of these groups with the average attendance in the previous 4 years (2016–2019), looking at the same month (April) to control for seasonal fluctuation in medical and trauma PED presentations.

Results 624 patients were seen in our PED in April 2020, compared to between 1620–1710 patients in previous years. All clinical groups showed reduced numbers, with medical, surgical, trauma, mental health and ‘other’ presentations reduced by respectively 67%, 46%, 66%, 20% and 43% compared with the average in preceding years. There was a significant decrease in children presenting with respiratory tract infections (63%), febrile seizures (41%), afebrile seizures (27%), urinary tract infections (67%), fractures (65%), and head injuries (44%). There was a decrease in head injuries (56%) and fractures in children less than 18 months (44%), the group most at risk for non-accidental injury. The number of children presenting with appendicitis, testicular torsion, overdoses, and children aged less than 3 months with presumed sepsis, were within the expected range. In April 2020 there were three cases of severe diabetic ketoacidosis (compared to only two in 2016 and none in 2017, 2018 and 2019).

Conclusions The lockdown significantly decreased PED attendance, and our data highlights several potential reasons, including a reduced burden of respiratory disease, changes in parental health seeking behaviour and possible barriers to attendance. The reduction in attendance was mainly in medical and trauma presentations. This could be explained by a decreased burden of infectious respiratory disease, and a reduction in injuries due to less road traffic and sport. Interestingly, non communicable medical conditions (urinary tract infection/pyelonephritis) and afebrile seizures also demonstrated a decreased rate, pointing to potential changes in parental health seeking behaviour. The increase in severe DKA presentations could indicate barriers (logistical or psychological) to attending primary/secondary health care. Overall, though the surgical attendances were decreased, presentations for surgical emergencies remained the same. Intriguingly, there was no increased attendance for mental health reasons. We found no evidence of increased domestic violence involving children in our population. Our data highlights that the lockdown was effective in decreasing the burden of both respiratory infections, and trauma patients presenting to ED. Our study will support workforce planning and resource allocation in paediatric ED, especially during staff redeployment.

British Academy of Childhood Disability

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HOW EFFECTIVE IS MAKATON IN ENCOURAGING COMMUNICATION, THE FORMATION OF SPEECH, AND ENHANCING POSITIVE SOCIAL INTERACTION IN CHILDREN AND YOUNG PEOPLE?

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Background Augmentative and alternative communication (AAC) forms are used by people of all ages with special educational needs as a way of facilitating communication. One of the most popular AACs is Makaton, a system that incorporates sign language, graphic symbols, and speech. Makaton has been used for a number of years in various settings, however its efficacy is unknown and not backed by empirical evidence.

Objectives To perform a literature review of published articles assessing the effectiveness of Makaton in aiding communication and social interactions with children and young people. Evidence will be analysed in order to suggest the validity of its use, with a view to expand its integration in clinical environments.

Methods Fourteen databases were methodically searched from inception to 20th January 2020. Inclusion criteria included studies assessing the efficacy of Makaton with children and young people, in comparison to speech or another AACs, that were published in the English language.

Results Six studies met inclusion criteria and were critically appraised. Five studies showed Makaton increased basic communication, four found it initiated spoken language, and all six observed an increase in positive social interaction and behaviour. There were a total of 73 combined participants, ranging from the ages 2–16 years old. Most studies analysed participants with a certain disorder (Autism Spectrum Disorder, Down Syndrome, Cerebral Palsy, severe learning difficulties), with one evaluating Makaton use when teaching English as an additional language. It was also found that the majority of professionals support its application and find it subjectively effective, however it is seldom utilised beyond parents and teachers, and there is little homogeneity in frequency of use between participants. Each study was of a small sample size limited to population and disorder demographic, and may not be generalisable to external populations.

Conclusions Despite current literature lacking high quality methodologies and the need for caution when interpreting or extrapolating results, there is a clear general consensus that Makaton is effective in facilitating communication and social interaction in children and young people. It allows children flexibility in communicating in ways that suit them, increasing feelings of inclusivity, and leading to a better quality of life. Regardless of a lack of empirical data, many people and schools around the country and world are adopting the use of Makaton and there is an attitude shift towards one of inclusion and acceptance for children who sign. Makaton gives a voice, be it literal or not, to children who may otherwise not have been able to express themselves. More effort should be made to integrate signs and symbols into mainstream society, and in particular to educate medical students and health care professionals, to allow for more autonomy and patient-centred care for these individuals.

British Association of Perinatal Medicine and Neonatal Society

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GENETIC VARIATIONS CAUSING NEONATAL DIABETES MELLITUS

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Background Neonatal Diabetes Mellitus (NDM) is rare with an approximate incidence of 1:100,000. More than 80% of cases have a genetic origin. We present 4 patients with NDM occurring within one health board.

Objectives Our aims were to compare and contrast the characteristics of our cases and to discuss the genetic variations

causing them with a view to developing a mechanism for early detection and management. We also sought to share information more widely about this highly unusual condition.

Methods This was a retrospective case series analysis. The study period was 2007 to 2021. Data were collected from BadgerNet and health board clinical records.

Results Case 1 was born at term. Growth restriction and oligohydramnios had been identified antenatally and birth weight was 2060g. Apgars were 1, 5 and 10 at 1, 5 and 10 minutes respectively. A blood sugar measured on day 2 was 17.3mmol/l. The infant was admitted to NICU and due to persistent hyperglycaemia was commenced on intravenous sliding scale insulin. This was switched to an insulin pump and the infant was discharged home after 38 days. Genetic analysis showed a 6q24 duplication. Cases 2 and 3 were siblings, one born at 34 weeks gestation and the other at term. Both were growth restricted in utero and developed hyperglycaemia on days 2 and 4 respectively. They also had congenital hypothyroidism and pancreatic/renal cysts. They were found to have homozygous partial GLIS 3 gene deletion. Both were discharged after prolonged hospital stay on pump delivered insulin. Case 4 born at term with a birth weight of 2030g and known to have been growth restricted in utero with low liquor volume, presented at 3 weeks of age with diabetic ketoacidosis. He was discharged on an insulin pump and had STAT 3 mutation.

Conclusions The most common cause of transient NDM is chromosome 6q24 duplication but there are more than 20 genetic disorders associated with permanent NDM. Chromosome 6q24-related transient NDM is characterized by intrauterine growth restriction and low birth weight, with neonatal hyperglycaemia resolving by 18 months and an increased risk for type 2 diabetes in adulthood. GLIS3 is a protein with roles in β cell survival and insulin secretion. Mutation in GLIS 3 is associated with neonatal diabetes, congenital hypothyroidism, polycystic kidney disease and liver fibrosis. Signal transducer and activator of transcription 3 (STAT3) is vital to the development of a normally functioning pancreas. STAT3 mutation causes neonatal diabetes through premature induction of pancreatic differentiation. In all 4 of our cases of NDM the infants were known to be growth restricted antenatally, with low birth weight postnatally and hyperglycaemia developed from the second day of life onwards. It is remarkable that this cluster with 3 distinct genetic causes occurred in a small geographical area. An infant born with lower than expected birth weight for gestational age will usually be monitored for hypoglycaemia. If higher than average levels of glucose are detected, there is a need to consider NDM with involvement of the specialist diabetes molecular genetics team.

Quality Improvement and Patient Safety

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ENHANCING ACCESS TO AND THE USE OF PAEDIATRIC PATIENT INFORMATION E-LEAFLETS THROUGH THE USE OF QR CODES – A NOVEL QUALITY IMPROVEMENT PROJECT

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Background As patients are increasingly technologically literate, they often resort to online sources of medical information which may not be accurate. Trust specific patient leaflets are a reliable source of written advice for a wide range of medical conditions, procedures and medications. These aim to provide patients with succinct, jargon free advice, and are usually available in paper and electronic forms. Yet, this represents an under-utilised resource by clinicians. Reasons cited by clinicians include lack of availability and accessibility to leaflets and time constraints.

Objectives We aimed to enhance access to and the use of paediatric patient information e-leaflets by developing a poster with QR codes that are linked to these e-leaflets.

Methods Pre-implementation surveys from patients and clinicians were undertaken within the paediatric department of a single district general hospital. A poster was designed in accordance with NHS design standards, with QR codes that are linked to 20 commonly used Trust specific paediatric e-leaflets. Its use was piloted in the paediatric emergency department, wards and outpatient clinics. Post-implementation surveys were collated from patients and clinicians to assess its use.

Results The results were very positive from both patients and clinicians. From the patient feedback, 84% found the poster 'extremely' or 'very useful' (n=19). Furthermore, 74% 'strongly agreed' or 'agreed' that the poster encouraged them to read the information leaflets (n=19). Qualitative feedback revealed that patients felt this was 'much more eco-friendly', 'offers a wider variety of information' and 'more convenient', although some patients did report a preference for paper leaflets.

Feedback from the clinicians demonstrated that 70% found the poster 'extremely' or 'very' useful, and 60% 'strongly agreed' or 'agreed' that having the poster encouraged them to ensure patients leave with a leaflet post consultation (n=10). Clinicians reported that it is 'convenient to have all the information in one place', 'visible, accessible and easy to use' and 'a great substitute to paper leaflets that need constant updating'.

Additionally, webpage analytics revealed an approximately five-fold increase in views to the 20 e-leaflets in the month after implementation of the poster, from 75 in June to 389 views in July 2020.

Conclusions QR code posters presents a unique way of improving the accessibility and availability of written medical information for paediatric patients and their parents. Aside from saving on paper, the poster is also timeless, as the QR codes do not need to change when the e-leaflets are updated on the webpage. In all, the patient and clinician experience of using these QR code posters was very positive, and we are developing further posters to be piloted in other specialties.

Paediatric Educators' Special Interest Group

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'STARTING THE CONVERSATION': AN EXPLORATION OF THE WAYS IN WHICH UK PAEDIATRICIANS INTERACT WITH MULTI-SOURCE FEEDBACK

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Background Doctors in the UK Paediatric Training Programme are required to gather anonymous Multi-Source Feedback (MSF) using the ePaedMSF tool as part of their training.