Abstract 459 Table 1 Median (inter-quartile range) percentage of time preterm infants spend outside SpO2 target range

Percentage of time preterm infants	4 hours	8 hours	12 hours	24 hours
<34 weeks spent with SpO2 <90%	17 (8–24)	18 (10–27)	17 (10–24)	16 (11–23)
<34 weeks spent with SpO2 >95%	49 (32–74)	50 (36–75)	52 (36–73)	53 (35–72)
<27 weeks spent with SpO2 <90%	19.5 (14–32.5)	21.5 (14–32)	20 (13–30)	20 (14–32)
<27 weeks spent with SpO2 >95%	58.5 (32–74)	60.5 (40–76)	58.5 (38.5–73)	57.5 (37–72)
<28 days spent with SpO2 <90%	13 (4–20)	14 (3–22)	13 (4–20)	14 (8–20)
<28 days spent with SpO2 >95%	38 (26–77)	46 (33–74)	41 (36–74)	48 (30–72)

weeks spent more time with SpO2 <90% at 4-, 8-, 12- and 24-hour histogram reviews ($p < 0.001$); there was no significant difference in time spent with SpO2 >95%. Infants >28 days spent significantly more time with SpO2 <90% compared to infants <28 days at 4-, 8-, 12- and 24-hour histogram reviews ($p < 0.05$); there was no significant difference in time spent with SpO2 >95%. Ventilated infants spent significantly more time with SpO2 <90% compared to infants on other modes of respiratory support ($p < 0.001$). There were strong correlations between 4-hour and 24-hour histograms for both hypoxemia and hyperoxemia, with R2 values of 0.7 and 0.8 respectively.

Conclusions Maintaining normoxia for preterm infants is challenging, with substantial amounts of time spent outside of the SpO2 target range. There is strong correlations between 4-hour and 24-hour histograms, which could help in assessing a preterm infants' response to changes in respiratory management.

British Paediatric Allergy Immunity and Infection Group

460

REVIEW OF PAEDIATRIC FOOD CHALLENGES: COULD MORE ALMOND AND TUNA CHALLENGES BE SAFELY PERFORMED AT HOME?

Eleanor Buck, Rosy Wells, Sophie Vaughan. *St George's Hospital*

10.1136/archdischild-2021-rcpch.34

Background Clinicians use serum immunoglobulin E (IgE) and/or skin prick test (SPT) to help decide whether a child is suitable for a food challenge. Performing a food challenge (FC) or supervised feed (SF) is the gold standard for a definitive diagnosis of type 1 food allergy. Food challenges are labour intensive and our unit currently has long waiting lists for food challenges, exacerbated by the COVID 19 pandemic. This study aims to determine if the current thresholds for home introduction can be altered.

Objectives

1. To evaluate the reaction rate, and the severity of reactions, of tuna and almond challenges performed in our hospital.
2. To use results collected to examine whether the thresholds for home introduction of both tuna and almond should be reviewed.

Methods Retrospective data analysis of tuna and almond challenges performed in the Paediatric Allergy Service at St George's Hospital. Electronic medical records were reviewed of all patients who underwent an oral food challenge between

April 2018 to October 2020 at St George's Hospital. Clinical history, results of SPT and specific IgE to tuna and almond and the outcome of the challenge were extracted from the hospital database.

Results Tuna

14 children underwent a tuna food challenge. None were observed to have a positive result. One child had an inconclusive challenge as the final sample was refused; prior to this the child did not experience any signs of an allergy reaction. All these children had a known allergy to other fish.

Almond

77 children underwent an almond only challenge; 8% (6) of these were supervised feeds, the other 92% (71) were food challenges. 8% (6) children were observed to have a positive almond challenge. One child had an inconclusive challenge as the final sample was refused; prior to this the child did not experience any signs of an allergy reaction.

50% (3) of children with a positive challenge were managed with cetirizine alone, at the correct dosage for age. The other 3 children complained of mild symptoms which resolved with no treatment.

Conclusions No children had a positive tuna challenge and the thresholds for home introduction of tuna could be reviewed and relaxed.

96% of children who had an SPT less than 2mm tolerated the almond challenge. For those that reacted, all reactions observed were mild to moderate. The threshold for home introduction of almond could also be reviewed and relaxed.

Association of Paediatric Emergency Medicine

465

DOES HAVING SIMULATION DEBRIEFS RUN BY HUMAN FACTOR EXPERTS IMPACT LEARNERS UNDERSTANDING

¹Emily Pye, ²Jonathan Simpson, ³Colin Wong, ¹John Allton, ³Katherine Hunter. ¹NHS; ²Airline Pilot; ³NHS Consultant

10.1136/archdischild-2021-rcpch.35

Background During the covid pandemic, we were fortunate enough to be joined by airline pilots through Project Wingman. As we are aware that pilot training is often gold standard for human factors training, we utilised this rare opportunity and formulated a project working alongside them looking at the impact debriefs by pilots could have on simulation training, focusing on human factors. In simulation, we often focus on clinical learning, whereas research shows that the majority of near miss and never events, which

should guide our learning, are caused by errors in human factors.

Objectives Our objective is to research the impact simulation debriefs led by experts in human factors has on learning and understanding compared to debriefs led by clinicians with little or no human factors training. This is a rare opportunity to undertake a study working alongside pilots and we hope to use the results to facilitate ongoing human factors training for simulation facilitators.

Methods We ran a series of Multi-disciplinary simulations throughout the paediatric department, using various settings to avoid bias. We introduced the simulation, including the role of the pilots, to ensure all participants were aware of learning outcomes and expectations. We ran the simulation, allowing all participants to work in their current role. Following this, there was a clinical debrief before the participants were split into two groups for human factors debriefs. One group led by pilots and one group by a clinician with little human factors training. We then asked both groups to fill in a questionnaire, focusing on their understanding of human factors and the impact they feel the simulation will have on their future training.

Results Our project involved 6 simulations with 62 multi-disciplinary participants. Our project showed that both groups had an increased understanding of the importance and impact of Human Factors. Both groups showed an increase in participants strongly agreeing that they have a good understanding of human factors, although a larger increase was seen amongst the pilot group - 48%. All participants rated feedback in Human Factors as 'Good' or 'Very Good'. 97% of the pilot group felt debriefs by pilots had improved their knowledge and impacted their training. 1 participant felt that having debriefs by pilots had not impacted their learning greater than debriefs by clinicians, but he went on to state he had a poor understanding of human factors. 98% of participants who answered felt pilots debriefs had a greater impact in learning compared to previous clinician led debriefs. Free comments were positive, including 'greater impact on patient safety', 'would encourage more sessions with pilots' and 'increased confidence and understanding'.

Conclusions In conclusion, this project showed that having debriefs lead by human factor experts had a great impact on understanding of human factors compared to standard clinician debrief. It also suggested that pilot debriefs has an impact on knowledge and patient safety. This data has been used to formulate a pilot lead human factors training course and will contact participants in 6 months to see if this simulation impact future resuscitations.

Quality Improvement and Patient Safety

475

IMPROVING RESEARCH OPPORTUNITIES FOR PAEDIATRIC TRAINEES

¹Ciara Regan, ²Lucy Crossman, ²Jessica Burgess-Shannon. ¹St Marys Hospital; ²Chelsea and Westminster hospital

10.1136/archdischild-2021-rcpch.36

Background Evidence based medicine and research build the foundation for gold standard practice. As clinicians we are

uniquely placed to understand the needs of our patients and can therefore provide an invaluable perspective for developing research that drives advances in healthcare. However, a recent national survey shows only 45% of paediatric consultants participate in research (RCPCH, 2015). With this in mind, we designed a survey for paediatric trainees working in a Neonatal Unit, to assess what their experience and perceived barriers were to research activity.

Our survey demonstrated 62% of respondents (n=13) did not feel confident that they had the research skills expected for their stage of training. However, 77% were interested in gaining further research experience. Our survey highlighted several barriers to participation, including time constraints, rota gaps and a lack of apparent opportunities. This highlighted a need for initiatives to support trainees in pursuing research opportunities, so that we develop a workforce with robust research skills.

Objectives To implement effective and reproducible strategies for improving access to research for paediatric trainees.

Methods Multiple events were held over a 6-month period including weekly Journal Clubs, a 'Research Opportunities Event' which provided research-orientated teaching and explored options for developing research skills, and an 'Interactive Research Workshop' for practical training on trial recruitment and consent. A research newsletter was developed to communicate opportunities and engage staff with studies running within the department.

Trainees completed a survey before and after events to evaluate their efficacy.

Results 100% of respondents (n=12) attended Journal Club, 67% attended the 'Research Opportunities Event' and 75% attended the 'Interactive Workshop'. Feedback was very positive, and all trainees felt that attendance had been helpful for developing their research skills. The benefits from participation in each of the events were identified as follows:

Benefits from weekly Journal Club participation:

- 84% had improved critical appraisal skills
- 100% reported increased knowledge of research methodologies
- 100% had exposure to new developments in neonatology

Benefits from attending the Research Opportunities Event:

- 100% had better understanding of academic training opportunities
- 88% agreed they had exposure to new research opportunities
- 100% had a better understanding of the RCPCH research curriculum

Benefits from attending the Interactive workshop:

- 100% had increased confidence in gaining consent for clinical trials
- 100% had improved knowledge of clinician's roles and responsibilities when taking consent for clinical trials

After attending the research events, 100% of trainees felt 'confident' or 'somewhat confident' that they had the research skills expected for their stage of training, in contrast to 38% prior to attendance.

Conclusions Our findings suggest a disconnect between trainees' interest in research and their previous exposure to opportunities that allow them to develop this interest through their training. Research orientated teaching and interactive