Background There is increasing recognition of the potential use of digital health technology to support delivery and effectiveness of care within the NHS. Use of gaming technology in rehabilitation is gaining popularity across the world. In collaboration with University College London Partners (UCLP), the physiotherapy department procured two 'MIRA Rehab' units (video exercise gaming technology) to improve children and young people (CYP) engagement, activity and participation.
Aim To demonstrate the facilitators and barriers to adoption of MIRA across the physiotherapy department.
Methods The process of adoption of MIRA involved: awareness raising, group and individual teaching sessions, problem solving with the company representative, working with different stakeholders within and outside the Trust such as Information Communication Technologies (ICT), Information Governance (IG), the company representatives and UCLP. Further feedback on usability of MIRA was gathered from the Young People Forum, parents, CYP, staff, and physiotherapists from other organisations.
Results The facilitators for adoption of MIRA were: positive feedback from YPF, parent and CYP following short-term use of MIRA; involvement across the multidisciplinary team; close collaboration for skill transfer from the company representative and ongoing problem solving; dedicated staff time to promote adoption, integration and implementation in collaboration with UCLP and the Trust's ICT. The barriers were: systemic issues in integrating an external technology within the Trust's ICT/IG framework; technical issues with the MIRA product; environmental issues such as accessibility and space; staff attitude, time constraints and the type of clinical caseload.
Conclusion Introducing technology into a real-world setting is a challenge. It requires collaborative working with internal and external stakeholders within the existing infrastructure. Further consideration is required as to whether video exercise gaming technology addresses a real clinical need in an acute clinical setting.

71 PUTTING PUBLIC PATIENT INVOLVEMENT TO WORK-HOW FAMILIES ARE MAKING RESEARCH MORE MEANINGFUL IN THE AREA OF SELECTIVE DORSAL RHIZOTOMY

[1]Gill Waite, [2]Steph Cawker, [2]Deepti Chugh, [3]Phill Harniess, [4]Kate Oulton. [1]*gill*; [2]*GOSH*; [3]*UCL-IOE/ICH*; [4]*ORCHID*

10.1136/archdischild-2019-gosh.71

Purpose Patient Public Involvement (PPI) is integral within health research. This abstract presents how involving families and other stakeholders has directly guided a forthcoming research project; which intends to understand families' and young peoples' experiences of selective dorsal rhizotomy (SDR), including rehabilitation.
Aims To demonstrate how PPI influenced protocol design for the forthcoming study exploring SDR

To highlight the benefits PPI had on protocol design
Method An active PPI group was convened for this project, building on previous PPI work. The group comprises 2 parents, 2 CYP's and 2 clinicians active in the field of neurodisability, to provide direction to:

- Prioritise and refine the research questions and design (including recruitment)
- Develop relevant topic guide
- Develop accessible information sheets
- 'Sense check' future findings
- Critically evaluate research outputs that include family information

The initial PPI focus group used participatory methods for equal member contributions. It covered points 1-3 with some reference for point 4. Further open PPI work at an SDR family event day provided steering for point 5.
Results PPI has demonstrably influenced protocol development, which is now undergoing NHS ethical review. The project is focused upon stakeholders' priorities with tangible outputs, whilst filling a research gap. The title represents this priority and associated methodology;

'Supporting family decision making around Selective Dorsal Rhizotomy – A family participatory research project to co-design pre-operative counselling information'.

Refined protocol qualitative interviews, now includes creative methods, to meet agreed objectives, to:

- Understand experiences and expectations families consider most important relating to SDR operation, physiotherapy treatment and outcomes (Phase1).
- Explore findings with families and clinical experts to direct child and family–centred information development, supporting their SDR journey (Phase 2).

Conclusion Collaboration with young people and families was essential to driving a relevant participatory research project including meaningful outputs.

72 DEVELOPMENT OF A SIMPLE VISITOR MANAGEMENT APP FOR GOSH DRIVE

[1]Chao Ding, [1]Benjamin Smith, [2]Daiana Bassi, [2]Sue Conner, [1]Yun Fu, [1]Dean Mohamedally, [2]Gemma Molyneux, [1]Graham Roberts, [2]Neil Sebire. [1]*UCL*; [2]*GOSH*

10.1136/archdischild-2019-gosh.72

Introduction GOSH DRIVE is a flexible workspace often used for events such as seminars, workshops and hackathons. Currently visitor management is completed using physical records. It would be beneficial if this process could be digitised. The goal of this visitor management app is to increase the efficiency of the sign in procedure for visitors.
Method As part of a joint collaboration between GOSH and UCL computer science (CS) through the industry exchange network programme, CS students devised a platform for easy tracking of visitors to a specific area, using GOSH DRIVE as a model. The application employs a 3-tier, presentation, logic and data, software architecture pattern. The presentation tier consists of a mobile application and web app. The mobile application was developed in Ionic4, an open source, cross-platform toolkit for developing mobile apps that uses standard web technologies; HTML, CSS and JavaScript. The web app make use of Bootstrap to create fully responsive web pages. The logic tier containing the applicationâ€ ™s functional business logic was built in Express.js and consists of the RESTful APIs used to access the data. The data tier comprises of a MySQL database to store events details, status and booked visitors, visitor details and visitors currently signed in.
Results The app for visitors to sign in and out of the building, alongside the web based admin panel allows staff members to view, modify or export the data from the database.

The app and web based user interface give the staff at DRIVE an easier way of accessing and manipulating data from events. The app also has the capacity to generate a register of all persons in the building in case of emergency evacuations.
Conclusion The app and website developed facilitates visitor management and could be used in other parts of the trust to replace physical records.

73 DEVELOPMENT OF A CLOUD-BASED DEVICE MANAGEMENT APPLICATION FOR SIMPLE ALLOCATION AND TRACKING OF DEVICES AND EQUIPMENT

[1]Wilfrid Berry ,[2]Cecilia Pretus Garcia-Escudero, [1]Poyzan Taneli, [3]Daiana Bassi, [3]Sue Conner, [1]Yun Fu, [1]Dean Mohamedally, [3]Gemma Molyneux, [1]Graham Roberts, [3]Neil Sebire. *[1]UCL; [2]UCLStudent; [3]GOSH*

10.1136/archdischild-2019-gosh.73

Introduction Keeping track of devices across large organisations can be challenging. Hospitals contain many electronic devices and pieces of equipment that can be moved around the building and lost. The aim of this project was to develop an electronic system for the management of devices with an app to allow for devices to be loaned to named individuals.
Method As part of a joint collaboration between GOSH and UCL computer science (CS) through the industry exchange network programme, CS students devised a platform for quickly and easily logging and tracking devise, using GOSH-DRIVE as a model. The application employs a 3-tier, presentation, logic and data, software architecture pattern. The presentation tier consists of a mobile application and web app. The mobile application was developed in Ionic4, an open source, cross-platform toolkit for developing mobile and desktop apps that uses standard web technologies; HTML, CSS and JavaScript. The web app make use of Bootstrap to create fully responsive web pages. The logic tier, which contains the application's functional business logic, was written in PHP and consists of the RESTful APIs the mobile and web app use to access the data. The data tier comprises of a MySQL database to store a list of devices, loans and borrowers details.
Results A web user interface was developed to allow administrators to create a database of equipment owned by an organisation with descriptions, serial numbers and physical locations. Each piece of equipment logged is assigned a QR code that can easily be scanned to check items in or out of the department. Additionally, lost items can be scanned and returned to the correct location.
Conclusion This application and web interface allows assets to be catalogued and loaned. This represents a low cost way of maintaining records of equipment and devices across a large organisation.

74 A WEB BASED SERVICE FOR MODULAR SMART ON FHIR APPLICATION DEVELOPMENT

[1]Ziyang Dong, [1]Qinyi Tang, [1]Ralf Yap, [2]Daiana Bassi, [2]Sue Conner, [1]Yun Fu, [1]Dean Mohamedally, [2]Gemma Molyneux, [1]Graham Roberts, [2]Neil Sebire, [3]John Booth. *[1]UCL; [2]GOSH; [3]Great Ormond Street Hosptial*

10.1136/archdischild-2019-gosh.74

Introduction Fast Healthcare Interoperability Resources (FHIR), is a standard for exchanging data. It is a common framework that makes it easier to read, write, and transfer medical data, such as patient information securely. SMART is a platform that builds upon the FHIR specification and provides developers with a set of APIs to create applications on top of FHIR. These applications range from retrieving a patient's medication history, to evaluating a patient's risk of cardiac arrest. The aim of this project was to help individual doctors, small teams of developers, or large medical organisations, who may not be familiar with FHIR, to discover the capabilities of SMART APIs and build applications for this next generation of digital healthcare.
Method As part of a joint collaboration between GOSH and UCL computer science (CS), through the industry exchange network programme. CS Students developed a web application using Django, a framework written in Python that employs a model-template-view (MTV) pattern. The client-side templates were built using React. The application's back-end encapsulates the app's logic; and interacts with the data persistency layer- a SQLite database. The code snippets are run by querying the SMART STU3 Sandbox.
Results A functional web application was developed that collates a catalogue of modular SMART functions that a developer can use to implement in their own application. The platform allows non-coders to explore SMART on FHIR components and develop prototype applications. It has a library of runnable code snippets that can act as a helpful tool and reference when building SMART applications.
Conclusion This application supports the development of SMART applications that adhere to FHIR standards in data interoperability, for developers who lack specific knowledge of FHIR standards. Such resources are likely to be of increasing importance as NHS organisations begin to develop customised local programmes using SMART on FHIR.

75 COMPUTER VISION FOR OBJECT DETECTION; MACHINE LEARNING-BASED IDENTIFICATION OF SURGICAL EQUIPMENT

[1]Benedict Chan, [2]Shirin Harandi, [3]Daiana Bassi, [3]Sue Conner, [1]Yun Fu, [1]Dean Mohamedally, [3]Gemma Molyneux, [1]Graham Roberts, [3]Neil Sebire. *[1]UCL; [2]UCL Student; [3]GOSH*

10.1136/archdischild-2019-gosh.75

Introduction Computer vision could be a valuable tool in medicine to track objects during a procedure. In an operating theatre computer vision could be used to track and monitor the use of surgical equipment, examples could be the scanning of trays pre and post operation to check instruments into and out of the operating theatre. The aim of this project was to create a system that utilises computer vision to identify surgical equipment. To discover the limitations of object detection systems, and the time required to train a model.
Method As part of a joint collaboration between GOSH and UCL computer science (CS) through the industry exchange network programme, CS students developed a platform for computer vision for reliable detection of surgical instruments using standard over-the-counter digital video and mobile phone cameras, in conjunction with an Object Detection model developed using Google's TensorFlow Object Detection API. The desktop client application was