to care, reduce waiting times and NHS costs (Department of Health, 2014).

One example of this collaboration is the Video Fluoroscopy Swallow Service provided by Radiographers and Speech and Language Therapists (SLT) at Great Ormond Street Hospital. The service provides accurate, low dose x-ray screening for the assessment of swallow physiology in children. Results are used to inform multi-disciplinary management of eating and drinking difficulties, including aspiration risk. We outline the service and explain how this method of collaborative working harnesses the clinical expertise of both professions, providing a high-quality service which contributes to the improvement of patient outcomes and experience.

Learning outcomes from this service include the importance of having clearly defined AHP roles, and patient suitability criteria as well as excellent communication between the whole multi-disciplinary team. The opportunity for extended scope practice provides staff with job satisfaction and skill development. This Video Fluoroscopy swallow study model highlights how AHP's working collaboratively can make a vital contribution to efficient use of clinical spaces, reducing costs and waiting lists while providing high quality care for children at Great Ormond Street Hospital.

It is essential that such collaborations at Great Ormond Street Hospital are celebrated and actively encouraged enabling service improvements.

81 CONTROLLED DRUGS STORAGE AND IMPROVEMENT

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10.1136/archdischild-2020-gosh.81

Learning from a Serious Incident in 2018 highlighted the importance of the documentation of controlled drugs. A detailed audit was conducted in July 2019. The main areas for improvement across the trust were around documentation in the CD order book and CD register. An action plan was agreed between nursing education and pharmacy departments to support best practice. This included the development of digestible best practice guidance to be displayed in medicine storage rooms, revision of policy and education roll out which took place in September 2019. Changes have been made and through the audit process we have improved our standards.

% of all standards met

Jul 2019 80%

December 2019 85%

August 2020 90%

Feeding back audit results quickly and visually has been useful. Thankyou to all pharmacists and ward staff who have supported this work. We have made changes and reduced risk in this area.

82 EVALUATION OF THE MEDICINES MATTER NEWSLETTER IN GOSH

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Medicines form the largest group of interventions used in children and young people. It also accounts for the highest number of clinical errors. A newsletter 'Medicines Matter' designed to support good use of medicines within the Trust was introduced in October 2019 and published monthly by Pharmacy. The newsletter, intended to be read by all health-care professionals, highlights issues and provides updates on all aspects of medicines management. The contents of the newsletter includes incident examples, along with tips in mitigation, new drugs approved by the Drugs & Therapeutic Committee, new resources, MHRA drug safety update, drug shortages, practice and governance issues.

A feedback survey was conducted to evaluate its' effectiveness as a communication forum as well as staff's views of it. A survey with 9 questions was circulated with the July 2020 edition and answers were collected until September 2020. Sixteen staff members completed the survey where nursing staff dominated (69%), followed by allied health professionals (25%) and medical staff (6%). 80% of participants read every or most issues with the remaining reading some issues. All participants rated the newsletter as good or very good and useful or very useful where at least 60% of the respondents were interested in each of the topics within the newsletter. The content was found to be engaging (53%), educational (80%), informative (100%), fun-to-read (33%) and a quick reference to changes that are happening (7%). A larger percentage (60%) of participants did not know where to find the newsletter and a suggestion were made to include some medication-related success stories and addition of hyperlinks to new resources available. One participant found the layout and format slightly disorientating but the overall response was positive. The feedback suggests that the newsletter provides a good platform to deliver up-to-date information and key communication across the organisation.

83 A MULTIVARIABLE COMPOSITE OUTCOME TO DEFINE DISEASE SEVERITY IN CHILDREN WITH CYSTIC FIBROSIS

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Introduction Improvements in cystic fibrosis (CF) care have resulted in improved outcomes, specifically many children maintain lung function in the normal range. Nonetheless there are children with poor outcomes, and there is a need for a more comprehensive multi-factorial measure that summarises the overall health status in this new era of CF care.

Objective To define phenotypically distinct clusters of pediatric CF patients that are linked to different health outcomes by using basic machine learning algorithms.

Method Data from the Toronto CF Clinical Database were used to define phenotypic clusters based on a broad variety of patient-descriptive variables. A Partitioning Around Medoids (PAM) clustering method was iteratively carried out on different combinations of the variables until a maximum distinction between outcome measures could be identified, which included time to recurrent event analyses for both pulmonary exacerbations and hospital admissions. The results were validated in GOSH CF clinical data housed within the GOSH-DRIVE DRE.

Results We were able to define 4 discrete clusters of patients based on 9 routinely collected clinical variables using data from 537 patients and 12200 encounters. Lung function outcomes were not used to define the clusters, however, there was a distinction between the different clusters, such that the cluster with the poorest outcomes also had the worst lung function. The cluster with the poorest outcomes also had the greatest risk of hospitalization and pulmonary exacerbation, which suggests that the approach correctly identifies patients with a more severe disease phenotype. The results were consistent in the GOSH clinical data.

Conclusion Four clusters of pediatric CF patients were identified with corresponding differences in clinical characteristics and outcomes. Future work will identify risk factors for transitioning to a severe disease cluster, and those factors that may improve health outcomes.

84 INVESTIGATING TEMPORAL CHANGES IN PERCENT PREDICTED FVC AND RULM SCORE IN NON-AMBULANT SMA TYPE III CHILDREN

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Spinal muscular atrophy (SMA) type III is a relatively mild form of SMA where a significant proportion lose ambulation during childhood. There is a paucity of studies investigating changes in both the respiratory and upper limb function within this population after loss of ambulation (LOA). The aim of this study is to investigate the change in the percentage of predicted forced vital capacity (FVC) and the change in the revised upper limb (RULM) score in these patients across a 24-month period after LOA. Retrospective analyses were performed on 24 non-ambulant SMA III patients on clinical data collected at two UK centres. Mean age at baseline was 10.9 years (4 to 16). The median FVC percentage predicted score at baseline was 90%. We observed a significant progressive deterioration of 14.7% in FVC over the 24-month period. Data on RULM was available in 16 patients with mean age at baseline of 11.5 years (6 to 16). The mean score at baseline was 30.3. We observed a significant progressive deterioration in upper limb function over the 24 months with a mean decrease in RULM score of 3 and a range from -8 to +1. Using a Wilcoxon signed rank test both results were significant ($p < 0.05$). This study highlights that SMA type III patients demonstrate progressive deterioration in their upper limb and respiratory function even after LOA. Combining correlative data from these assessments may provide insight into clinical progression within this patient population which could help inform for clinical trials and be helpful in managing disease progression expectation for patients.

85 AUGMENTING SOFT TOYS FOR SELF-REPORTING WELL-BEING

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It can be difficult for children to express and reflect on how they are feeling to others. As such, we hypothesise that children can use technology to express and reflect on their well-being. Existing research suggests that tangible interfaces offer a potential of being able to help capture well-being in hospitals for children, such as capitalising on young children's attraction to toys and play as a way for children to communicate and process their inner thoughts.

An aim was to develop a prototype to enable children to communicate and express how they are feeling with others. To ensure that prototypes were safe and appropriate, we involved The Young Persons' Advisory Group and the Play team to provide vicarious insights about a child's experiences as part of the design process. This process helped to identify user experience challenges such as when reflecting on the potential for negative experiences. From the insights gained, we developed a system that allows children to augment existing toys to make toys interactive and give children a sense of ownership. There were two key modes of interaction, firstly the soft toy acting as the input mechanism for data to be collected. Secondly, there was a visualisation display which would then render the data for children in an accessible way for them to reflect on.

To ensure that the system was safe and appropriate before children used it, we used a 'proxy' method to evaluate the system with researchers using prototypes in the wild. It was found that by having a two-pronged approach was considered valuable: (i) the tangible nature of collecting input provided a physical experience of being able to capture and reflect on well-being at the same time, and (ii) viewing visualisations from the system had a positive impact on the self-awareness of well-being.

86 PONSETI TECHNIQUE FOR CONGENITAL TALIPES EQUINOVARUS – A PHYSIOTHERAPY LED SERVICE

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Background Congenital Talipes Equinovarus (CTEV) deformity affects 1:1000 new-borns. Since the Ponseti technique became popular, the need for operative intervention beyond tenotomy has reduced. However, mid-long term results remain poorly reported. This prospective case series describes our patient population and outcomes since 2011 with an innovative physiotherapy-led Ponseti service.

Methods A prospective study of CTEV patients attending the Ponseti clinic. Primary outcomes included range of movement, calf circumference and functional status. Parents of children over the age of 5 were asked to complete the Oxford Ankle Foot questionnaire (OxFAQ).