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

¹Claire McGinn, ¹Rebecca Moore, ¹Kathryn Ferris, ²Thomas Waterfield, ³Rapid-19 Study Team N/a. ¹Belfast HandSC Trust; ²Queens University Belfast; ³Rapid-19

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

Andrew Kyrios, Emily Suckling, Jessica Smith, Rosie Fish. *UHBW Simulation Services*

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

junior to senior, and took turns directing the care of the patient sequentially. Slides showed clinical images such as bedside monitoring, blood gases and laboratory blood results. The scenario was proactively facilitated by the host as the clinical reasoning and management became more complex.

Results Overall, virtual simulation was very well received in a time when learning has become much more accessible but also more didactic. Our feedback questionnaire from 12 remote learners showed they both enjoyed and engaged with the scenarios, and particular highlights included capturing the sense and pressure of an emergency in methods 1 and 3, passing team leadership on as a baton in method 3, but also the anonymity and group interactivity of method 2. All scenarios benefitted from debrief in the traditional manner.

Conclusions We believe that virtual simulation has a role in the current healthcare environment, and is both possible and educationally valuable, with many different strengths that can be combined for a blended learning environment.

British Society of Paediatric Endocrinology and Diabetes

677 CUTANEOUS REACTIONS TO GLUCOSE SENSORS: A STICKY PROBLEM

Julie Smith, Tanya Bleiker, Isha Narang. *Derbyshire Children's Hospital*

10.1136/archdischild-2021-rcpch.137

Background Glucose sensors (GS) are increasingly used in children and young people (CYP) with Type 1 diabetes. Improved outcome has been associated with their use. However since their introduction, cutaneous reactions have been reported. Both irritant and allergic contact dermatitis (ACD) can be caused by constituents of these devices. Manufacturers are not under any legal obligation to disclose the constituents of the sensor. This makes identification of the allergen by patch test challenging and selection of an alternative device difficult.

Since the introduction of these devices in our paediatric diabetes service, we have seen an increasing number of these reactions. All cases are reported to Medicines and Health Regulatory Agency (MHRA) and referred to the Paediatric dermatologist. The relevant manufacturer is contacted to seek details of the constituents. This information has not been forthcoming.

Objectives The purpose of this study was to review our local experience of contact dermatitis and determine if our experience was reflected nationally and whether all teams were reporting cases to the MHRA and referring to dermatologists for investigation.

Methods We reviewed all cases in our service to determine incidence with each device and the results of patch testing if done. In June 2020, we carried out a survey to paediatric diabetes and dermatology teams in England to determine the number of cases of contact dermatitis seen, the devices involved and whether MHRA reporting and referral to dermatology for investigation was routine practice.

Results By 2019, in our service, 12.5% of Dexcom G5 users had experienced a skin reaction, 0% of Dexcom G6, 30% of Medtronic and 3.5% of Free Style Libre (FSL). Since 2019, the FSL formulation has been IBOA free and we have seen no further reactions. Dexcom G6 had a new formulation in

2019 which is IBOA free. Since 2020, we have noticed reactions in 6/55 (10.9%) of our patients. Dexcom has not disclosed the potential allergens in this new formulation, hindering further investigation.

From the national survey, we received responses from 61 out of 173 teams giving data on 10487 CYP. GS were used in 61%(6419). 5% (320) had developed a skin reaction likely to be contact dermatitis. The GS implicated were Dexcom G6 (5% of its users), G5 (7.4%), Medtronic Enlite Sensor(15%), Medtronic Guardian Sensor 3(8.8%),and Freestyle libre (3.7%). Only 5 teams had reported the reaction to MHRA via the Yellow Alert scheme and only 6 teams had referred to dermatology for further investigation and management.

Conclusions Our survey confirmed the problem is widespread, with under reporting of these cases in England to the MHRA. Dermatology referral is often not sought. It is essential that all cases are reported to raise awareness of this problem which is impacting the care of children with Type 1 diabetes. Working closely with dermatology team can help to find ways to manage these patients. Manufacturers must be more transparent in their labelling and modify their formulation if an increased rate of reaction occurs.

British Academy of Childhood Disability

678 BODY SHAPES DON'T DEFINE A PATIENT, SO WHY DOES IT AFFECT BASIC LIFE SUPPORT? AN IN-SITU SIMULATION SCENARIO ON CHOKING FOR A CHILD WITH AN ALTERED BODY SHAPE

Lucine Nahabedian, Annabel Copeman. *Royal Wolverhampton NHS Trust*

10.1136/archdischild-2021-rcpch.138

Background A recent article published in *Nursing Children and Young People* outlined how basic life support needs to be adapted for children with altered body shapes (Thomas, 2020). Paediatric basic life support (BLS) courses do not include information on how algorithms, such as choking or chest compressions, can be amended for patients with anatomical deformities to ensure that high quality basic life support can still be delivered.

Objectives The main focus of this simulation was to understand that children with altered body shapes and complex medical needs may not tolerate standard back blows or abdominal thrusts, and how to amend both of these techniques in such instances.

Methods We developed an in situ simulation case, whereby a 10 year old child with spastic quadriplegia and scoliosis presents in our paediatric assessment unit with respiratory distress. As the medical team begin to assess the patient, he vomits and then starts choking. Candidates are expected to recruit help by pulling the bedside alarm, and then begin using the choking algorithm to attempt to dislodge the obstruction.

We used a Diamond Debrief model to debrief candidates and used written feedback, in the form of free text responses and rating scales, to ascertain if the candidates found the session beneficial to their learning.

Results There were 7 candidates ranging from a trainee nurse practitioner, junior doctors in training and clinical fellows. The average confidence in dealing with this scenario increased from 2.5 to 4.2 (whereby 1 denotes very low confidence and 5 represents very high confidence). Every candidate