

significantly smaller and more premature than those in the OT, which could have had an impact on our results

#### 64 THE USE OF GRAPH ANALYTICS TO ENHANCE THE UNDERSTANDING OF HOSPITAL ADMISSIONS FOR PAEDIATRIC RENAL TRANSPLANTS

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**Aim** The interactions between patients and Health Care Providers (HCPs) within a hospital admission are complex and difficult to navigate using traditional analytical approaches when applied to Electronic Patient Record (EPR) data. The collaboration between HCPs, is not clear and could serve as an important signal to assess quality of care and patient safety. The objective of this paper is to demonstrate whether graph analytics can be applied to EPR data to distinguish different HCPs collaboration and interaction network structures with individual patients undergoing the same procedure.

**Method** We apply graph analysis to the HCPs interactions with an individual patient over the period of a complete hospital admission during which each patient underwent a renal transplant. Collaboration between HCPs was defined by the interaction of HCPs with the same patients within a 60-minute window. Separate sessions were defined by whether a patient was in the Intensive Care Unit (ICU) or in a standard hospital ward. A report is generated that explores the daily interaction and collaboration network structures within an admission.

**Results** HCPs and patient interactions for 120 hospital admissions where the principal procedure was Allotransplantation of kidney in the period May 2019 to June 2023 were extracted. 2,300 individual graphs were constructed to analyse each patient's HCP's interactions within a 60-minute window per day of admission. Varying types of admission were identified, by sex and age group of the patient, length of stay and with or without an ICU visit.

**Conclusions** Graph analysis provided a novel way to augment the numeric data to visualise differing collaboration and interaction network structures which can be used to gain a deeper understanding of the complex nature of Paediatric patient care.

#### 67 BOTH HUMAN AND TECHNOLOGY BASED SOLUTIONS HAVE THEIR PLACE IN THE FUTURE DELIVERY OF HOSPITAL FOOD

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**Background** Hospital food influences experiences and outcomes of care and optimising nutrition for hospitalised children is universally recognised as important for recovery. Whilst barriers to oral food intake have been identified, interventions to address them are limited. As part of a proof of concept (PoC) trial, our aim was to explore both technology and person to person solutions to this perennial problem.

**Methods** Our two-pronged approach involved exploring the potential for developing the catering liaison role (low tech) and implementing and evaluating a Food on Demand Delivery Service (FODDS) app (high tech) at Great Ormond Street Hospital. The catering liaison role was evaluated through individual case studies with 4 long-term patients whereas a PoC trial was undertaken on six inpatient wards during a 4 week period to evaluate the FODDS app. Data were collected using quantitative (surveys) and qualitative (focus groups and individual interviews) approaches with families and staff.

**Results** Overall, 149 families and 19 staff participated in data collection. Both solutions were positively evaluated by all stakeholder groups, with the Net Promotor score in relation to the FODDS app moving from a baseline score of -26 to +44 during the PoC. Challenges of both solutions were identified, particularly in relation to communication and logistics, but overall findings supported upscaling both the catering liaison manager role and the implementation of the FODDS app across the hospital.

**Discussion** Technology and person to person solutions both offer potential for addressing barriers to oral intake for hospitalised children. Challenges will need to be addressed prior to scaling up for a hospital-wide roll out but the benefits for children, families and staff, as well as potential resource benefits for the hospital, were evident and support further work to enable such solutions to be introduced across the hospital, alongside a comprehensive evaluation programme.

#### 69 HYPOXIC CHALLENGE TESTING IN CHILDREN USING PHRENIC NERVE PACING

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**Background** Phrenic nerve pacing (PNP) uses implanted devices to provide diaphragmatic stimulation from repeated electrical stimulation of the phrenic nerves in children with central hypoventilation disorders. Hypoxic Challenge Testing (HCT) is performed in respiratory disorders to assess whether patients need oxygen supplementation (O<sub>2</sub>) during flying. As children with hypoventilation disorders may worsen if given O<sub>2</sub> alone, we aimed to assess whether children with PNP need O<sub>2</sub> or respiratory support when flying.

**Method** An adapted HCT protocol monitored oxygen saturation (SpO<sub>2</sub>) and transcutaneous pCO<sub>2</sub> (tcpCO<sub>2</sub>) in a hypoxic environment (15% O<sub>2</sub>) used to simulate the aircraft cabin at altitude.<sup>1</sup> Children with PNP were monitored self-ventilating (SV) in air, and then with PNP in a hypoxic chamber to see if it provides adequate ventilation to maintain SpO<sub>2</sub> >90%, the threshold for O<sub>2</sub>.

**Results** We performed HCT in two patients (1 male) with PNP. They had normal baseline SpO<sub>2</sub>(98-99%) in room air and desaturated to <90% when self-ventilating in the hypoxic chamber. Phrenic nerve pacing increased SpO<sub>2</sub> to baseline (96-97%) in both patients and O<sub>2</sub> was not required. TcpCO<sub>2</sub> rose from baseline when SV in 15% FiO<sub>2</sub>, but returned to baseline once PNP started.

**Conclusion** PNP maintained SpO<sub>2</sub> at baseline, without the need for O<sub>2</sub> in children with central hypoventilation disorders. This confirmed that PNP alone during a flight can