

Virtual reality simulation for Foundation Training across East of England

Simulation-based education is an effective teaching method used to

- develop both clinical and non-clinical skills such as communication, prioritisation and team working.
- provides learners with a safe and supported environment to practice common clinical emergencies
- may be the only opportunity to experience rarer emergencies such as anaphylaxis.

Each foundation trainee in East of England Deanery attends a one full-day equivalent of mandatory high-fidelity simulation. Feedback from these sessions has been excellent.

Last year our Foundation School introduced an additional innovative learning opportunity - virtual reality (VR) simulation

This is designed to augment the existing physical simulation sessions by delivering the same learning points using new technology and flexibility.

The feedback from our successful implementation has been excellent

- VR is a valuable and effective means of self-directive training,
- The same scenario can be repeated until the trainee feels confident they can do this 'in real life' and
- The sim can be used as a reminder practice pre and post similar cases.
- since it can be done in your home, and without review, it is a psychologically safer way to practice scenarios.

We have therefore thought that particularly this year, early access to our VR training might be an invaluable educational resource for preparation for Final Year medical students joining us.

What is virtual reality?

Virtual reality typically involves a headset with screen inside so that when the user puts on the headset they are completely immersed in a clinical environment. Using software from Oxford Medical Simulation, users are immersed into a computer-generated, high-fidelity virtual clinical environment. Scenarios can be run within the virtual environment and user can 'interact' with virtual patient and staff by making selections on a wide range of pre-set options: e.g. to take a history, examine, investigate, diagnose and treat in real time.

These same scenarios can be run though in '2D' so if assuming you don't have 3D access, they are still possible and helpful.

The followings are the focus of learning during each scenario:

1. *Critical thinking and clinical decision-making*
2. *Interacting with the patient and colleagues*

3. *Prioritising actions and efficiently managing the scenario*

The virtual patient's condition, appearance, physiology, blood results, blood gas results and ECGs are dynamic throughout the scenario, so the user can obtain 'feedback' on the effects from their interventions as in physical simulation. The scenarios can be paused at any point by removing the headset if required. At the end of each scenario, personalised, objective feedback on user's performance based on latest clinical evidences is produced, combined with opportunity for self-reflection. A detailed list of learning objectives for each scenario is also available from OMS.

Equipment and access

We are presuming most of you do not have 3D equipment. As well as the usual Oculus Rift and Headset with the laptop, the scenarios can be run on-screen from the OMS software, using Windows 10 and above computers without Oculus Rift and Headset. (Please see software download instructions in a separate document to enable access from computers) OMS is also working to enable this functionality on Mac computers and will be available from Mid-April.

As the OMS VR system does not require faculty, scenarios can be practiced individually any time that suit the learners.

In view of the current COVID-19 situation, OMS has offered a **complimentary access** to 5 scenarios selected by EoE Foundation School that can be used on-screen. These scenarios are realistic reflection of common emergencies encountered on a daily clinical setting by Foundation Year trainees. This access will be available from **start of April to end of May – 60 days**

Each scenario lasts around 15 minutes, a timer will appear on screen once a scenario is launched. After completing a scenario, a summary page on learner's performance will be available to the learner. Record of completed scenarios, scores and feedback can be accessed anywhere using individual login. It is important to note that the scores are not used for assessment purpose, instead, it is used as a tool to develop learners' clinical skill and knowledge through feedback and reflection. These can be used effectively by the learners for self-reflection, consolidate knowledge and note their progress of learning as the same scenario can be practiced repeatedly.

User set-up will be coordinated centrally by the EoE Deanery using individual learners' email addresses [**your oriel email address**]; each learner will be given a unique login which allows access to the bank of 5 scenarios.

You will each receive a separate email from info@oxfordmedicalsimulation.com which will invite you to create your own individual account. It is important that everyone has their own account so that the performance data from your simulation scenario gets tracked appropriately. You will receive this email during the day on 31st March 2020 – please do check all junk folders if you do not receive it.

Please also see the PDF (attached) for end-to-end instructions for creating your account, downloading/installing the platform, and understanding how to run through scenarios and view your feedback. This works best on Google Chrome.

Please note: the platform is only currently available on Windows 10 computers, but Mac-compatibility is coming in the next few weeks. I'll inform you when this is available so you could go ahead with installing the platform as well. In the meantime, if you have any access to a Windows 10 computer, please use that.

Scenarios and learning opportunities

Oxford Medical Simulation will provide users learning objectives for the 5 selected scenarios:

- 1) Delirium with urosepsis
- 2) Perforated diverticular disease
- 3) NSTEMI
- 4) Pneumothorax
- 5) Infective exacerbation of COPD

We strongly encourage all Final Year Medical students starting FY1 post in EoE Deanery from August 2020 to make use of this excellent learning resources during the **60-day** opportunity, practice all the scenarios individually, review and reflect on feedback from the analytics, and repeat the scenarios to consolidate learning.

References

Simulation-based medical teaching and learning, Abdulmohsen H. Al-Elq. J Family Community Med. 2010 Jan-Apr; 17(1): 35–40.

