

independently manage a chest drain. Every attendee reported an increase in confidence because of the session (Table 1).

**Table 1:**

How confident are you to.....	Pre-session, %	Post-session, %
Monitor vital signs	95	100
Assess chest drain function	60	90
Recognize/monitor swinging drain	60	90
Patient mobilizing with drain	55	90
Recognizing when/why/if to clamp	25	80
Clamp a chest drain	50	80
Wound management post-removal	35	75
Change chest drain bottle	25	65
Remove chest drain	25	55

**Implications for practice:** As a result of this session, the ward areas created a 'chest drain box' which had everything needed to manage and replace a chest drain included as locating where kit was kept was identified as an issue. This box will be at the side of the patient being managed with the chest drain and will be checked for completeness regularly. This workshop would be useful to repeat because 50% of junior doctors have now rotated placements and many of the ward staff have been re-deployed to other areas.

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## 13 MEDICAL EMERGENCY *IN SITU* SIMULATION TRAINING FOR DENTAL HYGIENE THERAPISTS

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**Background:** *In situ* simulation, in the clinical environment, can help detect any issues with the systems, policies and practices within an organization that may not work. Many system errors go unnoticed until there is a real incident. Conducting simulation *in situ* is an innovative way of picking up these embedded problems<sup>[1]</sup>. Experiential learning theory suggests that, to truly understand a concept, you must experience it first-hand by doing it. Deliberate practice<sup>[2]</sup> recognizes that to gain expertise you must keep practicing a skill. Practicing tasks in a simulation environment helps to build performance levels and thus improves patient care and safety.

**Aims:** This simulation exercise is designed to develop the skillset of foundation dental therapists in respect of Medical Emergency recognition and management in their own working environment. The parameters for assessment included teamwork, knowledge, communication, effectiveness of actions and situational awareness.

**Methods:** Research methods for this project included a learning needs analysis, surveying and interviewing previous cohorts of hygiene therapists. The conclusions of which highlighted the need for further training in managing medical emergencies. The learning needs identified from stakeholders relating to this course have been used to develop the learning outcomes using Blooms' taxonomy<sup>[3]</sup>. The faculty delivered a medical emergency *in situ* simulation training session for Dental Foundation Therapists across the Midlands and East region. The therapist and dental nurse were given information on the 'patient' before the interactive mannikin was

positioned. Facilitators used an adjacent room from which to control the mannikin, including its vital signs and voice. A 360-degree camera along with iPads were used to monitor and record the session for safety and debrief purposes. The therapist worked with their dental nurse to react and respond to the emergency unfolding before them. They then watched back their performance, reflected and provided feedback.

**Results:** Using GIBBs model of reflection, the 2021 delegates recognized personal learning needs including improvement in leadership and management skills, delivery of chest compressions and teamwork. Changes to practice were also recognized, for example, placing their emergency drugs in a more appropriate location. Using video, a 'Hot Debrief' method of evaluation was carried out whilst the experience was fresh. This proved to be powerful and enhanced personal reflection to support future learning and development. Later, an evaluation method in the form of a survey took place. Results of which showed that 50% of delegates had never partaken in simulation-based education before and 100% gave an excellent rating on the benefits to team and individual. One participant stated 'this was such a good, real-life experience! I hope this can either be introduced into undergraduate training or as part of the practice annual BLS CPD!!'.

**Implications for practice:** A successful session needed prior communications with the practice staff to free up a surgery for use, inform present patients of the activity and understand where the emergency equipment was during the session for patient safety. The benefits of conducting *in situ* simulation were staggering, the delegates reviewed their current practices and made changes as appropriate.

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## 50 CONTINUING ESSENTIAL EDUCATION DURING THE COVID-19 PANDEMIC: VIRTUAL NEONATAL SKILLS TRAINING

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**Background:** Practical procedures are integral to neonatal care. All first-year paediatric specialist trainees (ST1s) are expected to develop essential skills from their first neonatal placement. However, many trainees join the speciality with minimal prior exposure. With recent changes in junior doctors' contracts, reduced working hours and evolving clinical practices, trainees may not get enough clinical exposure to acquire required skills. Simulation is recognized as essential to bridge this training gap<sup>[1]</sup>. A practical skills course developed in 2018 has been running with consistently good feedback. However, during the COVID-19 pandemic, it was suspended.

**Aim:** The aim of the study was to adapt neonatal skills training to virtual delivery.

**Methods:** In September 2020, we trialled a half-day virtual training course for new trainees on core topics. The first part included 'Human Factors' followed by 'Stabilization of the premature infant' using a pre-recorded simulation followed by a live debrief. The second part covered 'intubation

and difficult airway' followed by 'vascular access'. We used interactive lectures and pre-recorded demonstrations. A full-day course was then organized for new trainees in March 2021. We included additional sessions on 'Newborn Infant Physical Examination' (NIPE), 'chest drain insertion' and 'journal club', including sign posting to the Critical Appraisal Skills Programme (CASP). Interaction was encouraged to facilitate peer bonding. A Paediatric Trainee Committee representative also joined to outline the support available for trainees. We followed a similar structure to the first course but added live simulation demonstrations of equipment and techniques.

**Results:** Seventeen trainees attended the full-day course. A number of candidates rating the sessions as extremely useful were 16 for 'Stabilization of the premature infant' and 'intubation and difficult airway', 14 for 'Human Factors' and 'NIPE', 12 for 'vascular access' and 'chest drain insertion' and 11 for Journal club. Trainees commented positively on the videos, equipment demonstration, level of interactivity and overall usefulness of the course. Nine trainees commented on desire for additional face-to-face training.

**Implications for practice:** After balancing the safety and learning needs of trainees, we adapted an established face-to-face skills day for virtual delivery during the COVID-19 pandemic. Whilst we recognize that virtual training is not a substitute for doing, we were able to maintain essential education during highly pressured times. Feedback demonstrates that our virtual teaching programme was well received and useful. It also emphasizes the value of actual practice and the urgency to restore hands-on training as soon as possible.

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## USING IN SITU SIMULATION TO RESPOND TO CRITICAL INCIDENTS IN EMERGENCY MEDICINE

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**Background:** *In situ* simulation (ISS) has been shown to be an effective tool in delivering education to the inter-professional team in the Emergency Department (ED) <sup>[1]</sup>. ISS has also been utilized to drive quality improvement <sup>[2]</sup>. Using our local ISS programme, we provided a response to critical incidents involving patients within the ED. This has allowed identification and improvement of individual, team and system failures and has led to enhanced learning and departmental improvements to reduce risks of further incidents.

**Aim:** The aim of the study was to describe how simulation has improved learning and development from critical incidents.

**Method:** A simulated case is built around specific clinical incidents. Four were identified having occurred within the timeframe: missed abdominal aortic aneurysm, ischaemic limb, digoxin toxicity and ruptured ectopic pregnancy. The aim is to use ISS as a tool to educate colleagues about these presentations and as a way of checking that there are no system issues in managing such cases. Our ISS process involves either an 'actor' or a low-fidelity manikin with an 'app' providing a monitor. All equipment is sought and used in real time to attempt to simulate as close to real life as possible. The scenario utilizes junior doctors, nurses, healthcare assistants, trainee nurse associates and students. A senior

team member is included if required. The participants are both briefed and debriefed, and learning points are disseminated via email placed on the 'MYED' Facebook group as well as the 'MYEDSim' 'padlet' page.

**Results:** The ISS was run between October 2020 and May 2021. A total of 23 participants answered the nine questions on the post-ISS feedback form from the four incidents. Results are summarized in Figure 1. The participants were asked to record learning points from the sessions and suggestions for improvement. Key themes appear to be communication, team working and location of equipment in the department.

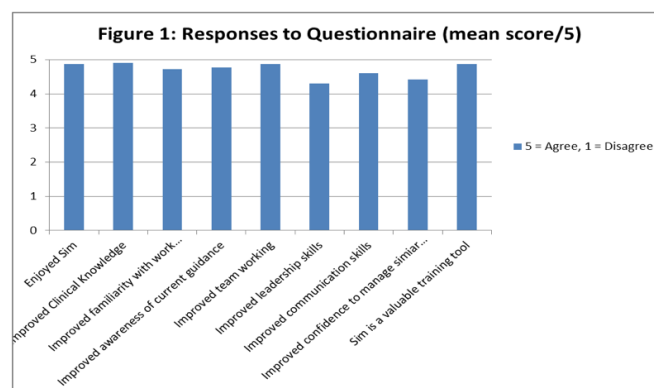


Figure 1:

**Implications for practice:** By running simulations of critical incidents, we have identified deficiencies in areas within individual's knowledge, factors shaping inter-professional team working and system failings from the wider trust which contribute to these events. This has led to wide dissemination of learning and knowledge sharing on various departmental social media/communication platforms and has allowed development and modification of clinical guidance and pathways within Mid-Yorkshire NHS Trust to reduce risks of further incidents occurring.

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## VIRTUAL SHINE (SIMULATION TO HELP IN NEONATAL EMERGENCIES): ADAPTING SIMULATION THROUGH THE COVID-19 PANDEMIC

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**Background:** It is well established that simulation can help individuals and teams improve their clinical skills and confidence in managing medical emergencies <sup>[1]</sup>. In our region, a full-day simulation course on common neonatal emergencies was established in 2018 for paediatric trainees. It consists of four scenarios and two workshops. It is designed for eight candidates who are split into two groups so that each has an opportunity to 'lead' a simulation. The Diamond Model is used for debriefing. The course has been running 3-4 times per year and receives consistently excellent feedback. During the COVID-19 pandemic, the course was suspended.