Mother during the FASSTT trial. In a sub sample of participants, magnetoencephalographic (MEG) brain imaging was performed to assess brain functioning through estimating neuronal activity in relation to semantic processing of language. Related covariates including general health and lifestyle measures, socioeconomic status, anthropometry including BMI status, B-vitamin biomarkers and nutritional dietary analysis were evaluated. Statistical analysis was performed using the Statistical package for the Social Services software.

Results Of the 119 mother-child pairs in the FASSTT trial, 68 children were assessed for neurocognitive performance at 11-year follow up (Dec 2017 to Nov 2018). Children of mothers randomized to FA compared with placebo scored significantly higher in two Processing Speed tests i.e. symbol search (mean difference 2.9 points, 95% CI 0.3 to 5.5, $p=0.03$) and cancellation (11.3 points, 2.5 to 20.1, $p=0.04$), whereas the positive effect on Verbal Comprehension was significant in girls only (6.5 points, 1.2 to 11.8, $p=0.03$).

MEG assessment of neuronal responses to a language task showed increased power at the Beta (13–30 Hz, $p=0.01$) and High Gamma (49–70 Hz, $P=0.04$) bands in children from FA-supplemented mothers, suggesting more efficient semantic processing of language.

Conclusions Continued FA supplementation in pregnancy beyond the early period currently recommended to prevent NTD, can benefit neurocognitive development of the child. MEG provides a non-invasive tool in paediatric research to objectively assess functional brain activity in response to nutrition and other interventions. Our findings add considerably to the existing evidence that have linked maternal folate status in pregnancy with neurocognitive outcomes in the older child. This evidence reinforces our previous findings in these children and suggest that continued FA intervention in pregnancy beyond the early period is beneficial to future neurocognitive development.

Association of Paediatric Emergency Medicine

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715 APPROACH TO EVALUATING A NOVEL EDUCATIONAL E-MODULE ON PAEDIATRIC ADVANCED LIFE SUPPORT

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Background Storytelling is a powerful tool in education where emotional investment rewards enhanced learning. We designed a 'choose your own adventure' story written in the second person where the participant assumes the role of a junior doctor taking decisions in the resuscitation of an infant. The decisions taken influence both the narrative and learner's role making it truly interactive. This breaks from traditional e-learning techniques with linear progression. Instead the learner is supported in a safe environment to make realistic clinical decisions. The purpose of such engagement is to stimulate interest, simulate real clinical practice and enables higher level

learning whilst also testing knowledge in a way that allows detailed personal feedback.

In the current climate of the COVID-19 pandemic, the aim was to produce an innovative e-module that engaged and entertained learners who most likely will have a degree of online burnout. Learning objectives are taken from the advanced paediatric life support course. Retention of knowledge is paramount and through simulating auditory, visual and cognitive cues it is hoped translation into practice is improved.

Objectives In this study, we had the following two aims. Firstly to gather user feedback to determine areas for improvement with subsequent versions. Secondly, to determine the utility of digital simulation in healthcare education as a tool to impact clinical practice.

Methods Many approaches to evaluation exist. Using a framework described by Roland et al. we crafted a pre and post-questionnaire to assess more than simply user experience. Users including all clinical staff in our tertiary hospital emergency department via email. Hence sampling was not random and instead was opportunistic. Beforehand, an anonymous online survey firstly gathered demographic data about users (for example; age, sex, ethnicity, profession group and training experience).

Afterwards, a series of questions were asked, again via an anonymous online survey, to determine the utility of the digital simulation with regards to the following; interactivity, interface, instruction, ideation (what you think you have learned), integration (what you have shown you have learned), implementation and improvement. This 7Is framework allows potential patient benefit to be encapsulated in its outcome measures as has an existing precedent for use as demonstrated in a previous study examining outcomes of a separate e-learning package.

Results Results include the following; 90% had high motivation, 60% were able to easily access the module (desktop computer, smartphone etc), 100% wished to utilise the same style of learning again, 80% report gaining new knowledge or skills, mean time to complete module was 22 minutes, blank space feedback included; 'novel and engaging format, unclear at first how to select choices,' 'needs to include feedback at each decision point, not at end,' 'learnt airway skills and steps to expect in the resuscitation of a baby.' The first one hundred staff to respond were included in this data set with good representation across the different demographic groups.

Conclusions This work represents preliminary stages of development for a novel elearning module. Results suggest with further improvement this is a format that has the potential to engage, educate and impact upon clinical practice.

British Paediatric Respiratory Society

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THE MANAGEMENT OF EPISODES OF A SIGNIFICANT DROP IN LUNG FUNCTION IN PATIENTS WITH CYSTIC FIBROSIS (CF) IN AN OUTPATIENT SETTING

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Background Cystic fibrosis (CF) is the commonest genetically inherited condition in white populations. It is a life-limiting condition, with no curative treatment. Respiratory impairment is the most significant cause of morbidity and mortality, with 90% of morbidity associated with lung disease and respiratory failure being the primary cause of death. Pulmonary exacerbations are important contributors to the progression of lung disease in CF leading to reduced survival. Significant drops in FEV1 are commonly associated with pulmonary exacerbations and therefore, surveillance and appropriate management of these drops seem cardinal to appropriately treat this disease. A leading CF centre have planned to implement a standardised approach to help manage these drops in lung function at clinic. This approach will be largely based on the approach outlined by in a previous study.

Objectives This study aims to determine the proportion of patients attending a leading CF centre, with a significant acute drop in lung function, and how these drops are being managed. This will help inform the development of the proposed standardised approach of the management of these patients.

Methods Patients were identified from the CF patient list. The electronic medical records of each patient were reviewed to determine whether a significant drop in lung function occurred, within a specific 12-month period. The management of this acute drop was then evaluated by reviewing the associated clinic notes. This data was entered to an excel spreadsheet and interpreted. Management strategies included follow-up plans, antibiotic use, admission to hospital, lung clearing therapies and steroid use. We reviewed whether: BL FEV1, the% drop which occurred, age and the varying consultants, affected the management of these patients. Furthermore, statistical analysis was conducted to determine whether there was statistical significance to the results.

Results 115 separate episodes of significant drops in FEV1 in 2019, associated with an outpatient clinic appointment, were highlighted. There was a clinical response to 70% of these episodes, in some way. However, no standardised approach to these episodes was recognised within or between clinicians. A clinical response was more likely to occur if the patient had a lower BL FEV1 ($p=0.021$) or a higher% drop in their FEV1 ($p < 0.0001$). 49% of patients who had a significant drop in their FEV1 had no significant improvement in their baseline lung function identified when they were followed up thereafter.

Conclusions This CF centre clinically responded to 70% of all episodes of children presenting to an outpatient clinic with a significant drop in their lung function however patients were less likely to be managed appropriately if they had a higher BL or smaller% drop. Research shows that loss of lung function can occur if these patients are not managed, even in patients with a higher baseline FEV1. Furthermore, drops in FEV1, regardless of% of BL, are commonly associated with exacerbations and therefore treatment is vital. This outcome of this study is the recommendation of a standardised management approach to all patients presenting with a significant drop in their lung function, both at this CF centre and elsewhere.

Quality Improvement and Patient Safety

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'POSTNATAL GET ME OUT OF HERE!' A QI PROJECT TO REDUCE UNWARRANTED 'LATE-STAYS' BY THE SHO POSTNATAL TEAM IN ANTRIM AREA HOSPITAL

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Background The postnatal ward is a very polarising place- you either love it or hate it! One of the 'house-keeping chores' is effective letter writing.

SHO team in Antrim Area Hospital is made up of paediatric trainees, GP trainees, FY2 doctors and locum SHOs. As a group they have reported a higher frequency of unwarranted 'late-stays' when working on the postnatal ward as compared to the general paediatric ward. This was deemed an inefficient use of valuable time.

Objectives The targeted aim of this project was to identify ways to reduce the number of unwarranted 'late-stays' experienced by the postnatal SHO teams by 50% by January 2021. It was planned to do this by establishing the underlying reasons for colleagues leaving the postnatal ward late and identifying solutions to remediate the issue.

Methods An online questionnaire was designed. It showed that SHOs stayed an average of 33mins past the end of their postnatal shift. The biggest contributing factor was 'administration tasks', with SHOs reported to writing more than 6 discharge letters per week.

Data collected for October 2020 showed of the 244 babies born in AAH 35% required at least 1 letter (discharge or referral) to be written prior to discharge home.

A series of standardised statements of the most common reasons for referral and discharge letters were drafted and uploaded to common a folder for colleagues to access like a comment-bank, i.e. copy and paste into the current letter template. Additional computer access was provided so this comment bank could be readily accessed as required. These pre-designed statements were intended to save time but also to encourage standardisation and quality assure the information being shared.

Results A second questionnaire was posted 2 weeks later. The SHO team reported that they saved, on average, 30 minutes by using the pre-written templates, especially for discharge letters.

Additional statements have been added following feedback from colleagues. The general consensus is that the pre-written 'phrases' are very helpful.

Conclusions The key strategy derived from the survey results was the introduction of pre-written statements for letters. The use of agreed descriptors, and phrasing, ensures that there is consistency of message within letters. The phrases also acted as a 'checklist' for colleagues, often operating within tight time constraints. The use of a common format makes reading the information easier and reduces ambiguity.

The changes were intended to reduce the amount of time the SHO team were spending doing administration tasks of