In the four groups with the highest initial HbA1c, improvements were seen when comparing Pre-LD to both Post-LD and Av-Post-LD, with the >69 group improving by 9.73mmol/mol and 10.18mmol/mol respectively. Only the two highest groups demonstrated a sustained improvement. In the two groups with the lowest initial HbA1c, a slight deterioration was seen when comparing Pre-LD to both Post-LD and Av-Post-LD, with a trend towards deterioration.

Conclusions Perhaps unsurprisingly, HbA1c testing fell during lockdown and never returned to pre-lockdown levels, highlighting the pandemic's disruption to the care of patients with long-term conditions. Contrary to guidance, 14.73% of patients were not tested in the nine months post-lockdown, potentially reflecting reluctance to attend hospital during the pandemic. Nevertheless, where results were available, lockdown seemed to have a positive impact on HbA1c despite the enforced use of telemedicine, unless the patient was already close to target. It is possible that lockdown provided more routine and parental supervision for those with initially high HbA1c but disrupted the successful routine and sporting activities of those initially closer to target.

British Paediatric Allergy Immunity and Infection Group

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DIAGNOSING EARLY-ONSET NEONATAL SEPSIS IN LOW-INCOME AND MIDDLE-INCOME COUNTRIES: DEVELOPMENT OF A MULTIVARIABLE PREDICTION MODEL FROM ROUTINE CLINICAL DATA

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Background Neonatal sepsis causes 15% of global neonatal deaths. Non-specific clinical features and unavailability of laboratory tests in many low-income and middle-income countries make it difficult to diagnose. Clinical prediction models could support timely, accurate diagnosis of neonatal sepsis and rationalise antibiotic usage. The NeoTree app is an Android-based quality improvement platform embedded into clinical practice at two neonatal units in Malawi and Zimbabwe. It combines evidence-based clinical decision support, education on neonatal care and immediate digital data capture.

Objectives We aimed to develop a clinical prediction model to diagnose neonatal sepsis with routine clinical data, without the need for laboratory tests.

Methods We analysed secondary data from an ongoing quality improvement project at the neonatal unit of Sally Mugabe Central Hospital, Zimbabwe, collected via the NeoTree app. We included neonates admitted from 1 February 2019 to 31 March 2020 aged <72 hours, born at $\geq 32^{+0}$ weeks with birth weight ≥ 1500 grams. We developed a clinical prediction model with multivariable logistic regression for the outcome of early-onset neonatal sepsis (EOS, <72 hours) as defined by

the treating consultant neonatologist. Candidate predictors were identified from expert opinion and literature review. Missing data were imputed using multivariate imputation with chained equations. We first fitted a 'full' main effects model containing all candidate predictors. We then examined several variations on the full model and selected the model favoured by the Bayesian information criterion. Performance was evaluated in the derivation cohort with the area under the receiver operating characteristic (ROC) curve (AUC) and sensitivity, specificity, predictive values and likelihood ratios at various thresholds of predicted probability.

Results We included 2627 neonates with mean gestational age 38.0 ± 2.5 weeks and mean birth weight 2889 ± 703 grams. EOS was diagnosed in 297 neonates (11.3%). The final model included eight predictors: maternal fever, foul-smelling liquor, prolonged rupture of membranes, neonatal temperature, respiratory rate, activity, chest retractions and grunting. ROC analysis gave AUC = 0.735 (95% confidence interval 0.699–0.771). For a sensitivity of 95 (92–97)%, corresponding specificity = 15 (13–16)%, positive predictive value = 12 (11–14)%, negative predictive value = 96 (93–98)%, positive likelihood ratio = 1.12, and negative likelihood ratio = 0.32.

Conclusions Our clinical prediction model for EOS achieved high sensitivity but with only modest specificity in the derivation cohort. This suggests our model may be best suited to ruling out a diagnosis of EOS, which may support healthcare workers' decisions to withhold antibiotics and prevent unnecessary antibiotic exposure in non-septic neonates. Future work will validate and refine this model before incorporating it into the NeoTree app for clinical use.

British Society of Paediatric Gastroenterology, Hepatology and Nutrition

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D LACTIC ACIDOSIS – IS IT MORE PREVALENT CONDITION THAN WE THINK?

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Background D-lactic acidosis is a known complication in children with short bowel syndrome. The unabsorbed carbohydrates are fermented by colonic bacteria to form D-lactic acid among other organic acids. They typically present with episodic metabolic acidosis and characteristic neurologic abnormalities including confusion, ataxia and slurred speech. Routine clinical assessment of serum lactate covers only L-lactic acid; when clinical suspicion for D-lactic acidosis is high, special assays for D-lactic acid are needed. Standard treatment consists of restricting oral carbohydrates or fasting, correction of acidosis, and long-term suppression of pathogenic floras with antibiotics.

Objectives To create more awareness of D-lactic acidosis and promote early detection as well as more effective management.

Methods A retrospective case notes review with short bowel syndrome identified 3 children presenting with d-lactic acidosis over a 10-year period at tertiary care hospital.