This retrospective observational study aims to examine survival to discharge from UK and Irish Paediatric Intensive Care Units (PICU) for children receiving exchange transfusion in the setting of pertussis.

Methods Retrospective data was requested from the Paediatric Intensive Care Audit network (PICAnet) with regards to completed exchange transfusions within UK and Irish Paediatric Intensive Care Units between 2007 and 2015. Reported instances of exchange transfusion in the setting of pertussis were then identified and analysed.

Results In total 25 exchange transfusions in the setting of pertussis were reported to PICAnet between 2007 and 2015. During this time, 167,462 PICU admissions were also reported. This equated to an average of 2.8 per year and an incidence of 1.5 per 10 000 admissions to UK and Irish PICUs.

The average age of these children was 1.7 months (range 21 days to 83 days) with average length of PICU stay 12 days.

In total 14 children (56%) survived to PICU discharge.

Conclusions Exchange transfusion in the setting of severe pertussis is a rare occurrence with incidence in UK and Ireland of 1.5 per 10,000 PICU admissions. The overall PICU survival rate for pertussis requiring exchange transfusion reported between 2007 and 2015 was 56%.

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G27(P) PROMOTING FAMILY-CENTRED CARE: ASSESSING PARENT & HEALTHCARE PROFESSIONALS' VIEWS ON INTRODUCING PARENTAL PRESENCE ON PICU WARD ROUNDS

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Aims Paediatric Intensive Care Unit (PICU) is a challenging environment. Being a parent to a child who is critically unwell creates a variety of complex emotions. Often the unwell child is not able to express their needs, and thus healthcare professionals must recognise the invaluable role parents play in this situation.¹ Communication between parents and staff is an essential part of the support offered during these difficult times and may reduce parent's emotional stress.²

Currently, RBHSC PICU does not facilitate parents to be present during morning PICU ward rounds. There are several reasons cited for this, including potential excess length of ward rounds and possible confidentiality implications due to the unique and often sensitive patient circumstances in a critical care environment. This practice is consistent with several other large PICU Centres in the UK and Ireland.

We introduced the concept of parents being invited to be present during the daily morning ward round and proposed a multitude of benefits for patients, parents and staff.

Methods A questionnaire was designed assessing staff and parent attitudes on parental presence on ward rounds. Parents and legal guardians of patients admitted to PICU for two successive mornings were eligible for participation. Focused questions included exploring themes around communication,

empowerment, understanding day plans, and whether respondents felt parents should be invited to remain present during ward rounds. In addition, during a two-week period, we monitored length of time of ward rounds.

Results The average length of time for morning ward round was 14 min per patient. 12 Parents responded to questionnaire. 92% were strongly in favour of being invited to stay for ward rounds. 70 PICU staff members responded including 56 Nurses, 9 Doctors, and 5 Allied health professionals. 30% of staff agreed that parents should be invited, 23% were equivocal, and 47% did not agree.

Conclusions This survey highlighted the varied staff and parent views on parental presence on PICU ward rounds. We plan to introduce a pilot period of parents being invited to stay present during the ward round and will re-survey to assess impact. These measures are in bid to enhance parental empowerment, improve communication and promote family-centred care in PICU.

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G28(P) HOW CAN WE IMPROVE INDUCTION TO THE PAEDIATRIC AND NEONATAL INTENSIVE CARE UNITS?

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Background Our regional Paediatric and Neonatal Intensive Care Units (PICU and NICU) care for 1700 critically unwell children a year. Medical staffing is provided by senior paediatric or anaesthetic trainees, and overseas fellows from diverse professional backgrounds, starting at several different points throughout the year, completing rotations of 3–12 months.

The current induction programme is one day of talks followed in most cases by a day of shadowing prior to starting clinical duties. Anecdotal feedback from both doctors and nursing staff has suggested that many doctors do not start work feeling fully equipped for such a high intensity role, and there remains a steep learning curve.

Methods An online survey was disseminated to doctors, assessing both their experiences of the induction they had received and their ideas for how the programme could be made more effective. A separate survey was sent to nurses for their thoughts on how the transition could be improved.

Results Of 19 doctors who participated, 26% felt the current induction format covered everything they needed to know to do their job effectively. 47% felt they had a good idea of what their job would be when they started but only 32% felt they had understood how the units worked. 68% found the shadowing period useful. 45 nurses contributed and only 13% felt new doctors started work with all the information they needed to do their jobs. Both staff groups identified key areas of difficulty, made suggestions for improvement and provided 'top tips' for new starters, based on information they felt would be important to know at the beginning of the rotation.

Conclusion Both professional groups felt the induction programme needed improvement. It was highlighted that access to more written information would be beneficial prior to starting work. In response, an induction website has been

created, addressing knowledge gaps highlighted by the surveys; doctors are given access to this in advance of their face to face sessions. The surveys will be repeated in future to determine whether this measure has helped ease the transition of new doctors joining the intensive care units.

G29(P) QUANTIFYING PAEDIATRIC HIGH DEPENDENCY CARE: DOES THE PAEDIATRIC CRITICAL CARE MINIMUM DATASET ACCURATELY CAPTURE WORKLOAD?

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Aims The structure of paediatric critical care (PCC) in the UK is under review.¹ This study aimed to evaluate the paediatric high dependency unit (PHDU) workload at our district general hospital, mapping it to the Paediatric Critical Care Minimum Dataset (PCCMDS).

Methods The demographics, diagnostic category, interventions required and outcomes of all PHDU admissions were recorded prospectively over a 4 month period (winter 2016–2017). Demographic data was compared to previous local PHDU audits and the intensity of interventions each patient received was assessed using the PCCMDS.

Results 105 patients were admitted with a mean age of 4.9 years (median 2.6 years, range 12 days–16 years 3 months). Age distribution was similar to previous years but number of admissions has greatly increased (n=34 in 2000–2001). Respiratory admissions are increasingly common (33% in 2000–2001 vs 55% in 2016–2007). Mean length of stay was 1.6 days (range 3 hours–12 days). 90 patients were discharged to the ward or home and 9 transferred to a tertiary centre (6 to paediatric intensive care, 1 to PHDU, 2 to wards). Outcome data was not recorded for 6. Regarding intensity of care: 66 patients received PCCMDS basic interventions; with 2 further patients meeting the suggested new criteria.¹ 11 patients had intermediate interventions (8 also had basic interventions). 34 patients received no PCCMDS interventions. These were mainly neurology (n=13) and poisoning (n=9) admissions. 3 of this sub-group received volume resuscitation and 4 were transferred to a tertiary centre.

Conclusions Paediatric high dependency workload is increasing, particularly respiratory admissions. The PCCMDS improves understanding of the PHDU workload and will enable comparison of work between units. However 32% of patients admitted to our PHDU received no PCCMDS interventions prompting review of our PHDU admission criteria and highlighting that some interventions are not recognised by the PCCMDS (including volume resuscitation and observation after prolonged seizures) leading to potential underestimation of workload. We recommend further modification of the PCCMDS to account for this.

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G30(P) BULIMIA NERVOSA – THE SILENT KILLER – A CASE REPORT FROM PAEDIATRIC INTENSIVE CARE

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A 14 year old boy was admitted to the paediatric intensive care unit following an out of hospital cardiac arrest. He was found to be in Ventricular Tachycardia by the ambulance service and one DC shock was administered at the scene and cardio-version achieved.

On arrival to hospital a capillary blood gas revealed a severe hypochloraemic hypokalaemic metabolic alkalosis. PH 7.89, PCO₂ 2.4, NA+126, K+1.5, Cl82. BE +ve 18. Bloods on admission showed an acute kidney injury creatinine 129, urea 8.0. The patient was gradually hydrated and electrolyte disturbance was corrected over 48 hours.

An ECG on arrival to accident and emergency showed a prolonged QTC of 675 ms. An echocardiogram confirmed that the heart was structurally normal. The patient was unresponsive on admission to hospital (GCS 4) he was therefore intubated and ventilated and transferred to PICU.

The differential diagnosis in this case was broad and included Bartters syndrome, Gitelmans syndrome, gastric outlet obstruction, HNF-1 beta, renal, metabolic and endocrine causes.

The patient was extubated twenty-four hours following admission. He was assessed by the neurology team and he was found to have no residual neurological deficit. On waking the patient disclosed that he had struggled with body image and perceptions about his weight for the last 3 years. His enteral intake had been good but he would induce vomiting after every meal. He denied laxative use but admitted to drinking highly caffeinated drinks to keep his energy levels up. The combination of severe hypokalaemia <1 and high caffeine intake may have lead to Torsades de pointes and ultimately cardiac arrest.

A history of chronic vomiting fits with the profound hypochloraemic hypokalaemic metabolic acidosis observed on admission. Metabolic and genetic investigations were normal. Interestingly the blood gas taken in accident and emergency was taken thirty minutes after a return of spontaneous circulation had been achieved. Therefore the patients PH and potassium levels may have been higher and lower respectively at the time of cardiac arrest. Theoretically the patient will have started to correct his alkalosis and profound hypokalaemia as cardiac arrest increases serum potassium levels and induces acidaemia.

Eating disorders in male paediatric population is an increasing problem with associated high morbidity, mortality and poor prognosis. This case highlights the importance of early intervention and support for affected individuals.

G31(P) BIG HANDS HEALING LITTLE HEARTS

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Aims The Healing Little Hearts charity provides Cardiac Surgery and Critical Care for children with congenital heart disease in low and middle-income countries. We report the outcomes of the 5th mission to the Hospital Universiti Sains Malaysia.

Methods A prospective, observational study in a Malaysian teaching hospital during a one week charity mission. The visiting charity team collaborated with local adult services to