). The most commonly recorded diagnosis was none-19/31(61%), followed by Transient Synovitis -11/31(35%) patients. One patient was identified as a late diagnosis of Developmental Dysplasia of the hip at age 11. Other diagnoses included Avulsion injury-1/31 Epididymitis -1/31, Osgood Schlatter-1/31 and Myositis-1/31.

Conclusions

In our cohort, patients with red flag symptoms or additional concerns were appropriately investigated. Relevant negatives in musculoskeletal examination and gait examination were not adequately documented in many cases. Patients without red flag symptoms frequently underwent phlebotomy and had x-rays performed. Poor recording of a working diagnosis and lack of a documented follow up plan were concerning trends. An updated hospital guideline on limp has been drafted and re-audit is planned following implementation of the new guideline.
https://www.rch.org.au/clinicalguide/guideline_index/Child_with_limp/

INPATIENT MANAGEMENT OF EATING DISORDERS IN CHILDREN AND ADOLESCENTS

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Aims:
The COVID-19 pandemic has brought into focus the crisis of eating disorders amongst children and young adults, as numbers rise and severity worsens[1,2]. The aims of this study were:

1. To produce a descriptive analysis of inpatient eating disorder management in a regional paediatric unit.
2. To perform an audit of inpatient eating disorder management against the current local protocol.

Methods:
All patients admitted for management of an eating disorder from January 2019 to December 2020 were included. Data was retrieved from patient charts and analysed using descriptive statistics.

Results:
Ten patients were admitted, of which nine were female. Three were admitted in 2019 and seven in 2020. Their mean age was 13.5 years (8-15 years). Eight patients had a diagnosis of anorexia nervosa, one had bulimia nervosa and one had ARFID. The average length of stay was 15.1 days.

The mean BMI on admission was 16.9 kg/m^2 (14.2-25.7 kg/m^2). The following admission criteria were met: bradycardia (4), rapid weight loss (4), BMI <2nd centile (2), % median BMI <75% (2), orthostatic change in HR/BP (2), hypotension (1), hypothermia (1) and food refusal (1). The following medical complications were identified: amenorrhoea (6), bradycardia (4), constipation (3) and hypoglycaemia (1).

With regards to the audit, a medical assessment proforma was completed for two patients and a weight chart was recorded for six patients. All patients had bloods taken on admission and nine had an ECG. Bloods were repeated in four of the eight patients at risk of refeeding syndrome. All patients were reviewed by a dietician.

Eight patients were discharged home and two were transferred to a specialist eating disorder unit. Four patients were followed up in the paediatric OPD.

Conclusions:
Inpatient admissions for management of eating disorders are uncommon, however patients have significant medical instability and their admissions are often prolonged. Improvements in documentation and adherence to blood testing guidelines are needed.

1. Lin JA, Hartman-Munick SM, Kells MR, Milliren CE, Slater WA, Woods ER, Forman SF, Richmond TK. The Impact of the COVID-19 Pandemic on the Number of Adolescents/Young Adults Seeking Eating Disorder-Related Care. J Adolesc Health. 2021 Oct;69(4):660-663. 2. Katzman DK. The COVID-19 Pandemic and Eating Disorders: A Wake-Up Call for the Future of Eating Disorders Among Adolescents and Young Adults. J Adolesc Health. 2021 Oct;69(4):535-537.

THE BURNING RED PAINFUL EAR – A CASE OF RED EAR SYNDROME (RES) IN A CHILD

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Aim: To assess, highlight and discuss presentation of RES as burning red painful ear in a child.

Background: Red Ear Syndrome is characterized by unilateral and to a lesser extent bilateral paroxysmal burning sensation and painful redness of external ear. Rare disorder described by lance in 1994. It lacks International classification of Headache Disorders-ICHD-II and IIIβ classification as there is no definite aetiology, pathophysiology and treatment. It can be spontaneous, trigger of rubbing, touching or environmental elements. Early onset idiopathic RES maybe associated with migraine while late onset can have secondary causes inclusive of trigeminal autonomic Cephalagias, upper cervical spine disorder or temporo-mandibular joint dysfunction. It is refractory to treatment.

Method: Case review of 11 year old girl with 1 year history of recurrent burning red painful ear, daily- weekly lasting for ¼-1hour, worse in hot weather and when emotionally upset. School attendance disruptions. No history of migraine, developmentally appropriate with no other medical history of note. Similar history of RES in Father. It is refractory to Analgesia but relieved slightly with ice-packs.

Result: Idiopathic familial red ear syndrome diagnosis. Normal ear-lobe, Cranial-nerves and physical examination. Normal biochemical and inflammatory markers. Normal MRI-Neck with no neurovascular compression of the C3 root by the vertebral artery. Incidental finding of 12mm Arachnoid cyst on MRI brain-non-contributory to symptoms.

Conclusion:

- Primary RES may have earlier age of onset contrary to median age of 44years and more common in females as in our index case.
- There is minimal benefit from NSAIDs, Tricyclic antidepressants, β-blockers, calcium channel blockers, anticonvulsants, serotonin agonists/antagonists, topical analgesia or steroids and local nerve blockade.
- Main stay of treatment is conservative management and reassurance
- The pathophysiology and treatment remains unclear but with the addition of family history, it should be included in the ICHD and IE book or ICD-10 disease classification as 'familial RES'.

1) Lance JW. The mystery of one red ear. Clin Exp Neurol. 1994;14:13–18. [PubMed] [Google Scholar] 2) Giorgio Lambru, Sarah Miller, and Manjit S Matharu, the red ear syndrome, J Headache Pain. 2013; 14(1): 83 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3850925/#!po=23.5849 3) Lance JW. The red ear syndrome. Neurology. 1996;14(3):617–620. doi: 10.1212/WNL.47.3.617. [PubMed] [CrossRef] [Google Scholar]

L1CAM Mutation Causing X-linked Hydrocephalus: A Case Report

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Aims:

To report the interesting case and radiographic findings of a child with a L1CAM mutation causing X-Linked hydrocephalous. Pathogenic mutations of the L1CAM gene causes a spectrum of disorders which range from mild to severe. X-Linked hydrocephalus with stenosis of aqueduct of Sylvius (HSAS) is the most severe form of disease, and has a prevalence of 1 in 30'000. The classic features are hydrocephalous, severe intellectual disability, adducted thumbs and spasticity.

Methods:

Case Report.

Results:

This child presented prenatally with severe ventriculomegaly first detected at the 20 week anatomy scan. They subsequently had a fetal MRI which showed massive ventriculomegaly and possible kinking of the brainstem. He was delivered by elective C-Section at 37 weeks and required no resuscitation. He was the first born male to two healthy parents, they had 2 daughters who were both well. He had an MRI Day of life 2 which showed severe dilatation of the lateral ventricles, cobblestone lissencephaly, severe stenosis of the cerebral aqueduct, cerebellar hypoplasia and brainstem kinking at the mesencephalic pontine junction. The differential diagnosis for this constellation of radiographic findings included Walker Warburg syndrome, Tublinopathy or L1CAM mutation. Tri-exome sequencing later confirmed the child was hemizygous for a pathogenic variant of the L1CAM gene. He had a VP shunt inserted DOL 7 and has subsequently done well. He has ongoing mild hypotonia and adducted thumbs but is making developmental progress to date.

Conclusions

We present the interesting case and radiographic findings of a child with an L1CAM mutation causing X-Linked hydrocephalous.

IT'S AN EMERGENCY!!
HOW ARE WE MANAGING OUR MEDICAL PAEDIATRIC EMERGENCY DEPARTMENT PATIENTS IN PORTIUNCULA UNIVERSITY HOSPITAL?

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Aim:
In January 2020 the Covid 19 crisis meant moving our Paediatric emergency department (ED) from the main ED in Portiuncula University Hospital (PUH) to the Paediatric ward. Paediatric patients presented to the main ED and were triaged according to Irish children triage system (ICTS) by ED nurses. Patients under this new system in Category 1 and 2 are assessed in the main ED, while Category 3, 4, 5 patients are assessed in the Paediatric ward. This led to challenges in ensuring appropriate triage and timely review of these patients. An audit and then a subsequent re-audit were carried out in order to improve the quality of care these patients receive.

Method:
A retrospective case review of 40 patients was taken on 2 occasions 6 months apart. The following were assessed triage compliance, action taken after paediatric assessment and time spent in ED.

Results:
Similar numbers of patients presented in each triage categories. Our initial audit demonstrated poor compliance with category 2 patients getting seen on time and poor information leaflet sharing with the parents.

The second audit showed much better compliance with category 2 patient's assessment on time. Sharing information with parents with written information leaflets was better; however, there was still room for improvement.

Conclusion:
Moving the paediatric ED department to our paediatric ward continues to present ongoing challenges. This necessitates ongoing education both medical and nursing in both our main and paediatric ED department. In particular appropriate triage training needs constant reinforcing, as well as the importance of information sharing with parents and appropriate investigations in this setting.

Irish children's triage system.

KEEPING UP WITH THE KARDEXES:
AN AUDIT ON PAEDIATRIC DRUG KARDEXES

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Aims: The objective of this audit is to assess how well paediatric drug kardexes are being completed and to identify areas of improvement.

Methods: Thirty-nine patients were audited using a structured pro-forma in the paediatric inpatient ward of Our Lady of Lourdes Hospital, over a two-week period in July 2021.

Results: Core patient details and patient's weight were documented in 100% and 97% of cases respectively. Nurses documented allergy status in 97% of drug kardexes whereas doctors recorded allergy status in 63%. 71% of medications were prescribed in the correct section. Some prescribing duplications were noted in the audit. Less than half of the prescriber's signature was legible. The prescribers bleep number and Medical Council number were both documented in less than 62% of all kardexes.

There was a discrepancy between generic prescribing in antimicrobials (85%) when compared with 'as required' medication and regular medication which was 44% and 53% respectively. The most common medication that was not prescribed generically was nurofen, the brand name for ibuprofen. The most commonly prescribed antimicrobial brand was augmentin which is the brand name for co-amoxiclav.

Conclusion: Our audit demonstrated robust performance in the documentation of basic patient details and highlighted areas of improvement, including; generic prescribing, prescription legibility, prescribing in the correct section of the kardex and accurate documentation of drug administration details.

The drug kardex is critical in communicating all relevant information to the person administering the medication. The kardex should be clear, legible and accurate. Any uncertainty is likely to increase the chances of an adverse outcome. Confusion surrounding the information conveyed in a prescription accounts for many of the serious hospital medication errors that occur each year.

NEONATAL STROKE

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We report the case of a neonatal stroke. Incidence rates of neonatal and childhood stroke range from 3-25 per 100,000 children born in developed countries. The risk is highest in new-borns with an overall risk of 1 in 4000 live births (1).

A 5month-old boy, was brought to the emergency department by his concerned mother. The main complaint being preference of left hand for approximately 3 months.

Patient was born at 39+4 weeks, weighing was 3.07kg, via forceps extraction, following an uncomplicated pregnancy. He was a posterior lie, with the cord wrapped around his neck. Apgar scores were normal.
On assessment in the ED the patient was bright and playful. Neonatal reflexes were present. Examination of upper limbs, the patient displayed an obvious preference for his left hand - bringing the left hand to the midline and towards the right side. The right upper limb was held with a mildly abducted proximal arm, right elbow in full extension and fisting of right hand. Of note, the right (or left?) hand had normal flexion/extension of digits, with good grasp strength. Tone of the right upper limb was increased. Reflexes at the deep bicep tendon were subtle but brisk. The neurological examination of other limbs was normal.
CT-Brain showed evidence of a dilated horn of left lateral ventricle due to adjacent porencephalic cyst which appeared to be involving the caudate nucleus, consistent with a perinatal stroke.

The patient has spasticity of his right upper extremity that is best characterised as a monoplegic-type cerebral palsy.

This is likely due to feto-maternal placental insufficiency resulting in clot formation in the placental arterial system that ultimately embolised to a perforator branch of the left middle cerebral artery.

The patient is awaiting further investigation, including echocardiogram; MRI brain; and therapy at the Central Remedial Clinic.

(1) D.M. Ferriero et al. Management of Stroke in Neonates and Children: A Scientific Statement From the American Heart Association/American Stroke Association. Stroke. 2019

PRIMARY AND SECONDARY CARE APPROACH TO PAEDIATRIC MENTAL HEALTH CONDITIONS – A NOVEL MODEL OF CARE

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The enforced isolation caused by the COVID-19 pandemic has led to an increase in mental health issues and severity of presentations to emergency departments. Prolonged waiting times for referral to psychiatry and psychology services have resulted in regression and many children are left untreated.
We proposed the creation of a “Happiness Toolkit” that can be given to children upon presentation to their primary care provider with a mental health issue. A literature review revealed six key resources that have been proven to boost self-esteem, develop resilience and promote positive mental health practices. This resource would provide immediate treatment to those children who would otherwise be forced to endure long waiting periods, sometimes greater than a year and a half, for referral. A leaflet detailing the practices along with a physical “box” that the children must make were created. Our toolkit allows children and their families to engage in positive mental health practices that can not only prevent regression during this waiting period, but also lead to improved mental health or cessation of symptoms.

A trial period of the resource took place in Mullingar Regional Hospital, Ireland, with a marked improvement in outcomes. Children reattending for clinic reported increased happiness and an unforeseen two-and-three-generational benefit was also observed as parents, grandparents and caregivers alike took part in the “Happiness Toolkit” activities. This resource, provided free to children and parents, can play a vital role in preventing increased mental health presentations as a result of the pandemic.

1. Dooley B, O'Connor C, Fitzgerald A, O'Reilly A. My World Survey 2: The National Study of Youth Mental Health in Ireland. Accessed 07/01/2021, http://www.myworldsurvey.ie/content/docs/My_World_Survey_2.pdf 2. E F, D F, R M, et al. Trends in Mental Health Presentations to a Paediatric Emergency Department. Irish medical journal. 02/13/2020 2020;113(2) 3. @CDCgov. Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic — United States, June 24–30, 2020 | MMWR. 2020-08-13T08:49:24Z 2020; 4. McDonnell T, Nicholson E, Conlon C, et al. Assessing the Impact of COVID-19 Public Health Stages on Paediatric Emergency Attendance. Article. International Journal of Environmental Research and Public Health. 2020-09-15 2020;17(18):6719. doi:10.3390/ijerph17186719 5. Qualter P, Brown SL, Munn P, Rotenberg KJ. Childhood loneliness as a predictor of adolescent depressive symptoms: an 8-year longitudinal study. OriginalPaper. European Child & Adolescent Psychiatry. 2009-09-24 2009;19(6):493-501. doi:doi:10.1007/s00787-009-0059-y

E-LEARNING IN PAEDIATRICS: LESSONS LEARNED- COVID-19 AND BEYOND

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1. Background and Objective

Paediatric education at undergraduate and postgraduate level has been transformed during the COVID-19 epidemic. As a new generation of paediatric trainees found themselves unable to experience common conditions e.g., bronchiolitis, on the ward, a meaningful shift took place from in-person learning to an online curriculum. Online learning tools ranging from the well-known 'Don't Forget the Bubbles' to recognised qualifications online saw a surge in popularity. Despite a plethora of research from our adult medicine colleagues exploring the barriers and enablers to online education, there is a relative paucity of specific literature exploring the paediatric situation. Our aim was to conduct a systematic review of e-learning in paediatrics and subsequently identify what makes the paediatric online learning experience unique.

2. Methods

A systematic literature review was conducted on "e-learning in paediatrics" and its relevant nomenclature.To identify the full papers that were included in the review, two reviewers in isolation screened the initial results using the Rayyan systematic review tool and applied inclusion and exclusion criteria to each abstract. Any disagreements between reviewers were resolved with a third reviewer and the final papers chosen. Themes were identified and a narrative description of the results explores the key findings.

3. Learning points

E-learning is now accepted as an integral part of medical education due to the disruption caused to in-person learning by the COVID-19 pandemic. While there exists an abundance of online resources available to paediatric trainees, more content and resource creation is needed to ensure that e-learning can more closely mimic in-person teaching. Conferences and Journal Clubs moving to an online format was one of the major benefits of COVID-19, allowing an unprecedented amount of international collaboration and learning. While education slowly returns to a face-to-face format, it is imperative that we continue to expand our e-learning curriculum.

"ITS NOT ONLY SKIN DEEP", COMMON DERMATOGICAL CONDITIONS AFFECTING CHILDREN WITH TRISOMY 21

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Aim

The literature reports children with Trisomy 21 (T21) have a higher incidence of particular dermatological problems, including but not exclusively fungal-related conditions[1,2,3]. This may be related to immune dysregulation in this population[4]. The aim of this study was to review the range of dermatological fungal and other presentations in children with T21 attending the General Paediatric outpatient clinic.

Methods

A retrospective review of T21 patients that had attended the General Paediatric/Dermatology clinic was performed. Referrals to this service are accepted from the Clinic for Children with Down Syndrome at the same unit. Demographics, diagnosis and management of children with T21 referred with concerns about a skin or nail conditions between January and September 2020 were analysed.

Results

15 children who had T21 and a skin condition were identified. The median age was 12.18years (range: 5-16). 80%(n=12) male.

The commonest presentation was oncholycosis, this was present in 40%(n=6), 20%(n=3) had seborrheic dermatitis, 20%(n=3) had tinea pedis, 13%(n=2) had folliculitis, 7%(n=1) had tinea corporis and 7%(n=1) had tinea capitis. 47%(n=7) had 2+ dermatological conditions at the same time. In addition, 2 patients presented with pyogenic granulomas, 2 with alopecia including one secondary to either a kerion or morphea and 1 patient with hidradenitis suppurativa.

Conclusion

Dermatological conditions are common in children with T21. While much focus is given to other known medically associated conditions of T21, skin complaints remain an important issue with a huge impact on quality of life[5], for the patient and their families. Our data indicates that dermatological presentations become more problematic as children reach teenage years, a time when self-care becomes a focus. Oral treatment with antifungal agents such as itraconazole may be needed for 3-6 months but is generally cheap, safe and effective[6].
We advocate that review of children's skin should be included in the annual medical surveillance for children with T21.

1.Castellanos, J., Toledo-Bahena, M., Mena-Cedillos, C. et al. Onychomycosis in Children with Down Syndrome. Curr Fungal Infect Rep 12, 207–212 (2018). https://doi.org/10.1007/s12281-018-0331-z 2.Madan V, Williams J, Lear JT. Dermatological manifestations of Down's syndrome. Clin Exp Dermatol. 2006 Sep;31(5):623-9. doi: 10.1111/j.1365-2230.2006.02164.x. PMID: 16901300. 3.Ercis M, Balci S, Atakan N. Dermatological manifestations of 71 Down syndrome children admitted to a clinical genetics unit. Clin Genet. 1996 Nov;50(5):317-20. doi: 10.1111/j.1399-0004.1996.tb02381.x. PMID: 9007317. 4.Huggard D, Doherty DG and Molloy EJ (2020) Immune Dysregulation in Children With Down Syndrome. Front. Pediatr. 8:73. doi: 10.3389/fped.2020.00073 5.Jain A, Jain S, Rawat S. Emerging fungal infections among children: A review on its clinical manifestations, diagnosis, and prevention. J Pharm Bioallied Sci. 2010;2(4):314-320. doi:10.4103/0975-7406.72131 6.Hay R. Therapy of Skin, Hair and Nail Fungal Infections. J Fungi (Basel). 2018;4(3):99. Published 2018 Aug 20. doi:10.3390/jof4030099

40% OF CHILDREN ATTENDING GENERAL PAEDIATRIC CLINICS IN AN IRISH HOSPITAL DURING THE COVID-19 PANDEMIC ARE OVERWEIGHT

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Aims

Childhood obesity poses a significant threat to the health of children in Ireland. The Childhood Obesity Surveillance Initiative 2020 report found that 19.1% of school-aged children in Ireland were overweight or obese (1). Overweight and obese children are at an increased lifetime risk of cardiovascular disease, respiratory disease, type 2 diabetes, osteoarthritis, and all-cause mortality (2), as well as low self-esteem, depression and emotional and behavioural disorders (3). In this study, we aimed to assess the rates of overweight and obesity among the local paediatric population attending general paediatric clinics in an Irish hospital.

Methods

Data was collected from thirteen paediatric clinics which took place between 4/11/20 and 2/12/20 in a regional hospital in the south east of Ireland. The majority of these were general paediatric clinics; one was a paediatric endocrine clinic. Heights and weights of all attending children between two and eighteen years were measured and recorded. Heights were measured using a wall-mounted stadiometer and weights were measured using either a sit-on or stand-on scales. Corresponding BMI centiles were calculated using the UK-WHO centile charts.

Results

142 patients attended clinic during this period. Data was available for 135. 54 patients (40%) had a BMI of 91st centile or above, categorising them as overweight or obese. 24 (16.9%) were 91st-98th centile (overweight), 16 patients (11.3%) were 98th-99.6th centile (obese) and 14 patients (10.4%) were above the 99.6th centile (severely obese).

Conclusion

Rates of overweight and obesity from this study were above national averages. The study was carried out during winter, and during the Covid-19 pandemic. While overall rates of overweight and obesity in Irish children have begun to stabilise over the past decade (4), the Covid-19 pandemic and resulting school closures and stay-at-home notices have impacted significantly on lifestyle and activity over the past year (5,6), and are likely to have aggravated the childhood obesity epidemic.

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CERVICAL CYSTIC TERATOMA IN AN ADOLESCENT FEMALE: A CASE REPORT.

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Background and Aims:
Cervical cystic teratomas are uncommon neoplasms in our Irish population and although these lesions are histologically benign they are usually large and may cause significant airway obstruction.

Methods:
We describe the clinical presentation, examinations findings, radiological investigations, treatment and outcome to date in an adolescent female.

Results:
A previously well and neurodevelopmently normal 14 year old Irish Caucasian girl presented to the Paediatric Emergency Department (PED) due to an anterior neck swelling noted during the preceding two days on a background of a one week history of neck pain. There were no systemic features such as fever or weight loss. The swelling was present in the anterior mediastinum just below the cricoid process. It was firm, warm, irregularly shaped, and larger on the left side of the neck. On examination there was a wheeze present when she was lying flat and she reported to be short of breath while doing so. Blood results were unremarkable with normal thyroid functions tests (TFT's). Her chest x-ray showed widening of the superior mediastinum with tracheal deviation and mild luminal narrowing. Follow on CT thorax demonstrated a complex solid cystic mass with substantial mass effect causing significant tracheal narrowing, tracheal deviation and superior vena cava obstruction suggestive of a mature cystic teratoma. She was immediately transferred to a tertiary level centre and had a good outcome after undergoing a successful complete resection. Her post-operative course was complicated by the development of an upper limb DVT which was treated with rivaroxaban.

Conclusion:
Neck swellings require immediate and urgent investigation to both determine the diagnosis and to prevent serious complications such as airway compromise and vascular invasion. Swift action and prompt imaging can help to prevent life-threatening complications. We add our case of a cystic teratoma in a Paediatric patient to the literature on this rare entity.

A DIAGNOSTIC PATHWAY OF ACUTE RHABDOMYOLYSIS IN A TEENAGER: A CASE REPORT.

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Background and Aims:
Rhabdomyolysis is characterised by muscle necrosis and the release of intracellular muscle components into the body's circulation. It typically presents with a clinical triad of muscular pain, weakness and dark urine.

Methods:
We describe the clinical presentation, examinations findings, diagnostic investigations, treatment and outcome to date in an eighteen year old girl.

Results:
Patient X is an adolescent teenager who presented to the Emergency Department with extreme muscular pain and fatigue for the past week. She had recently been commenced on a week long course of doxycycline by her GP for suspected viral parotitis after experiencing bilateral facial swelling, which had resolved at the time of her presentation. Initial investigations showed blood on a urine dipstick, creatinine kinase (CK) of 84835, lactate dehydrogenase (LDH) of 3727 and a transaminitis with elevated alanine transaminase (ALT) of 742. Treatment consisted of aggressive fluid replacement along with strict input and output measurements. Eliciting the cause of her rhabdomyolysis proved difficult and involved the expertise of a multi-disciplinary team including rheumatology, nephrology and metabolic colleagues. There had been no pre-existing trauma or extreme exertion, no medical history of seizure activity, autoimmune or inflammatory disorders and no recent alcohol or drug exposure. An extensive metabolic workup including urine organic acids, acylcarnitine profile and amino acid profile revealed no evidence of a metabolic cause such as fatty acid oxidation defects. Given her clinical and biochemical improvement with regular fluids and strict monitoring it was felt that it was likely to be doxycycline induced following her presentation with viral parotitis.

Conclusion:
Rhabdomyolysis has a number of differentials and once common causes have been outruled it is prudent to investigate chronic conditions such as metabolic disorders. We add our
case of rhabdomyolysis in a Paediatric patient to the literature on this intriguing condition.

THE DIAGNOSTIC ODYSSEY OF RECURRENT VOMITING IN A TODDLER: A CASE REPORT.

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Background and Aims:

Vomiting is a frequent reason for which parents seek medical advice. Our aim is to report a case of persistent vomiting in early childhood with a view to highlighting the importance of examining the child within family, community and culture when no apparent organic cause for this common symptom is identified.

Methods:

We describe the clinical presentation, examination, and results of investigations in our patient. In addition we explore the importance of navigating the biopsychosocial model in health and disease in order to achieve optimal outcomes for our child patients.

Results:

A 15month old boy has been seen repeatedly for chronic persistent vomiting since the age of 4months. He vomits 2-4 times per day, often soon after food or milk. Vomits are non-projectile, non-bilious and non-bloody. His physical and developmental examinations are normal apart from slow but adequate weight gain. He has no mechanical swallowing issues. The dietetics team prescribed supplements with little improvement. Upper GI studies and brain imaging were normal along with extensive blood workup, including a metabolic screen. Comprehensive social and family history delivers the answer. His parents are economic migrants from Bangladesh living in Ireland for 10years. They live in shared co-owned accommodation, a house which they purchased in conjunction with another Bangladeshi family and in which all five of our patient's family share one bedroom with access to a communal kitchen and bathroom. The other family, who paid a larger sum of money towards the purchase of the property "own" the other rooms in the house. Our patient's older and younger sibling sisters were previously hospitalised due to feeding issues without organic cause eventually labelled as behavioural feeding problems triggered by psychosocial stressors.

Conclusion:

Social and environmental factors should always be considered where medical investigations fail to unearth a diagnosis for common clinical problems in paediatrics.

THE PAEDS POLL

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Aims: Almost one third of non-consultant hospital doctors (NCHDs) in Ireland have experienced burnout, with 50% NCHDs reporting emotional exhaustion and feelings of being overwhelmed by work. (1) The COVID-19 pandemic has magnified this issue, increasing the need for physicians to receive social and emotional support from their institutions. (2) In May 2021 the CyberWare attack on HSE IT systems further compounded existing stressors and Irish healthcare professionals faced an additional challenge. My aim was to remind trainees of some of the “best bits” of working in paediatrics.

Methods: Two cohorts of doctors were invited to complete a 20 question online survey in May and July 2021; including all NCHDs working in CHI@Crumlin and Paediatric Basic Specialist Trainees (BSTs). Consent was obtained from all participants.

Results: One hundred and twenty six surveys were completed. Most trainees preferred ward rounds (58%), over consults (22%) and clinics (20%). While 77% prefer neonates to adolescents, half of doctors enjoy baby checks, but half dislike carrying out the task. When speaking to parents, only 16% remember their first names. Two thirds of NCHDs chose “Kulana Apple Juice” (67%) above “Kulana Orange Juice” (27%) with a small number opting for "Ribena Blackcurrant Juice". When using topical analgesia, 58% trainees’ favour “Ametop” over “Cyrogesic Cold Spray”. During assessment of toddlers’ Ear, Nose and Throat (ENT) system, “fairies” (46%) were visualised more often than “spuds” (34%) on otoscopy. The Part 1 Written exam was listed as the favourite membership exam. 70% of trainees would tackle a consultation on neonatal vitamin K refusal above counselling a parent with anti-vaccination views.

Conclusion: Physician health and wellbeing is an important focus for many faculties across training bodies in Ireland. In a high-pressure environment, it’s important to take a break now and then and take stock of the simple commonalities over which we can share a debate or just a laugh.

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PARENTAL ACCEPTABILITY OF CHILDHOOD INFLUENZA VACCINATION

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Aims

Vulnerable children with chronic diseases have received the influenza vaccine in Ireland for years. In May 2020, Ireland has announced that the influenza vaccine will be free for all children aged 2 to 12 years old for the upcoming flu season.[1] This is to minimise influenza disease burden to an already-strained health system due to the ongoing pandemic of COVID-19. Therefore, this study aims to evaluate parents' acceptability and key practices towards childhood influenza vaccination.

Methods

We performed an anonymous survey amongst 270 paediatric patients attending our service. Surveys were completed on paper by parents of patients attending the paediatric clinic between December 2020 and June 2021. Data was collected using a self-administered questionnaire and was analysed using IBM SPSS. A P-value of <0.05 was considered statistically significant and the Chi-squared test was used to compare categorical outcomes. This study was approved by the University Hospital Galway Ethics Committee and written informed consent was obtained from all participants included in the study.

Results

59 % of the parents showed good knowledge and 65 % had positive attitudes stating that the vaccine is easy to administer, beneficial against seasonal flu and its benefits outweigh the risks of adverse events. However, only 34.8 % had vaccinated their children. Parents who demonstrated overall good knowledge were more likely to have good attitudes (Odd ratio=4 $p < 0.001$). Unawareness of Flu vaccine existence for children and concerns about its safety were the main reasons elicited by parents for non-vaccination.

Conclusion:

Overall parents had good knowledge and positive attitudes towards influenza vaccination. The key to ensuring the successful implementation of this vaccine would be to improve influenza awareness strategies among the public through effectively addressing misconceptions about its availability, safety, and efficacy.

1. Vaccines for your child [Internet]. Www2.hse.ie. 2021 [cited 5 October 2020]. Available from: https://www2.hse.ie/wellbeing/child-health/vaccines-for-your-child.html 2. [Internet]. Hse.ie. 2021 [cited 5 October 2020]. Available from: https://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/chapter11.pdf 3. Awad S, Abdo N, Yusef D, Jawarneh A, Babaa A, Alwady D et al. Knowledge, attitudes and practices related to influenza illness and vaccination in children: Role of awareness campaigns in changing parents' attitudes toward influenza vaccination in Jordan. Vaccine. 2019;37(25):3303-3309. 4-2020/2021 Season - Health Protection Surveillance Centre [Internet]. Hpsc.ie. 2021 [cited 5 October 2020]. Available from: https://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/surveillance/influenzasurveillancereports/20202021season/ 5-McGuire A, Drummond M, Keeping S (2016) Childhood and adolescent influenza vaccination in Europe: A review of current policies and recommendations for the future. Expert Rev Vaccines 15: 659-670 6-Dubé E, Gagnon D, Kiely M, Boulianne N, Landry M. Acceptability of live attenuated influenza vaccine by vaccine providers in Quebec, Canada. Human Vaccines & Immunotherapeutics. 2015;11(4):956-960.

DISTAL FIBULA OSTEOMYELITIS, ANKLE SEPTIC ARTHRITIS, AND SECONDARY SALTER-HARRIS FRACTURE IN A CHILD WITH AUTISM SPECTRUM DISORDER:CHALLENGES IN MANAGEMENT

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Aims

Acute osteomyelitis is a bacterial infection that typically affects the femur and tibia. It rarely affects the distal fibula with very few cases documented in the literature, similar to native ankle septic arthritis. The mainstay of management is antibiotic therapy and surgical debridement. Delay in the initiation of appropriate management can result in bone and cartilage destruction predisposing to pathological fractures. [1]
Autism Spectrum Disorder (ASD) is a neurodevelopmental condition that affects 1 in 54 children.[2]

Methods

We report the case of a 14-year-old boy, with a background history of ASD and severe learning disability, with an uncommon presentation of concomitant osteomyelitis and septic arthritis with a secondary pathological Salter Harris type 1 Fracture. We highlight the challenges in his management and the multi-disciplinary team approach taken to facilitate a holistic patient care while maintaining focus on the parents' perspective.

Results

He presented with an erythematous swollen ankle with inability to weight-bear. Magnetic Resonance Imaging, under general anesthetic, revealed subperiosteal fluid collection around the distal fibula which mandated two washout, drainage, and decompression procedures. Targeted Antibiotic therapy was commenced as tissue samples grew methicillin sensitive staphylococcus aureus.The patient was treated in a backslab after input from the multidisciplinary team (MDT): orthopaedics surgeons, paediatricians, nursing staff, infectious diseases specialists, medical social worker, and dieticians to address the various issues that arose.

Conclusion

After a 5 week long admission, patient was clinically well on discharge with a full circular cast in-situ and outpatient follow-up arranged. Treating a child with ASD requires a delicate approach. In this case, the traditional model of getting blood samples, inserting cannulae/central lines , getting radiological imaging, being an inpatient, and tolerating a cast was a challenge. A MDT approach was crucial in managing this patient successfully in what must have been an extremely distressing time for him and his family.

1.Kaziz, H., et al. "Acute osteomyelitis of the distal fibula in children: Treatment options and long-term follow-up." Archives de Pédiatrie (2020). 2. "Data & Statistics on Autism Spectrum Disorder." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 25 Sept. 2020, https://www.cdc.gov/ncbddd/autism/data.html.

OBESITY IN CHILDHOOD

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Aim: Prospective audit of children attending our Paediatric Clinic to establish the prevalence of overweight and obese children. These children and young people were asked if they were fulfilling the National Guidelines on Physical Activity for Ireland for the prevention of Obesity.

Method: Parents and children received a questionnaire after their weight and height recording in clinic. They had to indicate how many minutes of exercise were done each day that week, and the minutes spent on muscle and bone strengthening exercises. Completed questionnaires were collected immediately after the consultation. Questionnaires were accompanied with a poster listing the exercises which helped them answer the questionnaires.

Results: Sample size was 204. 34 forms were spoiled. 114 were males, 90 were female. There were 40 preschool 2 to 4 year olds, 113 Primary school children 5 to12 year olds, 51 Secondary school 13 to 16 year olds.
3 out of 11 girls and10 out of 29 boys aged 2 to 4 years, 22 of 53 girls and 20 out of 60 boys aged 5 to 12 years and 7 of 26 girls and 11 of 25 boys aged 13 to 16 years were noted to be overweight or obese which is greater than the 85th centile.
3 out of 11girls and 3 out of 29 boys aged 2 to 4 were obese which is greater than the 95th BMI centile. 8 out of 53 girls and 12 out of 60 boys aged 5 to 12 were also obese. 5 out of 26 girls and 4 out of 25 boys were obese.

Conclusion: 23 out of 90 girls (26%) were compliant with the recommendations. 32 (36%) were overweight or obese. 16(18%) were obese. 36 out of 114 boys (32%) were compliant with the recommendations. 41(36%) were overweight or obese. 19(17%) were obese.

Growing Up in Ireland Publications WHO Europe Childhood Obesity Surveillance Initiative. SLAN, 2007 The Health Behaviours in School Children Survey(HBSC, 2006) The National Guidelines on Physical Activity for Ireland

CLINICAL AUDIT: MANAGEMENT OF HIGH BODY MASS INDEX IN PAEDIATRIC PATIENTS (0-6 YEARS OLD) IN PRIMARY CARE

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Aims: To assess the periodic measurement of BMI in 0-6 year olds in general practice and the associated outcomes.
Methods: Data was collected on 100 randomly selected patients between 0-6 years old attending a general practice in rural Ireland. The practice aimed to complete periodic assessments at 2 and 5 years old. The audit analysed whether such patients had been brought in for a periodic assessment including height and weight, the subsequent BMI classification, whether a referral for more specialised care was made for those of a high BMI (defined as >91st centile including overweight, obese and severely obese) and if the patient attended this referral.
Results:
69 of 100 patients attended at least one periodic assessment. Of the 69 patients who attended an assessment, one third (23) were of a high BMI. Of those with a high BMI, one third (8) were referred to a dietician but only 3 of those referred attended their appointment.
Conclusions: In line with the HSE Healthy Weight for Children (0-6 years) Framework, GPs are encouraged to perform periodic assessments on patients under 6 years old to ensure their height and weight are within normal limits for their age. The benefits of being of a healthy BMI at an early age and the consequences of being overweight on adult life have been proven. BMI assessment in general practice provides an opportunity to flag issues to parents, offer advice and refer to a dietician for more specialised advice. This audit demonstrated poor attendance of periodic assessments and dietician referrals. This may suggest difficulties with parents accepting that their child is overweight as well as a lack of awareness of the effects of BMI on children which extends into later life. Awareness of such in addition to education and support should be increased amongst parents in general practice.

1. (ESRI) EaSRI. Growing Up in Ireland: Key Findings: Infant Cohort at 7-8 years: No. 2 Health and Development. Dublin, 2017. 2. HSE. Healthy Weight for Children (0-6 years) Framework: HSE National Healthy Childhood Programme, HSE Healthy Eating Active Living Programme, 2018. 3. Affairs DoCaY. First 5: A Whole-of-Government Strategy for Babies, Young Children and their Families 2019-2028. Dublin, 2018. 4. Health Do. A Healthy Weight for Ireland Obesity Policy and Action Plan 2016-2015. Dublin, 2016. 5. ICGP, HSE. Weight Management Treatment Algorithm for Children, 2012. 6. WHO. WHO Child Growth Standards.

CLEAN CATCH URINE SAMPLING IN A PAEDIATRIC EMERGENCY DEPARTMENT

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Introduction

One of the most common infections in a paediatric emergency department (PED) setting, after viral URTI, is a urinary tract infection. Yet a convenient, sterile and reliable solution for non-invasive urine sampling, in continent and pre-continent children, remains elusive. Urine pads are associated with high contamination rates but are often acceptable given time and space restraints in an ED.

Methods

An alternative clean catch sampling method in place of a urine pad was introduced to a single centre tertiary PED with the aim to reduced mixed growth urine culture specimens by 5%. The alternative sampling in the form of a single packaged sterile 'Unisurge' box, with a patient/parent information leaflet on tips to aid urine sampling and sterility were instituted simultaneously.

Results

The total number of urine specimens sent during this clean catch trial period increased by 10%, however the target of 5% reduction in mixed growth urine culture was not met. An observational increase in proportion of no growth culture reports with a decrease in identifiable organism culture in the months following the trial was observed. Secondary outcome of length of time in the PED did not show any difference with a mean of 210 ±29 minutes compared to 204 minutes ± 18 minutes. There was an improvement in documentation of type of sample from 4% to 45%.

Conclusions

Practically, the simple change from a pad to a clean catch sample has its challenges from patient/parent to staff and departmental satisfaction. Despite not meeting the aim, the increase in the definitive no growth organism culture implies benefits of more sterile urine collection method in children. This has advantages including antimicrobial stewardship, avoiding unnecessary referral, and reducing parental anxiety which referral can precipitate. Given this highly frequent investigation in the PED setting there remains scope for further improvement.

1) Kaufman J. 2019. How to… collect urine sample from young children. Arch Dis Child Pract Ed. 2020; 105: 164-171 2) Diviney J and Jaswon M. 2020. Urine collection methods and dipstick testing in non-toilet trained children. Paediatric nephrology. 2020; 10.1007/s00467-020-04742-w 3) NICE 2018, Urinary tract infection in under 16s: diagnosis and management, viewed 10 May 2021, https://www.nice.org.uk/guidance/cg54/chapter/Recommendations#diagnosis.

ALLERGEN INTRODUCTION ADVICE DELIVERED BY ALLERGY CLINICAL NURSE SPECIALISTS AT THE POINT OF TRIAGE OF REFERRALS FROM ED

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Aims

A new paediatric allergy service was established in CHI at Connolly in December 2019. Referrals from the CHI-TS ED constitute a significant proportion of children seen in this clinic. Prompt review can promote early introduction of other allergenic foods that are often unduly avoided and infants with egg and milk allergy can start tolerance induction programmes. COVID-19 driven changes to practice have shown dietary changes can be implemented safely before clinic attendance. 2 Allergy CNS took up posts in November 2020. Educational sessions were delivered to ED staff and agreed referral pathways were implemented.

Methods

A retrospective review was conducted of all referrals from ED in CHI-TS to Allergy OPD over 2 identical six-month periods, November to April in 2019-2020 (Group 1) and 2020 to 2021 (Group 2).

Results

36 referrals were reviewed, 6 in group 1 and 30 in group 2, 19 male, 17 female. The most common problem foods were peanut (30.6%) and egg (27.8%). The median age at referral was 12 months (2.1-150m). The median waiting times for OPD were 6.31 months in group1 vs 2.25 months in group 2. Allergy CNS made a pre-clinic call to 26.7% of referrals in Group 2, targeting suspected egg allergy (60%). The mean time between receipt of referral and CNS call was 3.75d .

Conclusions

Referrals from CHI-TS ED to the new Allergy clinic increased significantly over the 1st year but with CNS support waiting times have actually decreased. Most referred cases of egg allergy are being rapidly reviewed virtually by CNSs with early interventions being implemented before clinic attendance and allergy testing.

RETROSPECTIVE AUDIT OF ADHERENCE TO BRONCHIOLITIS GUIDELINES IN CHILDREN

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Aims: To compare the practice of investigating and managing children presenting with clinical features of bronchiolitis against hospital guidelines.

Methods: Patients were identified using the HIPE database. 129 patients presented with clinical features suggesting bronchiolitis over the 12 month audit period i.e., between 01/06/2019 and 31/05/2020. Out of these, 62 patients were randomly selected for further analysis. Data were collected using the audit tool and analyzed using Microsoft Excel.

Results: 62 patients were selected for audit. The male to female ratio was 1.4:1. Age distribution: 0-3 months: 50%, 3-6 months: 22%, 6-24 months: 27%. 38% (24/62) were classified as mild, 46% (29/62) as moderate, and 14% (9/62) as severe bronchiolitis.Alternative diagnoses considered were: LRTI not specified: 21% , Sepsis 8% , UTI 1.6% , Pertussis 1.6%, BRUE 1.6% , Influenza B 1.6%, GORD 1.6%. 80% (50/62) of patients were hospitalized. The mean duration of hospital stay was 3.3 days. In terms of investigations, 40% had bloods or swabs or both taken, 32% had chest x-rays, and 8% had ECGs performed. Out of the 11 swabs performed, 6 were RSV positive, 1 COVID positive, and 1 Influenza B positive. From the management point of view, 26% (16/62) received antibiotic treatment, 42% (26/62) required oxygen support, and 23% (14/62) received salbutamol/ipratropium nebulization. 10% (6/62) required respiratory support while 3.2% (2/62) were transferred to ICU. Complications included pneumonia in 10%, lung collapse in 6.5% and re-admission in 22%.

Conclusion: Overall clinical approach to children with bronchiolitis was in line with the guidelines. However, a significant percentage of patients underwent unnecessary investigations and treatments. Antibiotics were prescribed in a high percentage (26%) of cases. Moreover, the hospitalization and re-admission rates were significantly high. A clinical assessment tool made readily available in ED may help in improving the assessment and management of these patients.

PREMATURITY AND BRONCHIOLITIS; AN INTENSIVE CARE PERSPECTIVE

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Bronchiolitis is a leading cause of morbidity and admissions to Paediatric Intensive Care Units (PICU). It is well recognised that those born prematurely are at high risk for developing bronchiolitis within the first year of life.

AIMS

To assess the trend in the number of babies with bronchiolitis requiring PICU care, and the relationship between gestational age (GA) and subsequent length of ventilation.

METHOD

Retrospective review of PICU admissions to the tertiary centre. Picanet data forms from 2014 - 2017 were reviewed. All infants aged <12 months with 'bronchiolitis' as primary reason for admission were included. Additional data was obtained from the electronic record and discharge letters. Information was gathered on the infant's GA, whether intubation was required, and number of days ventilated.

RESULTS

237 patients met the inclusion criteria. The total days ventilated ranged from 0-54. 62/237 patients remained unventilated, with 47/62 born >36 weeks, 12/62 born 32-35 weeks, 2 born 28-31 weeks and 1 born <27 weeks. 140 patients required up to 7 days ventilation; 99/140 born >36 weeks, 21/140 born 32-35 weeks, 16/140 born 28-31 weeks, 4/140 born <27 weeks. 22 babies were ventilated for 8-14 days; 8/22 born >36 weeks, 5/22 born 32-35 weeks, 6/22 born 28-31 weeks and 3/22 born <27 weeks. 4/237 patients required 15-21 days ventilation and 9/237 patients were ventilated for 22(+) days. Of 160 infants born >36 weeks, 47/160 were unventilated, whereas 99/160 were ventilated up to 7 days.

CONCLUSION

This data and graphs highlights the relationship between GA and requirement for ventilation in bronchiolitis. Interestingly the largest cohort was those born GA >36 weeks, where twice as many infants required ventilation for up to 7 days compared to unventilated PICU support.

THE ISBAR TOOL IN CLINICAL NOTE WRITING: I SHOULD BE ABLE TO READ YOUR NOTE

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Aims

A clinical audit was conducted to assess the use of the ISBAR tool in note writing as well as the inclusion of other vital components of the clinical note across the general paediatrics, paediatric surgery and orthopaedic departments at Our Lady of Lourdes Hospital Drogheda. The aim of this audit is to assess the incorporation of the ISBAR tool in clinical note writing as this has been proven to be a useful tool in verbal communication among healthcare professionals.

Methods

Patient charts from the departments of general paediatrics, paediatric surgery and orthopaedics were reviewed prospectively to assess for the inclusion of various components of the clinical note: addressograph, date, time, physician's details (name, position, medical council registration number, bleep number), note title, ISBAR and physician's signature. Results of this first audit cycle were presented to the general paediatrics team and a template of the desired clinical note was circulated before re-assessment of general paediatrics' patient charts alone in the second audit cycle. Comparative analyses of quantitative data were performed using the chi-squared test.

Results

A total of 245 notes were analysed between both cycles (150 general paediatrics, 50 paediatric surgery and 45 paediatric orthopaedics). Notes written after the intervention within the department of general paediatrics showed a significant incorporation of the ISBAR template (patient details, clinical situation and background, assessment and recommendation/plan). These notes were also more likely to include patient addressographs, date and time of note, name of doctor writing note, bleep number and note title.

Conclusion

The use of the ISBAR tool in note writing creates an easy-to-follow template for healthcare professionals to utilise and improves written communication between team members.

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THE IMPACT OF COVID-19 ON CHILDHOOD OBESITY

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Aims: Since December 2019, the world has grappled with the effects of coronavirus disease (COVID-19). In present day, it is assumed that the word pandemic simply refers to COVID-19, but today, we are finding that COVID-19 has come to negatively impact another pandemic - childhood obesity. This literature review explores the various ways in which COVID-19 exacerbates childhood obesity.
Methods: A literature search was conducted on Pubmed and MEDLINE for publications from December 18th, 2019, up to July 12th, 2021. Various terms were combined, such as “covid-19”, “children”, “child”, “obesity”, “obese”, and “effects”. Inclusion criteria included all the articles that examined factors leading to obesity or weight gain in children during the COVID-19 pandemic. Articles that included both children and adolescents were considered. Cross-sectional studies, observation studies, systematic reviews, review articles, and perspective pieces, were considered eligible. Abstracts, documents, poster presentations, and conferences proceedings were excluded. Studies that were published before December 2020 (before COVID-19) were excluded. From the database, 42 publications were retrieved. and 12 articles were considered eligible.
Results: Reviewing the literature brought forward 3 key areas of focus: Family stressors, school closures, and stay-at-home orders. The focus on these areas paints a detailed picture of the various ways in which childhood obesity is exacerbated during COVID-19. Analyzing these areas also brings forth the ways in which COVID-19 exacerbates the present inequalities in healthcare, ultimately disproportionally affecting populations.
Conclusion: This literature review shows a shortage of primary studies from which conclusions can be drawn, but this is not to say that we must wait for more primary studies. The published literature that currently exists should be the driving force for not only further research, but also the creation and implementation of strategies, policies, and programs to offset the ways in which COVID-19 is currently exacerbating childhood obesity.

AN AUDIT OF BREASTFEEDING RATES: ARE THE NATIONAL BREASTFEEDING GUIDELINES BEING FOLLOWED?

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Aims: Ireland has been found to have one of the lowest breastfeeding rates in the world, despite the adopted HSE guideline that infants should be exclusively breastfed for the first six months of their life, and thereafter should continue to breastfeed alongside a regular diet until 2 years of age or beyond.[1] This audit explores whether the national guideline on breastfeeding is followed by mothers in Cedarville Medical Center located in Abbeyfeale, Ireland.
Methods: The HealthOne system was reviewed to evaluate whether mothers who delivered between January 2018 and December 2019, were breastfeeding their newborn at the 6 week neonatal checkup. The following information was gathered to explore for relationships: maternal age at delivery, parity, and method of feeding.
Results: 63% of the women were not meeting the national guideline of exclusively breastfeeding their newborn infants for the first 6 months of their life. Exclusive breastfeeding was the least used method in the 20-29 age group, but the most used method in the 30-39 age group. Mothers with a parity of more than 1 were more inclined to exclusively breastfeed. In both women who had a vaginal delivery, and in women who had a caesarean section, the most preferred method of feeding was exclusive formula.
Conclusion: The findings of this audit are in par with the national levels of poor compliance with the HSE guideline which states that infants should be exclusively breastfed for the first six months of their life, and thereafter should continue to breastfeed alongside a regular diet until 2 years of age or beyond. The findings also indicate potential correlations between the variables of age, parity, and type of delivery, and the decision to breastfeed. A second audit must be performed to explore the structural and societal barriers that may prevent a woman's ability to breastfeed.

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SEVERE HYPERNATREMIA IN THE CONTEXT OF AUTISM SPECTRUM DISORDER

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Aims: We report a case of severe hypernatremia in a non-verbal 11-year-old boy with Autism Spectrum Disorder.

Methods: This 11-year-old boy presented to the emergency department (ED) with marked lethargy and reduced oral intake on a background of two previous admissions to ED during the preceding week. His initial presentation was due to multiple vomiting episodes which settled with an anti-emetic and the patient was discharged home only to represent a day later with lethargy and reduced oral intake. Following examination of an erythematous exudative oropharynx it was deemed likely bacterial pharyngitis which had led to him refusing anything orally. Intravenous access (IV) proved difficult to obtain and maintain as this patient was pulling out each successful IV line. Consequently, no blood work was obtained as when access was achieved it was prioritised for IV benzylpenicillin treatment. Due to the nature of this child's condition and his subsequent increased oral intake and improving clinical picture it did not seem reasonable to subject him to further access attempts. His parents felt that he would be able to increase his oral intake even more at home in familiar surroundings where he would be more familiar and at this stage he appeared well clinically and was discharged home on oral antibiotics. Two days later he represented with marked lethargy and, again, decreased oral intake.

Results: On his most recent admission bloods were successfully obtained and demonstrated a serum sodium of 170 mmol/L. Intensive care specialists were contacted regarding the management of this severe hypernatremia. He was subsequently intubated and transferred to a specialised intensive care unit for management.

Conclusion: It is important to consider the significant barriers to healthcare for children with Autism Spectrum Disorder and the challenge of getting the balance right with regards to necessary versus routine investigations.

IMPACT OF COVID-19 ON HOSPITAL CARE, MENTAL HEALTH, AND EDUCATION OF CHILDREN WITH CYSTIC FIBROSIS (CWCF)

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Aim:
COVID-19 pandemic created a global public health emergency greatly impacting the CF care, education, and mental health of CWCF. Aim of this study was to assess the impact of lockdown during pandemic on 1) hospital care, 2) mental well-being and 3) education of CWCF.
Methods:
A cross-sectional online survey, hosted by SmartSurveyUK was advertised to the CF community via CF website and social media in September/October 2020. Univariate logistic regression using SPSS was used to calculate OR (95%CI).
Results:
123 parents of CWCF participated. 54.9% indicated deferral of hospital visits, with delay ranging from 1- 6 months (64.2% up to 3 months, 35.8% 4 - over 6 months). Online consultation and prescription via email was new to >50% of parents and >80% found it useful. The mental health issues faced by CWCF during the pandemic included increased anxiety (25.6%) and increased levels of stress (33.3%). 11% children suffered with insomnia, with a higher proportion in older children (50%) as compared to infants (10%). CWCF aged >5 years were 2.39 times more likely to experience issues related to mental health as compared to those <5 years (Odds Ratio =2.39 (95%CI 1.04-5.49); P=0.039). To manage stress during COVID-19 most children and their parents chose: watching TV (10.4%), art and craft activities (8.3%), gardening (11.5%) and communicating with loved ones (18.8 %). Parents of CWCF aged >5 years were 2.66 times more willing to send their children to creche/playgroup/school as compared to those with children aged <5 years (Odds Ratio = 2.66 (95%CI 1.10-6.45); P=0.03).
Conclusion:
COVID-19 has greatly impacted CWCF and their parents in terms of hospital care and mental health. Parents of older children were more willing to send their children to school. Certain new favoured processes, such as online consultations and emailed prescriptions, may persist as a part of overall care post- pandemic.

Thriving in BST: Introduction of a Health and Wellbeing Course for Basic Specialist Trainees in RCPI

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Aims: Increasing numbers of trainees are presenting to the RCPI Health & Wellbeing (H&W) department, particularly amongst BSTs. The RCPI H&W Committee set out to design and deliver a H&W course for BSTs. A target was set to deliver two pilot courses in advance of NCHD changeover in July 2021. If well-received, the course would thereafter be listed as a 'desirable' course for all BSTs.

Methods: 6 NCHDs from the RCPI H&W Committee developed the course. It was decided that the NCHDs would deliver the course themselves to ensure the content is directly relatable to BSTs. A business proposal case was submitted to each RCPI faculty for approval. Once approved, the NCHDs collaborated with the RCPI education department to draft a course timetable and develop lesson plans. Owing to social-distancing, the course was designed in online format. Examples of learning activities employed include lecture slides, interactive small-group exercises, and simulated scenarios using pre-recorded videos. Dates for 2 pilot courses were set, with a cap of 15 participants per pilot. Participants provided anonymised feedback.

Results: Both pilots were fully subscribed with 15 participants, but due to last-minute cancellations 12 participants attended the first pilot and 7 attended to second pilot. 10 participants submitted feedback;

1. 90% felt the course content was interesting.
2. 90% felt the module formats were appropriate to their needs
3. 90% felt the resources provided deepened learning.
4. 100% felt they could apply what they had learnt to their role
5. Additional feedback included making the course mandatory for all BSTs

Conclusions:The pilot courses were well-received. RCPI has now included the course as 'desirable' on all BST curricula. It is hoped to become 'mandatory' such feedback remain positive. It is anticipated that course attendance will improve once the course becomes official. Other Irish medical training bodies are now looking to use this model to develop similar courses.

CHILD'S PLAY: DESIGNING A GUIDELINE FOR CREATING PAEDIATRIC GUIDELINES

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AIMS:
To assess the Paediatric and Emergency Departments' (ED) interests in and perceived need for locally approved Clinical Practice Guidelines (CPGs). To assess which platform would be best to utilise for the release of current and new CPGs. To establish which CPGs are most required in the short to medium term.
METHODS:
A CPG committee was setup, comprising 2 NCHDs, 1 PEM consultant and 2 Paediatric Consultants for creating and maintaining oversight of CPGs in Cork University Hospital (CUH). A survey was agreed among its members as the best method to assess proposed users perceptions. Once approved by the committee, the survey was disseminated to both departments at ED and Paediatric meetings as well as electronic communication. The CPG committee convened regularly and reviewed survey responses to direct its future practice.
RESULTS:
29 respondents completed the survey. 83% were very likely to use CPGs in everyday clinical practice. RCH Melbourne, EMed (local) and CHI at Crumlin were the most popular CPG platforms respectively. 79% strongly agreed that improved access to locally approved CPGs would be helpful to their clinical practice. Phone applications and EMed (local website) were the most popular platforms for future guidelines to be released on. Head injuries, status epilepticus asthma and bronchiolitis were the most frequently used CPGs respectively across both departments. Over 24 topics were suggested by respondents for reviewed/new CPGs.
CONCLUSIONS:
The survey responses have assisted our committee in establishing which platform to use for future guidelines in addition to which topics are most urgently needed. We have used this to create standard operating procedures for creating, approving and maintaining current and future CPGs in CUH as well as a mentor/mentee system to allow NCHDs and consultants to create these CPGs.

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EFFICIENCY OF VIRTUAL GENERAL PAEDIATRIC CLINICS DURING THE CORONAVIRUS PANDEMIC

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Aims: Following the emergence of the COVID-19 pandemic in Ireland, many outpatient services transitioned rapidly to a virtual or distance model of consult delivery. We examined the efficiency of these clinics in a second level paediatric centre.
Methods: A subset of virtual clinics encounters in our center (n=117) were examined. Duration of each consult, number of attempts to reach parents and outcomes (discharge, in person clinical review, follow up appointment) were recorded.

Results: Average consult duration was 9 minutes (range 5-21 minutes), the majority of patients could be contacted by phone (80.3%, n=94) however a substantial minority of consults required more than a single attempt for the consult to be instigated (35%, n=21 of recorded attempts). 65 % (70) of parents answered the first attempt. Where outcome was recorded, the most common result (50%) was a further outpatient appointment (58 consults), followed by (29%) inpatient review (34 consults) and discharge (10%) by virtual clinic (11 consults).

Conclusions: Virtual outpatient clinics represent a feasible means of delivering outpatient care from a clinician perspective. Further research should explore parental and patient attitudes towards this form of service delivery.

SHOULD VIRTUAL CLINICS PERSIST? PARENTS' FEEDBACK ABOUT VIRTUAL PAEDIATRICS CLINICS

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Aims: The Covid-19 pandemic resulted in major changes to healthcare and it delivery to patients. Phone clinics were to be introduced on an urgent basis to help delivering already stressed outpatient services. The aim of this study was to assess parent's opinion and gather their feedback abut virtual paediatrics phone clinics in Midlands Regional Hospital Mullingar.

Methods: This is a questionnaire-based survey. Participants were parents of children who were attending our paediatrics OPD clinics. Permission was thought after phone consultations from parents to participate. Those accepted received a text message with a link to a seven questions google-doc questionnaire. Data were analyzed thereafter using Google doc and Excel.

Results: Sixty-five parents out of one hindered twenty-one parent responded and filled the questionnaire (53.7%). 56% reported that their experience was excellent while 26 (40%) rated it as satisfactory. 87% (57) felt that they were clearly understood while 92% reported that the consultation question was clear. 86% thought they had enough time slot whereas 84% had their concerns addressed. Management plan was clear to most of participants. 95% were happy about the follow-up arrangements.

Conclusion: In conclusion, It was clear that the majority of participants were happy about the phone consultations clinics in general. The low response number is properly the result of the recent cyber-attack on the HSE that made people reluctant to respond to links. With good selection of cases phone clinics seems to provide reasonable alternative to the ordinary clinics.

AUDIT PRE AND POST INTRODUCTION OF AN ENTONOX GUIDELINE IN A REGIONAL PAEDIATRIC DEPARTMENT.

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Aims:
Pain can often go undertreated due to timing, fear of side effects, busy departments, etc. To ensure safe delivery and appropriate administration of Entonox® in a paediatric department.

Methods:
Data collection via proforma from eight patients both pre- and post-guideline introduction. All patients were under 16 years of age.

Results:
Indications for use included phlebotomy or cannulation, lumbar puncture, manipulation and dressing/cast changes. No contraindications to use were noted in either group. Mandatory written consent post guideline introduction was suboptimal at 25%. This was thought to be due to computers being out of use due to a national cyber-attack and the printed consent form could not be accessed. The equipment was checked prior to use in all patients. Location of use was in the emergency department, dayward and in-patient wards. Vital signs were checked in all patients' pre and post procedure. Entonox was prescribed in the drug kardex in 50% pre guideline introduction and 62.5% post.
No side effects were reported in the 1st group. In the post guideline introduction group 1 patient reported dizziness and 1 had abdominal pain and bloating. The University of Michigan Sedation score (UMSS) for the majority of patients was 0 with only one patient 0-1 range in the 2nd group. The procedure was considered successful based on patient verbal satisfaction, with 87.5% in the first group and 75% in the second reporting the procedure went well. Adjunct analgesia, including Ametop (tetracaine gel) topically or paracetamol, was used in 25% and 37.5% in both groups.

Conclusion:
Our study demonstrates Entonox is a safe and effective adjunct in many paediatric settings. It is hugely beneficial to the child's experience and the side effects are minimal and reversible. It is convenient once staff are familiarised with the equipment and the child can have an active role in their own pain management. There is huge potential to increasing its use once all staff are trained.

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Evaluation of admission notes discrepancies in paediatric ward of University Hospital Kerry

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Background: HSE Standards & Recommended Practices for Healthcare Records Management are a guide to the standards of practice required in the management of healthcare records in the HSE, based on current legal requirements and professional best practice.

Aims: The audit was done to check for following standards including documentation of patient sticker, date and time, allergy mentioned, eligible doctor name, Irish medical council registration number and signature on clinical notes as per HSE guidelines for keeping medical records in Paediatric ward of University Hospital Kerry. These standards are essential as they records decisions relating to the care plan and maintain communication with other staff.

Methods: 50 sets of random admission note in paediatric ward over the period of August 2021 to September 2021 were pulled and compliance with each of the standards in the audit tool was recorded.

Results: 50 patient charts were analyzed.88% charts have patient sticker on admission clinical notes. 0n 62% charts, time and allergy was mentioned, on 60%, date was written. Doctors eligible name, signature and IMCN was documented on 74%, 76% and 64% charts respectively.

Conclusion: There is good compliance for patient sticker in admission notes and fair compliance for doctor's eligible name and signature, whereas there is poor compliance for writing date, time, allergies and eligible IMCN. To get 100% compliance audit results should be displayed in ward, Emergency, and doctor's office for sensitization. Rubber stamps should be provided to NCHDS with name and IMCN to improve compliance.

AN AUDIT OF PAEDIATRIC DISCHARGE PRESCRIPTIONS IN UNIVERSITY HOSPITAL KERRY

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Aim

To audit discharge prescriptions in the paediatric department at UHK.

Methods

A retrospective review of thirty, consecutive prescriptions located in the discharge prescription pad on the paediatric ward at UHK was conducted between the 17/09/2021 to the 19/09/2021. The results were compared against the HSE prescribing standards available on the HSE website. [1]

Results

Thirty prescriptions were reviewed. 13% of prescriptions (n=4) satisfied all of the criteria outlined in the standards section. 13% of prescriptions (n = 4) satisfied all of the basic legal requirements set out in the standards.

100% of prescriptions (n=30) complied in the following ways: they were written in ink, signed by the prescriber, dated by the prescriber, contained the full name of the patient, were legible, instructed the correct dosage and did not contain unnecessary zeros.

The Irish Medical Council number was present in 93% (n=28). The duration along with age or date of birth was specified in 90% (n=27). The address of the patient was included in 87% (n=26). Alterations were made in 3% (n=1) of prescriptions.

Only 46% (n=14) of prescriptions contained a legible name of the prescriber. Similarly, only 46% of prescriptions used generic naming of drugs.

Conclusions

This audit found that the average compliance with the “Basic Legal Requirements” of a prescription is 90.7% across nine domains. Average compliance across the 9 “Good Practice Points” was 91.5%.

This audit illustrates that the writing of discharge prescriptions in the department fell below the expected standards in two specific performance areas (inclusion of prescriber name (46.7%) and the use of generic drug names(46.7%)). This audit highlights a need to bring prescribing in line with national standards to ensure patient safety and efficient delivery of care.

1. HSE December 2019 https://www.hse.ie/eng/services/list/2/gp/antibiotic-prescribing/conditions-and-treatments/dental/dental-prescription-guidelines/

A PEER SUPPORT PROGRAMME ACROSS A HOSPITAL GROUP: ESTABLISHMENT, TRAINING AND FEEDBACK

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Aim: To establish a free, confidential, one to one professionalism Peer Support programme across a hospital group for colleagues under stress, with trained Peer Supporters and obtain feedback

Methods: A Professionalism Peer Support programme modelled on international centres of excellence[1], was established across a hospital group. Potential Peer Supporters across the hospital group were identified through peer nomination. Subsequently, they were invited to undergo training to become Professionalism Peer Supporters. Training involves successful completion of an on line course followed by interactive training with cases and role play. Total training time is ~7 hours. Trained Peer Supporters include non-clinical and clinical staff, including doctors, nurses and Health and Social Care Professionals. Colleagues may seek support if stressed from working during COVID-19, an adverse event or medical error, an unexpected patient outcome or death or the stress of continuous change at work. A confidential e-mail and telephone line was established which is checked daily by the programme lead who links colleagues with a trained Peer Supporter. The Peer Supporter contacts the colleague, meets with them (either virtually or face to face), provides psychological first aid, a non-judgemental, listening ear and access to free resources including counselling if required. The Peer Supporter contacts the colleague a few days later to ensure they are well.

Results: A Professionalism in the Workplace survey across the hospital group identified that 92% (1,176) of respondents said that establishment of the Professionalism Peer Support Programme was a positive step, 82% (1,051) said they would recommend the Peer Support programme to a colleague and 73% (930) said they would consider using it themselves.

Conclusion: Establishment of a confidential Professionalism Peer Support Programme modelled on international centres of excellence, providing trained peer supporters is identified as helpful by colleagues. Establishment is cost neutral.

1. RISE – Resilience in Stressful Events https://wwwjhsph.edu

METHODS USED TO TEACH MEDICAL PROFESSIONALISM AT UNDERGRADUATE LEVEL NATIONALLY AND INTERNATIONALLY

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Aim: To assess how medical professionalism is taught at undergraduate level nationally and internationally. Methods: Searches for medical professionalism curricula were conducted across the websites of 17 medical schools from seven countries. A literature search of peer-reviewed publications was performed for six teaching methods that promote aspects of medical professionalism. All searches occurred between June and July 2021. Cross-checking results of the literature search with information from Universities' websites provided an overview of the educational methods used to teach medical professionalism and evidence to support their use. Universities that did not specify how they apply a teaching method were not considered to adopt it.

Results: Medical Professionalism has become an increasingly important part of undergraduate curriculum over the last decade. Multiple methods are commonly used to teach medical professionalism. Common methods used include simulation, provision of feedback, small group teaching, multi-professional education and longitudinal patient experiences. Multi-professional education and mindfulness are two less commonly used methods. Irish universities use similar methods to those of high ranking universities in USA and Canada. High-fidelity simulation training develops professional identity, improves preparedness and multi-professional teamwork. Simulation courses result in compassion towards simulated patients and a strong desire to perform in a professional manner. Feedback in the form of structured debriefs after simulations are fundamental opportunities for reflective learning and are helpful in identifying effective strategies to improve communication skills and demonstrate compassion. Specific and structured behaviour-oriented feedback can significantly improve student performance when handling patients' emotions and improves general communication skills. Small group teaching improves teamwork, communication, and peer-interaction.

Conclusion: Universities nationally and internationally use a range of methods to teach medical professionalism, of which simulation and feedback are most common.

DEVELOPMENT, WRITING AND APPROVAL OF PROFESSIONALISM PLEDGES ACROSS A HOSPITAL GROUP

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Aim: That staff representatives from across a hospital group develop and write Professionalism Pledges about expected behaviour and what is important to staff at work.

Methods: Representation was invited from a broad range of professional groups across the five CHI sites to develop and write professionalism pledges including representation from portering, catering hygiene services, nurses (staff nurse and managerial level), doctors (NCHDs and consultants), Health and Social Care Professionals, administrative staff, HR, pharmacy and finance. Themes about what is important to staff at work were identified and discussed at workshops with representatives. Significant consultation was held with colleagues regarding the content and wording of the pledges. Themes important to staff at work were common across professional groups including trust; taking responsibility for owns own behaviour; good communication; kindness, empathy and compassion; diversity, equality and fairness; an open mindset; teamwork; self-care; a safe working environment and life-long learning. Draft professionalism pledges were sent for review to all email users at CHI and amended after receiving feedback. The pledges were approved by the Executive Committee and signed by its members at the launch of CHI Professionalism Week in February 2021. All CHI staff are invited to sign the Pledges and wear the Professionalism pin, in the shape of a flower which is the emblem of professionalism at CHI. The process of developing the pledges is based on international centres of excellence.

Results: Common themes about what is important at work and expected behaviour were identified by CHI staff. More than 1,800 CHI staff have signed the professionalism pledges in the first few months. Framed professionalism pledges are displayed in CHI hospitals.

Conclusion: Common themes about what is important to staff and expected behaviour have been identified by staff at CHI. This is the first hospital group nationally to have implemented this initiative.

AN ONLINE NCHD LED TEACHING INITATIVE FOR THE MRCPI PART 2 CLINICAL EXAMINATION

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Aim
This project was conceived to help individuals prepare for the Membership of the Royal College of Physicians of Ireland (MRCPI) Part 2 Clinical Exam during the COVID-19 pandemic.
Methods
A non-consultant hospital doctor (NCHD) led online teaching program was designed with topics selected according to both the MRCPI Part 2 Syllabus and the specific expertise of senior paediatric trainees working in Children's Health Ireland at Temple Street. Participants completed online surveys before and after each cycle of the teaching program.
Results
This online educational program was delivered in October 2020, February 2021 and May 2021 prior to each sitting of the MRCPI Part 2 Clinical Exam, with 41, 33 and 15 participants attending each respective cycle. Each cycle of the teaching program comprised of 10 lectures on the following topics: Endocrinology, Paediatric Neurodisability, (x2), Respiratory Medicine, Metabolic Medicine, What to expect from the new exam format, Neurology, Nephrology, Gastroenterology, and Cardiology. The project was co-ordinated via WhatsApp and delivered via Zoom. All participants rated the course as either excellent or very good. All participants either agreed or strongly agreed that the material presented had practical relevance and that the topics covered in this online preparation course adequately reflected topics covered by the MRCPI Part 2 Clinical Examination.
Conclusion
COVID-19 public health measures prevented traditional bedside preparations for the MRCPI Part 2 Clinical exam. Although an imperfect tool, this online tutorial-based program was well received. As restrictions ease there should be a move back to traditional bedside teaching of clinical examination.

ANALYSIS OF INTUBATION IN ROTUNDA HOSPITAL IN 2019

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Aims of the audit:

1. Analysis of endotracheal intubations carried out in Rotunda Hospital in terms of: rate, location, number of attempts, personnel doing intubation
2. Identification of factors associated with repeated/ unsuccessful attempts
3. Comparing procedures to NRP guidelines

Methodology:

1. Data collected retrospectively.
2. A list of neonates who were intubated during there admissionto NICU was obtained from medical records. It inculded random 3 months
3. Data analysed using SPSS

Results:

Study sample: 33
Location
Majority of intubations were done in NICU(55%), followed by theater and delivery suit (24% and 21% respectively
Number of attempts:

Most cases were successful at the first time, 62%, attempted twice on 12% and 3 times on 6%of neonates.There was no documentation about attempts in 20% of cases.
Reasons for repeated attempts were: incorrect tube position, O2 sats changes, accidental extubation, inappropriate tube size and poor visualization
Grade of personnel:
Most intubations were performed by registrars, (67.6%), followed by onsultants (14.7%) and ANPs (11.7%). Only 5.9% intubations were performed by SHOs.
Additional information:
Sedation use was documented in 29% of cases, but was not used in 5 (15%) of them. Sats monitor was used in 73.5% of cases.
Use of Co2 detector was documented in (14.7%) of cases.

Discussion:

Endotracheal intubation was performed 34 times over the period of 3 months, ie, at a rate of 136 per year. Most procedures were successful at first attempts. There was no documentation regarding number of attempts in fifths of the cases. Incorrect tube position was the main documented reason for repeated attempts.
The use of CO2 detector to confirm correct tube size was documented only in 14.7% of cases.

Conclusion:

Endotracheal intubation is performed in Rotunda at a high success rate from first attempt. More than half intubations are done in the NICU by registrars.
However, more adherence to documentation is required, in order to identify factors related to failed intubation procedures, and to audit adherence to NRP guidelines on intubation

Neonatal resuscitation programme, fifth edition

INJURY ASSOCIATED WITH HIGH FLOW NASAL CANNULA USE IN PRETERM INFANTS.

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Aim

To investigate the incidence of injury associated with HFNC use in infants born under 32 weeks' gestation admitted to the NICU and to describe these injuries.

Methods

Retrospective case review of medical records. All infants born under 32 weeks' gestation from 1st January 2019 to 31 December 2019 and admitted to the NICU at the National Maternity Hospital Dublin were included.

Results

Of 122 infants admitted, 61 received HFNC. Median (IQR) gestation was 27.4 weeks (IQR 26, 28.8) and birth weight was 965g (705, 1200). HF was commenced on day 30 of life (14, 49). HF duration was median (IQR) 7 days (0.25, 13). 4/61 (7%) of infants received an injury associated with high flow use. Gestation at injury was median (IQR) 30 weeks (29, 33) and weight at injury 1325 g (1090, 1610). The Median (IQR) duration of injury was 3 days (2.5, 5.5). Injuries were described as a nasal bridge in 1 infant, cheek in 3 infants. Management was barrier/antibacterial ointment (Polymyxin/Bacitracin Zinc) in 2, adhesive skin closure in 1, and observation in 1 patient. Injury resolved in all cases and no cases require plastic surgery referral.

Conclusions

HFNC may be associated with injury, clinicians should be vigilant in assessing and managing these injuries.

OUTCOME OF BABIES BORN TO COVID-19 POSITIVE MOTHERS AT WEXFORD GENERAL HOSPITAL FROM 1ST JANUARY 2021 TO 7TH OCTOBER 2021

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Aim: To evaluate incidence of vertical transmission from Covid-19 positive mothers to their babies and access their morbidity and outcome.

Method: A retrospective review of medical records of mother who were positive at time of their delivery with Covid-19 was done at Wexford General Hospital. Medical notes of these babies were also analysed. Data was collected on their hospitalization, treatment and outcome.

Results: Total number of births for same period were 1319, and 5 (0.3% of total births) amongst these mothers had covid-19 positive at the time of birth. 1 of these 5 babies, born to covid positive mothers was a premature birth (20% of the incidence). None of these 5 (0% of total incidence), babies were found to be covid positive. 4 of them required no hospital admission. 1 premature baby was admitted to SCBU for prematurity according to guidelines of WGH [1] [4] but baby was tested covid negative and all cultures came out to be negative as well. Baby was discharged later and there were no additional adverse neonatal outcomes other than those related to preterm delivery.

Conclusion: Although covid-19 is prevalent in aged 25-44 [2][3], but no cases of vertical transmission were observed in our cohort of patients. None of the newborns was transferred to Special Care Baby Unit (SCBU) or Tertiary Care Hospital for Covid-19 related illness [1][2]Therefore we could not find any significant morbidity in babies born to Covid-19 positive mothers [2][3].

[1] “Neonatal intensive care and special care baby units - HSE.ie.” https://www2.hse.ie/wellbeing/child-health/neonatal-intensive-care-and-special-care-baby-units.html (accessed Oct. 11, 2021). [2] “547 Neonatal outcomes of COVID-19 positive mothers.” https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7848579/ (accessed Oct. 11, 2021). [3] “Caring for Newborns | COVID-19 | CDC.” https://www.cdc.gov/coronavirus/2019-ncov/hcp/caring-for-newborns.html (accessed Oct. 11, 2021). [4] Wexford General Hospital Guidelines

AN UNUSUAL CASE OF NEONATAL SOTO'S SYNDROME WITH SILENT ASPIRATION

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Background:
Soto's syndrome is an AD disorder characterised by perinatal overgrowth, acromegaly, hypotonia, intellectual disability and atypical facial appearance. Soto's syndrome is caused by mutations in the NSD1 gene. The estimated prevalence is 1:14,000 births (1).

Case Report:
A 4 months old male (Ex 34 weeks) was noted at birth to have dysmorphic features (high broad forehead, dolichocephalic head and widely spaced eyes) and central hypotonia. He was born by EmCS due to evolving PET. Apgar's were 8 and 9 at one and five minutes respectively. He weighed 2.23kg at birth and had a head circumference of 37.5cm (> 99th centile). He had ongoing respiratory requirements since birth and required intubation on the 1st day of life. He had microlayngoscopy and bronchoscopy (MLB) on DOL 16 and were normal. He had ongoing issues with feeding and poor suck requiring solely nasogastric (NG) feeds. He underwent video fluoroscopy at 2 months of age which identified silent aspiration on type 1 fluids. Genetic testing was completed and identified an NSD 1 variant c 3377del p. (Gly1126Aspfs*15) mutation by Sanger sequence and MLPA which confirmed diagnosis of Soto's Syndrome type 1.

Conclusion:
Poor feeding due to hypotonia has been documented in the literature in Soto's syndrome during the neonatal period and tends to improve after the first month of life (2). Soto's syndrome is not reported to have difficulties to establish swallowing and ongoing enteral feeding needs. In this case the baby had recurrent episodes of aspiration. This is the first case of Neonatal Soto's Syndrome documented in Ireland. This unusual case highlights the complex multi-factorial medical issues that can come with a diagnosis of Soto's Syndrome.

1 Gaudreau P, Zizak V, Gallagher T. The Otolaryngologic manifestations of Sotos syndrome. International Journal of Pediatric Otorhinolaryngology 2013; 77: 1861-1863 2 Holla Col RG, Prasad Lt Col AN. Sotos Syndrome. MJAFI 2011; 67:288 -290

TIME TO FIRST PASSAGE OF MECONIUM AND ASSOCIATED FACTORS IN 702 IRISH-BORN 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 determine associated maternal, perinatal and neonatal factors.
Methods
This was a prospective cohort study of 702 Irish-born term infants in University Hospital Galway Maternity Department. Mothers were consented antenatally, and asked to record the precise time of first meconium passage following delivery. Antenatal, perinatal and neonatal data were obtained from the medical chart. Mean(SD) were reported for normally distributed continuous data, median[IQR] were reported for skewed data. Main outcome variable, Time to First Meconium Passage, was skewed to the right. Difference in mean ranks between time of meconium passage and variables related to neonatal and obstetric factors were examined.
Results
Data from 702 neonates; median[IQR] time to passage of first meconium 5.89[1.00-10.41] hours, range 0 to 83 hours; 98% passed meconium within the first 24 hours. Mean(SD) gestation 39(1.15) weeks, birthweight 3652g(1981.7g). Among 45% caesarean deliveries; median time to first passage 5.0[1.12-10.10] hours for emergency caesarean section vs 7.25[4.4-10.2] hours for elective procedure. First feed within the first hour post-delivery in 83%; 28% formula, 70% breastmilk, 1.6% mixed. Time to Meconium was 5.27[1.13-8.97] and 6.14[1.0-11.3] hours for formula and breastmilk respectively; primigravids 5.5[0.5-10.17] hours vs multigravids 6.15[1.47-10.42] hours. Epidural 5.32[0.44-10.58], Spinal 6.57[3.34-10.32] and GA 6.86[0-10.57] hours. Final data analysis to assess association of all collated maternal and neonatal factors with time to meconium passage is underway.
Conclusions:
Our data confirm that 98% of Irish-born neonates pass meconium in the first 24 hours, with only 16 neonates' first passage of meconium beyond that time point. Preliminary data analysis at the midpoint of the study showed no association with mode of delivery, birth weight and feeding methods.

UTILITY OF CORD BLOOD DIRECT COOMBS TESTING (CB-DCT) FROM INFANTS OF RHESUS-NEGATIVE MOTHERS IN THE PREDICTION OF HYPERBILIRUBINAEMIA REQUIRING PHOTOTHERAPY

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Aims: Historically, protocols in maternity units worldwide have included CB-DCT and blood grouping in all infants of Rhesus-negative mothers, aiming to identify those at risk of Haemolytic Disease of the Newborn (HDN). However, the introduction of routine antenatal anti-D prophylaxis (RAADP) has led to a significant number of false positive results[1] and previous research has found positive DCT to be poorly predictive of subsequent hyperbilirubinaemia.[2] This study aims to investigate the utility of this practice in the identification and management of neonatal hyperbilirubinaemia.

Methods: Retrospective review of all babies born to Rhesus-negative mothers over a 10 month period (January – October 2020). Hospital In-Patient Enquiry (HIPE) phototherapy records and laboratory reports recording RAADP administration were also reviewed. The primary outcome was the predictive value of positive CB-DCT for hyperbilirubinaemia requiring phototherapy.

Results: Incidence of positive cord-blood DCT (CB-DCT) was 10% (93/933). Six CB-DCT-positive babies required phototherapy (6/93, 6.3%); 3 of whom were premature (gestation <37 weeks). Antenatal diagnosis of HDN prompted premature delivery in 2 cases, both receiving phototherapy within one hour of life. Laboratory notification of positive-CB-DCT result prompted serum bilirubin (SBR) measurement in 3 of the 4 remaining cases with one initial SBR plotting above phototherapy threshold. The incidence of phototherapy amongst CB-DCT-negative babies was 4.3% (36/840; 53% premature). Median age at commencement of phototherapy for CB-DCT positive vs CB-DCT negative babies was 13hrs (range 0-77hrs) and 41hrs (range 8-179hrs), respectively.

Conclusion: The positive predictive value (PPV) of a positive CB-DCT for requirement of phototherapy in infants born to Rhesus-negative mothers who received RAADP in pregnancy is 6.4%. Our data supports previous research indicating low PPV of CB-DCT in the prediction of significant neonatal hyperbilirubinaemia in this cohort[2], concurring with international guidelines that it is unnecessary to perform CB-DCT where mothers are Rh-negative, have received RAADP and are not known to be sensitised.[3]

References: 1. Dillon, A., Chaudhari, T., Crispin, P., Shadbolt, B. and Kent, A., 2010. Has anti-D prophylaxis increased the rate of positive direct antiglobulin test results and can the direct antiglobulin test predict need for phototherapy in Rh/ABO incompatibility?. Journal of Paediatrics and Child Health, 47(1-2), pp.40-43. 2. Dinesh, D., 2005. Review of positive direct antiglobulin tests found on cord blood sampling. Journal of Paediatrics and Child Health, 41(9-10), pp.504-507. 3. James, R., McGuire, W. and Smith, D., 2010. The investigation of infants with RhD-negative mothers: can we safely omit the umbilical cord blood direct antiglobulin test?. Archives of Disease in Childhood - Fetal and Neonatal Edition, 96(4), pp.F301-F304.

Survey to assess Non-Consultant Hospital Doctor preference of neonatal ventilation support in a Neonate Resuscitation Scenario

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Aim:
Studies have shown that compared to self-inflating bags, T-Piece resuscitators such as neopuff provide a more controlled and reliable peak inspiratory pressure (PIP) and positive end expiratory pressure (PEEP), which facilitates the maintenance of functional residual capacity (FRC) (Perez *et al*., 2017). The aim of this study is to assess non-consultant hospital doctors (NCHDs) preference for neopuff vs. bag valve mask in a neonatal resuscitation, outside of a maternity hospital setting.

Method:
This study was carried out in Children's Health Ireland at Temple Street. The survey was created and distributed to Temple Street NCHDs via email.

Results:
Twenty-three NCHDs participated in the study; 43.48% were specialist registrars, 13.04% were registrars and 43.45% were senior house officers. 82.61% of participants had previous neonatal experience in which they regularly attended the birth of new-borns. The remaining of 17.39% had no experience. 82.61% of participant's were familiar with neopuff. 73.91% were confident to use neopuff. In comparison 95.65% were familiar with bag valve masks, however only 69% were confident in its use when called to a deteriorating infant. Given the choice of bag valve mask or neopuff, 73.91% chose neopuff as their preference in a neonatal resuscitation scenario. The results were further supported by comments from NCHDs outlining the benefits of neopuff over bag valve mask.

Conclusion:
NCHDs with prior neopuff experience and exposure demonstrated a preference for neopuff over bag valve mask in the setting of neonate resuscitation. These results are important to emphasise the need for implementation of neopuff equipment and training outside of the maternity hospitals.

Perez, S.A. et al. (2017) "Comparison the efficacy of three positive pressure ventilation devices used by medicine students on a neonatal resuscitation simulator", Clinical Practice, 14(2), pp. 137 – 144.

MICROSTRUCTURAL GREY AND WHITE MATTER DIFFERENCES ACROSS THE NEONATAL BRAIN ASSESSED BY STRUCTURAL AND FUNCTIONAL IMAGING

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Aims
At birth, the foundational microstructure of the brain is largely set, following rapid prenatal development. However, the differentiation, maturation and myelination of neurons continue during the early postnatal period through infancy[1]. Adverse neonatal events, such as neonatal encephalopathy (NE), may affect the developmental trajectory of certain regions of the brain, in particular the corpus callosum (CC) and the thalamus[2]. Diffusion Tensor Imaging (DTI) and Neurite Orientation Dispersion and Density Imaging (NODDI) allow for an examination of these maturational processes on a microstructural level. Our aim was to use these techniques to examine the developmental trajectories of the CC and thalamus in the typically developing neonate, in order to better understand how these regions may be affected in NE.
Methods
This study was a retrospective analysis of a subset of neonates from the second data release of the Developing Human Connectome Project, consisting of 126 term-born neonates (67 female, 59 male, average scan age 41.17 weeks). DTI, NODDI and myelin maps were generated for each neonate, and the CC and thalamus were parcellated using a neonatal atlas[3]. We examined the relationship between these MRI parameters and scan age using a linear regression model, controlling for sex and brain volume.
Results
NODDI metrics (neurite density index, orientation dispersion index) and myelin metrics were associated with scan age in the CC, whilst DTI metrics (fractional anisotropy, mean diffusivity) were not age related. In the thalamus, all metrics were associated with scan age, except for the orientation dispersion index. Additionally, all global brain metrics were associated with scan age.
Conclusion
DTI and NODDI are effective tools in studying the microstructural development of the neonatal brain. In understanding these developmental trajectories in the healthy term neonate, it is possible to examine the effects that adverse neonatal events such as NE have on the brain, and how this may affect neurodevelopmental outcome.

1. Stiles J, Jernigan TL. The basics of brain development. Neuropsychol Rev. 2010;20(4):327-348. 2. Dibble M, O'Dea MI, Hurley T, et al. Diffusion tensor imaging in neonatal encephalopathy: a systematic review. Archives of Disease in Childhood-Fetal and Neonatal Edition. 2020;105(5):480-8. 3. Schuh A, Makropoulos A, Robinson EC, et al. Unbiased construction of a temporally consistent morphological atlas of neonatal brain development. bioRxiv. 2018:251512.

PERSISTENT SYSTEMIC INFLAMMATION FOLLOWING NEONATAL BRAIN INJURY

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AIMS: To examine and review the existing evidence for persistent systemic inflammatory mechanisms, following neonatal brain injury (NBI), which leads to adverse neurological outcomes, including cerebral palsy (CP).

METHODS: A systematic review of all relevant papers published was conducted using PubMed/Medline, with keywords from the research title. All papers were assessed and critically appraised. The results thereof were analysed to be included in this review.

RESULTS: Several tertiary mechanisms were identified in the developing brain of children who suffered from NBI, which prolongs the injury cycle beyond infancy. This results in encephalopathy which can damage specific brain regions (1). Cytokines are raised in both cerebrospinal fluid and blood serum which correlates with increased risk of (CP) (2). Compared to children with a normal birth history, children who experienced neonatal encephalopathy (NE) and children with CP have significantly higher levels of the cytokine TNF-alpha (means ± SEM: CP, 53 ± 16pg/ml vs control, 10 ± 4pg/ml; $p < .001$) (3). This increase is also seen in animal studies at post-natal day 21 , where TNF-alpha was raised following in vitro injection of lipopolysaccharide (LPS), which replicates injury seen in utero (10.44±2.3pg/mL vs. 23.32±3.83pg/mL, $p<0.001$) (4). Furthermore, this elevation in inflammatory cytokines persists into school aged children (4-7 years) where levels of cytokines, particularly GM-CSF, TNF-β, IL-2, IL-6 and IL-8 were all found to be increased in the NE-exposed group with a significant rise in GM-CSF and IL-8 post-LPS injection (5).

CONCLUSIONS: Further research into specific changes in the inflammatory response of NE may yield therapeutic options to reduce disease burden, for example, interleukin-1 receptor antagonists. Also, the persistence of systemic inflammation into later life following NBI, suggests there may be opportunity for intervention in NBI beyond the neonatal period.

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AN ASSESSMENT OF INDICATIONS FOR SUPPLEMENTAL FEEDING IN INFANTS WHERE MOTHERS PLAN TO EXCLUSIVELY BREASTFEED

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INTRODUCTION:
Ireland has the lowest breastfeeding initiation rate among high-income OECD countries. Breastfeeding provides many benefits to both mother and child.
AIMS:
To assess the indications for supplemental formula feeding in infants of mothers who initially aimed to breastfeed on post-natal wards in the National Maternity Hospital (NMH). To assess what measures were used to support mothers to breastfeed their babies prior to offering formula.
METHODS:
An anonymised survey was designed with input from midwives, managers, NCHDs, consultants and lactation consultants. The finalised survey was disseminated to all post-natal wards to be filled out by midwives offering formula top-ups to breastfeeding infants over a 1 week period in September 2021. A form was indicated for each supplemental feed.
RESULTS:
27 forms were completed during the period of observation. This is likely to under represent the true incidence of supplemental feeding. The most common reasons for topping up were “mother is tired and requested formula” (66.7%) and “difficulty latching” (22.2%). Other reasons included cluster feeding requiring maternal rest. 1 was due to hypoplastic breasts (pre-planned top-ups) and 1 experienced excessive infant weight loss (11%), 2 infants were on phototherapy (one of whom had a medical review advising top-up). 59.3% of infants did not receive documented implementation of supports to allow for maternal support, infant comfort or infant positioning to assist in exclusive breastfeeding.
CONCLUSIONS:
The most common reason for infant supplemental formula feeding was maternal fatigue. This is multifactorial and requires further research to assess what healthcare providers can do to assist these mothers to achieve their goal of breastfeeding. Measures such as lower patient to midwife ratios and greater maternal breastfeeding support may help reduce early use of formula in breastfed infants.

1. Lubold, A.M. Historical-qualitative analysis of breastfeeding trends in three OECD countries. Int Breastfeed J 14, 36 (2019). https://doi.org/10.1186/s13006-019-0230-0

A REVIEW OF THE UTILITY OF METABOLIC SCREENS IN DIAGNOSING IHERITED METABOLIC DISORDERS IN A TERTIARY NEONATAL UNIT

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Aim: To investigate 'metabolic screens' carried out over a two year period in a tertiary neonatal unit and their utility in the diagnosis of inherited metabolic disorders (IMD).

Methods: We included infants who had a 'metabolic screen' performed as either an inpatient or outpatient at the Rotunda Hospital between January 2018 and December 2020. Patients were retrospectively identified by the Department of Laboratory Medicine in the Rotunda Hospital. Positive screens identified by or follow-up investigations as a result of Newborn Bloodspot Screening (NBSS) were excluded from analysis. For the purposes of this study a 'metabolic screen' comprised at least one of the following investigations: ammonia, serum amino acids, urine organic acids and acylcarnitine profile.
Patient's electronic medical records were reviewed. Data collected included final diagnoses (where known), the indication for the screen, which investigations were undertaken, whether any test needed to be repeated and why. The data was stored in an anonymised excel document on a secure computer. The study was approved by the local Research Ethics Committee.

Results: 204 patients met inclusion criteria. The gestational age of patients varied from 23 3/7 – 41 6/7 (median 37 5/7). Patients were tested at different intervals between day of life 1 and 180 (median day 4). In 40% (81/204) of patients at least one investigation needed to be repeated. Metabolic medicine were consulted or provided advice in 17% (34/204) of cases. IMD were diagnosed in 5 patients. This included one diagnosis of a urea cycle defect, 3 patients with lysosomal storage disorders and 1 patient with a mitochondrial disorder. In 3 of the 5 patients diagnosed with IMD there was a family history of the identified disorder.

Conclusion: In 204 patients that underwent a 'metabolic screen' in a tertiary neonatal unit 2.4% (5/204) had a diagnosis of an inherited metabolic disorder.

THE UTILITY OF METABOLIC SCREENS FOR HYPOGLYCAEMIA IN A TERTIARY NEONATAL UNIT FROM 2018 – 2020

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Aims: The aim of this study was to examine the utility of 'metabolic screens' in the setting of hypoglycaemia in neonates/ infants in a tertiary neonatal unit over a two year period.

Methods: Any infant who had a 'metabolic screen' performed for hypoglycemia between January 2018 and December 2020 was retrospectively identified by the Department of Laboratory Medicine.
A 'metabolic screen' comprised at least one of the following: ammonia, serum amino acids, urine organic acids and acylcarnitine profile. Patients who had investigation due to abnormal newborn screening were excluded from analysis. A review of eligible electronic medical records was undertaken. The metabolic investigations and results along with any final diagnosis were collected on an anonymised excel document. This study was approved by the Local Research and Ethics Committee.

Results: We reviewed 26 cases where the indication for metabolic investigation was hypoglycaemia. The gestational age at birth of this group ranged from 23 3/7 – 38 5/7, 69% were preterm (<37 weeks gestational age). The lowest blood glucose recorded for each patient ranged from 0.2 mmol/l – 3.1 mmol/L, the median was 2.1 mmol/L. 50% (13/26) of patients had at least one abnormality on their metabolic work-up, 38% (10/26) required at least one test to be repeated. 27% (7/26) had a diagnosis of hyperinsulinism; each of these patients were 34+6/7 or older. In other patients the final diagnosis was unknown or not the cause of hypoglycaemia.

Conclusion: Preterm infants represented a higher percentage of patients having metabolic screens for hypoglycaemia.A diagnosis of hyperinsulinism was made in 27% (all of whom were 34+6/7 plus). This, coupled with the high rate of abnormal tests and need for repeat samples suggests that more judicious screening criteria should be implemented in the use of 'metabolic screens' for hypoglycaemia in very and extremely preterm infants.

POINT OF CARE vs. SERUM ELECTROLYTES IN THE NEONATAL ICU

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Aim:
To establish if Point of Care Testing (POCT) of electrolytes (Sodium & Potassium) is as accurate as Serum electrolytes samples in Neonates.

Methods:
Electrolytes results were reviewed for patients admitted to the Neonatal ICU at Our Lady of Lourdes Hospital, Drogheda from August-December 2019, who required respiratory support. For every POCT carried out, the WinPath Lab Enquiry system was used to see if a paired serum blood sample was taken. Paired samples were defined as POCT **and** Serum Urea & Electrolytes (U&E) taken within 1hr of each other.

Results:
A total of 50 paired samples were obtained. POCT Sodium samples were generally lower (28/50) than Serum Sodium. In 22%, POCT and Serum Sodium samples were equal. Serum Sodium was higher in 11 samples. The largest Sodium difference between the 2 sample sets was 2mmol/L. POCT Potassium samples were lower overall (4.53mmol/L) than Serum Potassium (4.598mmol/L), with a difference mean of 0.068mmol/L between the 2 groups. In 4 samples, POCT and Serum Potassium samples were equal. In 62%, POCT and Serum Potassium differed by only 0.1-0.5mmol/L.

Conclusion:
POCT is a quick and easy form of bedside blood testing. In neonates, this involves a very small volume via heel-prick. Those receiving IV fluids/parenteral nutrition require daily electrolytes. Our study shows that POCT and Serum Sodium and Potassium did not differ much in any sample and should be used in clinical practice, thereby reducing needle sticks in vulnerable neonates. However, if POCT of electrolytes is much outside the lower or higher limits of normal, or if urine output/kidney injury is a concern, a full Serum U&E should be undertaken.

https://pubmed.ncbi.nlm.nih.gov/33757138/
https://pediatrics.aappublications.org/content/141/1_MeetingAbstract/578

POSTNATAL JAUNDICE CLINIC IN THE COVID-19 ERA: A QUALITY IMPROVEMENT PROJECT

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Aims

A postnatal SHO-led jaundice clinic offers reliable and focused follow up of this common but potentially devastating condition. In the midst of the Covid-19 pandemic we re-assessed our service (1) to make it both efficient and effective. Our aims were to:

1. Evaluate our existing clinic
2. Update our guidelines and re-educate our staff
3. Re-evaluate our new service

Methods

An initial audit of our service was conducted by retrospective chart review over a week in October 2020. Results were presented to the neonatal and paediatric departments along with a literature review of international best practice (2,3,4) for managing neonatal jaundice. Our local guidelines were updated, staff were re-educated and a post-intervention audit was conducted in June 2021 for comparison.

Results

In our initial audit, 19 infants were recalled to postnatal jaundice clinic over 7 days. 5/19 (26.3%) were plotted as High Intermediate Risk (HIR) on the Bhutani nomogram. All 5 HIR infants had serial Transcutaneous Bilirubinometer (TcB) measurements in clinic prior to discharge. 14/19 (73.6%) were Low Intermediate Risk (LIR). 11 of the 14 (78.6%) were discharged after one clinic visit and the remaining 3 infants were discharged at their second visit. None of these infants required phlebotomy or phototherapy.

Following revision of our guidelines, only infants from the High Risk (HR) and High Intermediate Risk groups were recalled. On our subsequent audit, 7 infants were recalled over the same time period: 3/7(43%) were HR with 4/7 (57%) HIR. All required serial TcB measurements and 1 infant required serum bilirubin measurement prior to discharge.

Conclusions

Our quality improvement project updated our local guidelines with international standards while tailoring our approach to our population in light of the Covid-19 pandemic and a need to reduce unnecessary hospital visits, particularly for vulnerable infants and mothers.

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KEEPING THE INFANT AND PARENTS AT THE CORE OF CARE - PALLIATION IN TWIN TO TWIN TRANSFUSION SYNDROME

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We report a case of a male infant born preterm at 32+2 weeks gestation from a monochorionic diamniotic (MCDA) twin pregnancy. The pregnancy was complicated by severe twin-to-twin transfusion syndrome. Twin two died in-utero at 15 weeks gestation.

Antenatal scans showed bilateral ventriculomegaly and dilated loops of bowel. A fetal MRI scan was performed at 27 weeks gestation. The scan demonstrated extensive ischaemic injury characterised by bilateral parenchymal loss in keeping with post-ischaemic encephalomalacia.

Twin one was born by spontaneous vaginal delivery, weighing 1.985kg with APGAR scores of 8 and 9 at one and five minutes respectively. Twin one had respiratory distress and required rescue surfactant and non-invasive ventilation for 16 hours. A septic work up was negative. Parenteral nutrition was commenced. Postnatal MRI brain demonstrated a small amount of prefrontal cortex with complete loss of bilateral temporal lobes, parietal lobes and occipital lobes. MRI abdomen demonstrated a stomach and duodenum. No distal bowel could be identified. Upper contrast study showed jejunal atresia and no progression of contrast distally.

A decision was made that it would be in the infant's best interest to proceed with the palliative care pathway. Several conversations were had with the parents showing them the radiology imaging. Intensive care management was discontinued. Full supportive care was provided by the local neonatal and palliative care teams. Twin one died day of life 10, very comfortable in the arms of his parents.

Conversations around palliative care are emotional and can be difficult. Keeping infants and parents at the core of decision making using radiology imaging can help in the decision making process. Briefing the neonatal team was equally important. This was done at the daily morning huddle addressing all questions around palliative care for this infant.

AUTISTIC TRAITS AT EARLY CHILDHOOD NEURODEVELOPMENTAL ASSESSMENT IN CHILDREN BORN PRETERM: AN OBSERVATIONAL CASE-CONTROL STUDY</h4>J Hayden[1], C Ahearne[1], L Wienand[1], S Viash[1], N McCallion[1], BC Hayes[1]

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Aims:

Preterm birth has been associated with a higher incidence of autism.We aimed to assess the perinatal exposures of preterm infants who presented with autistic traits at early childhood neurodevelopmental assessment.

Methods:

An observational retrospective case-control study in a single tertiary NICU. Preterm infants who attended for early childhood neurodevelopmental assessment in 2019 were eligible to be included. Inclusion criteria were infants born ≤1500g or ≤32/40 weeks. Assessment was performed by a senior clinical psychologist and included clinical observation, Bayley Scales of Infant and Toddler Development (Edition 3) and Child Behaviour Checklist (1 ½ -5) parental questionnaire.

Results:

96 preterm infants met inclusion criteria. 22 children (23%) demonstrated clinical features of autism at early childhood assessment. The remaining 74 acted as a control group. In the case group 18 (82%) were male. There was no difference in rate of multiple births between the groups. There was no statistically significant difference in maternal age or indication for delivery between the case and control groups.

Male gender, non-Irish ethnicity, vaginal delivery and abnormal cranial ultrasound occurred more frequently in the case group, $p<0.05$. Use of assistive reproductive technologies occurred less frequently, $p=0.05$. All composite scores measured on Bayleys-3 at a median (IQR) age of 32 (31-35) months showed statistically significant differences ($p <0.01$).

Conclusion:

Autistic traits are commonly seen on follow up of the preterm population. Our data emphasises the importance of thorough early assessment and validates early screening. Male gender and abnormal cranial ultrasound were associated with increased odds of autistic traits on follow up. The association with abnormal imaging may support the hypothesis that autistic traits may result from abnormal brain development in this vulnerable population. Through further research, a neonatal neuroprotective strategy could be created. Enhancing tactile, thermal and social experiences may be beneficial. Awareness of the association between prematurity and autistic traits may guide parental counselling and targeted neurodevelopmental follow-up.

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FEEDING PRACTICES AND THE PREVELANCE OF COW'S MILK PROTEIN ALLERGY IN IRISH PRETERM INFANTS

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Background

The prevalence of cow's-milk protein allergy (CMPA) is between 2-3% with symptoms varying depending on the underlying pathogenesis. [1,2] Very preterm infants are at high risk of feed intolerance and complications such as necrotising enterocolitis. Breast milk is the optimal nutrition for premature infants and breast milk fortifiers (BMF) are commonly used to optimise growth. [3,4] They are typically derived from cow's milk and as such preterm infants are exposed to cow's milk in the first weeks of life. The primary aim of this study was to evaluate the prevalence of CMPA among very preterm (<32 weeks) and/or very low birth weight (VLBW) infants. The secondary aim was to describe the feeding practices of this cohort over the first six months of life.

Methodology

This was a retrospective study performed in a large tertiary maternity hospital (8,500 deliveries/year and 110 very preterm infants/year) over a three-year period. Infants born very preterm and/or VLBW who were followed until 6 months corrected gestational age (CGA) were included.

Results

144 infants were included. No infant had a diagnosis of CMPA when leaving the NICU, by six months CGA this increased to 1.4% (*n=2)*. Upon discharge 88 infants (61%) were receiving at least some breast milk, decreasing to 13 (9%) at six months CGA. Those who were receiving exclusive breast milk at discharge were significantly more likely to still be receiving any breast milk at three (p=<0.001) and six months(p=<0.001) CGA, compared with those combined or exclusively formula feeding. At 6 months CGA 18.9% (n=27) were attending a dietician and 31.7% (n=45) were using specialist, non-standard infant formula.

Conclusions

The prevalence of CMPA in this cohort was 1.4% which is similar to the reported prevalence in the general paediatric population. Infants who were exclusively breastfeeding at discharge were more likely to be receiving any breast milk at follow up, highlighting need for on-going outpatient lactation and dietetic support.

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ELECTIVE CAESAREAN SECTIONS: WHY 39 WEEKS IS THE GOLDEN NUMBER

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Aim The purpose of this audit was to highlight the number of neonatal admissions to neonatal intensive care unit (NICU) following elective caesarean section (CS) at term, evaluate the indication for admission and identify possible ways of reducing admission of these infants.
Methods A retrospective cohort study was conducted. Charts of 482 infants born by elective CS at early, full and late term between September 2019 - 2020 were reviewed. 41(9%) of which needed admission to NICU. Data collected: Gestational age (GA), indication for CS, APGAR's, resuscitation, antenatal steroids, condition of infant at delivery, cord gas, meconium, anaesthesia, admission reason, age of life at admission, duration of stay, discharge diagnosis, and NICU interventions. Respiratory morbidity secondary to transient tachypnoea of the new-born (TTN) or surfactant deficiency, accounted for the majority of NICU admissions in term infants following elective CS [1,2]. These infants increase the occupancy rate of NICU with the supplementary effect of parental-infant separation issues within the crucial first few days of life. Additionally, elective CS at earlier term is associated with increased neonatal interventions, which further increase both the financial cost and parental anxiety [3].
Results The majority of elective CSs were performed < 39 weeks GA, the main indication for CS being for previous (66%). Respiratory morbidity was the most common reason for admission, TTN being the most common diagnosis on discharge. A substantial number received medical treatment in the form of chest x-rays, intravenous antibiotics, and intravenous fluids. 46% of those who had CXRs and 56% who had SWUs were either TTN, RDS, no diagnosis documented or no diagnosis documented but SWU negative.
Conclusion Our audit supports the evidence that 39 weeks GA is a more appropriate time for elective CSs to be performed in order to improve neonatal outcomes and reduce the incidence of their admission to NICU.

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AETIOLOGY AND ANALYSIS OF NEONATAL RE-ADMISSIONS TO THE COOMBE WOMEN AND INFANTS UNIVERSITY HOSPITAL (CWIUH)

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Aims

Identify the rate and aetiology of neonatal re-admissions from home between 01/01/2020 and 31/07/2021 with comparison to the CWIUH's neonatal centre re-admission guidelines.
Identify pre-discharge factors which with appropriate pre-emptive management could prevent re-admission.

Methods

This audit was approved by the CWUIH audit panel, AQUA. Case notes of neonates re-admitted from home were reviewed.
Inclusion criteria: Neonate re-admitted to the CWIUH from home between 01/01/2020 and 30/06/2021
Exclusion criteria: Neonate transferred from another unit or hospital

Results

N = 43
Average time between discharge and re-admission: 3.9 days
Average age at discharge prior to re-admission: 2.9 days
Average re-admission length of stay: 1.5 days
Aetiology of neonatal re-admission: 72 % jaundice requiring treatment, 21 % jaundice requiring treatment and one or more of the following, poor feeding, weight loss, hypernatraemia or dehydration, 2 % isolated weight loss of greater than 10 % of the birth weight and lastly 5 % anaemia of prematurity.
Management of re-admitted neonates: 86 % received phototherapy (PT), 5 % were observed, 2 % received rehydration via top ups, 2 % received PT and rehydration, and 5 % received a RCC transfusion.
55 % of the re-admitted neonates were documented as appearing jaundice or having received treatment for jaundice prior to discharge.
39 % of the re-admitted neonates didn't have a documented transcutaneous bilirubin (TBC) prior to discharge.

Conclusion

This audit demonstrates that the CWIUH's neonatal re-admission guidelines are largely being adhered to. The collected data has identified areas where improvement is necessary. 55 % of re-admitted neonates were documented by a midwife or NCHD as appearing jaundice prior to discharge and no TCB was documented for 39 %. Highlighting these findings and promoting more thorough documentation and investigation where clinically indicated will contribute to the prevention of illness and re-hospitalization.

The CWIUH neonatal readmission guidelines located on the CWIUH intranet.

THE IMPACT OF THE COVID-19 PANDEMIC ON BREASTFEEDING RATES IN A REGIONAL PAEDIATRIC UNIT

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Aims and Introduction

Exclusive breastfeeding until 6 months and complementary breastfeeding until 2 years is the gold standard of infant feeding, endorsed by the HSE and WHO[1].
The Covid-19 pandemic has impacted healthcare service provision worldwide. In our hospital this included redeployment of lactation consultants, loss of face-to-face support groups and restricted PHN home-visits. Innovative adaptations to service delivery included lactation support via Zoom, Facebook and Whatsapp. Anecdotally, whilst many mothers missed the in-person support, others enjoyed the accessibility of virtual services[2,3].

This study aims to (i) compare breastfeeding rates before and during the pandemic; and (ii) determine if changes in supports impacted outcomes.

Methods

Data collected on behalf of the National Women's and Infant's Health Programme was retrospectively reviewed from April 2019 (prior to the pandemic), April 2020 (during the first lockdown) and April 2021 (following one year of restrictions).

Results

Data from 695 births was reviewed.
In April 2019 60% of mothers initiated breastfeeding, with 35% exclusively breastfeeding on discharge from hospital.
In April 2020 53% initiated breastfeeding whilst 30% exclusively breastfed on discharge.
Finally, in April 2021 61% initiated breastfeeding compared to 28% exclusively breastfeeding on discharge.
40% chose to exclusively formula-feed from birth in April 2019, compared to 47% in 2020 and 39% in 2021.

Conclusion

Initiation and continuation rates were lower in 2020 compared to 2019. Exclusive formula-feeding from birth was also highest in 2020, at the onset of the pandemic. Although initiation rates are comparable between 2019 and 2021, continuation rates declined further in 2021.

These changes may have resulted from curtailed lactation support services. Additionally, many women, including first-time mothers, opted for early discharge at the onset of the pandemic. Further analysis of post-discharge breastfeeding rates and review of the supports mothers found most useful may guide service provision in a post-pandemic era.

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DOCUMENTATION OF GROWTH PARAMETERS IN THE NEONATAL UNIT

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Aims and Introduction

Growth parameters reflect the nutritional status of the newborn, and are particularly important in preterm and growth-restricted infants. Poor postnatal growth is associated with subsequent motor and cognitive impairment in childhood[1,2]. Body weight measurements, although easily reproducible, do not differentiate between the size of body compartments and the quality of growth[3]. The occipitofrontal head circumference (OFC) correlates with brain growth, and length with skeletal growth[3]. Our local NICU guideline requires the measurement of weight every 1-2 days, OFC weekly and length every 1-2 weeks, plotted on appropriate centile charts[4]. This aligns with European standards[5].

The aim of this audit is to identify current practice in our unit with regard to recording and documenting anthropological measurements.

Methods

30 charts were analysed retrospectively during August 2021. The documentation of weight, OFC and length on admission, discharge and at least once weekly (for patients admitted more than seven days) was reviewed.

Results

46% of the patient cohort was preterm infants. 10% had antenatal growth issues. A further 10% did not have centile charts; however the admission and discharge measurements were recorded in the clinical notes
All charts had an admission weight documented, 77% had a documented OFC and 43% had length recorded.
60% of patients were admitted for longer than one week. Of these, 50% had weekly weights and OFC plotted on the centile chart, whilst only 17% had weekly lengths plotted.
More than 90% had all three measurements recorded at discharge.
20% of charts fulfilled all documentation criteria.

Conclusion

Despite regular weight measurements, the other parameters of growth and wellbeing may be neglected, particularly in long-stay patients. Recorded measurements should be plotted on centile charts to visualise growth progress.

We plan to provide staff education and visual prompts within the unit to improve documentation in the future.

TERM NEONATES WITH BILIOUS VOMITING NEED TIME CRITICAL TRANSFER TO SURGICAL UNITS FOR EVALUATION

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Background

Bilious vomiting in a term neonate may be a sign of intestinal obstruction that can be functional or anatomical. Malrotation and midgut volvulus should be considered as a delayed diagnosis can result in compromised gut viability and intestinal perforation[1]. Diagnostic suspicion and interdisciplinary coordination are essential for timely diagnosis and surgical treatment. Bilious vomiting in neonates can present with or without abdominal distension. A naso- or orogastric tube should be placed immediately to decompress the stomach. Plain abdominal films show dilated bowel loops and air-fluid levels. A contrast study is required to assess the site of intestinal obstruction.

Case Report

A 4.7 kg female infant is born to Gravida 4 Para 2 woman at 39+2 weeks gestation via SVD. The antenatal period is largely uneventful, with second-trimester antenatal anatomy ultrasound scan reported as normal. The neonate does not require any active resuscitation at birth. Formula feeds are introduced. The first meconium is passed within 24 hours. On the second day of life, she developed bilious vomiting. There was no abdominal distension. The rest of the systemic examination was unremarkable. She was started on intravenous antibiotics. Nasogastric tube was passed for decompression. A plain film abdominal X-Ray showed a double bubble sign. The neonate was urgently transferred to a tertiary surgical centre. An upper GI contrast study was suggestive of malrotation with volvulus and was confirmed on ultrasound with a whirlpool[2]appearance in the upper abdomen. She underwent laparotomy and Ladd's procedure. There was a 720-degree volvulus; the bowel was congested and purple. Volvulus was untwisted, warm saline applied, the bowel improved in colour. No bowel was resected. She remained on TPN for ten days post-surgery and was discharged home on oral feeds.

Conclusions: Term neonates with bilious vomiting referred for transfer to surgical units should be prioritised as time-critical[3.]

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Nationwide survey on the use of high flow nasal cannula in neonatal units in Ireland

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Background: High flow nasal cannula (HFNC) therapy is a form of non-invasive respiratory support delivering heated humidified blended air and oxygen to infants through loose-fitting nasal prongs at a flow rate >2L/min. In neonatal units, HFNC has become an increasingly popular mode of non-invasive respiratory support due to the ease of use, reduced nasal trauma, and increased infant comfort.

Aim: The goal of this study was to determine the current practice and opinions regarding the use of HFNC among the 19 neonatal units in the Republic of Ireland (4 Level 3 units, 4 level 2 units and 11 level 1 units).

Study design: Structured telephone interviews were conducted with senior neonatal unit staff in all 19 neonatal units, and a prepared questionnaire on practice and opinions regarding the use of HFNC was completed.

Results: Responses were obtained from all 19 units (100%). Ninety-five percent (18/19) of units reported HFNC use. Of the 18 units that used HFNC, 8 units (44.4%) use it frequently, 6 units (33.3%) occasionally and 4 units (22.2%) rarely. Variations existed in primary indications for treatment, starting flow rates (1-8L/min), weaning flow rates (0.5-2L/min), weaning protocols, and minimum and maximum flow rates. A quarter of the units were fitting the nasal prongs (NP) incorrectly. Seventeen of the 18 units used either the Optiflow junior (Fisher and Paykel) or the Fabian Therapy Evolution (Acutronic) delivery system (56% vs. 39%).

Conclusion: Although HFNC is been widely used in neonatal units throughout Ireland, wide variations exist in most aspects of providing this common non-invasive respiratory support. Incorrect NP application in 25% of units, the use of very low starting flow pressures in some units and the lack of weaning protocols would suggests many units would benefit from national guidelines on HFNC use in neonatal patients.

ASSESSMENT OF INTUBATION PRACTICE IN A LEVEL 2 REGIONAL NEONATAL 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 OLOL Hospital Drogheda in order to identify areas for improvement.

Methods:
We designed a single page audit proforma to be completed by the relevant clinician soon after the intubation procedure. All neonates intubated in OLOLH Drogheda from November 2020 to June 2021 were included.

Results:
Twenty four new born required intubation during the audit period.Eight were term and sixteen were preterm.Birth weight range from 970 gm to 3.86 kg.Nine intubations were elective and fifteen were emergencies.Conventional laryngoscope was used in twenty intubations.Video laryngoscope was used in four intubations.Five attempts at intubation were made on four occasions,four attempts on two occasions,three attempts on four occasions,two attempts on nine occasions and one attempt was made on five occasions.Lowest heart rate of 50 /min was observed during one intubation.Right main bronchus intubation observed in two cases, mucosal bleeding and laryngeal oedema in one case and oesophageal intubation noted in one case. Morphine used as a premedication in nine cases. There was almost an equal incidence of complications observed in both elective and emergency intubations. No complications seen in one attempt intubations.

Conclusion:
The video laryngoscope was found to be an improvement on the standard laryngoscope in terms of ease of intubation and less incidence of complications.However, it seems to be used after attempts with standard laryngoscope. We recommend increased use of video laryngoscope to familiarise staff in order to reduce the incidence of trauma and improve success rate. A new proforma for documentation of intubation was developed.

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Pierre Robin Sequence: a structured clinical approach

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BACKGROUND: Pierre Robin syndrome is triad of micrognathia, gloss ptosis, and cleft palate. It has multiple mechanism.Most cases are thought to result from hypoplasia of the mandible that occurs before the ninth week of development. It may present as isolated abnormality and associated with other syndromes. Complications include respiratory compromise, failure to thrive and feeding problems.

CASE STUDY: A new born, 37 weeks old boy was born by CS due to decreased foetal movements. The APGARS was 4 at 1st minute,6 at 5th minute and 8 at 10th minute. Baby transferred to NICU in prone position with 40% O2 in head box. Anomaly antenatal scan was normal and US scan at 37-week showed polyhydramnios. Mother, primigravida, 42-year-old, has schizoaffective disorder and was on olanzapine in 3rd trimester. Clinical examination revealed small chin, cleft palate, bilateral talipes and hypertonia in upper limbs which resolved. Baby was shifted to tertiary care centre for multidisciplinary care. Oral feeds were established via Haberman bottle and NG tube on elevated side lying position. Ophthalmology review rule out stickler syndrome. Echo and microarray CGH were normal.

DISCUSSION: Antenatal scan give limited information for cleft palate, but cleft lip can be visualized. Micrognathia can be seen on scan at early 2nd trimester. Management of PRS incudes looking for feeding difficulties and upper airway obstruction. Multidisciplinary approach including neonatologist, respiratory team, plastic surgeons, SLT, plastic surgeons, genetic team, ophthalmology, and hearing assessments should be made. Parental education regarding NPA insertion and care is effective.
The mortality associated with Pierre Robin sequence is generally related to airway compromise and is higher when associated with prematurity. Mortality rates in term infants with Pierre Robin sequences range from 1.7 to 11.3 percent. However, the reported mortality rate increases to 26 percent when other anomalies are present.

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PLAN ONE, GET ONE FREE: TWIN-TWIN TRANFUSION SYNDROME AS A COMPLICATION OF FERTILITY TREATMENT

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Aims

Multiple births account for 18.8 per 1000 births in Ireland. 36% of all twins are being birthed from fertility treatment, as a result of widening access. A complication affecting up to 10% of monochorionic-diamniotic twins (MCDA) is twin-twin transfusion syndrome (TTTS). With increased risk of TTTS occurring in mothers who have taken fertility treatment, we aim to discuss the pre-natal sonography, management and complications associated with this phenomenon.

Methods

A 27-year-old primigravida mother with MCDA twins was referred to the special care baby unit (SCBU) for incongruent newborn growth. Prior anomaly scanning demonstrating TTTS was managed with selective fetoscopic laser photocoagulation (SFLP) at 21 weeks. After elective caesarean section at 32+1 weeks, the donor twin birthweight was 0.8kg , the recipient twin was 1.05kg. Recipient twin had normal neonatal course in SCBU. Donor twin recieved transfusion of 20ml/kg of packed red blood cells showing improvement to 14.7g/dL from 8.8g/dL pre-transfusion in view of symptomatic anaemia. Both twins were discharged and are being followed up routinely in clinic. Consent was given by the mother to write this case.

Results

Antenatal anomaly scanning by skilled sonographers is vital in the diagnosis of twins and their complications, as other diagnostic tools such as nuchal translucency produce high false-positive rates. In multifetal pregnancies, prematurity (57%) is the most common risk factor with greater fetal discordance in growth predicting the greatest increase in fetal mortality. The use of twin pregnancy nomogram for predicting neonatal complications in selective small for gestational age neonates remains controversial in clinical practice. SFLP remains the gold standard of treatment in any abnormal vascular anastomosis, whilst high-intensity focused ultrasound is an emerging treatment with stronger outcomes seen in preliminary in-vivo studies.

Conclusions

Knowledge of multifetal pregnancies and the widening array of novel complications and therapies is vital for paediatricians given the increasing incidence nationally.

UTILITY OF THE EIGHT-HOUR MEDICAL REVIEW FOR SEPTIC RISK FACTORS IN NEONATES.

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Aims: The aim of this audit was to evaluate the performance of the local clinical practice guideline for management of neonates with risk factors for early-onset sepsis (EOS). E.g. GBS positive, pyrexia in labour etc. The focus of this audit was to determine how many neonates underwent eight-hour medical review and clinical examination over a specified period and if this review changed management.

Methods: In this retrospective cohort study the charts of 2403 infants born over a four-month period were reviewed. Any infant >35 weeks' gestation who was identified as requiring an eight-hour review was included. Those for whom the review was not completed or for whom a septic work-up was completed prior to the review were excluded. Basic demographic information, risk factors for EOS identified and timing of medical review were recorded. Whether the review was indicated and whether a change was made to management following the review were recorded.

Results: 201 infants were included of which 102 were male. The most common risk factor identified was prolonged rupture of membranes >18 hours (n=86). Of the 201 reviews carried out, 37 were not indicated and in 38 cases, it was unclear if the review was indicated due to the omission of detail regarding intrapartum antibiotic prophylaxis in the neonatal notes. There was no change to the management of 200 infants following medical review. One infant was observed for poor feeding following review but did not undergo septic work-up.

Conclusion: In this cohort of infants an eight-hour medical review by the on-call neonatal Senior House Officer did not change management. A significant limitation of this audit is the low incidence of EOS. As such it is difficult to establish if a medical review would be beneficial in early identification of an affected infant. Future re-audit is advised to examine this.

A NEWBORN WITH COPIOUS SECRETIONS : A CASE PRESENTATION

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Aims:

Tracheoesophageal is a common congenital anomaly of the respiratory tract, with an incidence of approximately 1 in 3500 to 1 in 4500 live births. Tracheoesophageal fistulas are classified according to their anatomic configuration and are usually associated with other anomalies in one-half of cases. This poster presentation is aimed to present a case of a new-born with profuse amounts of secretions and feeding difficulties in the first days of life which was found to have a tracheoesophageal fistula.

Methods:

This is a retrospective case presentation. Information was gathered from the patient's medical chart keeping in mind the general data protection regulations (GDPR) and after taking the appropriate consent from the patient's carers. The main reference for the poster presentation is UptoDate medical resource.

Result:

A brief poster presentation was compiled to present this case, elucidate other abnormalities associated with tracheoesophageal fistula and its general course of management.

Conclusion:

Tracheoesophageal fistula is a rather uncommon but nonetheless important differential diagnosis to be put in mind when managing babies with profuse secretions and feeding difficulties in the first days of life, especially those born to mothers with a history of polyhydramnios in antenatal scans.

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MATERNAL VISITATION WITHIN THE FIRST WEEK OF THE POSTNATAL PERIOD FOLLOWING NEONATAL ADMISSION TO PICU

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Aims
PICU in CHI at Crumlin receives a high number of neonatal admissions from all over Ireland annually. Barriers to timely maternal visiting may include prenatal detection of anomaly, mode of delivery, maternal illness, location of maternity hospital. Bonding with the newborn, participation in decision-making and time with their newborn before surgery may be negatively impacted. This is of particular concern if the outcome for the infant is poor within the first hours of admission. The study aimed to investigate when a newborn is visited by their mother and the factors influencing the first visit to PICU.

Methods
Utilising electronic records in the PICU setting, charts of all neonatal admissions for the years 2019 and 2020 were examined and the timing of first maternal visit recorded. Other demographics including source of admission, diagnosis of preterm anomaly, method of delivery, medical/surgical admission, discharge location and breastfeeding rates were documented.

Results
Between 1st Jan 2019 and 31st Dec 2020, 247 neonatal admissions to PICU were recorded. 198 (80%) were term gestation. 31% were born via emergency section and 1 neonate via EXIT procedure. 80 (32%) admissions came from Dublin maternity hospitals, with 18 (7%) from the wards of CHI at Crumlin. Within 24 hours of admission 181 (73%) neonates were visited by their mothers, 26 (10%) within 24-48 hours, 14 (6%) within 48-72 hours and 7 (3%) at >72 hours. Out of 195 babies who were taking PO feed and mode of feeding documented, 140 babies were breastfed (72%).

Conclusions
While early visitation and breastfeeding rates are >70%, it is important to remember that delay of the first visit of a mother to her newborn can negatively impact on bonding and feto-maternal wellbeing. Thus all efforts should be made to facilitate an ‘as normal as possible’ post partum period for a mother and her sick neonate.

REDUCTION IN NEONATAL RED BLOOD CELL USAGE OVER 10 YEARS IN IRELAND

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Background: The evidence for the benefits of red cell transfusions to treat anaemia in the Very Low Birth Weight (VLBW) population in the NICU has changed substantially in the past fifteen years with the publication of the large randomised PINT study (Premature Infants in Need of Transfusion). Even more recent evidence - the TOP (Transfusion of Preterms) and ETTNO (Effects of Transfusion Thresholds on Neurocognitive Outcomes) studies - provides further strong evidence that a lower transfusion threshold is safe both in the NICU and with regards neurodevelopmental outcome at two years corrected. Blood products in Ireland are provided by the Irish Blood Transfusion Service, and neonatal non-emergency small volume transfusions are provided through pedipacks, where an fresh adult unit of red cell concentrate is split, immediately prior to release from the IBTS.

Aim: Identify any change in pedipack release from the IBTS between 2011 and 2020.
Methods: This was a retrospective review of pedipack units released from the Irish Blood Transfusion Service (IBTS) between January 2011 and December 2020. Cases were identified on the IBTS system. National birth numbers were retrieved from the Central Statistics Office (CSO).

Results: Over the ten year period of this review there were 8,745 pedipacks released from the IBTS. In 2011 there were 1172 pedipacks released and in 2020 there were 634 pedipacks released. There has been a 45% reduction in the number of pedipacks released over the past ten years.
There has been a 25% reduction in the number of live births in Ireland over the past ten years.

Conclusion: There has been a substantial and significant reduction in neonatal red cell concentrate release from the IBTS, with the reduction in pedipack release being greater than the reduction in the birth rate.

NEONATAL OUTCOMES FOLLOWING PRETERM PREMATURE RUPTURE OF MEMBRANES: A RETROSPECTIVE COHORT STUDY

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Background:
Preterm premature rupture of membranes (PPROM) complicates <1% of all pregnancies but is associated with 40% of preterm deliveries. Mid trimester PPROM can lead to high perinatal mortality and neonatal morbidity rates. Neonatologists are often asked to prognosticate on neonatal outcomes following PPROM. Our objective was to establish, over a two year period, the natural history of PPROM in a neonatal tertiary centre. We aimed to provide contemporaneous information on our experience to aid clinicians counselling these women on foetal risks associated with PPROM.

Methods:
This was a retrospective, descriptive cohort study. All women who presented to the National Maternity Hospital between January 2018 and December 2019 with PPROM were included. PPROM was defined as the rupture of membranes prior to 37+0 weeks' gestation. Mid trimester PPROM was defined as the rupture of membranes prior to 28 weeks' gestation.

Results:
A total of 28 cases (58%) were categorised as mid trimester PPROM and 20 women (42%) delivered their infants before 28+0 weeks'. Oligohydraminos was identified in 18 cases (38%). Chorioamnionitis was clinically suspected in 11 cases (24%) and histologically confirmed in 34 (72%.). The average birth weight was 1.11kg. 44 infants (94%) required respiratory support in the delivery room.
On admission to NICU, 24 infants (52%) were managed with non-invasive ventilation and 17 (37%) were intubated & ventilated. Surfactant was administered to 16 (35%). 10 infants (22%) developed persistent pulmonary hypertension (PPHN). Air leak occurred in 4 (9%). 10 infants (22%) required inotropic support. Culture positive sepsis was confirmed in 4 cases (9%). An intraventricular haemorrhage was identified in 9 infants (21%), with 5 (12%) categorised as ≥ grade III. Periventricular leukomalacia was identified in 2 infants (5%). Most infants survived to discharge (79%).

Conclusion:
This study highlights the significant foetal risks associated with PPROM and provides useful data for pregnant women and their clinicians regarding these challenging cases.

MATERNAL COVID-19 MAY RESULT IN PRETERM BIRTHS? A STUDY AT WEXFORD GENERAL HOSPITAL

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Introduction: A special care baby unit (SCBU) is a specialist hospital ward for the care and treatment of newborn babies that are ill or premature. [1] In Wexford General Hospital neonates under 2.5kg or less than 35 weeks gestation requires admission to SCBU. [2] Some infants require transfer to tertiary neonatal intensive care unit (NICU). [3]
Aim: To compare admissions to SCBU from 1st of January through to 31st of July 2020 to the same period in 2021 and consider if the numbers support the hypothesis that Covid-19 may cause an increase in premature deliveries.
Methods: A record was kept of every admission to SCBU including neonates transferred to a tertiary centre. This record included gestational age, mode of delivery and interventions done in SBCU.
Results: There was an increase in neonates born before 28 weeks gestation from 1 (0.6% of total admissions) to 5 (2.74% of total admissions). Total number of admissions were almost the same in both periods 178 in 2020 and 182 in 2021 with a relative risk of 5.
There was a five-fold increase in babies born between 28 to 32 weeks of gestation from 2 (1.1%) to 10 (5.5%).
10 (5.49%) babies were born with a birth-weight less than 1.5 kg as compared to 0 (0%) in 2020.
14 babies required intubation and ventilation in the same period of 2021 as compare 4 in 2020.
Discussion: Studies have shown that maternal Covid-19 is a possible risk factor for premature labour. [4] Considering the increase in weekly cases from the first period in 2020 to the second period in 2021 [5] and the age group of 25-44 recorded the highest incidence of Covid-19 infection [6], this supports the hypothesis that maternal Covid-19 may cause premature labour. A focused study would be required, as this audit did not include information on maternal infection status.

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INCIDENTAL DIAGNOSIS OF POLYCYTHAEMA ON NEONATAL SCID SCREENING

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Aims:
Severe Combined Immunodeficiency Disease, specifically ADA-SCID, has an incidence of 1/1000 in the Travelling Community. SCID Screening is performed in this cohort using a neonatal full blood count (FBC) to evaluate for significant lymphopaenia (<1.5 x 10^9/L).
Incidental diagnoses of polycythaemia (haematocrit >0.65) were frequently identified in this cohort. Symptoms of polycythaemia can include respiratory distress, hypoglycaemia and a risk of hyperviscosity. The management of neonatal polycythaemia, particularly if asymptomatic, is controversial.
The aim of this project was to identify the incidence and management of polycythaemia in infants undergoing SCID screening.

Methods:
This was a retrospective chart review. Infants born between 1st July 2019 - 1st July 2020 with a haematocrit >0.65 were identified by the laboratory. Only infants >34 weeks with polycythaemia identified on SCID Screens were included in this analysis.

Results:
111 infants underwent SCID screens; 36 (32%) were polycythaemic. The median haematocrit was 0.68 (IQR 0.67 – 0.72). In 15 cases (42%), polycythaemia was documented and an FBC repeated. 8 (22%) received a fluid bolus and 7 (19%) were admitted to NICU for management of polycythaemia and four for other indications. 1 (3%) received a partial exchange transfusion. Symptoms potentially attributable to polycythaemia were rare; jaundice requiring phototherapy (n=1), respiratory support (n=1) and hypoglycaemia (n=1). 16 (44%) mothers smoked and 8 (23%) had diabetes. None of the 111 infants had significant lymphopenia.

Conclusion:
The incidence of polycythaemia in this cohort (32%) is higher than expected (1–5%). There was a high burden of additional testing and treatment, administered as a result of screening. Screening timing may have contributed (peripheral samples, median DOL 1); the use of cord samples may be an alternative. While early diagnosis of ADA-SCID is essential, staff and parental awareness of these incidental diagnoses and their management is necessary, as well as additional resources.

IMPACT OF EARLY ONSET SEPSIS CALCULATOR ON USE OF PROPHYLACTIC ANTIBIOTICS IN A REGIONAL SCBU – A PRE- POST STUDY

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Aims: A range of risk factors are associated with neonatal early onset sepsis (EOS) including: Group B Streptococcus carriage, Rupture of Membranes > 18 hours, and maternal fever >38 degrees. Prophylactic antibiotics reduce the incidence of EOS. A neonatal early onset sepsis calculator (NEOSC) has been validated both internationally1 and in an Irish Tertiary Neonatal unit2, to reduce antibiotic use in term infants by up to 50% with no increased incidence of sepsis.
The NEOSC was introduced in the maternity unit in Wexford General Hospital in December 2020. Prior to its introduction asymptomatic infants with risk factors for EOS were treated with prophylactic antibiotics. Following its introduction, asymptomatic infants were only treated with antibiotics if there was a calculated risk of EOS of >1/1,000. We report the impact of the NEOSC on admissions for prophylactic antibiotics in our unit using a pre- post study design.

Methods: The periods studied were January 1st to May 31st 2020 (pre) and 2021 (post). A review of the birth register and the SCBU admissions register was performed. Admissions for prophylactic antibiotics were only counted if no other reason for admission was documented. Ethical approval was obtained from the hospitals research ethics committee. Comparison of categorical data between the two periods was preformed using Chi-squared tests.

Results: 649 (2020) and 710 (2021) infants were delivered in the two periods. There was a total of 11 and 3 infants admitted for prophylactic antibiotics respectively. This equates to a 76% reduction in admissions for prophylactic antibiotics. The result is statistically significant (p=0.02).

Conclusions: This is the first report, to our knowledge of the impact of the NEOSC on SCBU admissions of asymptomatic infants for prophylactic antibiotics in an Irish regional unit. The results support the introduction of the calculator in other regional units.

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OUTCOMES OF THE TONGUE TIE ASSESSMENT CLINIC AT THE COOMBE WOMAN AND INFANTS UNIVERSITY HOSPITAL

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Aim:
To describe referrals, management, adherence to guidelines, and outcomes for patients attending the Tongue Tie Assessment Clinic (TTAC) at the Coombe Women and Infants University Hospital (CWIUH).

Methods:
All patients referred were triaged by telephone by a midwife/IBCLC. Those who required assessment were offered an appointment. All patient information was added to a database. Reason for referral, examination findings, management and outcome was recorded. A questionnaire was sent at 4-months to document feeding and clinical outcomes.

Results:
At total of 351 referrals were received from 02 April 2019 to 06 May 2021. 214 (57%) attended TTAC, 161 (42%) were referred for lactation support (68%) and 52 (32%) attended a private clinic. 72% of mothers reported pain with breastfeeding and 55% of neonates had a poor latch. The mean waiting time for the clinic was 7 days. 214 patients were seen in the clinic and 96% had a frenotomy.
Bleeding was the only complication - only 4% had 'some' bleeding. 76% of mothers reported immediate feeding improvement and 94% of mothers report pain relief. At the 4-month review, 70% of mothers continued to breastfeed.

Conclusion:
This study demonstrates that with an effective triage and lactation support system many tongue ties did not require frenotomy. However ankyloglossia is a source of pain when breastfeeding and it is essential to provide multidisciplinary, timely, affordable assessment and treatment. Frenotomy was a safe procedure and contributed to high breastfeeding rates.

AUDIT OF THE TIME INTERVAL BETWEEN BIRTH AND ADMINISTRATION OF VITAMIN K TO NEWBORNS IN UNIVERSITY HOSPITAL KERRY (UHK)

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Aim: To assess the compliance of the time interval between birth and administration of vitamin K to newborns against international standards in UHK.

Background: Haemorrhagic disease of the newborn is a bleeding disorder that manifests usually postpartum. It is referred to as vitamin-K deficiency bleeding (VKDB) when cause is exclusively due to vitamin-K deficiency. VKDB can be early, classic or late (1,2,3). It is estimated that without Vitamin-K prophylaxis there would be 10-20 cases of intracerebral haemorrhage annually and 4-6 babies could die. The Vitamin-K Summary of Product Characteristics and the BNFc recommend administration of 1mg intramuscular (IM) vitamin-K at birth or soon after birth. The Canadian Paediatric Society and the AAP recommends the routine administration to all newborns within the first **6hours** of life.

Method: A retrospective cohort study of all newborns-first quarter of 2021 in UHK. Reports using MN-CMS Business Objects: Delivery times for all babies born 01/01/2021–31/03/2021 and Vitamin-K administration time for corresponding newborns. Merged reports, data analysis carried out in Microsoft Excel using Pivot tables.

Result: Eligible number=341. 1-refusal. Total number=340. Refusal rate=0.29 %. Percentage of babies who received vitamin-K within 1,2,3,4,5, and 6hours are 17.6%,19%,29%,18.5%,10%,3.5% respectively. 97.8% received vitamin-K within 6hours and 2.1% over 6hours. 99% via IM route. 1% via oral route.

Conclusion: Result showed very poor compliance of 17.6% to the standard of administration within 1 hour of birth. High uptake at 6hours, short of desirable target. To reduce risk of VKDB, there should be a collective effort to achieve 100%-compliance.

Recommendation:

- The importance of Vitamin-K administration must be discussed at the booking clinic and information leaflet provided.
- Consent for Vitamin-K administration prior to delivery, booking clinic or at 30/32 week visit.
- EHR tick box within the MPage on MN-CMS once verbal consent has been obtained to prevent any delay in obtaining consent post delivery.
- Standardise practise across the South/Southwest hospital group to administer Vitamin-k in delivery room within 1 hour

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ANTI Wra POSITIVE AND Wra ANTIGEN- A RARE CAUSE OF SEVERE HAEMOLYTIC DISEASE OF NEWBORN IN AN IRISH BABY

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Aim: To assess, highlight and present rare but possible presentation of Wra blood group antigen, part of Diego blood group system as a rare cause of severe Haemolytic Disease of Newborn (HDN) and pathological jaundice in an Irish baby.

Background: Wra is a low frequency antigen and part of Diego blood group system. Presence in blood donors is approximately 0.1% however the corresponding antibody is much more prevalent. It can cause severe haemolytic Transfusion Reaction as well as HDN. The index case is the 1st case reported in the south/southWest group of hospitals in Ireland

Alloimmune HDN is caused by baby's rbcs destruction by maternal IgG-Antibodies. Primarily involves the major blood groups: Rhesus(Rh),A,B,AB,O. 44 Rh antigens, thirty-three total blood-group systems with >300-antigens, recognized by ISBT. Minor blood group incompatibilities (Kell,Duffy,MNS,P,Diego-systems) may give significant disease. Anti-D has reduced HDN mortality from 1.2 per 1000 (1970) -> 0.2 per 1000.

Method: Case report- Full term baby-boy of a G2P1 ARhD-negative, Antibody+ve-Irish mother, received Anti-D. Birth-weight-3.66kg, jaundiced at 3 hours of age, serum bilirubin in exchange level with low heamoglobulin.

Result: Baby's blood group-ARhD+ve, DCT-strongly +ve. Mother-ARhD-ve, initially thought to be rhesusisoimunization. Total/Direct bilirubin-173/13.7 and HB-14.7 at 3hours of age. Treated with quadruple-phototherapy, IVIG, IV-fluids, partial septic-screen and IV-Antibiotics. Improved, discharged on day-5. Readmitted in 2nd week of life with Hb-4.7gm/dl requiring O-ve rcc transfusion, serial monitoring of Hb: 10.1,9.9,7.9,8.5,7.5 at age of 2,3,4,5,6 weeks respectively. Improved to 9.8,12.5gm/dl at 2,6 months respectively. Further genotyping of parents revealed ORhD+ve,K-,Wra+,Wrb+ Mediterranean father (Wra/Wrb genotype) and ARhD-ve,C-,E-,c+,e+,K-,Wra-,Wrb+ Irish mother, with Anti-Wra detected in baby's eluate.

Conclusion:

- Anti-Wra+ve HDN babies should receive D-,C-,E-,K-,CMV-,red cells and platelets.
- Wra is rare but possible in an Irish baby, inherited through various alleles of the gene SLC4A1 located on chromosome 17.
- Haemolysis can be prolonged. Worst in the 2nd week of life in our index case
- It causes severe HDN and may be initially presumed rhesus isoimmunisation and kells+ve HDN.
- Accurate genotyping is essential for adequate counselling of patients.

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EVALUATION OF THE ROLE OF PERITONEAL DRAINAGE IN THE MANAGEMENT OF INTESTINAL PERFORATION

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Aim: To investigate the effectiveness of peritoneal drainage (PD) in the management of intestinal perforation secondary to necrotizing enterocolitis (NEC) and spontaneous intestinal perforation (SIP).
Methods: A retrospective review of all preterm infant (birthweight ≤1500g) who underwent surgical intervention (PD and/or laparotomy) for intestinal perforation between March 2010 and March 2020. The primary outcome was death at 90 days after primary surgical intervention. Secondary outcomes were the need for subsequent laparotomy after PD and time to full enteral feeding achieved (>120ml/kg/day).
Results: A total of 43 infants who underwent surgical intervention for intestinal perforation were included (19 (44%) with NEC and 24 (56%) with SIP). PD was more commonly placed as the initial surgical procedure for the management of SIP compared with NEC (23 (96%) vs 11 (58%), P=0.003). Mortality was greater for infants who were initially managed with PD [11 (32%)] compared with those who underwent primary laparotomy [2 (22%), P=0.5]. Among the 20 infants who were treated with PD only, mortality appears greater for those with underlying NEC compared with SIP, however, these differences were not significant: NEC 57% (4/7); SIP 39% (5/13); p=0.4. The mean (SD) number of days to achieve full enteral feeds following primary laparotomy (44 ±13) compared with primary PD (39 ±16), was similar between groups (P=0.5).
Conclusion: PD should be used as a stabilising procedure in very sick infants with intestinal perforation to allow systemic recovery. However, the initial surgical management of intestinal perforation is more often according to underlying pathology. Regardless of the pathology, the majority of infants with intestinal perforation undergo laparotomy.

ARE ADMISSIONS IN THE NEONATOLOGY DEPARTMENT IN CHILDREN HEALTH IRELAND (CHI)- CRUMLIN FOLLOWING ADMISSION CRITERIA? SIX MONTHS OVERVIEW.

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Aim:
To determine if the neonatal admissions follow the admission criteria for the Neonatology Department in CHI-Crumlin.
Methods:
Review neonatal admissions (inpatient / day case) in the neonatology department in CHI-Crumlin over a period of six months. Inclusion criteria: All neonatal admissions over 6 months, from 1/1/2019 to 30/6/2019. Patient admission list was collected from HIPE and the admission office in CHI- Crumlin.
Population sample: 95 patients.
Parameters included: Admission date, age on admission, gestational Age, diagnosis, discharge date, discharge outcome, admission type (inpatient/ day case).
Results:
The total number of admissions was 95 cases. 20% (n=19) of cases were 0-7 days old, 42% (n=40) were 0-28 days old, all of them were inpatient cases. However, 44% (n=42) patients were more than three months old on admission, cases were almost equally divided between inpatient and day cases, with nearly 50% (n=47) being more than 37 weeks gestational age. Patients were equally divided between term & preterm babies.
10 entries (10.5%) did not have discharge outcomes recorded. Of the known outcome, 90% (n=75) were discharged home, 3.5% (n=3) deceased, 3.5% (n=3) transferred to another hospital and 2 patients were still inpatient at the time of data collection.
32% discharged the same day (day case), while 30% (n=28) stayed more than one week, with 9% being inpatient for more than 29 days.
Conclusions:
The majority of inpatient admissions fulfilled the criteria for neonatal admission, as most of the patients who were admitted were more than 7 days old and were either preterm or transferred from other hospitals. 30% of patients were inpatient for more than one week, with 5% of them with hospital stay more than 3 weeks.

SAVING NICU NURSES TIME: NEW POINT OF CARE GLUCOSE MACHINES REDUCE TIME TO TEST BY 80%.

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Aim:
Cotside determination of blood glucose levels facilitates immediate and efficacious clinical decision making in the setting of neonatal hypoglycaemia. We sought to compare the performance of two point of care (POC) glucose machines in a tertiary center neonatal intensive care unit (NICU).

Method:
Clinically indicated POC glucose levels were assessed using both the Accu-Chek Inform II (Roche Diagnostics UK) and the HemoCue Glucose 201 (HemoCue AB Sweden). A retrospective comparative review was undertaken. Blood samples were taken simultaneously from 50 infants (both term and pre-term). Both arterial and capillary blood were sampled. Each assay was timed from the initiation of machine calibration to final determination of a result. Guidance from the manufacturers was strictly adhered to. Staff satisfaction was assessed using free-form text boxes in a research notebook beside each machine. Using the Jarque Bera test the data were found to be normally distributed. A paired t-test was used to determine the glycaemic averages from the samples.
<ins cite="mailto:Miriam%20Smyth" datetime="2021-10-04T20:44"> </ins>

Results:
The average HemoCue result was 3.63mmmol/L and the average Accu-Chek was 4.07mmol/L. The difference between the two was statistically significant (p-value 0.00046). The average time from calibration to result using the Hemocue glucose monitor was 30.01 seconds whereas a result was determined in 4.73 seconds using the Accu-Check glucose monitor. Both nursing and medical staff in the NICU reported a preference for the Accu-Check monitor for its ease of use and efficacy. The neonatal staff noted a significant improvement in time management with this glucose monitor.

Conclusion:
Hypoglycaemic emergencies are a common, time sensitive presentation in the neonate. The speed of the Accu-Chek will ensure that babies presenting with hypoglycaemia receive appropriate treatment in a timely manner. Innovative solutions to enhance productivity in the NICU environment are welcome additions to clinical care facilitating improved care provision and fostering professional development.

Rise of the variants; Is it causing increased transplacental transmission of SARS-CoV ?

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Aims: In utero transmission of SARS-CoV-2 is a highly debatable topic. We present a case of a preterm infant born to a covid positive mother who tested positive within 90 minutes of birth without the possibility of external contamination.
Methods: This is a case report of a SARS-CoV-2 positive mother who delivered a 31-week-old baby via emergency section. All staff present were in full PPE and the mother had a surgical face mask on. The baby was shown briefly to the mother from 2 feet away, there was no direct contact. Due to his prematurity, he was taken to SCBU in a resuscitator directly into a negative pressure room. He had no contact with any other family members.
Results: The neonates covid swab at 90 minutes of life was positive via RT-PCR. His RT-PCR Ct was 20.2**.** The mothers RT-PCR Ct was 27.9. The low Ct values demonstrate increased viral shedding.
Conclusion: We believe that this is a probable case of congenital SARS-CoV-2 infection. This is supported by the following: the neonate was not in contact with vaginal secretions and there was no physical contact with the mother prior to collection of the neonate's swab making respiratory transmission very unlikely. All healthcare workers involved were in full PPE ruling out horizontal transmission.
Classification for the definition of SARS-CoV-2 infection in pregnant women and neonates is available[2]. Based on this, our case is deemed as probable transmission. The Delta variant has been associated with greater transmissibility and higher viral RNA loads. This may cause increased numbers of transplacental transmission. Our case is similiar to international findings.
Ongoing surveillance and research are needed to assess effects of infections in early pregnancy and longer-term outcomes of exposed infants. Testing should include PCR in umbilical cord/blood/amniotic fluid (if rupture is present) to differentiate congenital and postpartum SARS-CoV-2 infection in neonates.

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PLACENTAL SWAB IN SUPPORTING DIAGNOSIS OF VERTICAL TRANSMISSION IN SARS-COV-2 POSITIVE MOTHERS.

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Aims: To review the evidence regarding 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. 20 papers were selected.

Results: 183 COVID-19 positive pregnant women were identified whose 184 placentas and 185 neonates were also analysed by RT-PCR or immunohistochemistry and/or in situ hybridization for the presence of SARS-CoV-2 (one case of monochorionic diamniotic twins and one case of dichorionic diamniotic twins). 183 liveborn neonates were successfully delivered primarily via caesarean section (99%). 2 mothers did not deliver liveborn infants due to severe preeclampsia resulting in a termination of pregnancy and a miscarriage, both occurring in the second trimester. 9 neonates tested positive for SARS-CoV-2 (5%). We report no neonatal mortality after live birth and no maternal mortality. 17 placentas tested positive for SARS-CoV-2 out of a total of 184 tested (9%). Of these 17, 7 cases of SARS-CoV-2 were identified in the maternal, neonatal and placental tissue.

Conclusion: There is no concrete evidence of vertical transmission occurring between mother and infant. We propose 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.

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CRY ME A RIVER - THE REALITY OF RAISING AN INFANT WITH COLITIS

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Aims: The aim of this literature review is to look upon allergic colitis, its origin and explore its relationship towards infantile colic associated with parental stress and anxiety, while infants are exhibiting this colic pain. In addition, several allergens and conditions, such as cow's milk protein intolerance (CMPI) were explored to examine the association between infantile colitis and their presence in the infant or mother.

Methods: A literature review was conducted via PubMed, Sciencedirect, Medline and Google Scholar using the following search terms ''allergic colitis'', ''infant colitis'', ''infant baby colic'', ''parental stress'', ''parental anxiety'', ''maternal stress'', ''maternal anxiety'' and ''cow's milk protein intolerance''.

Results: This review revealed varying degrees of association between infantile colitis and CMPI, which also correlated to the level of stress and anxiety among parents of these infants. Several referenced papers discussed the role of CMPI in the pathogenesis of colitis, while others explored the effect of an infant's colic symptoms on its parents.

Conclusion: This review highlights an association between infantile colitis and the stress experienced by parents whose infants are exhibiting the symptoms of this condition. CMPI and other food intolerances were implicated in a number of studies as being potential causative agents, and this warrants further future investigation through a well-designed study to explore this link in more detail.

OPTIMISING TREATMENT OF NEONATAL HYPOGLYCAEMIA IN NOTHERN IRELAND

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Background:
Hypoglycaemia is recognised as being a leading cause of admission to neonatal units in term babies. Neonatal hypoglycaemia can potentially cause seizures, brain injury and ultimately a poor neurodevelopment outcome. Optimal glucose management in the newborn can therefore prevent harm, avoid mother-baby separation, reduce neonatal unit admissions and lessen cost to the NHS.

Aims:
To seek areas for improvement in the recognition and management of neonatal hypoglycaemia on the post-natal wards.
To initiate change via educational sessions for the multi-disciplinary team.
To introduce midwifery prescribing of hypoglycaemia treatment.

Method:
Over a 6-week period, 21 babies were prospectively identified as being at risk of hypoglycaemia and commenced blood sugar monitoring. Medical staff were contacted during any blood sugar <2.6mmol/l and collected data on the episode, which was then compared to the regional guideline of Northern Ireland.

Results:
Several areas for improvement were identified. Through regular education meetings, simulation teaching and safety brief reminders we have ensured better understanding of neonatal hypoglycaemia. We introduced midwifery prescribing of oral dextrose solution and increased staff awareness through visual prompts in all clinical areas. We included teaching on hypoglycaemia for junior medical staff inductions. Early repeat data collection has shown 87% reduction in babies requiring review by paediatric doctor and now 71% of babies appropriately receiving dextrose gel and follow up feed. Time to initial blood sugar check has reduced from 5h to 4h15mins. Average time to treat hypoglycaemia has reduced from 28 minutes to 12 minutes.

Conclusion:
This project highlights the importance of timely management of neonatal hypoglycaemia. We are extending data collection across all neonatal units in Northern Ireland with a view to standardising care across the country. We intend to to use the information collated to contribute to a new regional guideline on neonatal hypoglycaemia.

EXPLORATION OF PAEDIATRIC MORTALITY IN THE MIDWEST REGION OF IRELAND

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Aim

The death of a child (sudden or expected) is a tragedy for the parents, the extended family and the community.[1] In Ireland, there are currently little data readily available on the circumstances and causes of death in children after the age of one year.[2]
The aim of this study was to collate data available on the demographics and causes of paediatric mortality in the MidWest region of Ireland over a six-year period.

Methods

Ethical approval was obtained from the Research Ethics Committee of the University Limerick Hospital Group. Data on children aged 0 to 18 who had passed away between 01/01/2015 to 31/12/2020 were collated from multiple sources, including the regional mortuary records, records kept by the CNC for children with life-limiting conditions and the remembrance services.

Results

A total of 160 children were identified as having died in the region during the timeframe specified, of which 54% were male. Neonatal deaths accounted for 58 cases (21 IUD/stillbirths), with 102 occurring post-neonatal discharge. Mean age of the cohort who died post-natally was 7.5±6.7 years, with 41 children dying at home, 33 in the ED and 18 in a ward/ICU setting. “Anticipated”deaths comprised 46% (n=47), with specialist CNC involvement. Post-mortem examinations were carried out in all neonatal deaths and in 52% of post-natal deaths. Most prevalent causes of death in the community were neuro-degenerative conditions, SIDS, congenital disorders, suicide, trauma and oncological disease. Overall, a cause of death was not available for 26 cases (16%); overall mortality rate was 0.13%, with under-5 mortality calculated at 4.8 per 1,000 live births (national rate 3.3 in 2019).

Conclusions

Gathering data regarding paediatric mortality remains quite challenging. We support the institution of a National Paediatric Mortality Registry to streamline data collection and identify potentially modifiable causes of death in the paediatric population.

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RENAL FUNCTION IN CHILDREN WITH SEVERE NEUROLOGICAL IMPAIRMENT

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Aim

Children with Severe Neurological Impairment (SNI) are at increased risk of dysfunction in several organ systems, including the genitourinary tract, which may, in turn, lead to renal dysfunction. There are issues with the use of creatinine to monitor renal function because there must be a significant decline in glomerular filtration rate (GFR) before increases in creatinine are seen. In children with neurodisability, early renal dysfunction may be more difficult to detect because a reduction in creatinine at baseline may conceal any decrease in GFR. We aimed to assess biochemical markers of renal function in children with SNI, including Cystatin C, which is independent of muscle mass, and compare with controls.

Methods

Children with SNI (n=23) and controls (n=12) were recruited from CHI at Tallaght. Urea, creatinine, and electrolytes were gathered as part of routine clinical monitoring. Serum was isolated from a separate sample of blood for subsequent analysis of Cystatin C by enzyme linked immunosorbent assay (ELISA).

Results

Sodium, potassium, and urea values were similar between the groups with no significant differences seen ($p=0.81$, $p=0.75$, and $p=0.82$ respectively). Creatinine was significantly lower in the children with SNI than in controls ($p=0.04$). There was no difference in Cystatin C in controls compared to children with SNI ($p=0.08$).

Conclusion

Children with SNI have lower creatinine levels than controls, consistent with existing literature. It may be more reassuring that there was no difference in Cystatin C between the groups. However, estimated GFR calculation is preferable to isolated biochemical monitoring. Existing formulas for eGFR may not be suitable for children with SNI as they are based on average anthropometric measures or creatinine values derived from the general population. The development of such a formula to facilitate accurate monitoring of renal function for children with neurodisability would be useful in clinical practice.

THE PSYCHOLOGICAL IMPACT OF SUDDEN TRAUMATIC BEREAVEMENT CAUSES METABOLIC DECOMPENSATION IN SISTERS WITH MSUD

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Background

Maple syrup urine disease (MSUD) is a defect of the branched-chain alpha-ketoacid dehydrogenase complex, which is responsible for the breakdown of branched-chain amino acids (BCAAs) leucine, isoleucine and valine. Treatment includes dietary restriction of BCAAs, with good outcomes if management is initiated early.
The aim is to describe a sibship pair, members of the travelling community, diagnosed with MSUD on newborn screening; who experienced severe metabolic decompensation in the immediate aftermath of the death of a much loved young relative.

Methods

We describe the clinical course of sibling X and sibling Y who both had an inpatient admission in the week following a traumatic bereavement.

Results

Sibling X, age 10, was admitted following a few episodes of vomiting at home. Her clinical examination was normal and she displayed no signs of infection. Her leucine level was elevated at 1381.
Sibling Y, age 14, presented to the department two days after sibling X. She initially presented as a social admission, but on arrival had one vomit. Amino acid bloods were sent, but while awaiting these results her routine leucine level from the previous day was reported as 1022. Both siblings were managed with their unwell regimen – zero exchanges, 120% maintenance fluids and 20% lipid infusion. Both levels corrected to normal within three days.

Sibling X presented to the hospital three days after the death of their cousin in a road traffic accident. Sibling Y presented the evening of his funeral. Family and nomadism are core features of culture in the travelling community and this event posed significant stress on a tight-knit family.

Conclusion

This case outlines two patients with a complex metabolic condition and displays the important connection between physical and emotional well-being. Both patients presented with a destabilised chronic illness despite full compliance to treatment and the absence of intercurrent illnesses.

'P.S.' I Love You: Introduction of a Psychological Safety initiative to Temple Street ED

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Aims: Psychological safety (PS) is the shared belief that the workplace is a safe place to speak up, with ideas, questions, or concerns. Research in the healthcare setting has found PS to be a crucial element in optimising team performance (1). Using a validated tool, we aimed to increase PS levels >75% in our department within 6 months.

Methods: A validated survey (2) was used to measure baseline PS levels. An MDT of PS Champions within the department was assembled. This team devised a series of interventions to increase levels of staff PS;

1. PS Week (in March 2021). Featuring daily 'Liberating Structures' workshops
2. An electronic Learning from Excellence (LfE) reporting system was launched. This enables staff to report excellent performance amongst colleagues.
3. A 'PS Minute' was introduced at the twice-daily staff huddles. A pack of cards were created with one 'pearl' about PS on each card.
4. A PS communication board was installed to collect staff feedback and ideas.

Results: The pre-intervention PS survey reported a mean score of 51%. The repeat survey was launched in October 2021 and results are awaited. The PS Minute continues to feature in daily staff huddles 6 months after implementation. The LfE reporting system was launched in March 2021, with over 65 Excellence reports issued by staff to date.

Conclusions: Staff engagement in the initiative has been strong, with positive anecdotal feedback to date. The results of the repeat survey are awaited. Future avenues to expand the initiative include;
1. PS Week will recur 6-monthly, incorporating feedback from previous iterations
2. Using the LfE system to target specific themes for improvement (e.g. workplace civility)
3. Incorporating staff ideas from communication board
4. Sharing learning points across the Children's Health Ireland network

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Praise You Like I Should: Introduction of Learning from Excellence (LfE) to Temple Street PICU

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Aims: Performance assessment in healthcare traditionally focuses on identifying and mitigating errors. Recognition of excellence provides an opportunity for improving individual wellbeing and organisatonal performance. We introduced an Excellence Reporting tool ('Learning from Excellence'/LfE) to achieve 4 interdependent aims; improving understanding of 'work as done', identifying what staff consider excellent/important, boosting staff morale, and promoting best practice.

Methods: LfE champions from all sectors of our PICU were assembled. A baseline survey assessing staff morale was disseminated. The champions designed QR code cards that allow staff to submit LfE reports electronically. A copy of each report is stored centrally by the champions, and a copy is forwarded to the recipient. The champions analyse reports to look for emerging patterns and themes. Reports are discussed at weekly staff Safety Pause meetings. An LfE poster board provides further opportunity for exploring reports. A repeat survey was conducted 6 months after implementation.

Results: 103 LfE reports have been issued over 8 months. Thematic analysis suggests a balanced proportion of technical and non-technical themes. LfE reports have been discussed at every Safety Pause meeting, where learning points are explored with all staff. 82 and 49 PICU staff completed the baseline and follow up surveys, respectively. Perception that recognition of excellence is good or very good increased from 36% (24/67)to 73% (36/49). Staff reporting receiving some form of positive feedback in preceding months increased from 54% (36/67) to 71% (35/49). Perception that staff morale is good or excellent increased from 27% (17/63) to 59% (29/49). 98% (48/49) feel that the LfE initiative has a positive impact on our PICU.

Conclusions: LfE complements existing incident reporting structures to improve knowledge of departmental workflow. Additionally, it can improve staff morale and to encourage best practice. We now aim to use LfE to target a specific theme e.g. workplace civilty.

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EOSINOPHILIC OESOPHAGITIS IN A CHILD UNDERGOING PEANUT ORAL IMMUNOTHERAPY – A CASE REPORT

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Aim: Discuss a case of eosinophilic oesophagitis occurring in a 13 year old boy undergoing immunotherapy for peanut allergy.

Method: Review of case files and online hospital data regarding the patient's history.

Results: The patient is a 13 year old boy with a history of anaphylactic allergy to peanut from nine months of age. Following first exposure to peanut there were no accidental exposures and adrenaline auto-injector was never required. He commenced oral immunotherapy aged nine years and successfully reached maintenance dose therapy without adverse effect during peanut test sampling.
Oral immunotherapy involves controlled administration of allergens over time. Exposure to the oral allergen in a larger dose is then attempted following months of gradual up-titration of immunotherapy dose. This therapy proved successful for the duration the patient was receiving it.
The patient had an acute episode of symptoms of food impaction in January 2021, after 39 months of immunotherapy. Following OGD and histology results, it was revealed he had eosinophilic oesophagitis (EOE). EOE is a chronic inflammatory disease which is immune/antigen mediated. It involves significant eosinophilic infiltration of oesophageal mucosa, as well as mast cells and basophils leading to progressive dysfunction of the oesophagus. Paediatric presentation includes feeding difficulties, reflux symptoms, and potential food impaction. Diagnosis is achieved via oesophageal biopsy and visualisation of >15 eosinophils per high powered field.
While EOE is associated with concomitant allergic disorders, in this case it presented with acute symptoms of food impaction in a child who had an entirely peanut avoidant diet for over 12 years, excepting oral immunotherapy.

Conclusion: The role of immunotherapy is considered in this case report which describes the development of EOE in a child who was adherent to a strict peanut avoidant diet. This report adds to a growing discussion around a potential link between the development of EOE and oral immunotherapy in allergy treatment.

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SUCCESSFUL DELIVERY OF MRNA COVID-19 VACCINE AT CHI TO HIGH-RISK CHILDREN AGED 12+ WITH A HISTORY OF IMMEDIATE REACTION TO POLYETHENE GLYCOL (PEG)

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Aim

The underlying mechanism for anaphylactic reactions to mRNA based COVID-19 vaccines remains unclear but may be related to the excipient polyethylene glycol (PEG)[1]. The HSE COVID-19 immunisation guidelines list "anaphylaxis after a medication that contained PEG" as a precaution[2]. In July 2021, the National Immunisation Advisory Committee (NIAC) issued recommendations that 12-15yr olds be offered an mRNA COVID-19 vaccine[3]. Children with a history of allergic reactions to PEG-asparaginase presented with a theoretical increased risk of anaphylaxis. Administration of viral vector COVID-19 vaccines were not an option. The aim of our project was to provide a safe environment for delivery of the PEG containing Comirnaty® (Pfizer/BioNTech) vaccine to high risk children aged 12+yrs with a history of previous allergic reaction to a PEG containing medication.

Methods

Patients of CHI, with a history of an immediate reaction to PEG-asparaginase during treatment for a haematological malignancy were identified by the CHI Haematology team, with 1 patient referred from the City-West Vaccination centre. CHI, an established COVID-19 vaccine centre, arranged 2 vaccine clinics, 4wks apart. The vaccines were administered by registered vaccinators. All were observed for one hour post dose 1 and 30mins post dose 2. The allergy team were in attendance throughout. CHI anaesthetic staff were aware of the clinic.

Results

10 children age range 12-17yrs were identified and vaccinated. 8 attended the first vaccine clinic on 02/09/21 and received their second vaccine on 30/09/2021. 2 received their first vaccine on 30/09/2021. No immediate adverse reactions occurred.

Conclusions

It is imperative that vaccination is not withheld from vulnerable populations due to theoretical risks, but that safe environments are provided for their administration. There is still much to be understood regarding anaphylaxis to COVID-19 mRNA vaccines. This successful outcome adds to the small but growing international body of evidence[4].

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EPIDEMIOLOGY OF COMMON ALLERGY PRESENTATIONS TO THE PAEDIATRIC EMERGENCY CARE UNIT AT CHI TALLAGHT

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BACKGROUND:
Management of allergies is becoming an increasing burden in Ireland with up 4% of Irish children now suffering from a food allergy (1). The emergency department is often the first point of contact for undifferentiated allergic reactions and important for short and long term management.
AIMS:
The study aim was to understand and identify common allergens presenting to our department.
METHODS:
Our retrospective audit looked at paediatric patients presenting to the emergency care unit with allergy as the presenting complaint or diagnosis from 1st March 2021 until the 30th September 2021. The electronic records were accessed through hospital software.
RESULTS:
There were 79 patients presenting with allergy. 3 patients were excluded due to incorrect clinical labelling, leaving 76 eligible . The median age was 3 years. 50% of patients were male and 50% female. 28% of patients had other known allergens, 44% a documented history of atopy and 39% had eczema. 35% of patients had a documented family history of allergy. 8% of presentations (N=6) were with suspected anaphylactoid reactions. The most common symptoms included rash (70%), eye swelling (26%), lip swelling (23%) and gastrointestinal symptoms (11%). 70% of presentations were a result of suspected food allergen (N=53). 18% of offending agents were environmental, 5% medication, 4% presentations were thought to be viral illness related and 3% unknown. The most common food allergens were tree nuts representing 15 of the 53 (28%) food allergens, peanuts 12 (22%) and eggs 8 (15%). There were 2 suspected shellfish allergies and 1 suspected fish. 73 of reactions were likely IgE, 2 non IgE and 1 serum sickness.
CONCLUSION:
The majority of allergy presentations to our emergency care unit were likely related to food allergens. Nuts including peanuts and tree-nuts appear to account for a large portion of food allergens (50%) and indicative of the more severe symptoms experienced in these cases.

1.) Irish Food Allergy Network (IFAN), Online publication, Accessed from http://ifan.ie/childcare-schools, Sept 2021

THE TREATMENT AND OUTCOMES OF PATIENTS PRESENTING WITH ALLERGY TO THE PAEDIATRIC EMERGENCY CARE UNIT AT CHI TALLAGHT

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BACKGROUND:
Paediatric allergies commonly present to the emergency department, requiring varying treatments. Despite this, few studies have evaluated the outcome of allergy presentations to the emergency department (1) and most existing literature focuses on anaphylaxis outcomes (2). Allergic reactions commonly present to the emergency department which can influence ongoing management.
AIMS:
The aim of our study was to evaluate treatment, outcomes and follow-up of patients presenting with allergy to the emergency care unit. This audit was undertaken as part of an ongoing quality improvement project.
METHODS:
A retrospective chart audit focusing on clinically confirmed allergy diagnosis to the department from 1st March 2021 to 30th September 2021. Patient records were accessed electronically through local software.
RESULTS:
There was 76 eligible patients included. The median age of presentation was 3. The patients were 50% male and 50% female. The common allergens included food (70%), environmental (18%) and other (12%). 6 presentations were caused by anaphylaxis (8%). 1 patient presented with serum sickness. 87% required acute treatment with antihistamines, 12% with steroids and 7% with adrenaline. 1 patient requiried admission to hospital (1%), with serum sickness. 26% were prescribed or already had discharge adrenaline autoinjectors. 74% were prescribed a discharge antihistamine and 7% were discharged on oral steroids. Advice resources were documented in 23%. 39% of patients were newly referred to an allergist, while 11% were known allergy patients. 11% were referred for GP follow up and 39% had no follow up arranged. In 22% of cases exclusion or reintroduction advice was formally documented.
CONCLUSION:
Most acute allergy presentations were managed in the department with a 1% admission rate. A large proportion of treatments involved only antihistamines or no treatment at all. The long term advice is not well documented, with specific resources and avoidance advice rarely documented. This study highlights the importance of adherence to allergy guidelines and useful resources.

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Pulmonary capillaritis through the eyes of a parent

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Aims: This narrative aims to raise awareness of the lived experience of pulmonary capillaritis and the challenges experienced by a person living with this alveolar haemorrhaging syndrome as seen through the eyes of a mother. The purpose is to share the whole person impact of this disease, the successes and disappointments of the disease and treatment journey as seen through the lens of a parent. Thereby increasing awareness both of this potentially devastating, life-threatening disease and increasing hope that the potentially fatal outcome is modifiable with appropriate intervention.

Methods: This is a narrative of the lived experience of a mother, a doctor, of the presenting features, recurrences and treatments. A parental view of the impact of the disease on her daughter and the lived experience of having an alveolar haemorrhaging syndrome will be shared.

Results: The disease journey, including the diagnosis of an ultra-rare disease and subsequent management, is extremely important as a family living with a disease of this complexity. The diagnostic challenges, negotiating the paucity of evidence to guide treatment, disbelief and also positive healthcare engagements, treatment successes and the impact on school were key parts of the lived experience.

Conclusion: Pulmonary capillaritis is a potentially fatal, ultra-rare disease with associated morbidity. As a parent, I believe that both national and international awareness and collaboration is needed alongside coproduction with patients and families who have lived experience of pulmonary capillaritis to enhance outcomes for patients living with this disease in terms of mortality, morbidity and quality of life. Communication, effective listening and an openness to collaboration with patients and families will hopefully enhance the disease journey for patients, families and clinicians.

A CASE OF FAMILIAL PHAEOCHROMOCYTOMA-PARAGANGLIOMA SYNDROME SECONDARY TO MONOALLELIC PATHOGENIC SDHB VARIANT

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Background

Phaeochromocytomas (PCC) and paragangliomas (PGL) are neuroendocrine tumours arising from chromaffin cells. Sympathetic PGLs cause catecholamine excess; parasympathetic PGLs are most often non-secretory. Incidence in the paediatric population is rare at 0.2-0.5/1,000,000 [1]. Up to 50-70% of paediatric presentations have germline mutations in one of several susceptibility genes, which may be hereditary or associated with a genetic syndrome[2].

Case Report

We present the case of a previously well 10 year-old girl with a 6 month history episodic abdominal pain and headaches. Headaches were triggered by exertion and accompanied on occasion by vomiting and pallor. She did report episodes of diaphoresis but denied palpitations, diarrhoea, or flushing. Examination was unremarkable aside from mild tachycardia and she was normotensive. Family history was significant for a paternal PCC 10 years prior. He underwent surgical resection without further imaging and genetic testing had not been pursued. Investigations revealed elevated plasma and urinary catecholamines and metanephrines. CT localised a suprarenal mass which was excised surgically. Preoperatively, she was treated with sequential alpha-adrenergic blockade followed by beta to reduce intraoperative blood pressure fluctuation due to tumour manipulation. Subsequent histology confirmed a PGL. Postoperatively she recovered well with symptom resolution. Targeted sanger sequencing identified a heterozygous SDHB missense variant. Monoallelic pathogenic SDHB variants are well described and cause paraganglioma-phaeochromocytoma syndrome which has an autosomal dominant pattern of inheritance[3]. Family screening was performed confirming an SDHB mutation in the patient's father and 12 year-old brother. Subsequent surveillance, as advised by the genetics team, involves annual 24-hour urine collection and abdominal MRI with MRI head and neck screening from 20 years of age.

Discussion

This case highlights the importance of determining the genetic aetiology in children presenting with PCC/PGL. This allows for gene-specific surveillance and identification of at-risk family members. Lifelong follow-up and periodic surveillance are essential in patients with SDHB mutations and can improve outcomes through early detection of tumour recurrence.

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NOT ANOTHER MIGRAINE!

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The international headache society revised the nomenclature of ophthalmoplegic migraine (OM) in 2018, replacing with the term *recurrent painful ophthalmoplegic neuropathy* (RPON)(ICHD-3, 2018). This is rare cause of painful opthalmoplegia. We present a case that demonstrates why the new terminology is relevant, and clues to diagnosis.

An 11 year old girl presented with a 5 day history of right sided moderate headache and a sub-acute right sided ptosis and diplopia. She had a history (2 years) of episodic (right) frontal headache. On examination, there was complete ptosis and limited extraocular movement consistent with a right oculomotor palsy with pupil sparing. MRI brain including angiogram and contrast, needed careful review and clinical correlation as a focal enhancing 3mm bulbous expansion of the right oculmotor nerve (at the brainstem) was only seen on 1 MRI acquisition (the post-contrast T1 fat-saturation). Investigations excluded vascular, malignant, infectious and other neuro-inflammatory conditions. Pulsed methylprednisolone, and tapering oral prednisolone led to complete clinical and radiological resolution within weeks, and months respectively.

In RPON, the ipsilateral headache is not frequently migrainous (33%) and ophthalmoplegia onset is often after headache onset, and persists beyond headache resolution. Involvement of the IVth, VIth and/or IIIrd cranial nerve may also occur. Orbital, parasellar and posterior fossa lesions need to be excluded. Corticosteroids are beneficial. Similar clinical and MRI findings have been described as oculomotor schwanomma, however tissue diagnosis is often not pursued due to the risk of operating in this area. This case demonstrates why the new terminology is relevant, however our understanding of this condition is not complete. MRI imaging of cranial neuropathy requires fine cuts (contrast and fat-suppression) of the path of the affected nerve in order not to miss this entity, and guide management and prognosis. Recurrent attacks are possible.

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BRANDS OF ADRENALINE AUTO INJECTOR IN IRELAND: WHAT BRANDS DO CAREGIVERS USE AND ARE THEY ADEQUATELY TRAINED IN THEIR ADMINISTRATION?

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Aim: To determine which out of the three main brands of adrenaline auto injector (AAI) available in Ireland are used by caregivers and to evalute the prevelance of switching brands of AAI among caregivers while exploring the reasons for switching and what brands of AAI caregivers have received administration training in.

Method: Online surveys were distributed to a convenience sample of 500 parents/caregivers, all of whom have children prescribed with an AAI attending the paediatric allergy service in Cork University Hospital.

Results: 114 replies to the survey were received. 70.2% of those surveyed carried an Epipen®, while 15.8% carried Jext® and 9.6% carried Anapen®. No caregiver carried an Emerade® AAI. 50 (43.9%) of those surveyed had switched between brands of AAI at least once, with the most common reason being that this was due to their usual brand not being available at their pharmacy. 85 (74.5%) caregivers had only received training in one brand of AAI, with only 9 stating they had received training in all 3 brands available in Ireland. 70% (35) of those who had switched brands of AAI did not receive training in the administration of the new AAI.

Conclusion: Epipen® appears to be the AAI most commonly carried by caregivers of children with allergies. Switching between devices is a common practice with almost half of those surveyed having switched brands at least once. However, a large proportion of these caregivers were not trained in this new brand of AAI when they switched brands, with only a small number having been trained in all the available brands in Ireland. Further evaluation should be carried out to assess correct administration of different brands of AAI and correct administration by caregivers before and after receiving AAI administration training.

AUDIT OF SLEEP PATHWAY FOR PRADER-WILLI SYNDROME INFANTS COMMENCING GROWTH HORMONE THERAPY

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Aims: Infants with Prader-Willi Syndrome (PWS) require growth hormone therapy as part of their standard of care. Current guidelines recommend at least two sleep studies- the first prior to commencement of growth hormone and the second within three months of commencing therapy. A Prader-Willi Syndrome Sleep Pathway was introduced at our centre to ensure appropriate screening and treatment of this cohort of patients.

Methods: A retrospective chart review was performed of the 12 infants referred to our service between May 2019 and June 2020. Polysomnography (PSG) data from pre- and post-growth hormone studies was analysed along with clinical outcomes and non-invasive ventilation requirements.

Results: Initial PSG was performed at a mean age of 9 months (range 3-12) and showed a mean obstructive apnoea-hypopnoea index (OAHI) of 5.3/hour (0-15) and mean central apnoea index (CAI) of 2.9/hour (0.5-6). 3 infants were initiated on CPAP prior to growth hormone commencement. Post-growth hormone PSG was performed at a mean age of 16 months (10-28) with a mean OAHI of 5.2 (0.4-14.7) and a mean CAI of 3.3 (1.3-7.2). 2 further patients were commenced on CPAP post growth hormone.

Conclusion: Infants with PWS are predisposed to sleep-disordered breathing due to a number of factors. Sleep disordered breathing may be exacerbated by growth hormone therapy. The introduction of a dedicated pathway for this cohort allows early identification and treatment of sleep disordered breathing.

SLEEP DISORDERED BREATHING IN SYNDROMIC CRANIOSYNOSTOSIS

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Introduction

Children with syndromic craniosynostosis are considered at risk for developing sleep disordered breathing (SDB), most commonly obstructive sleep apnoea (OSA). Its prevalence in this cohort is reported in the literature between 6-74%, depending on screening methods used and populations studied. There is limited published literature on the appropriate screening pathways for OSA in children with syndromic craniosynostosis.

This study aimed to assess the prevalence of OSA among a cohort of children with syndromic craniosynostosis attending a national centre in Ireland and evaluate the current screening methods used in this cohort.

Methods

Retrospective review of all children with syndromic craniosynostosis attending a national craniofacial service in Ireland.

Results

Sixty-four children were identified.

58% (n=37) of children in this cohort had attended a respiratory service for assessment. Symptoms of OSA were present in 31/37 (84%) children and 35/37 (94%) underwent investigation for OSA. The most common screening tool used initially to investigate for OSA was overnight transcutaneous carbon dioxide and oximetry monitoring (TOSCA) in 19/37 children, followed by overnight oximetry in 8/37 and polysomnography (PSG) in 8/37. 46% of children (17/37) screened were given a diagnosis of OSA.

Of the 42% (n=27) of children who have not attended any respiratory service, 12/27 (44%) charts had documented screening questions for OSA symptoms in their previous clinical interaction with the craniofacial team. Children with identified OSA symptoms were subsequently referred to a respiratory service.

Conclusions

Obstructive sleep apnoea was detected in 46% of children with syndromic craniosynostosis referred to a respiratory service. Screening methods and investigations used varied quite significantly in this cohort, which is similar to that reported in the literature. The development of a standardised screening pathway for OSA by the Paediatric Respiratory Department will facilitate the early detection of OSA in this at risk cohort.

A DECADE WITH MILK LADDER FOR COW'S MILK PROTEIN ALLERGY IN CORK; ARE WE ACHIEVING OUR GOALS?

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Aim: to determine if the infants treated in the paediatric allergy clinic in Cork University Hospital diagnosed with cow's milk protein allergy (CMPA) IgE mediated are finishing the milk ladder and also to assess how long the process takes on average.
Method: as part of a bigger research project we have done a retrospective descriptive study of a sample of 66 patients collected from 2011-2021. They were all diagnosed for CMPA with a prick test of ≥3 or a positive specific IgE for milk and treated in the paediatric allergy clinic at Cork University Hospital.
Results: 96.6% (64) of patients were treated with milk ladder approach. 68.75% (44) of those completed the treatment against 31.25% (20) that failed. Of those who failed, 70% (14) was because of poor compliance while 10% (2) of them had too many symptoms and 20% (4) were not interested. There were 2 patients that move abroad and change to a different hospital. The average duration of milk ladder treatment was 17,78 months. 34.37% (22) of the patients had symptoms during treatment; 63.63% (14) of those had them only at the beginning of the treatment (during the first 6 steps of the milk ladder) in comparison of 27.27% (6) that had symptoms at the end of the treatment (last 6 steps of the milk ladder). Only 3.125% (2) of the patients had symptoms during all the treatment.
Conclusion: milk ladder appears to be the most common treatment approach for cow's milk allergy in the paediatric allergy service in Cork University Hospital. Good proportion of patients finished the ladder treatment. However, poor compliance is one of the major problems in patients that failed the treatment. Therefore, recollection of more data will be necessary to understand the background to fix this problem.

PHYSICAL (IN)ACTIVITY SURVEILLANCE IN CHILDREN WITH TYPE 1 DIABETES: A PILOT MIXED-METHODS INVESTIGATION

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AIMS: The purpose of this study was to pilot a mixed methods protocol for assessing habitual Physical Activity (PA) in children with Type 1 Diabetes (T1D).T1D affects over 2,500 children in Ireland. Pharmacotherapy is the mainstay of treatment and PA is an important component of management. International figures suggest that children with T1D are not meeting the recommended daily 60 minutes of Moderate to Vigorous (MVPA). Technology could provide a solution to monitoring PA in this population.

METHODS: Research grade thigh-mounted accelerometers were used to quantify parameters of PA over an 8-day period in 21 male and female children and adolescents (10-17 years) attending an outpatient paediatric diabetes clinic. Clinical parameters (HbA1c, insulin regimen and weight centiles) were measured. Total steps, standing time, seated time were recorded. Self-report was used to measure perceived activity levels.

RESULTS: Mean daily steps recorded was 8,220. Differences in mean daily steps between females (7, 306 steps) and males (10,806 steps) reached significance (p=0.001). No significant differences were found between genders in sitting time or standing time. Overweight or obesity was identified in 44% of females and 15% of males. Mean HbA1c for females 8.25% (67 mmol/mol) and males 7.97% (64 mmol/mol) were above the ISPAD recommended <7.0% (53 mmol/mol). Self-reported PA showed that participants perceived achieving a minimum of 30-60 mins of PA on most days.

CONCLUSION: The purpose of this research was to pilot empirical research methodologies. The results of this study show that this cohort is not achieving the recommended targets for sustaining health. It is hoped that further research will aid the development of additional education and intervention to promote the translation of ISPAD guidelines into clinical practice for PA promotion.

PARENT AND CHILD PERCEPTIONS OF PHYSICAL ACTIVITY WITH TYPE 1 DIABETES

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AIMS: Type 1 Diabetes (T1D) is a lifelong illness that affects over 2,500 children in Ireland. Management involves complex daily regimens including frequent blood glucose monitoring, pharmacotherapy, dietary management, and physical activity (PA). PA is an important modifiable lifestyle factor. Unfortunately, children with T1D remain physically inactive. Children with T1D face disease-specific barriers and facilitators to PA engagement. All aspects of T1D management for children are supported or supervised by parents. Thus the purpose of this study was to examine parents' and childrens' perceptions of barriers and facilitators to PA engagement.

METHODS: 43 parent and child dyads participated. Parents completed a self-report survey. Children completed a modified version of the Physical Activity Questionnaire for Children (PAQ-C) that explored habitual PA patterns, perceived facilitators and barriers to PA engagement.

RESULTS: 21 females, 22 males and their parents (36 mothers, 7 fathers) participated. 69% of males and 90% of females reported that having diabetes did affect their PA participation. 54% of males and 48% of females were insufficiently active based on their total PAQ-C score (<2.9 and <2.7). 53% of parents reported that their children participated in school PE. 21% of parents reported that their child did not participate in PA outside of the school setting. 23% of parents reported that they did not feel comfortable with their child participating in strenuous PA. A further 30% of parents reported that they only felt comfortable with their child participating in strenuous PA if supervised. 66% of parents reported their child should be more physically active. 83% of parents reported that having T1D did impact their child's PA level.

CONCLUSIONS: This study demonstrates the potential influence of parents' perceptions on PA engagement in children with T1D. Additional education is needed to support the promotion of PA for children with T1D.

DIAGNOSTIC PATHWAYS FOR OBSTRUCTIVE SLEEP APNOEA REQUIRING TREATMENT WITH NON-INVASIVE VENTILATION AT A TERTIARY PAEDIATRIC CENTRE

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Aims

There is limited data on the optimal approach to diagnosing obstructive sleep apnoea (OSA) in children and practices vary between institutions (1,2). The primary aim of this study was to assess the pathways currently used to diagnose OSA requiring treatment with non-invasive ventilation (NIV) at Children's Health Ireland (CHI) at Temple Street. A secondary aim was to assess the approach to screening for pulmonary hypertension in patients diagnosed with OSA requiring NIV therapy.

Methods

A retrospective chart review of all patients registered in the NIV clinic at CHI at Temple Street was conducted from July 2020 to March 2021. A data collection tool was used to ensure accurate and consistent data recording. Information on all diagnostic tests performed for OSA and pulmonary hypertension were recorded. Descriptive statistical analysis of quantitative data was performed.

Results

Of the 104 children attending NIV clinics, 68 had been diagnosed with OSA that was treated with NIV. OSA was diagnosed by overnight TOSCA (transcutaneous carbon dioxide and oximetry) studies in 59/68 (87%) of cases. Overnight oximetry alone was used to diagnose OSA in 5/68 (7%) and polysomnography used in the remaining 4/68 (6%) of cases. Twenty-two children diagnosed with OSA by TOSCA or oximetry studies were referred for polysomnography after commencing NIV. Six of these polysomnograms (6/22, 27%) were normal while OSA was confirmed in the remaining 16/22 (73%). Fifty-seven of the 68 children treated with NIV (84%) had an echocardiogram performed after the diagnosis of OSA. Pulmonary hypertension was reported in 6/57 (11%) of cases.

Conclusions

Polysomnography is currently unavailable in many paediatric institutions worldwide, including CHI at Temple Street. We have demonstrated that a significant number of children may be diagnosed with OSA and NIV therapy initiated, without the need for a polysomnogram. Access to echocardiography is necessary when OSA is identified as pulmonary hypertension is a noted complication.

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HIRSUTISM: WHY IT ISN'T ALWAYS PCOS

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Introduction

Type A insulin resistance(IR) has a reported incidence of 1 in 100,000. Patients with type A IR syndrome are non-obese and demonstrate severe hyperinsulinemia, hyperandrogenism, and acanthosis nigricans(1,2).

Case Report

A previously well 13-year-old female presented with a 12-month history of severe hirsutism. Born to non-consanguineous parents in the travelling community, both parents had presumed type 2 diabetes mellitus(T2DM).

Hirsutism was noted over the face, back and abdomen(Ferriman-Gallway score=23). There was severe acanthosis nigricans over the neck and axillae. Tanner staging was B4 and P4 with normal genitalia. Height and weight were on the 75th and 91st centile. BMI 23.85 kg/m2

Investigations identified biochemical hyperandrogenism. An oral glucose tolerance test(OGTT) revealed impaired glucose tolerance with a glucose of 12.7 mmol/L at 120 minutes. Insulin levels were 4,007 pmol/L while fasting and >6,945 pmol/L when stimulated 2hours post OGTT. Phenotype was not consistent with T2DM and so targeted genetic analysis for monogenic diabetes was performed. Results confirmed heterozygosity for a pathogenic INSR missense variant(p.Arg1201Gln).

She was commenced on metformin and the oral contraceptive pill(3). HbA1c improved from 46 mmol/mol to 40 mmol/mol six months post metformin instigation. Psychological support and genetic screening are underway.

Discussion

IR is typically seen in the context of obesity. Severe IR can be seen in mutations in the insulin receptor gene in non-obese patients. Females are often diagnosed earlier. Our patient's father, who had a normal BMI, was possibly misdiagnosed with T2DM in adulthood(2). Consider a genetic cause in the following: hirsutism and a normal BMI, acanthosis nigricans in a non-obese Caucasian female, and a family history of T2DM in individuals with a normal BMI.

Conclusion

Type A IR is an uncommon inherited condition that presents in the pubertal period in females while often un/misdiagnosed in males(1,2). Identification of a genetic mutation allows for more-appropriate treatment, prognostic predication, genetic screening, and counselling.

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A case of HMG CoA synthase deficiency in a 5 year old; A case report

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Aim: To report a case of hypoketotic hypoglycemia induced seizure in an otherwise well 5-year-old child with unremarkable family or personal history.

Methods: We describe the clinical presentation, examinations findings,results of hematological,metabolic & genetic investigations,treatment and outcome in our patient.

Results: Our patient was brought in by ambulance in Nov 2017 following an episode of hypoglycemic seizure lasting ~20 min.Her blood sugar(BSL) was 1.2.On arrival to ED her ketones were 0.3.She had a normal EEG.Her metabolic work up was essentially normal except slight elevated glycine.She was discharged with advised to check her BSL twice daily and regular follow up.She had her endocrine work up including insulin, c peptide and GH & repeated metabolic work up in 2018 with no diagnostic results.No further hypoglycemic event noticed until July 2020 when she again had history of 3/7 of vomiting following an episode of becoming pale unresponsive eyes staring,BSL 2.1 and treated by paramedics, ketones in ED 0.3 and BSL corrected to 2.7.Repeat metabolic work up showed persistence in raised glycine along with decreased glutamine and citrulline all in keeping with low sugar.She was later admitted in temple street for an elective fasting study which demonstrated results in urinary organic acid profile suggestive of HMG CoA synthase deficiency later confirmed with two variants noted in HMGCS2 gene, one pathogenic& one likely pathogenic. Advise was given to avoid fasting specially when un well.She should also take SOS 20 every 4-6 hours when unwell and present to ED if not tolerating.She has been under regular follow up with both teams and doing very well.

Conclusion: Mitochondrial 3-hydroxy 3 methyl CoA synthase deficiency should be taken into consideration when a patient has severe metabolic acidosis with no or subtle ketosis, even without hypoglycemia. HMG-CoA synthase deficiency requires an early diagnosis in order to avoid hypoglycemic crises that can lead to permanent brain damage or death.

THE EFFECT OF COVID-19 ON THE INCIDENCE OF SOMATOFORM DISORDERS IN PATIENTS OF THE PAEDIATRIC EMERGENCY DEPARTMENT

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Aim: Whilst it is well known that COVID-19 has affected our paediatric population to a smaller extent compared to adults,[1] paediatric mental health presentations significantly increased during the pandemic in 2020.[2;3] There is an association between COVID-19 induced anxiety and somatic symptoms in adults.[4] There is no evidence to assess the pandemic's psychosomatic effects in children. Our aim was to compare the incidence of somatoform presentations in patients presenting to the Paediatric Emergency Department (ED) in Temple Street Hospital during the COVID-19 pandemic, to patients presenting to the ED before the pandemic, to complete our biopsychosocial understanding of the pandemic, thereby better preparing our EDs to manage our patients.

Methods: This was a retrospective observational study of patients with somatoform disorders attending the ED: one group attended during the COVID-19 pandemic (1 March 2020 -31 December 2020), and the second group attended pre-pandemic (1 March 2019- 31 December 2019).

Results: Total ED presentations decreased by 37% in 2020 versus 2019. Despite this, there is a 49% increase in psychosomatic presentations in 2020 versus 2019 (p<0.0001). The lockdown period in Ireland started in March 2020 and only eased in June 2020, where there was a peak in presentations, specifically: non-specific abdominal pain (NSAP) increased by 56%. There is an increasing trend in presentations from September to November, correlating with lockdown trends: a two-fold increase in presentations of NSAP; non-specific chest pain tripled in 2020 versus 2019; non-specific headache increased by 33% in 2020 versus 2019.

Conclusion: Our research shows that the pandemic has a significant impact on children with increasing psychosomatic presentations, closely trending with the levels of lockdown. There is a need for improved systems to manage these patients in hospitals and to improve mental health and social support structures during this challenging time.

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A RETROSPECTIVE REVIEW OF PATIENTS REQUIRING HYDROXYCARBAMIDE FOR SICKLE CELL DISEASE TO DETERMINE A COHORT REQUIRING ADDITIONAL THERAPIES.

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Aim

Hydroxycarbamide (hydroxyurea) is a mainstay treatment of patients with sickle cell disease (SCD). It reduces the incidence of vaso-occulsive events such as pain episodes and acute chest syndromes, improving quality of life and life expectancy by increasing HbF production and thus preventing red cell sickling. Nevertheless there are treatment failures, often due to non-compliance particularly in young adults. The aim of our study was to evaluate the patients in our hydroxycarbamide group to determine patient demographics, indication for commencement/discontinuation of the drug, the number and cause of hospitalizations to determine those requiring further education or the addition of newer drug therapies.

Methods

A retrospective chart review and secondary hydroxycarbamide database search was performed on all patients with SCD who attended CHI Crumlin Haematology Department in 2019-2020 period. Relevant data was collected and patients were anonymised according to hospital number.

Results:

161 patients (84 female, 77 male, average age 12.7yrs, range 9 months-20yrs), 46% of SCD population, received hydroxycarbamide therapy in 2019. The most common indication for commencement of hydroxycarbamide was recurrent pain crises (26%) followed by abnormal (21%) or conditional (15%) transcranial dopplers. 6 patients had hydroxycarbamide discontinued in 2019. The most common reason was non-compliance. There were 222 acute admissions in 2019; 89 (40%) of these from the hydroxycarbamide cohort. Sixty-six percent admissions were with pain; fever and infection being the next most common (16%). The majority of those with pain had HbF<15% (70%) and 40% were older than 16 years.

Conclusion:

A large percentage of the SCD population attending CHI Crumlin are on hydroxycarbamide. These are a group with the most significant disease burden. It is clear that whilst this therapy offers benefit, a substantial number still suffer sickle related illness. This group will benefit from the introduction of newer therapies such as crizanlizumab and L-Glutamine.

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READABILITY AND RELIABILITY OF ONLINE PARENT INFORMATION FOR PEDIATRIC RHEUMATIC DISEASES

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Aims

To assess the readability of freely available online information for parents of children with juvenile idiopathic arthritis (JIA), juvenile dermatomyositis (JDM), juvenile systemic lupus erythematosus (JSLE) and juvenile scleroderma (JScl) from English-language websites using standardized tools.

Methods

A focused search was performed in Google Search, using the words “parent information” and the disease names/abbreviations above. Pages by advocacy groups, healthcare providers and universities were reviewed, while excluding personal websites. Reading ease, grade, and percentage of passive sentences were measured using the Flesch-Kincaid Score. For such information, the recommended reading ease is >70, 5th-8th grade with no passive sentences. Each relevant PDF brochure and pamphlet was inputted into Microsoft Word to be scored. Results were recorded in Microsoft Excel to determine average readability for each paediatric rheumatic disease.

Results

40 JIA, 6 JDM, 27 JScl, and 6 JSLE PDF brochures and pamphlets were found appropriate for analysis. Mean reading grade for all diseases above the recommended level: JIA 10.65, JDM 9.9, JScl 10.8, JSLE 9.6. Mean reading ease was below the recommended score: JIA 49.9, JDM 51.5, JScl 47.1, JSLE 54.6. The percentage of passive sentences was more variable; a small number of leaflets performed well with <5% passive sentences; but on average, 13-22% of sentences were passive overall. No leaflet met all recommendations for plain English medical information.

Conclusion

Plain English parent information for pediatric rheumatic diseases is easily accessible online. However, information does not meet recommended standards for reading ease even for the most common paediatric rheumatic disease, JIA. This demonstrates a need to develop additional easily comprehensible information aimed at parents of children with JIA. It also provides an opportunity to develop such resources in collaboration with families in order to better support parents in understanding their children’s disease.

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Alcohol – based hand sanitisation gel related eye injuries or ingestions presenting to a paediatric emergency department

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Aim: Our aim was to determine the extent of alcohol gel incidents resulting in children presenting to the Paediatric Emergency or Urgent Care Departments within the Children's Health Ireland Group in Crumlin, Temple Street and Connolly Hospitals.

Methods: We retrospectively identified patients by utilising the search function with key words in the electronic patient records in the departments. We included any patients who suffered eye splashes and ingestions of alcohol gel. Once identified, their charts were assessed for the details of the accident and the management in the department and their discharge outcomes.

Results: Each patient with an eye splash injury received irrigation with normal saline and the pH level normalised. Each patient with an ingestion was asymptomatic and therefore, observed for four hours and discharged home.

Discussion: There has been a low presentation rate during the study period. The irrigation process is effective management of eye splashes. It has been noted that the content and type of alcohol used in the gel is not frequently recorded in the notes. The patients suffered only minor adverse effects however, alcohol gels are not child friendly products and should ideally be subject to child protective measures like those used for household cleaning products and detergents

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THE EFFECTS OF THE COVID-19 PANDEMIC ON A TERTIARY LEVEL PAEDIATRIC GASTROENTEROLOGY SERVICE

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AIMS: The COVID-19 pandemic has affected healthcare delivery around the globe. Our aim is to investigate how the pandemic has impacted the Paediatric gastroenterology services provided centrally at the National Centre for Paediatric Gastroenterology (NCPG), based at Children's Health Ireland (CHI) at Crumlin.
METHODS: This study was conducted by the paediatric gastroenterology department in CHI at Crumlin. CHI at Crumlin HIPE department provided data detailing: (a) outpatient services; (b) day case admissions and (c) endoscopy access for the months of January to December 2020. Data was compiled on a Microsoft Excel database. Descriptive analysis was performed using Microsoft Excel.
RESULTS: Outpatient services initially reduced patient contact during the first three months of lockdown. The implementation of telephone clinics increased the average number of patients reviewed in the department by 20% from March 2020. Inpatient admissions remained virtually static during all stages of the pandemic. No child under the care of the NCPG service was admitted with Sars- Covid 19 infection. Endoscopy capacity was significantly reduced during the pandemic with restrictions on day case services, theatre capacity and more stringent infection control precautions in place in CHI at Crumlin. Endoscopy throughput was reduced to 36% of pre lockdown levels. Day case admissions remained static, this allowed administration of the disease stabilizing and modifying agents which are essential for keeping our patient cohort healthy.
CONCLUSION: In this study the importance of implementing new methods of patient care is particularly highlighted. As discovered the instigation of telephone clinics can lead to an overall increase in patient contacts and provide safe and timely access to services. The data also highlights the scarcity of access for the paediatric population to some diagnostic services, namely endoscopy. Endoscopy is essential to provide an accurate diagnosis for children with IBD and allow for timely patient specific treatment plans in accordance with international standards.

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COVID-19 RELATED OCCUPATIONAL STRESS IN STAFF IN AN ACUTE PAEDIATRIC TEACHING HOSPITAL.

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Aims: The COVID-19 pandemic has resulted in major strains for health care staff. This study aims to assess the prevalence of occupational burnout (BO) in all staff working in an acute paediatric setting. Methods: The Copenhagen Burnout Inventory (CBI) was used as the main outcome measure. Additional study specific questions were added to determine the impact of COVID-19 on work setting and personal health. A total of one hundred and thirty-three staff, 89 % clinical, completed an online or paper and pencil survey.

Results: The majority of respondents reported moderate or higher levels of burnout for personal (n=93; 69.9%) and work domains (n=83; 62.4%). Rates of patient-related burnout were lower(n=18;13.5%). Higher rates of BO were found in staff with perceived COVID-19 adverse effects on physical (n=50, 38%) and mental health (n=88, 66%); [F (2, 13.019) = 16.019, p< .001]. The majority of staff had no stress reduction training at any stage in their career, either in professional (60%), on the job (62%) or post pandemic (59%) work. Although most (82%) were aware of occupational health supports, few (30%) would access these if needed. 65% (n=86) of the respondents seriously considered changing jobs in the last 6-12 months.

Conclusion: High level of occupational stress among hospital staff during COVID-19, in the absence of stress reduction training is a risk factor for burnout. Interventions, acceptable to the employee, are urgently needed given the likelihood of additional work demands as COVID-19 continues.

NONKETOTIC HYPERGLYCINEMIA IN AN ADOLESCENCENT FEMALE

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Aims and Background:

Nonketotic hyperglycinemia is a rare metabolic disorder characterized by apnoea, chorea, seizures, spasticity, and intellectual disability(1, 2). A mutation in the patient's glycine cleavage enzyme system leads to the accumulation of glycine, primarily in the spinal cord and brain(2). Life expectancy with nonketotic hyperglycinemia is poor, with one study of 65 patients showing only a 38% survival rate over the age of 3(1). We aim to discuss the case of an adolescent girl currently living with nonketotic hyperglycinemia.

Methods:

All information for this case report was acquired with parental consent from the patient's health care record.

Results:

This 12-year-old girl first presented as an infant and was subsequently found to have raised plasma glycine levels. Genetic analysis determined she was a compound heterozygote, with two mutations in the GLDC gene.

Along with her diagnosis of nonketotic hyperglycinemia, the patient also has a history of an absent corpus callosum and epilepsy with generalized tonic-clonic seizures being her main seizure type. Her epilepsy is currently well controlled on antiepileptic medication, her most recent seizure was two years ago. Our patient who currently attends a special school has global developmental delay and is nonverbal. She exhibits challenging behaviour and can get aggressive if she does not get what she wants.

Discussion:

Nonketotic hyperglycinemia is a rare disorder, with one study demonstrating an estimated incidence of 1 in 76000 individuals(3). Our patient who can walk and run has defied the odds as a study showed that affected females have worse developmental outcomes than males, with just two affected females developing the ability to walk(1). This case highlights the difficulties of managing an adolescent patient with this rare disorder as there is little data available on how it effects adolescent patients.

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HIS FIRST WORD WAS 'CREAM'". THE BURDEN OF TREATMENT IN PAEDIATRIC ATOPIC DERMATITIS - A MIXED METHODS STUDY.

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Aims
Burden of treatment (BOT) is defined as the workload of healthcare experienced by those with chronic conditions and consequences on well-being. BOT has not been examined in atopic dermatitis (AD) using mixed methods. The aim of this study was to assess the BOT of AD on children with AD and their caregivers.

Methods
This mixed methods study used quantitative and qualitative strategies. The quantitative component involved a modified version of the validated Treatment Burden Questionnaire. The qualitative component involved one-on-one semi-structured telephone interviews with parents of children with moderate-severe AD.

Results
The questionnaire was completed by 168 parents of children with AD; 32.1% had mild AD, 39.9% had moderate AD, and 28% had severe AD. The average burden score was 3.5 (out of 10). Average burden scores were low in mild AD (1.0 out of 10) and were proportionally higher in moderate (3.9 out of 10) and severe (5.8 out of 10) AD ($p<0.001$). Increased frequency of therapy was associated with increased perceived burden. For children with moderate-severe AD, oral therapy was rated as less burdensome than topical therapies. Semi-structured interviews were conducted with 15 parents of children with moderate-severe AD. Thematic analysis grouped experiences into healthcare burden, treatment burden, and financial burden. Insights that emerged from healthcare burden analysis included ‘mixed messages’, ‘treatment futility’, and ‘expectant resolution’. Insights from treatment burden included treatment routine, schooling impact, and ‘topical-sparing’ with systemic treatment. Factors of financial burden included topical treatments, clothing, and healthcare visits.

Conclusion
Moderate-severe AD is associated with high BOT, particularly related to topical therapies, which may be reduced by systemic treatment. All physicians treating children with AD should be aware of the potential damage of communication regarding mixed messages, treatment futility, and expectant resolution.

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CAREGIVER EDUCATION REGARDING ADRENALINE AUTO-INJECTOR ADMINISTRATION AND ANAPHYLAXIS MANAGEMENT IN THE ERA OF COVID-19 AND TELEMEDICINE

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Aims: Caregiver education in adrenaline auto-injector (AAI) administration and anaphylaxis management is one of the main methods of improving paediatric anaphylaxis outcomes [1]. During Covid-19, telemedicine became popular in outpatient clinics nationwide, however this reduced face-to-face interaction. We wish to assess how this has impacted the training that caregivers receive with regards to AAI administration and anaphylaxis, as well as their confidence in their ability to educate their child.

Methods: This is a quantitative, cross-sectional study involving an online questionnaire examining caregivers of children who have been prescribed an AAI and are enrolled in the Cork University Hospital Paediatric Allergy clinic.

Results: 114 participants completed the questionnaire. 108 (94.7%) were eligible for inclusion. 75.9% of participants knew what an anaphylaxis management plan was. 10% of participants had never received training on how to administer an AAI pen, with a further 43.5% reporting no educational demonstration in the last 3 years. 59.1% of participants reported they had not received training on when to administer an AAI pen in the last 3 years. 65.7% of parents felt confident in their ability to teach their child about the symptoms of anaphylaxis. Only 50.9% of parents felt sufficiently confident in their ability to teach their child how to use an AAI pen independently.

Conclusions: Studies based on physicians suggest that 3 months after AAI administration education, skills had reduced significantly, emphasising the need for continued education and reinforcement [2]. Due to the covid-19 pandemic, there has been prolonged intervals between caregiver education on AAI administration and anaphylaxis management, with many caregivers waiting over 3 years. This increases the risk of poorer patient outcomes. To counteract this transition to telemedicine, a structured, virtual method of caregiver education would be highly beneficial.

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Poster No: 173
Sub-Specialty

ACUTE MANAGEMENT OF PAIN IN PAEDIATRIC PATIENTS PRESENTING WITH AN ACUTE SURGICAL ISSUE

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BACKGROUND/INTRODUCTION

The Royal College Of Emergency Medicine has developed guidelines for the recognition and treatment of pain in the paediatric population. Pain is commonly underappreciated and therefore undertreated. Pain management in the paediatric population presents a different challenge to adult patients; Specific treatment protocols have been issued by RCEM to assist with this.

AIMS/OBJECTIVES

To assess the treatment of pain in the paediatric population of Waterford and the southeast of Ireland attending UHW with an acute surgical issue.

METHOD

We performed a closed loop audit on the management of pain secondary to an acute surgical presentation. Using the RCEM guidelines for treatment of pain we created an audit tool. We retrospectively compared the ED management plan and medication prescription sheet to the RCEM guidelines for patients (age 0 days - 16years) attending University Hospital Waterford Emergency Department. We organised teaching sessions for ED NCHDs and nursing staff highlighting major issues with recognition of pain and adequate treatment of pain in the paediatric population.

RESULTS

Initial audit of 70 patients showed an improvement in the recognition of pain in this population and in the prescription of appropriate analgesia. Our audit showed an increase in the rate of prescription of analgesia improved from 51% to 66% following our intervention. Recognition of pain also improved, with clear documentation of pain score improving from 20% to 60%.

DISCUSSION/CONCLUSIONS

Paediatric pain can be challenging to assess and treat when compared to adult patients. We have delivered formal education to staff in our department which has improved recognition and treatment of paediatric pain. A standardised guideline will follow to formalise this improvement.

PERIOD OF PURPLE CRYING PROGRAM FOR THE PREVENTION OF ABUSIVE HEAD TRAUMA/SHAKEN BABY SYNDROME

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The *Period of PURPLE Crying* Program is an educational program delivered to parents of newborn children that aims to reduce the incidence of abusive head trauma/shaken baby syndrome[1]. The program was developed by a research-based, non-profit organisation and has already been implemented in many countries around the world. It educates parents on what to expect during the first few months of their newborn infant's life, allowing parents to become more informed and better prepared to care for their child. The recent surge in the number of cases of abusive head trauma in children during the COVID-19 pandemic has highlighted the need for greater resources being made available to parents. The *Period of PURPLE Crying* Program is one such resource that could be implemented in Ireland.

DIABETES TECHNOLOGY, HAS THE INTRODUCTION OF MEDTRONIC 780G IMPROVED GLYCAEMIC CONTROL IN OUR PAEDIATRIC DIABETES COHORT TO DATE?

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AIMS

The aim of this study was to evaluate the impact of technology on our patients with Type 1 Diabetes Mellitus (T1DM) who have been started on the new Medtronic Minimed 780G (780G) insulin pump.
The Medtronic 780G is a hybrid closed loop insulin delivery system that uses SmartGuard technology to deliver self-adjusting basal insulin and auto corrections based on blood glucose readings to maintain target blood glucose levels. This is the latest technology available to paediatric patients with T1DM in Ireland, licenced since January 2021. It uses Bluetooth technology to share data from the continuous glucose monitor (Gaurdian3 sensor) to the CSII pump and allows data to be shared with up to 5 people.

METHODS

Retrospective data was collected from patient's paper charts who have been commenced on 780G between February and August 2021. Information collected included; patient demographics, duration of use of 780G, previous insulin delivery system, HbA1c prior to starting 780G and most recent HbA1c available. Using SPSS (version 24) data collected was analysed. Pair T-Tests were performed to compare means.

RESULTS

In this period, 9 patients were commenced on 780G. Follow up HbA1c data were not available on 2 patients and therefore they were excluded from further analysis.
Data is presented for 7 patients(86% female). Mean age 13(±3.4) years, (range 8-17). Mean duration using 780G 5(± 1.7) months. Previous insulin delivery system was MDI 2(29%) patients and 5(71%) on CSII therapy with 640G. Mean HbA1c prior to 780G 66.8(±9.3) mmol/L, and mean HbA1c post pump 58.4 (±10.7) mmol/L; P= 0.047.

CONCLUSION

This preliminary study of the 780G has shown improvement of HbA1c. Limitations include; small sample size, short duration of follow up and other potential cofounding factors influencing glycaemic control that might affect our results. Extended follow-up is underway and new participants will be included as they are commenced on 780G.

PERFORMANCE OF ANA O 3 COMPONENT TESTING IN A PAEDIATRIC CASHEW ALLERGY COHORT

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Cashew allergy is the second most common seed allergen causing anaphylactic reactions in children. Ana o3 testing may help us understand cashew allergy further.

Aims: To determine if IgE sensitisation to rAna o 3 can predict if a patient will have a positive OFC to cashew.
Methods: All study participants had undergone a cashew OFC in CHI Tallaght between 2014 and 2020. A retrospective chart review was conducted and specific IgE to rAna o 3 levels were tested on a single occasion.
Results: Twenty-two participants were recruited. Fourteen (64%) had a concomitant atopic diagnosis with 17 (77%) having another food allergy of which 7 (32%) had additional tree-nut allergy. Eight participants (36%) had positive challenges. Two patients had a positive Ana o 3 result (>0.35 kua/L), both had positive OFC to cashew. This study demonstrated high specificity (100%) but lacked appropriate sensitivity (25%).
Conclusion: OFC continues to be the gold standard investigation for allergy. Ana o 3 component analysis may be a useful adjunct for cashew allergy. It should be used with caution as our study found 6 patients with OFC confirmed cashew allergy with Ana o3 < 0.35 Kua/L.
Clinical allergy is a dynamic phenomenon which we do not fully understand. Our results may represent decreasing biochemical sensitisation as a result of prolonged allergen avoidance. Prior studies performed Ana o 3 testing prior to OFC or within one year of exposure. Our participants had up to 6 years since last exposure. It may also reflect a different culprit allergen in our cohort, such as Ana o 1 or Ana o 2.
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NEW MODELS OF COMMUNICATION: PROVIDING TIMELY RESPONSES TO ALLERGY CONCERNS IN SUPPORT OF THE COVID-19 VACCINATION CAMPAIGN IN 12-15YR OLDS

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Aims:
Vaccination with the Comirnaty® (Pfizer/BioNTech) vaccine commenced in December 2020. Following two suspected severe allergic reactions, early in the programme, the UK placed restrictions on allergic people receiving the vaccine. This restriction was subsequently lifted and ongoing international surveillance indicates that risk of anaphylaxis is low, at 3-4/million. Despite this, there remains heightened concern in the public arena about the risk of allergic reactions in atopic individuals. We set up a pathway supporting timely role out of mRNA Covid-19 vaccines to atopic 12-15yr olds, with minimal turn-around time and limited use of hospital resources.

Methods:
Advise was placed on all 4 CHI websites for parents of allergic children. A voice message was recorded on the department phones directing parents to the website. A CHI ALLERGY email account was set up, accessible to CHI allergy team members across sites. A communication was sent via ICGP and Vaccinator leads to all GPs and large vaccination centres, regarding the secure pathway. All responses were finalised by a member of the Consultant team.

Results:
The CHI website advice for parents with allergic children, went live on 28/7/21. Vaccine related phone inquiries to the department, reduced from 10/day to zero in 24hr. Between 18/8 and 23/9 the department took 27 queries by email. All were answered within 1 week. 10 came from vaccination centres and the rest from GPs. Only one came through the traditional pathway of referral. 17 patients were reassured to get their vaccine in the community. 9 received at least one vaccine in the hospital. 9 patients were identified with unaddressed allergic conditions needing a clinic appointment with us.

Conclusion:
This is an example of how adapting to COVID has made us more flexible to explore novel routes of communication between primary and tertiary care.

SWEET BABIES: CASE SERIES OF NEONATAL DIABETES IN A TERTIARY IRISH PAEDIATRIC CENTRE BETWEEN 2006- 2021

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Aims

Neonatal diabetes mellitus (NDM) is a rare form of diabetes, presenting as either permanent NDM (PNDM) or transient NDM (TNDM), before six months of age. Our aim was to review the phenotypes, genotypes, and management of children presenting with NDM in the largest Irish tertiary paediatric diabetes centre.

Methods

We interrogated our database for cases of NDM with known mutations in the ABCC8 gene, KCNJ11 gene, and 6q24 methylation defect between 2006-2021 and conducted a retrospective chart review.

Results

Eight cases were identified, half were PNDM and half were TNDM. All cases of PNDM were due to genetic mutations in the KCNJ11 gene. Of the cases of TNDM, one was due to ABCC8 gene mutation and three were due to 6q24 methylation defect. Those with mutations in genes encoding subunits of the K_{ATP} channel may be responsive to treatment with sulphonylureas and all five of our patients commenced treatment with sulphonylureas following genetic diagnosis. The duration of weaning was guided by protocols specific to the genetic mutation provided by Exeter University. Two were switched to sulphonylurea under four months old and another at six years ten months. Two patients had ongoing insulin requirements despite treatment with sulphonylureas. One commenced sulphonylurea at 18 and had significant reduction in insulin. The other patient who commenced sulphonylurea aged 16 found the dosage of sulphonylurea required to maintain normoglycaemia less tolerable than insulin and returned to subcutaneous insulin. All of our TNDM were off insulin within first year of life and given advice on possible recurrence of diabetes mellitus later in life. None required further insulin therapy during childhood.

Conclusion

Neonatal diabetes is a rare condition with incidence of 1: 90,000- 160,000 live births.[1] Due to personalized medicine, early genetic diagnosis is critical to guide treatment and inform future risk for the patient and their families.

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