VR Healthcare Solutions

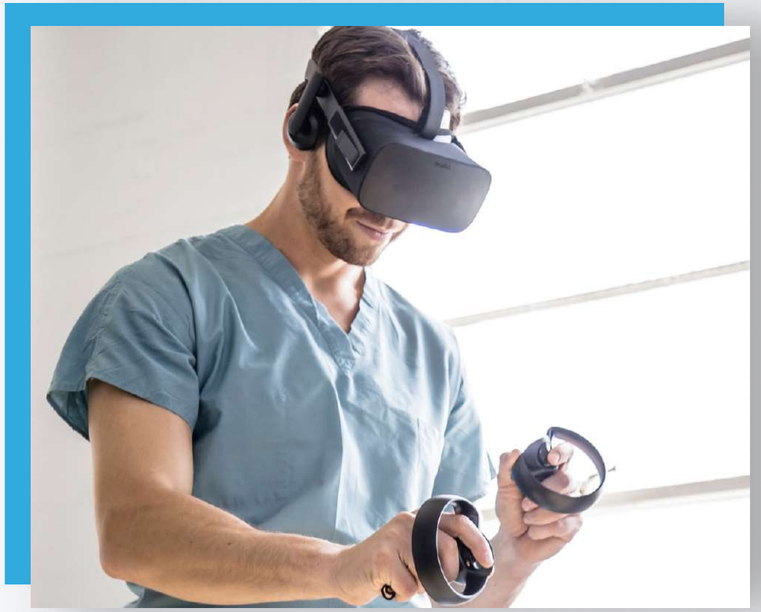
We provide specialized solutions for Healthcare. This way, XtraBlast can help patients and healthcare professionals/students employ VR solutions for education, training, treatment, rehabilitation and planning.

Why VR for Healthcare?

Healthcare is the perfect field to employ Virtual and Augmented Reality solutions. Using these innovative techniques, healthcare professionals will be able to improve treatment to their patients, improve training of personnel, reduce pain during treatments and more.

Virtual Reality for Healthcare can be used for:

- Training of Medical Personnel (Students and Surgeons)
- First Aid Training
- Pre-Surgery Visualization
- Rehabilitation of Patients
- Pain Treatment and Hypnosis
- Improving Patient Wellbeing
- Pre-Surgery Analysis
- Disaster Management



Training of Students

Training in Virtual Reality increases retention and understanding, while offering much more possibilities to the trainer to create realistic training scenarios.

In Virtual Reality, trainers can create scenarios to:

- Have students dissect a virtual body, eliminating the need for real (expensive) corpses
- Provide full anatomy 3D models to students for examination
- Train specific surgical procedures
- Train standard emergency procedures in a virtual Emergency Room (ER)

Trainers are able to monitor progress of the trainee, track performance, change scenarios to better match their needs/skills and more.

Training of Surgeons

Virtual Reality is an ideal tool to provide ongoing training for medical professionals. This way, surgeons are able to train surgical procedures to treat uncommon pathologies, or practice more advanced medical procedures, without taking any risks.

Training in Virtual Reality increases retention and understanding. Additionally, VR minimizes the need to train on expensive corpses and allows the surgeon to train at a time of his choosing, accommodating his/her busy schedule.

First Aid Training

Using Virtual Reality, it is possible to train correct first aid procedures. Currently, expensive dolls are being used to perform these exercises. While these dolls provide adequate feedback (e.g., breathing, pressure resistance etc.), they are not realistic.

VR can be combined with a less expensive doll to add a layer of realism by showing a real 3D figure instead of a doll, which can be useful to acclimatize students to the emergency situation (blood, grave injuries etc.). The inexpensive doll can still provide a minimum of feedback, resulting in a more realistic experience for the student.

Using VR, trainers are also able to check the progress of the student, as the 3D environment will accurately track the actions of each student. Additionally, trainers are able to adjust the scenarios in which the students are put, to enhance the learning experience.

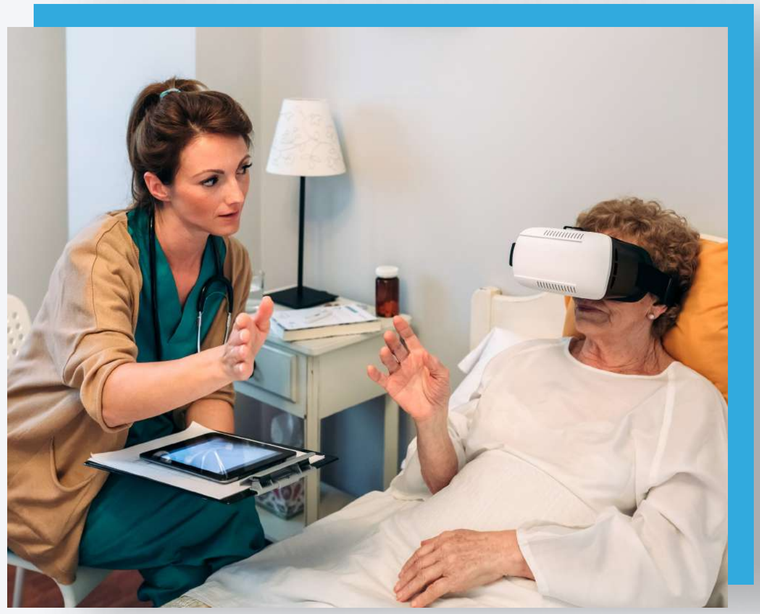
Pre-Surgery Visualization

Using Virtual Reality, hospitals can provide useful insights to their patients such as what the different steps will be in the medical procedure they will undergo.

Research has shown that some patients take longer to recover due to the fact that they go into shock after waking up in the Intensive Care ward. Indeed, it can be shocking to wake up with tubes in your body, pain in various positions and effects of medications changing your perceptions. Going into shock at this stage can have a negative effect on the recovery time of the patient and can even lead to further complications.

To try and minimize this effect, researchers have turned to Virtual Reality to show the patients before the surgery what will happen (the move to the surgery, the sleeping in, waking up in the IC unit etc.). This has helped patients to mentally prepare for waking up in the IC unit.

Additionally, 360 video Virtual Reality experiences can help the family of the patient make sense of what is going on by providing more details on the procedures that the patient will undergo.



Rehabilitation of Patients

Rehabilitation is a large field where Virtual Reality shines.

Studies have shown that VR can significantly increase the speed at which patients rehabilitate because the patients can be put in environments that accelerate the recovery process (e.g., mimicking motor neuron treatment).

Additionally, using gamification, tedious rehabilitation activities can be made more interesting, increasing patient motivation. This way, patients are less inclined to drop out of a rehabilitation trajectory. Also, the immersive character of Virtual Reality will help patients focus on their recovery without being (negatively) influenced by the outside environment.

The latest tracking techniques have become very accurate and are able to measure sub-millimeter movements. As such, rehabilitation professionals are able to use these measurements to accurately track progress of the patient and are able to adjust the 3D environment to adjust to the patient's progress. Also, automatic tracking of the patient movements enables healthcare professionals to allow patients to perform activities on their own, increasing efficiency of the healthcare institution and lowering costs.

Pain Treatment and Hypnosis

Virtual Reality has the ability to captivate the attention of the viewer. This immersive character of VR has attracted researchers to investigate its capacity to reduce pain during medical procedures.

As such, research has shown that VR is indeed able to significantly reduce the pain experience by placing the patient in engaging VR environments. The reason lays in the fact that the patient's attention is diverted towards a pleasant experience, and not towards the pain inducing procedure.

On top of its applications in pain management, VR can be employed to facilitate hypnosis with less or no medicines, reduce anxiety of patients and as such increase the recovery rate of the patient after surgery.

Improve Patient Wellbeing

Virtual Reality has the ability to transport its viewer to places where they normally cannot go. Long term patients in a hospital can feel lonely or disconnected from their family. Kids especially suffer from this.

Using 360 live streaming video technology, patients can be shown a live feed from their home and see what their parents are doing. This way, little patients can communicate with their parents, and still feel the warmth of their home in the hospital environment.

Alternatively, patients can virtually attend a concert of their favorite band and experience it as if they are there themselves!

Pre-Surgery Analysis

The medical field has been under financial stress for years. Every year, medical facilities are required to reduce costs and increase efficiency. Virtual Reality can be an integral part to increasing efficiency while maintaining quality.

Using Virtual Reality, surgeons are able to use a 3D visualization of the patient or the organ. As such, they can already virtually practice the surgery and for example, find out the best and most efficient way to enter the body and extract the tumor.

By using VR, surgeons can increase the speed and accuracy at which they perform the surgery and therefore reduce the potential impact on the patient. Pre-surgery VR can this way reduce costs and increase efficiency.

Disaster Management

Virtual Reality has the ability to create virtual environments that show a wealth of information in an easy-to-understand layout.

A disaster recovery manager can use Virtual Reality to get an overview of the situation at hand. In a VR environment, the manager can be shown critical information streams such as a map indicating the position of all actors, important statistics etc. At the same time, the virtual environment can show different live streams from various camera feeds.

Using this wealth of information, the disaster recovery manager will be able to better maintain overview, and seamlessly interact with the various actors in the field.

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