

AN INNOVATION CASE STUDY



WALES' VIRTUAL HOSPITAL

PROJECT DURATION: 19 months

PARTNERS/STAKEHOLDERS: Virtus Tech, Cwm Taf Morgannwg University Health Board, Aneurin Bevan University Health Board, South Wales Major Trauma Network, Health Education and Improvement Wales, Assistive Technologies Innovation Centre (University of Wales Trinity St David), and Cardiff University

PROJECT AIM: To establish a multi-disciplinary, and cross-speciality, undergraduate and postgraduate online virtual environment (Wales' Virtual Hospital)

OVERVIEW

Clinical placements are an essential component of the education provision for students of medicine and other health professions. It enables the vital and very unique experience of applying textbook knowledge to 'real' patients and the demands of an often-evolving clinical situation.

Whilst this is unquestionably valuable experience, opportunities to achieve learning outcomes cannot be consistent across students due to the very nature of their exposure to different patients in defined timeframes and settings, and the unpredictability of patient attendance.

COVID-19 has brought further challenges to learning whilst on clinical placement; bringing communication issues, physical distancing and extended infection control procedures into play.

This collaborative project is focused on delivering a novel approach to maximizing clinical learning opportunities and addressing notable inconsistencies in learning experiences.

Enabled through an online virtual environment (Wales' Virtual Hospital), clinicians will be able to create 3 types of learning experience framed around a patient presentation.

- 360° still environment (with embedded content to create an eLearning package)
- 360° video environment (with game play in both branching and non-branching scenarios)
- Fully immersive 360° /3D environment (with interactive online simulation)

The ability to train and gain immersive experiences, is increasingly important with the restrictions placed on teaching/training during the COVID-19 pandemic. Such an environment reduces the numbers of people in the room, offering increased staff and patient safety. The use of disposable, cardboard VR headsets also facilitates personalised training options with improved safety.

As a training tool this type of environment enables students to experience various clinical situations with a unique full view. These simulations can further be employed as a mode of assessment for high accuracy, low frequency situations, where it is unlikely for students/trainees to experience the situation in real-life.

Accelerate is supporting the delivery of this project which encompasses expertise from those delivering medical education, together with the industrial experience of Virtus Tech, who bring the capability of providing an immersive interactive DIGI Tour platform.

Cardiff University will provide academic expertise to assess the teaching effectiveness of this virtual environment in addition to delivering project management through the Clinical Innovation Accelerator. The Assistive Technologies Innovation Centre (ATiC), University of Wales Trinity Saint David will undertake an evaluation of effectiveness and user experience.



A scene from Wales' Virtual Hospital



EXPECTED OUTCOMES

- Development of a unique and marketable fully immersive, 360-degree 3D virtual learning environment
- A dedicated clinical teaching aid and evaluation tool providing specialist modules and bespoke provision
- A single portal for ensuring continuity across virtual clinical teaching
- An immersive learning experience
- Opportunities for further collaboration between project partners
- Case studies
- Peer reviewed publications



FUTURE IMPACT

- Benefitting the education of healthcare professionals from different specialties and disciplines across medical institutions in Wales
- Positive impact on patient care and experience
- Consolidated medical education jobs in the NHS by providing a single point of entry to all virtual clinical teaching
- A reduced carbon footprint enabled through the virtual environment
- A novel resource for reducing infection risk in the delivery of clinical education
- A high-quality educational package entitled "Wales' Virtual Hospital" to showcase Wales as a Worldwide exemplar of medical education