- To identify the patient demographic presenting to the emergency department who have undergone an out of hospital or in department cardiac arrest.
- To compare outcomes of OHCA's presenting to a ED to the existing literature.
- To identify areas of good practice and improvements, specifically documentation and recorded downtime.

Methods Patients presenting to the ED aged 18 or under were included. The audit data was taken between 2015 and 2020 using patient data who required a '2222' cardiac arrest team call or were coded within electronic patient records as 'CARDIAC ARREST'. For audit inclusion, patients had to receive CPR before or within the emergency department. CPR was defined as the receipt of external chest compressions and/or internal cardiac massage for at least 60 seconds. All patients received by the emergency department after transfer from a local district general prior were excluded.

Results Survival

Following the inclusion criteria, 34 paediatric cardiac arrests were eligible for this audit, of these patients, 7 survived to discharge. The average age of all discharged survivors was 9.4 years with an age range of 5 weeks to 17 years. Survival to discharge for cardiac arrests within the department was 60% compared to 13.8% for OHCA's. All patients who survived to discharge either suffered a cardiac arrest within the ED or had a pre-hospital return of spontaneous circulation (ROSC).

Downtime (Temporal duration of cardiac arrest identified-to-ROSC)

The average total downtime for all 34 patients was 35.8 minutes with the shortest downtime being 1 minute and 106 minutes recorded as the longest. Average downtime for patients who survived to discharge was 8.4 minutes. No patient who had a downtime greater than 20 minutes survived to discharge.

Aetiology

In total there were 9 Hypoxic cardiac arrests, 4 of cardiac origin, 2 traumatic cardiac arrests and 19 classified initially as Sudden Unexpected Death of Infant/Child (SUDI/SUDC). Cardiac arrest deemed cardiac in aetiology had the greatest survival rate of 75%. SUDI/SUDC was the most common aetiology of cardiac arrest, making up 56% of cardiac arrests attending the department.

Conclusions This is the first audit at this tertiary centre describing in detail cardiac arrests presenting to the ED. OHCA's attending the audited ED have an increased survival to discharge rate compared to trends in recent reports. Survival rates based on total downtime and aetiology dependant cardiac arrests align to the existing evidence. Improvement and uptake of the existing cardiac arrest proforma would notably improve documentation. A downtime box in the department's pre-alert sheet could help guide clinicians on the expected outcome for an incoming cardiac arrest.

Background Novel Coronavirus-19 infection with its original and mutant variant (seems to be more contagious) is an emerging threat today, nevertheless, the children population cannot be overlooked, as a certain risk group child are also infected in the UK. The children mainly present with respiratory symptoms ranging from mild to severe respiratory distress. The racial predilection, weight percentile, and consistency of management protocol of Paediatric COVID-19 infection is an important issue in the UK, needs to be addressed.

Objectives The objectives of the study were:

- To identify the main presenting complaints among the children cohort with Covid-19 infection
- Whether children are the source of primary or secondary infection of COVID-19
- Whether the children visited with any comorbidity with COVID infection
- Any predilection of ethnicity and the
- Pattern of disease progression with COVID-19.

Methods A pre-tested open and close-ended (dichotomous) questionnaire was developed and used for the study.

The criteria for selection of the cases were- the children who presented with fever, respiratory and other symptoms, and who were admitted to the ward for treatment. The patient cohort was swabbed as per existing NHS guidelines for the detection of COVID-19 infection¹. The data protection act and the patient's confidentiality were strictly followed. The study was standardized as per protocol of the WHO guidelines, NHS website, and Public Health England including Royal College of Paediatrics and Child Health (RCPCH) guidelines 3,4. This was an observational study carried out among 158 children, ages ranging between 0 and 15 years. This study was carried out during the pandemic period of March-May 2020 at Queen's Hospital under Barking, Havering, and Redbridge University Hospital NHS Trust. The laboratory investigations were carried out at the local and tertiary hospitals.

Results From among 158 cases, 34 (21.3%) cases were COVID-19 positive, 8 (5%) cases suffered from Paediatric Inflammatory Multisystem Syndrome PIMS-TS. The demographic pattern which was expressed in number (n) of the cases by age, gender, and ethnicity.

It is revealed that ethnicity-wise, the Black, and Asian children are affected more. 24% of children were not swabbed, 8.7% of cases were wrongly labelled. It is elucidated the percent distribution of the cases who were not swabbed and wrongly labelled and negative cases. Only one case (n=1) was detected as COVID-19 positive and PIMS. It is depicted the percent distribution of the total patients of COVID-19 positive and PIMS-TS cases.

Conclusions Healthy children are affected, no children with underlying co-morbidity was noted and the ethnicity predilection is Black and Asian group, similarly, weight of higher centile category of children is affected more. Although the severity of infection is mild among children, the consequence of this infection cannot be overlooked.

To expedite the test and trace service

To develop strong liaison with tertiary care for sero-surveillance

To develop a consistent follow-up protocol

To develop proper documentation system

Development of appropriate swab technique and ensuring labelling whilst transferring the swab.

Ensuring appropriate PPE

British Association of General Paediatrics

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CHILDREN ARE AT RISK OF COVID-19 INFECTION: A PROFILE FROM A UK HOSPITAL

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10.1136/archdischild-2021-rcpch.134

Validation for a proven benefit of antibiotic at the onset of the COVID 19 infection.

British paediatric allergy immunity and infection group

675 SYMPTOMS OF SARS-COV-2 INFECTION IN THE UK PAEDIATRIC POPULATION

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10.1136/archdischild-2021-rcpch.135

Background During the first wave of the pandemic in 2020, Covid-19 symptoms of cough, fever and loss of taste/smell were identified in the adult population and aided diagnostic PCR testing. However, children with similar symptoms appeared less likely to test positive or to develop severe disease. As part of a multi-centre observational cohort study from 16th April 2020 to 3rd July 2020, 992 paediatric participants aged 2–15 years, were recruited and underwent SARS-CoV-2 antibody testing and provided symptom data.

Objectives To identify the proportion of healthy children who demonstrated antibody response to SARS-CoV-2 infection in this cohort of healthcare worker's children.

To identify the symptoms experienced by participants who had the presence of SARS-CoV-2 antibodies.

To assess if there was correlation between different symptoms experienced and SARS-CoV-2 antibody titres in a paediatric population.

Methods 1007 participants were enrolled and 992 were included in the final analysis. Participants were identified across 5 UK sites-Belfast, Glasgow, Cardiff, Manchester and London. All participants were healthy children of NHS healthcare workers. Participants underwent phlebotomy and provided blood samples for SARS-CoV-2 antibody testing and information on their symptoms in the form of an electronic case report form (CRF). Serum and/or plasma was tested for antibodies to SARS-CoV-2 using nucleocapsid and spike protein assays. Study data was recorded on a CRF using REDCap and information recorded included age, sex, previous health, recent symptoms and potential predictors of presence of SARS-CoV-2 antibodies including contact with confirmed or suspected cases.

Results Of the 992 patients included, 962/992 (97%) had complete CRFs. The median age of study participants was 10.1 years (2.03–15.99yrs) and 51% were male. There were 68/992 participants with positive SARS-CoV-2 antibodies, giving a seroprevalence of 6.9%. Of those with positive SARS-CoV-2 antibody tests, 34/68 (50%) were asymptomatic. In the symptomatic participants (34/68), the most commonly reported symptoms were fever 21/68 (31%), gastrointestinal symptoms 13/68 (19%) and headache 12/68 (18%). The presence of fever, cough or change in smell/taste was reported by 26/68 (38%) of antibody positive participants.

None of the participants experienced severe symptoms requiring hospital admission.

One of the assays (Abbott Architect SARS-CoV-2 IgG assay), indicated a small but significant increase in mean antibody titres between asymptomatic 4.3 S/C (95% CI 3.4 to 5.2) and symptomatic participants 5.5 S/C (95% CI 4.7

to 6.2), but this was not replicated with Roche Elecsys or DiaSorin LIAISON assays which found no significant difference.

Conclusions Following the first wave of the pandemic, 68/992 (6.9%) of children of healthcare workers in UK had evidence of previous SARS-CoV-2 infection. Importantly, only 50% of these children experienced symptoms and this highlights the potential for asymptomatic children to be missed by current NHS testing guidelines. The symptoms which adults often experience, namely pyrexia, cough and loss of taste/smell, were only experienced by 38% of children who had SARS-CoV-2 antibodies. These children were more likely to experience gastrointestinal symptoms or lethargy and headache and therefore raises the question of whether this should be factored into current symptomatic testing guidelines.

Paediatric educators' special interest group

676 PAEDIATRIC VIRTUAL SIMULATION

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10.1136/archdischild-2021-rcpch.136

Background Simulation has multiple benefits in paediatrics – experiential learning, hands-on skills practice, communication, task prioritisation and human factors challenges to name but a few. We also recognise the significant value of the debrief, and how supporting a peer-led learning conversation helps to both further and consolidate knowledge. During COVID-19, routine face-to-face simulation delivery in our Trust has stopped, begging the question of how we can continue to support our colleagues' clinical knowledge and skills, bearing in mind that many are now shielding at home.

Objectives Our solution was to design paediatric emergency simulated scenarios and deliver them virtually to remote learners via video conferencing software, as we believed that this could lead to both effective teaching and learning. We set out to explore the different ways in which this could feasibly be achieved, and through feedback from our learners, establish which methods were most effective. Our goal was to ensure real-time interactivity through engagement from the learners, as this has been a criticism of observing and our involvement with remote simulation in the past.

Methods We developed 3 distinct forms of virtual simulation:

1. Simulation By-Proxy: The set-up was as per traditional face-to-face simulation, with a high-fidelity manikin in a hospital bed surrounded by medical equipment and visible monitoring. The remote learners were shown a webcam view and were asked to work as a team to clearly instruct an in-situ confederate nurse and doctor (with no initiative of their own) to manage a complex child with pneumonia and sepsis.

2. Real-time Input: No manikin or bed-space were used. Remote learners were shown a power-point-type presentation which described an evolving clinical case of a paediatric burn. Integrated software allowed real-time group participation in word clouds, prioritisation tasks and multiple-choice questions with anonymous results visible within the presentation (like asking the audience in Who Wants To Be A Millionaire).

3. Direct Facilitation: No manikin or bed-space were used. Remote learners were shown a power-point presentation which described an evolving clinical case of paediatric toxic shock syndrome. Learners were numbered upwards from