The second patient was a 2 year old boy with middle aortic syndrome in which a bypass was performed from the thoracic aorta to the aortic iliac bifurcation with successful bilateral renal auto-transplantation. 3D models allowed the team for better planning of surgical approach and in the first case, initially planned surgical approach was amended once the model was reviewed.

Patients and families commented that seeing the model made them better understand the operation and it contributed to better patient information and consenting pathway.

Conclusions This is the first report on the use of the 3D printing for planning of complex vascular surgeries involving major arteries in children with renovascular hypertension and associated severe middle aortic syndrome. Both cases were successfully performed and 3D models benefitted both the surgical and medical planning, enhances safety of complex procedures, as well as improving family understanding of the complexity of the procedure and adding to the quality of informed consent.

British Association for Paediatric Nephrology

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A CASE SERIES OF PAEDIATRIC KIDNEY TRANSPLANTS DURING THE ONGOING COVID-19 PANDEMIC

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Background During the current COVID-19 pandemic, multiple lockdowns and a high incidence of cases severely impacted many European transplant programs. During the first wave of the pandemic, there was a need to stop both the living donor (LD) and deceased donor (DD) paediatric kidney transplant (KT) programs in our centres, subsequently reopening them fully. In contrast, increased confidence in our processes and outcomes led us to keep our deceased donor paediatric programme open during the UK's second COVID-19 wave.

Objectives We report our experience with 25 children who received a KT during the current ongoing COVID-19 pandemic.

Methods From May 2020 to February 2021, all paediatric KT recipients were recorded and followed up in Evelina London Children's Hospital, Southampton Children's Hospital and Great Ormond Street Hospital. Covid-secure pathways were established for both LD and recipients following the UK guidelines on COVID-19. We prospectively recorded transplant outcomes and instances of SARS-CoV-2 infection in KT recipients.

Results There was 100% patient and 100% renal allograft survival in all 25 (12 (48%) female) KT recipients aged 2 to 17 (median 11) years of whom 18 were from LD (72%) and 7 from DD (28% [5 transplants from donors after brain death and 2 from donors after cardiac death]). Two patients (8%) developed COVID-19; one of them 5 weeks post-KT presenting with low grade fever and high CRP for one week without acute kidney injury during admission for surgical complication. The second one 4 month's post-KT, presenting with low grade

fever without any further complication. Four (16%) transplants were intraperitoneal, with 21 (84%) extraperitoneal, including an en-bloc KT. There were no vascular complications and two ureteric complications requiring surgical intervention. All of the patients shielded as per local guidelines.

Conclusions During the COVID-19 pandemic, different strategies had to be taken on the transplant programme to enable paediatric KT programmes to continue. This enabled safe and effective transplantation options from both living and deceased donors. In our experience, two transplant recipients acquired COVID-19 post-transplant without renal allograft dysfunction and did not require any changes to the immunosuppression.

Association of Paediatric Emergency Medicine

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DE-LABELLING FALSE PENICILLIN ALLERGY IN ACUTE PAEDIATRIC SETTINGS: EVALUATING EVIDENCE OF PRACTICABILITY

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Background Many children present to emergency departments (EDs) with a reported allergy to penicillin.¹ There is growing data to support key historical features to accurately stratify patients into low and high-risk groups which is crucial in application of direct provocation test (DPT).² Non-immediate mild cutaneous reactions to penicillin antibiotic are classed as low risk symptoms where DPT with penicillin can be applied. It is apparent that removal of penicillin allergy labels reduces undesirable health care risks, antibiotic resistance, and increased costs.¹

Objectives To answer a 3-part question: In [children presenting with history of non-immediate benign skin rash to penicillin therapy], [can direct provocation test] with a penicillin antibiotic if clinically indicated [safely de-label the allergy] in acute settings?

Methods Search was carried out independently by the authors in PubMed, EMBASE, Cochrane Library, and BestBETs Database from inception to November 2020 using search strategy: (('penicillin allergy' OR 'provocation test') OR ('beta lactam allergy' OR challenge) OR ('penicillin allergy' AND 'de labelling')). The search included studies with reaction to DPT as their main outcome. Studies of mixed adult-children population, and methodology involving prior or concurrent skin testing were excluded.

Results Seven studies were identified to answer the clinical question. The studies aimed to de-label penicillin allergy with oral penicillin-based antibiotics in outpatient settings. Six were prospective observational studies while one was a retrospective study. Notably, a study performed in a US paediatric emergency department was not included because of prior skin prick testing. One of the reviewed studies provided the largest sample size (818 children) in the literature demonstrating the safety and accuracy of DPT with amoxicillin in children with reported non-immediate benign skin rashes. Results of negative DPT in the reviewed studies ranged from 86% to 100%. No severe reaction was reported. However,

there was heterogeneity in the use of single versus graded oral provocative tests.

Conclusions There is good evidence that DPT with penicillin is safe in non-immediate mild cutaneous reactions. DPT in conjunction with tight safety net advice is practical in emergency and urgent care settings. However, whilst adopting this practice to foster antimicrobial stewardship, it is reasonable to consider the ED 4-hour target performance indicator.

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British Association of Perinatal Medicine and Neonatal Society

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DOES THE STRENGTHS OF POSITIVE DIRECT ANTIGLOBULIN TEST PREDICT THE NEED FOR PHOTOTHERAPY AND DURATION OF PHOTOTHERAPY?

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Background The available evidence on the use of Direct Antiglobulin test (DAT) in management of neonatal hyperbilirubinaemia are conflicting.

Objectives To assess if the strength of positive Direct Antiglobulin test (DAT) predicts the need for phototherapy, duration of phototherapy and need for major interventions.

Methods This was a retrospective single center study conducted over a period of six years (2014–2019). We collected data on all DAT positive neonates ≥ 32 weeks. Data regarding blood group, DAT and clinical details were obtained from hospital database. We also collected data on serial haemoglobin and other relevant laboratory parameters. Irrespective of DAT status we also collected data on infants receiving major interventions like exchange transfusion, in-utero transfusion, immunoglobulins and postnatal transfusion for the duration of the study period. All of these infants were electronically followed up for a period of 6 weeks. This study was approved by institutional audit authority. All the statistics were performed using SPSS software.

Results A total of 1285 DAT tests were performed during this time frame. Out this, 91 infants were DAT positive (7%), and 78 DAT positive infants were available for analysis. 72% of the study population were >37 weeks of gestation. There were 54 infants with DAT (1+), 15 infants with DAT (2+), 7 infants with DAT (3+) and 2 infants with DAT (4+). There was no significant difference in terms of need for phototherapy, duration of phototherapy, need for major interventions and haemoglobin levels at different time points between the groups (DAT 1+ Vs DAT $\geq 2+$; DAT 2+ Vs DAT $\geq 3+$). Total of 10 infants received major interventions, with one infant receiving all three interventions (DAT 3+ with significant maternal antibodies), 2 infants (both DAT1+) received exchange transfusion, 6 infants received immunoglobulin (2 infants: DAT 2+; 4 infants: DAT 1+) and one infant (DAT 1

+) with significant maternal antibodies received postnatal transfusion.

Conclusions The strength of DAT did not predict the need for phototherapy, duration of phototherapy, and need for major haemolysis related intervention in the first six weeks of life.

International Child Health Group

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DETERMINANTS OF CARE-SEEKING BEHAVIOUR FOR FEVER, ACUTE RESPIRATORY INFECTION AND DIARRHOEA AMONG CHILDREN UNDER FIVE IN NIGERIA

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Background Despite available, inexpensive and effective treatments, malaria, diarrhoea, and pneumonia still contribute the majority of the global burden of childhood morbidity and mortality. Nigeria has one of the highest absolute numbers of child deaths worldwide. Optimal care-seeking is important for prompt diagnosis, appropriate and timely treatment, and prevention of complications.

Objectives The objective of this study was to examine the prevalence of and factors associated with optimal care-seeking for childhood illnesses.

Methods We used the most recent Nigeria Demographic and Health Survey (2018) to assess the prevalence of optimal care-seeking among mothers of children under five with symptoms of common childhood illnesses. Optimal care-seeking was defined as seeking care from a hospital or health centre for diarrhoea, and additionally seeking care within two days of symptom onset for fever and symptoms of acute respiratory infection (ARI). Multivariate logistic regression was carried out to assess factors associated with optimal care-seeking for each illness.

Results At least 25% of parents did not seek any care for children with fever or ARI; this figure was over one third for diarrhoea. Only 15% and 14% of caregivers showed optimal care-seeking for their children with fever and ARI respectively, and 27% of mothers sought care in a formal health facility for diarrhoea. Predictors of optimal care-seeking varied according to childhood illness. Maternal and/or paternal education were associated with increased odds of optimal care-seeking for all three illnesses, as well as previous facility delivery. Having multiple symptoms was associated with optimal care-seeking for ARI and diarrhoea, but not fever. Rural/urban residence was not associated with optimal care-seeking for any illness and wealth was only associated with increased odds of optimal care-seeking for fever.

Conclusions Overall, care-seeking for childhood illnesses was suboptimal among caregivers in Nigeria. Interventions to increase caregivers' awareness of the importance of optimal care-seeking are needed alongside quality of care interventions that reinforce people's trust in formal health facilities, to improve timely care-seeking and ultimately reduce the high burden of child deaths in Nigeria.