intubated and ventilated within 6 hours of age. 9 babies had raised pulmonary pressures confirmed on echocardiography, while 7 did not have it prior to transfer to a tertiary centre. 14 babies received surfactant and inhaled nitric oxide (iNO), 6 babies required high frequency oscillation ventilation (HFOV) and none of the babies needed ECMO. Out of the 14 babies who received iNO, 8 received it within 8 hours of admission. Inotropic agents were started within 8 hours of admission for 11 babies, and within 12 hours for 15 babies. 14 babies were transferred to Level 3 NICU or PICU. All babies survived to discharge, 15 babies went home within 4 weeks of birth.

Conclusions More aggressive and robust treatment of PPHN with early ventilation, use of iNO and inotropes has eliminated the need of ECMO. In the past this unit had high rates of babies requiring ECMO - 3 babies a year on average. This study has shown a great improvement of outcomes for babies with PPHN despite the seriousness of the condition.

Quality Improvement and Patient Safety

1265 PIP! ONE PAEDIATRIC DEPARTMENT'S QUALITY IMPROVEMENT JOURNEY

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10.1136/archdischild-2021-rcpch.518

Background The Paediatric Improvement Plan (PIP) is a 12 workstream plan covering the main paediatric areas in the hospital as well as key themes such as medicines management. It was constructed to ensure the department provides the level of care expected by the Trust and the Care Quality Commission (CQC). 27 of the actions within the plan address the CQC domain 'safe', 25 'well led', and four 'effective'.

Objectives The main aims were:

- Documentation of operational policies and practices.
- Ensuring nursing training competencies were met, documented and used to facilitate safe rostering.
- Standardising paperwork and practices.
- Improving communication around governance.
- Ensuring children and young people cared for outside the paediatric department were provided with equitable care.

Methods The PIP started with 50 points to be actioned, and review identified a further six. These were split into three time divisions based on importance and feasibility of implementing the recommendations. The majority fell into the 0–6 month timeframe (other timeframes are 6 months-2 years and 2–5 years). Points were marked as 'Red' if no action had been taken, 'Amber' if action was in progress, 'Green' if actions were complete, and 'Blue' if the impact had been evidenced.

Results Over a four month period, 34 (92%) 'Red' actions have been addressed and 10 completed ('Green' or 'Blue'). There are now no 'Red' actions in the 0–6 month timeframe.

Key achievements:

1. A rapid access clinic has been established to see patients who require urgent but not emergency review. It also addresses training needs of paediatric registrars.
2. Evidencing and documentation of nursing competencies such as life support training has improved and is factored into rostering.
3. Training on nurse-led discharge, medicine management, 'TTA' pre-packs and controlled drugs has resumed.
4. Seven operational and clinical policies were written, and another five are in progress. Many involved clinicians who had not previously written such documents.
5. While awaiting the Trust wide introduction of governance boards, a monthly paediatric governance newsletter was designed. Neonatal governance meetings were reintroduced and a monthly medicine management meeting started.
6. A neonatal quality improvement group now meets monthly.

Conclusions A written plan with clearly documented actions, responsible owner and timeframes proved invaluable, as did having a co-ordinator with dedicated time. Involving and motivating the whole multi-disciplinary team was perhaps most crucial to the success of the PIP.

My background as a paediatric registrar allowed me to see through a clinical lens and understand competing demands. During the four month period, 11 junior doctors became involved in improvement projects, and a number joined the neonatal quality improvement group.

The COVID-19 pandemic created unique challenges. Demands on the workforce were immense and there was little spare capacity to take on additional improvement work. Many face-to-face courses and training sessions were cancelled or moved online. This remains a challenge to addressing outstanding training requirements, particularly life support training for nursing staff.

Quality Improvement and Patient Safety

1266 STANDARDISING CARE – NORTHERN IRELAND REGIONAL PAEDIATRIC GENTAMICIN CHART

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10.1136/archdischild-2021-rcpch.519

Background Gentamicin is one of the most commonly reported medications associated with drug errors amongst paediatric inpatients.[1] Such errors include inappropriate dosing, insufficient monitoring and lack of awareness of its role in acute kidney injury (AKI). As with other aminoglycosides, gentamicin side-effects are dose-related, highlighting the significance of dose calculation and therapeutic monitoring.

Collaborative services is one of the key recommendations from the RCPCH standards for paediatric care.[2] Within Northern Ireland there is a well-established regional neonatal gentamicin prescription chart, however, it has previously lacked a paediatric equivalent. Lack of standardisation of practice across units is a common source of frustration for paediatric trainees and trainers. It also contributes to variations in care across Northern Ireland.

Objectives To improve gentamicin prescription, drug monitoring and avoidance of nephrotoxicity, through the design, implementation and evaluation of a standardised gentamicin prescription chart for children (one month to sixteen years old). Particular emphasis was placed on dose adjustment and close monitoring in renal impairment, and ideal-body-weight

(IBW) for height prescribing in grossly oedematous or overweight children. Additionally, a stronger focus was placed on antibiotic stewardship. For instance, following two gentamicin doses the prescriber is prompted to review diagnosis, culture results and on-going antimicrobial indication. A further prompt for Paediatric Infectious Diseases discussion is highlighted in treatment courses exceeding five doses.

Methods A rapid-fire PDSA QI approach was employed, with contribution from Paediatric Infectious Diseases, Paediatric Nephrology and Pharmacy departments. The team pursued this project during the COVID-19 pandemic, despite some initial colleague hesitancies. Throughout implementation, the chart design, content and accessibility were regularly scrutinised. An initial three month pilot was conducted in RBHSC PICU & surgical ward (August- November 2020), prior to hospital-wide adoption. Pre- and post- implementation multidisciplinary education sessions helped to embed its clinical use and facilitate user feedback. Following pilot, the chart was amended to include specific instructions to review both anaesthetic and emergency department records, to ensure gentamicin doses weren't missed. An audit of toxic gentamicin levels ($\geq$1), renal function monitoring and associated AKI was conducted, comparing serum gentamicin levels sent in the 6 months prior to and following chart introduction. Quantitative and qualitative staff feedback was also obtained.

Results Audit data showed improvement in renal function monitoring (84.6% to 100%) and associated reduction in AKI (33.4% to 22.2%), following chart introduction. However, similar levels of gentamicin toxicity were encountered before and after chart implementation (9.8% and 10.7% of all gentamicin results respectively). Staff feedback was overwhelmingly positive, with 100% of prescribers agreeing the chart enhanced their knowledge of therapeutic drug monitoring, and prescription and monitoring in renal impairment. Furthermore, regional implementation was supported by all survey respondents. New relationships with laboratory colleagues has facilitated the development of an auto-analysis function to process creatinine results when serum gentamicin levels are requested; this will help to limit clinician variability and may prompt enhanced AKI recognition.

Conclusions A collaborative, multi-professional approach to a standardised gentamicin prescription chart will help to harmonise paediatric clinical care throughout Northern Ireland and may contribute to improved antimicrobial prescribing, monitoring and stewardship.

British Society of Paediatric Gastroenterology, Hepatology and Nutrition

1267 REGIONAL VARIANCE IN THE INVESTIGATION OF PROLONGED JAUNDICE- THE NEED FOR A STANDARDISED APPROACH

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10.1136/archdischild-2021-rcpch.520

Background Paediatric trainees in Northern Ireland perceive variation in the investigation of infants with prolonged jaundice. With national guidance from NICE and BSPHGAN we feel there should be a unified, regional Northern Ireland approach to ensure all infants achieve the appropriate standard of care. [1,2]

Objectives To identify the first-line investigations performed in infants presenting with prolonged jaundice among paediatric training units in Northern Ireland and examine variation in practice.

Methods We conducted a retrospective, multi-centre cohort study in the five main paediatric training units in Northern Ireland. A trainee and consultant ambassador were identified in each unit to facilitate data collection. Cases were identified from hospital records and included infants referred with prolonged jaundice over a three-month period (October to December 2020). 20 patients were randomly selected from this cohort with case notes and electronic laboratory results reviewed. A bespoke electronic data collection proforma was created and included gestation, method of feeding, referral source, clinical presentation, investigations performed and overall diagnosis.

All hepatology patients in Northern Ireland are managed by the Birmingham liver unit. Their 'Yellow Alert' prolonged jaundice protocol recommends initial clinical assessment and investigations.

Results 106 patient records were reviewed, of which 16 were identified by the assessing clinician as not jaundiced. This left a study population of 90 infants.

Health visiting teams were the largest referrers (44%) followed by midwives (13%) and general practitioners (4%). The referral source was unknown in 36% of cases. The majority of cases were assessed between 0900–1700 (97%). Paediatric advanced nurse practitioners assessed 48% of cases with ST1–2 paediatric doctors assessing 24%. The mean age at review was 15 days old. 88% of cases were term infants. The mean gestational age was 37+6 weeks. 58% of the infants assessed were breastfed, 25% formula fed. 14% were combination fed, method of feeding was unknown for 3%.

Only one infant was described as 'unwell' at the time of assessment, presenting with obstructive symptoms and subsequent diagnosis of biliary atresia. 42% of cases were attributed to breastfeeding associated jaundice, 32% physiological jaundice. No overall diagnosis was documented in 24% of cases.

All 90 infants had a split bilirubin performed. 13 different variations of blood tests were performed with 90% getting a full blood count, 67% receiving liver function tests, 61% had thyroid function test and 32% having electrolytes checked. 30% of these infants also had a urine culture.

7% of infants in Northern Ireland followed the Birmingham 'Yellow Alert' protocol for their initial prolonged jaundice investigation. [3]

Conclusions There was demonstratable variance amongst the investigation of infants with prolonged jaundice in Northern Ireland.

Our findings suggest that following the 'Yellow Alert' initial protocol would have identified the one pathological jaundice whilst reducing investigations required in the vast majority of infants with breastfeeding/physiological jaundice.

A regional guideline is being developed. Implementation of a unified approach will benefit patients, by reducing additional investigations and paediatric medical staff by ensuring a consistent regional approach. This will help further minimise the time and medic-economic burden on the heath service.