Table 1: Feedback received from trainees

Trainee details	Theme: positive learning environment	Theme: bespoke opportunities	Theme: increasing confidence	Theme: appreciation for support
Registrar returning after second maternity leave	'It was run in a very relaxed way, so I felt comfortable and like it was a good learning experience, rather than it feeling intimidating, which simulation can sometime be.'	'Returning to training felt so much better the second time round.' <After first maternity leave> 'there wasn't really anything in place to support me returning to work. The second time was a completely different experience… it all felt much more planned and supported. 'you really helped with this – meeting to plan return to work with me which was specific to what I felt I needed… You also just listened to me and gave me advice that helped me feel so much more comfortable returning.'	'It helped to give me confidence and revise my knowledge/the practicalities of managing acute situations'	'I am so grateful for all this support, after some challenges in the year I had before, I had lost some confidence and wasn't feeling as motivated about pursuing training in paediatrics and your support really helped.' 'thank you again for all your support and feedback how impactful supporting people back to work and in general can be. It is something I have learnt from and will always aspire to support others in the future'
Registrar returning after second maternity leave	'You initially did some just you and me to build my confidence and then brought other members of the team into the simulation to increase it's 'real life' feel'	'The training itself was comprehensive and thoughtful – you realised I'd gone off just as COVID-19 started and so needed instruction in PPE donning/doffing'	'I honestly can't think of any negatives/constructive feedback as it very much did what I wanted it to do, which was to re-build my confidence on returning to work, especially after lockdowns.'	'You were proactive in contacting me and arranging the simulation training during a KIT day, it made me feel very supported in my return to work.' 'I also want to say, compared with my first mat leave return to a different Trust, this was truly amazing in the support you gave. For my first return I had no simulation sessions and it was noticeable how much quicker I returned to feeling comfortable after this second leave'
Experienced SHO returning after 2 years of maternity leave	'low pressure, non-judgemental space to experience different clinical scenarios for a return to work trainee'	'I really appreciated the personalised element.'	'I liked that I could choose some of the topics/ clinical contexts so I could work on what I wasn't confident with.'	
Trainee returning to first post as registrar following 3 years research	'a very helpful and intense couple of hours of simulation. It was a very helpful experience through which several important learning points arose.'			

Conclusion: Our bespoke courses were successful and well received by paediatric trainees. We are launching a new framework, CUSTOM, Creating Unique Support for Trainees and Others with the Multidisciplinary Team. CUSTOM will support other departments to offer bespoke courses. Going forward, we aspire to expand this support to returners from the multidisciplinary team.

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IN-SITU SIMULATION: EDUCATIONAL TOOL AND A CLINICAL SYSTEM TEST

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Background: Simulation-based clinical systems testing (SbCST) is a process that allows clinicians and hospital stakeholders to evaluate work carried out in new environments. Unlike work-as-imagined, SbCST takes into account the complex interactions resulting from human performance limitations [1]. These factors can result in errors that may even lead to patient harm [2]. Therefore, we used SbCST to evaluate a newly built children's emergency department with the aim of identifying latent errors and implementing changes to minimise the risk of their occurrence, whilst also ensuring that the simulation experience was an independently valuable educational opportunity.

Methods: Scenarios were created according to two criteria. Firstly, that they tested at least one specific environmental issue and secondly, that they focused on topics that the paediatric and Accident and Emergency departments felt would be educationally valuable to the participants. Once created, these scenarios were then carried out as un-announced in-situ simulations during the first 8-weeks

of departmental opening. The participants were instructed to treat the scenarios as real, including the manner in which they called for help. Any equipment required came from the department and if single use, it was exchanged for training equipment. The participants then undertook a hot debriefing before feedback was gathered about both the educational value of the scenarios as well as any issues identified within the new department.

Results: In total there were 38 multidisciplinary participants including nurses, operating department practitioners, and doctors from 6 different specialties. The feedback from the sessions was positive with an average ranking of >4 out of 5 in 8 out of the 9 measured domains, including; realism, enhancement of knowledge, and usefulness of in-situ simulation in a new environment. We also identified greater than 50 problems spanning all 5 of the categories from the 'SHEEP' model [3]. Approximately 60% of issues were resolved within the 8 weeks, whilst the remaining are on the risk register and awaiting review at a stakeholder level.

Conclusion: In-situ simulation is an excellent mechanism for carrying out clinical systems testing of new environments due to the fact that it simulates realistic events which are prone to the same errors as the real events, without the risk of patient harm. Once the source of an error is exposed the debriefing can help to identify methods to minimise the risk of future reoccurrences. At the same time, with appropriate planning, the scenarios can also provide an opportunity to deliver multidisciplinary training.

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JUST-IN-TIME IN-SITU SIMULATION FOR HIGH STAKES SUCCESS IN VIRAL HAEMORRHAGIC FEVER (VHF)

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Background: Success of just-in-time in-situ simulation to find new ways of working, test processes, and uncover latent error to promote patient and staff safety is well documented from the COVID-19 pandemic [1,2]. We used just-in-time simulation in a unique situation where imminent transfer of a critically unwell patient with VHF was required to our high-level isolation unit (HLIU). The Trexler isolator tent is custom made for treating high consequence infectious diseases (HCID), requires specific training. Staff provide care by 'stepping' into 'suits' in the plastic walls. Transfers into the tent are time-critical to reduce potential exposure risk to staff. This was the first time ever an intubated, ventilated patient was to be transferred into the tent.

Methods: Simulation, Infectious Diseases, and Intensive Care teams collaborated within a few hours' notice to simulate in-situ the mechanism of transferring a patient (using a Laerdal SimMan 3G) intubated and ventilated with multiple drug infusions running, headfirst from a transport trolley into the foot end of the isolator tent. This was repeated subsequently in several Plan-Do-Study-Act (PDSA) cycles to refine the process and reduce transfer time taken. There were multiple pauses as problems, latent threats, and potential failure points were identified, and time outs to discuss solutions.

Results: Transfer teams informally reported increased confidence being able to troubleshoot and rehearse the transfer process before patient arrival. Key learning related to leadership, communication, highlighting safety steps, and sharing mental models between teams such as airway management, significance during transfer and ergonomics of airway-trained personnel positioning in the tent. This was written up as a visual aid for the transfer team. Environmental latent threats found included safe ventilator mounting, IV pump management, emergency drug preparation, and allowed for enhanced consideration of the practicalities of caring for an intensive care patient in the HLIU tent. The actual transfer of the patient went smoothly and without incident. Further simulations were run during the patient care episode to rehearse and potential anticipate airway and ventilation management issues.

Conclusion: Just-in-time in-situ simulation provided a valuable opportunity to rehearse a high-stakes, never done before activity, and facilitated identification of environmental latent threats before patient arrival. It created a shared mental model between different specialities of patient needs contributing towards an increased situational awareness and ability to forward plan and project, ultimately increasing patient and staff safety.

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SUCCESSFULLY DELIVERING A NEW, TRUST-WIDE IN-SITU SIMULATION TRAINING PROGRAMME TO MULTIDISCIPLINARY TEAMS IN THE CLINICAL ENVIRONMENT

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Background: Simulation-based education is well established as a teaching strategy but is often taught in dedicated simulation centres. In-situ simulation had previously been less prominent as a teaching tool within the Trust due to lack of awareness of its benefits and versatility. The aim of