CASE STUDY

Using Augmented Reality to Enhance CPR Training

Pennsylvania leverages innovative technology to improve CPR training

THE CHALLENGE:

Studies have revealed that the quality of healthcare provider CPR can be improved. New techniques are needed to advance CPR training and improve CPR quality and effectiveness.

THE RESPONSE:

HeartRescue team members from the University of Pennsylvania in Philadelphia deployed a series of prototype trials of augmented reality (AR) to improve the overall CPR training experience. The technology enabled a more immersive experience that helped to simulate some of the circumstances and stresses that often impact successful CPR efforts.

How It Worked:

- The CPReality system is a novel AR system that integrated the Microsoft Hololens, with a CPR feedback manikin to create a holographic image of the human circulatory system.

- As the trainee performed CPR on the feedback manikin, data was rendered into the Microsoft HoloLens and a holographic image of the circulatory system was overlaid next to the feedback manikin.

- CPReality was responsive to the performance of the subjects, as the blood flow to the brain increased or decreased based on the quality of the CPR.

- Subjects could visualize the blood flow and hear an audio heartbeat metronome, which increased or decreased depending on the quality of their CPR on the feedback manikin. This approach provided a compelling new strategy that could transform future CPR trainings and has led to further trials and discussions about how AR can be implemented and scaled to enhance sudden cardiac arrest education and preparedness by bystanders and others.

Watch a **demonstration of the CPReality here**

THE RESULTS:

- An overwhelming majority of healthcare providers who participated in AR CPR trainings said the technology provided a realistic patient presence.

- The first-of-its kind evaluation indicated that AR is a viable training method and can achieve at least comparable CPR skills compared to human interface training.

- The experience and results also provided an important proof of concept platform to use AR as a way to train for other medical emergencies.

Learn more about the **Pennsylvania HeartRescue Project here.**