outcome if transplant is made affordable and accessible as most patients are from lower socioeconomic groups. Awareness about these disorders may improve the diagnosis of these conditions and help in appropriate management. There is a need to share experience and data on these rare conditions and build support groups to guide patients and families afflicted with these ominous disorders.

Association of Paediatric Emergency Medicine

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PARENTAL PERCEPTIONS OF PAEDIATRIC EMERGENCY DEPARTMENTAL ATTENDANCE IN CHILDREN DURING THE COVID-19 PANDEMIC IN UK (PPEDIC). THE QUANTITATIVE OUTCOMES

¹Lorraine Wicksey, ¹Marylyn Emedo, ¹Tina Sajjanhar, ¹Anthony Hemeson, ²Emmanuel Singogo, ¹Gayle Appleby, ¹Benjamin Cahill, ¹Sophie Keers, ³Alastair Yim, ⁴Alexandra Wharton-Smith, ¹Maggie Nyirenda. ¹Lewisham and Greenwich NHS Trust: University Hospital Lewisham; ²University of Northern Carolina; ³Lewisham and Greenwich NHS Trust: Queen Elizabeth Hospital; ⁴London School of Hygiene and Tropical Medicine

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Background Since March 2020, National lockdowns in UK to control the spread and impact of the COVID-19 pandemic have resulted in a reduction in children attending Paediatric Emergency Departments (PED) nationwide. At our Trust, there was a 46% reduction in PED attendances in 2020 compared to the same two-month period in 2019 (6631 v 12092).

Objectives The study aims were to analyse the impact of lockdown on PED attendance in our Trust, identify reasons for reduced attendance, drivers of change in behaviour, the clinical conditions, timing, and outcomes of PED attendees.

Methods This quantitative sub-study was part of a prospective mixed methods study that recruited caregivers of children ≤16 years attending PEDs in our Trust during November-December 2020. A semi-structured questionnaire was used to collect data including demographics, details on reason for attendance, source and type of advice sought prior to attendance, the form of transport used to get to PED and clinical outcomes of the attendees. Likert scales were used to assess fears and drivers of change in behaviour around PED attendance. We used frequencies, proportions and Spearman's correlation coefficient to summarize the data. Likert scale data was analysed using measures of central tendency (median) and dispersion (interquartile range).

Results A total of 98 caregivers who attended PED with their children during the study period were recruited randomly. Most participants were female (79.6%). About 92% of the participants disclosed their ethnicity: with 57/90 (63%) were white, 19(21%) identified as black and 14(16%) were other races including people of Asian and Hispanic descent.

Over 60% of participants came to PED within 2 days of illness, with mode of transport being: by ambulance (13%), drove their own cars (59%) and used public transport (13%). The commonest clinical presentation was injuries 29/98 (30%), followed by respiratory conditions 11/98 (11%). A total of 76 (78%) were discharged while 17(17%) were admitted.

The main concerns related to PED attendance were; risk of contracting COVID-19(41%); and concerned about overburdening the NHS (25%). Just under half, 42/98 (43%), of participants stated that they would have attended PED in

the same time frame as they did in contrast to 32/98 (32.6%) of those who felt they would have attended earlier if there was no pandemic. Whilst 22/98 (22.4%) were not worried about attending PED at all. There was no correlation between self-rated level of worry about coming to PED and time taken to PED attendance (spearman correlation co-efficient = 0.1399)

Most participants 60/98(61.2%) discussed their child's illness with another person prior to presentation. 5/98 (5.1%) of the participants were advised not come to ED but they decided to attend anyway. 28/98 (28.6%) participants contacted GPs followed by 19/98 (19%) who consulted the NHS 111 service.

Conclusions This study demonstrates that in line with national figures, PED attendances fell dramatically during the Covid pandemic, especially in the area of respiratory illness. For the carers who brought their children to the PED, there was a high level of concern about safety and infection control for themselves and their children that needs to be addressed.

Quality Improvement and Patient Safety

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IMPROVING THE QUALITY OF NEONATAL HANDOVER: A QUALITY IMPROVEMENT PROJECT

Karim Noordally, Preethika Mosali. *Royal Berkshire NHS Trust*

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Background Effective handovers facilitate safe, error-free and efficient continuity of care of patients through the sharing of information between two engaging parties. This requires one party to 'hand over' relevant information succinctly to the recipient who should be able to read, question, digest and therefore understand the patient's issues, before resuming their care. Several guidelines from the National Patient Safety Agency, as well as the Royal Colleges emphasise the importance and benefits from effective handovers.

Following on from several 'near misses', handover practices within our medium sized DGH providing Level 2 neonatal care were reviewed between 2019 and 2020.

Objectives To introduce a system of formal handover within the Neonatal Unit and Postnatal Ward and to assess its effectiveness amongst relevant team members.

Methods Team members:

Consultants, Trainees and Nurses of all grades, were invited to participate in an electronic survey to gain further insight into the current handover arrangements and to identify possible improvements in these processes. The survey was designed via the 'Survey Monkey' web interface. The survey aimed primarily to address the safety and effectiveness of handovers. Questions were reviewed and validated by both internal and external colleagues prior to being sent to all team members. The initial survey period was between June 2019 and July 2019. Changes were subsequently implemented from September 2019, followed by a period of re-evaluation between May 2020 and July 2020. The period of evaluation during the second survey was slightly longer than the initial survey to account for the impact of the COVID-19 pandemic.

Results A total of 35 invitations for participation were sent out to the medical team. There were 26 completed responses for the initial survey (74% completion rate; ranging from consultants to foundation year trainees) and 28/35 (80%

completion rate) in the subsequent survey. During the first survey, 14 invitations for participation were sent to nursing team, with 3 collected responses (21% completion rate). Following on from the 2019 survey, a 6-step plan of change was implemented from September 2019 and this formed the basis of subsequent evaluation in 2020.

Conclusions The initial survey revealed a lack of structured medical handovers within the department. As well as causing a reported negative impact on individuals, and the team as a whole, patient safety was being compromised as a result. The second survey, following the introduction of certain new hand-over practices, demonstrated increased satisfaction amongst the medical team, however, the lack of a formal patient lists remained a great cause for concern.

British Association of Perinatal Medicine and Neonatal Society

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EVALUATION OF THE KAISER PERMANENTE RISK CALCULATOR TO MANAGE NEWBORN BABIES AT RISK OF EARLY ONSET NEONATAL SEPSIS: A PROSPECTIVE COHORT STUDY

Alexander Cleator, Karl Holden, Debora Freitas, Helen Auger, Rajkumar Dhandayuthapani, Kristian Whalley, Jill Harrison. *Liverpool Women's Hospital*

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Background Early onset neonatal sepsis (EONS) is rare but associated with significant mortality and morbidity. Most post-natal units assess risk and treat for suspected EONS using the NICE guideline (CG149) based on pregnancy and peri-partum risk factors. This sees many clinically well babies receive empirical antibiotics, before investigations rule out any evidence of infection. This process usually involves separating baby and mother and exposure to the risks associated with intravenous antibiotic therapy. As such, there is a clear mandate to validate a tool that can safely risk stratify and identify which babies should receive empirical antibiotics. The Kaiser Permanente Risk Calculator (KPRC) combines peri-partum risk factors with the clinical status of the neonate, resulting in a stratification to low, medium or high risk of EONS. Application of the KPRC in some centres has been shown to reduce antibiotic administration by 50–75% without missing any cases of culture positive sepsis.

Objectives To evaluate the performance of the KPRC in comparison to the NICE guideline in identifying babies at risk of developing EONS in a large UK maternity hospital.

Methods In this prospective single-centre cohort study, we identified all neonates born at 34 weeks' gestation who were commenced on empirical antibiotics, as per the CG149 guideline. We prospectively collected data on these babies including peri-partum risk factors and the clinical status of the baby at the time the decision was made to treat. This data was inputted into the KPRC, a risk score was calculated and the suggested management plan recorded. Our primary outcome measure was to observe for any babies who became significantly unwell with infection (defined as unwell as per KPRC criteria, maximal CRP > 50mg/L, raised CSF white cell count or positive blood or CSF culture) that would not have been started on empirical antibiotics had the KPRC been used.

Results Over a 4-month period we identified 94 babies born at 34 weeks' gestation receiving empirical antibiotics for

suspected EONS as per CG149. One baby had a positive blood culture and one had a positive CSF culture. Of these 94 babies, only 19 (20.2%) would have been commenced on empirical antibiotics by the KPRC. Those 19 babies were more likely to have a CRP >20mg/L ($p<0.05$) and need a longer course of antibiotics ($p<0.05$). Interestingly, 27 out of the 94 babies (28.7%) were classed as significantly unwell (as defined above) and of these, only 15 (55.6%) would have been identified by the KPRC as needing antibiotics. 6 babies with a CRP >50 were not identified for antibiotics by the KPRC, including a baby with a CRP of 155.

Conclusions Application of the KPRC to this cohort would have significantly reduced antibiotic administration rates. The safety and appropriateness of the KPRC for our population needs further assessment though, as some babies with significant evidence of infection went undetected by the calculator. In particular, the role of the KPRC in identifying clinically well babies with a very high CRP needs further consideration.

Quality Improvement and Patient Safety

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BARRIERS TO ACHIEVING QUALITY NEONATAL CARE IN LOW RESOURCE SETTINGS: PERSPECTIVES FROM A UNIQUE PANEL OF NEONATAL HEALTH EXPERTS

¹Eshkeerat Kaur, ²Michelle Heys, ²Emma Wilson, ²Mari Evans, ²Caroline Crehan, ³Anthony Costella, ⁴Msandeni Chiume. ¹Royal College of Surgeons in Ireland; ²UCL Great Ormond Street Institute for Child Health, UK; ³UCL Institute for Global Health, UK; ⁴Department of Paediatrics, Kamuzu Central Hospital, Lilongwe, Malawi

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Background In 2019 there were 2.4 million newborn deaths worldwide, accounting for nearly half of all child deaths under 5 years of age. Despite increasing rates of facility based deliveries, neonatal mortality rates remain persistently high in low resource settings (LRS). This has catalysed international focus on understanding and enabling quality newborn care in order to achieve global targets to end preventable newborn deaths by 2030. Digital interventions are a promising tool that may accelerate progress towards achieving quality improvement goals.

The WHO quality improvement standards for maternal and newborn care provide a blueprint for Quality of Care (QoC). Yet in many LRS, this agenda has yet to be operationalised and refined at the national and facility level to respond to country-driven priorities. We carried out a qualitative study to understand persistent barriers to QoC, and to identify quality improvement priorities from the perspective of a unique panel of neonatal experts with first-hand experience of delivering inpatient newborn care in LRS. We also sought expert views on the role of digital health as a vehicle to improve QoC.

Objectives The study aim was to identify barriers to quality inpatient neonatal care in LRS from the perspective of experts experienced in delivering and overseeing frontline neonatal care in these contexts.

Methods This study was part of a larger DELPHI study, carried out in 2018 to refine clinical diagnostic algorithms for the NeoTree platform. The Neotree is a digital quality improvement system combining immediate data capture, education and clinical diagnostic and management support. Physicians and nurse practitioners from high income and low income countries with clinical and research expertise in neonatal health were invited to participate. Additional inclusion criteria included