Association of Paediatric Emergency Medicine

INCIDENCE OF SPREAD OF CLINICALLY RELEVANT SARS-COV2 INFECTION BETWEEN CHILDREN IN A TERTIARY EMERGENCY DEPARTMENT: AN EVALUATION

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10.1136/archdischild-2021-rcpch.74

Background SARS-CoV-2 infection presents significant challenges to the management of children. To our knowledge, the spread in healthcare settings between children had not been reported. Leicester was the first area in the United Kingdom to undergo a localised lockdown with reports of relatively high numbers of children affected.

Objectives Our evaluation aimed to identify the number of clinically significant SARS-CoV-2 paediatric patients (age < 18 years) presenting to our Children’s Emergency Department (CED) at the Leicester Royal Infirmary (LRI), investigate the effectiveness of infection control measures and examine outcomes.

Methods We determined clinically significant infection to be that which prompted parents/carers to bring their child to the CED and be admitted. The national guidance in England at the time determined that only admitted patients are swabbed for SARS-CoV-2.

Clinical information on the timelines of hospital attendance, length of hospital stay (LOS) and outcomes was gathered by retrospectively from 15.03.2020 to 31.07.2020 by looking at the attendances in Nervecentre®.

National infection control policies were followed, ranging from adoption of rigorous hand washing and provision of Personal Protective Equipment (PPE) for patient contacts, to the separation of the department into ‘red’ (suspected COVID) and ‘blue’ (non-suspected COVID) zones on the basis of pre-determined criteria.

The study was ratified as a service evaluation project by the trust.

Results 27 children (0–15 years) tested COVID positive. 22 (81.5%) of these presented to the PED among 10777 presentations.

20/22 (90.9%) patients were admitted, all were eventually discharged. Nearly all of the patients came through the red zone; 21/22 (95.4%). The average Length of Stay (LOS) of discharged patients was 120.7 hours.

2 patients were felt to have the novel Paediatric Inflammatory Multisystem Syndrome temporally related to SARS-CoV-2 (PIMS-TS), both needing paediatric intensive care stay. Children presented with lower respiratory tract infection (3/22; 4/27), suspected sepsis (4/22; 4/27), and Bronchiolitis (2/22; 2/27).

There was no overlap between any SARS-CoV-2 positive patients with any other patients who subsequently tested positive in the department. Thus, no clinically relevant SARS-CoV-2 cross-infection was noted.

Conclusions Our study demonstrated that children don’t appear to be causing spread within our CED. Division of CED into two areas meant a substantial change to our working due to changes in staff allocation and challenges to CED leadership. Only a very small number of patients were SARS-CoV-2 positive- this led us to believe that the existing measures to split the departments were effective, but also perhaps, unnecessary.

On the basis of this study, the splitting of the CED into red and blue zones has been abolished and the department has been merged, to avail the staffing and space resources optimally to enhance patient safety and provide best healthcare services to our patients.

This study could be crucial in anticipating and managing the future PED patient flow, especially during the winters when the other seasonal viral infections are likely to overburden the services.

British Association of Perinatal Medicine and Neonatal Society

HELPING BABIES BREATHE: DESCRIBING OUR EXPERIENCES OF INTRODUCING LESS INVASIVE SURFACANT ADMINISTRATION TO REDUCE RATES OF BRONCHOPULMONARY DYSPLASIA

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10.1136/archdischild-2021-rcpch.75

Background Respiratory Distress Syndrome affects approximately 50% of babies born under 32 weeks gestation. Surfactant is a key component in reducing surface lung tension, and despite the administration of antenatal steroids at risk of preterm delivery to promote surfactant production, many preterm babies are born with surfactant deficiency. If left untreated babies require increasing respiratory support, and potential complications such as pneumothorax, the development of bronchopulmonary dysplasia, home oxygen and increased susceptibility to infections.

Traditionally surfactant administration requires babies to be intubated and placed on mechanical ventilation. With this technique there are many potential complications, including the use of drugs for sedation during intubation, the risk of trauma and subsequent airway abnormalities, and the risk of barotrauma to the lungs due to persistent use of high pressure ventilation.

Objectives Less invasive surfactant administration (LISA) delivers surfactant directly to the lungs via a tracheal fine-bore catheter avoiding invasive ventilation. Following introduction into our unit in May 2018 we determined LISA efficacy by comparing total ventilation days, total non-invasive ventilation days, total oxygen days and bronchopulmonary dysplasia rates between babies who received surfactant via LISA to those following intubation.

Methods Between May 2018 and October 2019 89 babies were identified via Badgernet as having received surfactant. We included only those infants between 26 + 0 and 32 + 6 weeks gestation producing groups with comparable gestation and birth weight. Using a data collection form and retrospective analysis of the Badgernet generated database we compared the demographics and long-term outcomes for infants receiving surfactant via LISA to those following intubation. Rates of bronchopulmonary dysplasia were collected from NNAP data.
Quality Improvement and Patient Safety

Background Handover is an essential component to ensuring patient safety. It was noted by neonatal staff that there was variation in which team members were being contacted and the information provided by Labour Ward and Theatre staff when requesting neonatal attendance at a delivery. Objectives Our aim was to assess the handover provided to identify areas where this could be improved. Methods We devised a data collection form, and collected information for each phone call received over a two week period. We collected data on which staff were called/paged to attend, and the information provided. Results We found that there was a wide variation in relation to which team members were being called/paged. The registrar was only paged 64% of the time, and 23% of the time neither doctor was paged and only the neonatal unit ward phone called. We were informed of gestation 38% of the time, and reason for attendance 87% of the time.

It was decided that the registrar and FY2 were required to be contacted for a delivery, and the neonatal unit did not need to be called separately. Signs were put above phones in labour ward and theatre informing staff of the page numbers to be contacted, and the information required. Senior staff on Labour Ward disseminated this information to their staff and included it in daily safety briefs.

Results We found that there was a reduction in median invasive ventilation days (0 vs. 2 days), non-invasive respiratory support days (0 days vs. 39 days) and total oxygen days (5 vs. 34.5 days) in the LISA cohort compared those receiving surfactant via endotracheal tube. One infant required home oxygen in the LISA cohort vs. eight in the non-LISA. There was a 9% reduction in BPD rates after introduction of LISA according to NNAP data. Eight babies required intubation following unsuccessful LISA. Compared to their successful counterparts median invasive ventilation days, non-invasive respiratory support days and total oxygen days were 1.5 days, 17.5 days and 10 days respectively. Of the babies who required intubation five had a complete course of antenatal steroids, and three an incomplete course.

Conclusions Following the introduction of LISA we successfully saw a reduction in total ventilation days, total non-invasive ventilation days, total oxygen days and bronchopulmonary dysplasia rates. With LISA becoming a standard of care for infants requiring surfactant and part of a package aimed at reducing BPD rates in our unit, we hope to see a sustained reduction in ventilation days and BPD rates. As no discriminating factor amongst those infants requiring intubation post LISA could be identified no changes have been made to the eligibility criteria for LISA.

We performed a second round of data collection six weeks following this intervention. There remained some variation in who was contacted, however there was improvement with the registrar now being paged 79% of the time, and only the neonatal unit ward phone being called reduced to 10%. We were now informed of the gestation 59% of the time, and reason for attendance had increased to 100%.

Conclusions This project showed that a simple intervention can make an improvement in the quality of information provided between teams. By ensuring that the correct team members were contacted this allowed for the necessary staff to attend a delivery with minimal delay. By providing important information to the neonatal team it allowed the registrar to decide if a neonatal nurse was also required to attend a delivery, thereby ensuring that their resources and staff were being utilised effectively.

Child Protection Special Interest Group

Background Infants presenting with injury are known to be a high-risk group for Safeguarding concerns. National guidance highlights the importance of adequate processes to identify and assess this group. Locally a bi-weekly multi-disciplinary Safeguarding meeting reviews all high risk or concerning presentations to quality assure internal processes. In our Paediatric Emergency Department (PED) a ‘Safeguarding information sharing form’ (SIF) triggers this review. Submission is the joint responsibility of medical and nursing staff. Local practice review in 2017–18 highlighted areas for improvement with a quality improvement project (QIP) January 2018–December 2019. We wanted to establish whether changes implemented had become embedded using a separate analysis method to the original QIP.

Objectives 1. Improve & sustain documentation of ‘the safeguarding triad’ (SFT) in <1 year olds presenting with head/ facial injury:
   - Full exposure
   - Absence/presence of bruising or marks
   - Developmental stage

   2. Improve & sustain submission of SIF for these infants

Methods All infants aged <1 year who attended our PED (28,000 total attendances/year) with ‘head or facial injury’ as the initial complaint between 01/01/2017 to 31/01/2021 were retrospectively included. Using random number generation in Microsoft Excel, 5 infants per month were selected as a truly random selection should fairly reflect processes over time. Clinical notes of selected patients were reviewed for documentation of all 3 parts of SFT and whether a SIF was submitted to the Safeguarding team. Data was entered into monthly run charts with pre-intervention median calculated January-December 2017. Interventions were noted on the run charts. A