paediatric ward. By regularly simulating clinical practice in their daily working environment, all candidates have demonstrated improved clinical confidence and better familiarity with the ward environment. Additionally, the fortnightly in-situ simulation has improved working relationships through recognition of the roles of the ward multidisciplinary team, communication skills and team and leaderships skills.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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CONTENT

A50 THE SEIPS GAME: AN INTERPROFESSIONAL TEACHING AID TO PROMOTE UNDERSTANDING OF HUMAN FACTORS IN HEALTHCARE

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10.54531/WYRV9282

Background and aim: As a human-factors focused simulation centre, we begin all our simulation courses with a human factors workshop introducing participants to the SEIPS model of human factors [1]. This enables them to explore systems-based impacts on clinical practice during post-scenario debriefs. However, we have noticed that some participants struggle to identify and discuss human factor themes which impact on them in their workplace. We aimed to develop an innovative teaching aid which would promote participant understanding and engagement.

Activity: Previous experience has provided evidence that participants enjoy simulation games. Therefore, we chose to develop a table-top game to play with participants based on the SEIPS work system. We worked with interprofessional colleagues to identify factors that help and hinder processes in the work system and categorized them under SEIPS headings. We made a series of cards based on these factors which participants collect. The winner was the person who collected a helpful card for each SEIPS heading first.

Findings: We have piloted our SEIPS game with interprofessional faculty, including those with specialist expertise in human factors in healthcare. We surveyed participants to obtain feedback. Survey results so far include data contained in Table 1-A50, and the following participant comments:

- 'Play' is a kinaesthetic way of learning and helps embed ideas and thinking. It also can create opportunities for discussion on different headings for human factors and systems thinking.
- The examples are fun but are also realistic so helps you see how HF is relevant. With the examples of human factors in the game it could be useful for staff with little clinical experience.
- Liked the competitive element and the examples helped expand on what SEIPS was and how it could be relevant to lots of areas.

Table 1-A50: SEIPS game participant survey results

100% of participants enjoyed playing the SEIPS game.
100% of participants felt the SEIPS game could increase participants understanding of human factors in healthcare.
100% of participants felt the SEIPS game could help participants identify human factors impacts on their own work system.

Conclusion: We have developed a SEIPS game to facilitate discussion of human factors in healthcare. This novel approach has received positive initial feedback following our pilot. We are confident we can now move forward to integrate our SEIPS game into our Foundation Doctor's simulation programme from August 2023. Following this, we intend to continue the process of data collection and analysis, with the intention of incorporating our SEIPS game more widely across simulation courses within various clinical specialties in future.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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TECHNOLOGY

A51 EDUCATIONAL EFFECTIVENESS OF A HIGH-CONSEQUENCE INFECTIOUS DISEASE TRAINING COURSE USING ULTRAVIOLET SIMULATION

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10.54531/XVSB4567

Background and aim: High-consequence infectious diseases (HCID) are pathogens which spread easily between people, have high mortality rates, and lack effective treatment [1]. Examples include Ebola and Lassa fever. Most emerging pandemics, including COVID-19, are initially classified as HCID. Assessment of patients with suspected HCID infection is an advanced procedural skill requiring application of enhanced infection control measures including patient isolation, personal protective equipment, and decontamination. There is a risk of healthcare worker infection if procedures are not followed [2]. HCID often present in non-specialist centres; there is a need for an accessible, educationally effective HCID course for NHS staff.

Activity: We developed a course for clinicians in infectious disease and emergency medicine, in collaboration with the Health & Safety Executive and clinicians in the UK-HCID network. The course uses a blended approach; theoretical components are taught with online learning. Practical components are taught with high-fidelity, multidisciplinary simulation using VIOLET, a mannequin which coughs, vomits and sweats ultraviolet markers (Figure 1-A51) [3]. This simulates airborne, contact and fomite transmission, allowing visualization and debrief of contamination before and after PPE removal. Training

culminates in summative assessment. Educational effectiveness was evaluated through curriculum-linked pre- and post-course tests, and self-rated confidence using Likert scales.

Figure 1-A51: Ultraviolet tracers are used to replicate contact and airborne transmission of infectious pathogens in simulation scenarios

Findings: Between 01/12/22 and 01/04/23, 57 specialized clinicians participated. All participants passed post-course competency-based practical assessments. Participants demonstrated significant gains in knowledge between pre- and post-course tests (mean score 61% vs. 83%, p = <0.0001). Pre-course, 36% (19/53) of learners reported feeling confident or very confident at PPE donning and doffing, rising to 97% (32/33) post-course. All participants rated their learning experience as high or very high quality.

Conclusion: This is the first HCID simulation course internationally using ultraviolet markers to allow visualization of contamination. The course appears to be an effective educational intervention and improves learner confidence in PPE use.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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DESIGN

A52 PROBING FOR VEINS: A COST-EFFECTIVE, REPRODUCIBLE METHOD FOR TEACHING ULTRASOUND-GUIDED PERIPHERAL INTRAVENOUS ACCESS

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Background and aim: Repeated attempts at peripheral intravenous (PIV) access cause increased discomfort and delays in treatment for patients in hospital. The use of ultrasound can improve success in PIV access, benefitting patient experience. Medical professionals are increasingly expected to use ultrasound when landmark techniques fail [1]. We sought to improve confidence using ultrasound for PIV cannulation with low-cost simulation models made from ADAMgel [2] or tofu in multiple teaching sessions.

Activity: We organized teaching sessions with multiple specialties at St Richard's Hospital. A total of 48 members of staff have been taught over four sessions. Prior to the teaching session learners were asked to complete a survey identifying previous ultrasound experience and rating confidence using ultrasound for PIV access. The teaching session consisted of an introductory multimedia presentation with a video demonstration, then practical experience. Models consisted of water-filled balloons placed in ADAMgel (Aqueous Dietary Fibre Antifreeze Mix gel) or tofu to simulate human tissue and veins, Figure 1-A52. Red dye added to the water in the balloons produced 'flashback' in the intravenous cannula. Modification of difficulty was achieved by changing the balloon depth. We then conducted questionnaires immediately after the sessions for feedback.

Findings: The initial survey identified only 29% of staff had previously used ultrasound for PIV access, and half of these (15% overall) had only used it once or twice a year. Using a five-point Likert scale, 74% of respondents rated their confidence in using ultrasound as one or two out of five. All respondents thought they would benefit from further teaching in PIV access. Feedback after teaching sessions was favourable, with 95% of respondents finding the session very useful and 95% also believing it would increase their use of ultrasound in clinical practice. After the session, more than half rated their confidence in ultrasound cannulation as four or five out of five.

Conclusion: We have demonstrated that there is a desire from medical staff to increase their competency in ultrasound-guided PIV cannulation. Using low-cost, high-fidelity simulation models with a blended learning method, we can deliver teaching sessions to a large number of medical staff. We hope to continue this teaching in collaboration with our sister sites throughout Sussex to increase confidence with ultrasound-guided PIV cannulation in this region.

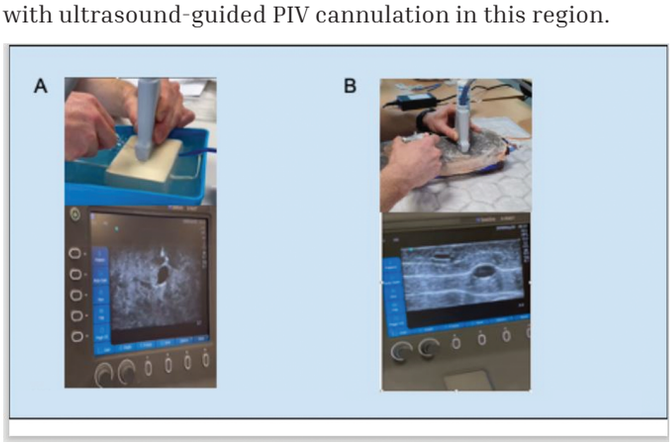

Figure 1-A52: Models used to deliver teaching sessions. After ADAMgel became available this has been used exclusively due to it being more reusable compared to the tofu models A: tofu model with ultrasound image underneath.