therapist input suggests the potential widespread use for services in the hospital. Future research and clinical implications are highlighted for implementation and outcomes.

37 HYPoxic CHALLENGE TESTING IN INFANTS; WHO IS RECOMMENDED TO FLY WITH SUPPLEMENTAL OXYGEN?

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Infants with a history of neonatal chronic respiratory problems may demonstrate hypoxaemia when at in-flight oxygen levels, despite normal sea-level oxygen requirements. The British Thoracic Society recommend these infants have hypoxic challenge testing (HCT) before air travel, SpO₂ <85% is recommended as a threshold below which in-flight oxygen is required and 'paediatrician discretion should be used when SpO₂ between 85–90% and, where there is doubt, the doctor should err on the side of caution.'

Aim To establish how many infants fell into each of the threshold categories during HCT; SpO₂ <85%, >90%, 85–90% and which of these patients were recommended to fly ± supplemental oxygen (suppO₂).

Methods Our HCT protocol for infants is 20 minutes in 15% FiO₂ within a body plethysmograph. SpO₂ is monitored throughout and suppO₂ administered via nasal cannula if SpO₂ < 85%. If after 20 minutes SpO₂ has remained >85% but <90% then suppO₂ is titrated for 5 minutes. We reviewed data collected from infants (aged < 1 year) whom had HCT between March 2017– January 2020.

Results Data collected from 65 infants, median age 27.6 weeks (range 5 to 51.6), 37 were male. None were receiving suppO₂ in room air prior to testing; all had baseline SpO₂ ≥96%. In 40 infants, SpO₂ did not dip to <90%. SpO₂ dropped to <85% in 16 infants, requiring administration of suppO₂. 9 infants required extended protocol due to SpO₂ 85–90%. SuppO₂ corrected SpO₂ in all to baseline levels.

In the 85–90% category, all 9 infants were advised by their clinician to use suppO₂ for air travel. The flight times in this subgroup ranged from 90 to 450 minutes.

Conclusion Infants with baseline SpO₂ ≥96% may still exhibit SpO₂ desaturation during HCT. We found all paediatricians recommended in-flight oxygen for infants with HCT SpO₂ <90% regardless of flight duration.

38 ADAPTING THE DELIVERY OF PSYCHOLOGICAL INTERVENTION IN A CHILDREN'S HEADACHE SERVICE IN RESPONSE TO COVID-19

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Objectives Psychological intervention forms part of a multidisciplinary approach to the treatment of headache conditions in childhood. Within the Children's Headache Service at Great Ormond Street Hospital many children and young people typically access this in the format of a group intervention. In response to the impact of COVID-19 on service provision,

the group materials were adapted into an alternative low-intensity psychological intervention format to be offered via individual video appointments.

Methods The group materials were reviewed and adapted into a six session guided self-help intervention. Session material was underpinned by an evidence-based approach utilising a CBT model, which forms the current basis of psychological headache intervention. This intervention was offered to young people who were originally referred to the group, and who subsequently agreed to the alternative guided self-help intervention. Goal-based outcome measures were used to monitor progress during the course of the intervention. The materials were reviewed by the practitioners providing the intervention and the young people accessing the intervention were also asked for feedback to enable continued adaptation and development based on experience.

Results Initial results suggest that a guided self-help intervention via video appointments is an accepted low-intensity psychological intervention by young people with headache conditions.

Conclusion Service found a way to adapt support for young people with headache conditions in the face of exceptional circumstances due to Covid-19. This has implications for the future provision of interventions and improves accessibility for the young people referred to our service who may otherwise be limited by financial or geographical means.

39 PEERS – POST EVENT EVALUATION REFLECTION AND SUPPORT

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The NHS is the largest employer in the United Kingdom, the largest employer in Europe and the fifth largest employer in the World employing over 1.7 million people. Great Ormond Street Hospital employs over 4200 of these individuals.

Many teams and Industries support their teams by debriefing following significant negative events and indeed some teams debrief all events.

Healthcare teams are unique when compared to teams in other industries. Health Care teams differ in Gender, age, culture, ethnicity, cognitive ability, experience and training and specialty. The spectrum of a healthcare team may range from student nurse to professor all working with a common same focus – 'the Patient'.

Health care teams are Heterogeneous unlike the Homogeneous nature of teams such as the Military or Aerospace which are for example, predominantly male, similar backgrounds and similar ages.

PEERS recognises and responds to needs diverse of individuals and teams that make up our healthcare system.

The aim of PEERS meetings is to provide support for colleagues, assisting them to explore and make sense of and process common reactions to potentially stressful events.

The PEERS approach seeks, nurture resilience, vulnerability and wellbeing through supported reflection by creating a safe space where individuals can speak openly and honestly, and be heard without bias, judgment or threat.

The fundamental objective is to foster, support and encourage, personal growth, wellbeing and to encourage 'help-seeking' behaviour, if needed.

PEERS Participants should feel safe enough to share their experiences, actions and reactions in open forum, their attendance and participation is never mandated, Participants are never compelled or required to share before they are ready.

40

A QUALITATIVE EVALUATION OF A 1 YEAR PILOT STUDY OF YOUNG PEOPLE AND PARENTS ACCESSING A MENTAL HEALTH DROP-IN CENTRE IN A PAEDIATRIC HOSPITAL SETTING

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Background Children and young people with long term physical health conditions (LTC) are known to have higher levels of co-morbid mental health problems than medically healthy children. Evidence-based treatments for mental health problems are effective in children who also have an LTC. A drop-in centre in a paediatric hospital, delivering a range of interventions including onward referral, signposting and guided self-help, may be one way to complement existing mental health services as part of a stepped-care approach. The aim of this study was to understand patients' perspectives of the centre.

Methods 128 patients attending a drop-in centre at Great Ormond Street Hospital were invited to participate. Overall, 35 participated in semi-structured interviews (either in person or by phone) exploring their experience of the drop-in centre. Interviews were audio-recorded, transcribed, and analysed using Framework analysis.

Results Overall, participants found the drop-in centre highly acceptable and reported a positive experience. Reasons for this varied, but broadly focused around four areas: (1) Choice in how to access the intervention and feeling empowered afterwards; (2) Having someone to talk to who could provide them with practical support; (3) Integration and parity of physical and mental health care; (4) The intervention being sufficient to meet their needs and quick to access.

Discussion Participants found the intervention feasible and acceptable. A drop-in centre in a paediatric hospital appears to be a positive and valued adjunct to supplement existing mental health services at GOSH.

41

FHIR-ENABLED HOLOGRAPHIC MODELS FROM IMAGING STUDIES: HOLOREPOSITORY 2020

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Introduction Advancements in Augmented Reality technologies allow for the generation of three-dimensional (3D) models of anatomical structures from MRI or CT scans. We present the HoloRepository 2020 Proof of Concept as an open source FHIR-enabled research demonstrator using openly available imaging data.

Method We used the latest Machine Learning (ML) algorithms in the field for organ segmentation with a supporting

structure for future ML algorithm revisions. The Cancer Imaging Archive was used for testing and integration, providing over 30 million radiology images for over 70 different anatomical structures. With this, a model training process that will allow hospitals and clinical groups to build out organ segmentation models on their own DICOM sets is anticipated.

Results This new version has 3 main editions: the Cloud HoloRepository 2020 (CH20), Intel NUC optimized HoloRepository 2020 (NH20), and HoloRepository 2020 Viewer (H20V). These facilitate new components such as an organ segmentation library, enhanced augmented reality experiences through cameras and multi-monitor displays, and a synthetic medical imaging data platform. CT and MRI DICOM scans of the brain, lungs, chest, abdomen and kidneys are rendered as a 3D view using a pre-trained model and the latest techniques for organ segmentation. A step-by-step guide on how to carry out the implementation procedure from research to deployment is laid out, enabling easy integration of newly available segmentation algorithms and methods. HoloRegistration enables simplified over-the-body tracking of the holographic views, achieving an Augmented Reality clinical education experience.

Conclusion The viewer and Intel NUC application allows for HoloRepository to be run on a local laptop or workstation, providing easier and faster access. Optimisations from this study have reduced generation times from 30 seconds to 3 seconds and cloud hosting costs by 66%. Future research into volumetric measurements and 2D cross-sectional tracking may aid diagnostics and assist navigation during surgery.

42

AUGMENTED REALITY CLIPBOARD: A SMART, SECURE AND INTERACTIVE ALTERNATIVE FOR PATIENT OBSERVATION CHARTING

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Introduction In a hospital, a patient may traditionally have observations and personal data displayed on a paper clipboard next to their bed. Not only does this raise privacy concerns, as data can be viewed by anyone approaching the bed, but it also needs to be manually updated when there is a change. A handheld mobile Augmented Reality (AR) application allows the clinician to view data as superimposed on a real-life clipboard, fetching and updating this information in real time. The AR application draws the clinician away from the screen and back into the 'real world', human interaction with the patient, providing a seamless, unobtrusive way for them to interact with patient data.

Method As part of a collaboration between GOSH and UCL computer science through the industry exchange network (IXN), we developed a prototype mobile AR application for viewing patient data on an AR clipboard. The application was developed using Unity game engine and the AR foundation package for cross platform development with iOS and Android. The application pulled synthetic patient data for display, in the FHIR standard format, from the FHIR API.

Results The mobile AR application responds to a trigger image on a clipboard and displays patient information in real time, tracking the clipboard in space, so the information appears superimposed onto the object. The application offers the option to search and display patient data by patient ID