

# Virtual Reality, Telehealth, And The Future Of Healthcare

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With Facebook's acquisition of Oculus VR, the maker of the virtual reality headset Oculus Rift – and its implication for “virtual house calls” – the U.S. healthcare system seems poised to make a powerful shift toward the telehealth model. According to some experts, 50 percent of face-to-face doctor consultations can be easily handled via virtual reality devices.

These same experts believe virtual visits are superior to “real” visits because they are convenient for both patient and doctor, eliminate the discomfort of the waiting room experience – in which sick people experience lengthy wait times and exposure to germs – and increase patient engagement by making charts and records instantly visible on screen during the consultation.

Virtual reality healthcare applications could not only provide a revolutionary way to enhance a patient's understanding of their disease process, but also help them to understand the benefit of behavior modification, and strengthen medication compliance – a major cause of hospital re-admissions. This technology will also have an expanded role in medical education, especially in the area of modeling and simulation.

## Today's Virtual and Digital Healthcare Tools

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## *Remote Monitoring*

Remote patient monitoring is a type of ambulatory healthcare that allows a patient to use a mobile medical device to perform a routine test – measuring glucose, heart rate and rhythm and blood pressure, for example – and send the data to a healthcare professional in real-time. Remote monitoring techniques allow patients and their physicians to closely monitor medical conditions and, if need be, intervene. The most advanced virtual teleconference doctor visits rely on remote monitoring devices that enable the doctor to listen to a patient’s heart and lungs, take their blood pressure, look in their eyes, ears, nose and throat, test pulmonary functions and examine their skin, to name a few.

Monitoring patients in their real world environments, such as the home – rather in a clinical setting – is not only safer and more convenient for the patient, but it also replicates the patient’s condition and environmental challenges.

## *Remote Home Assessments*

Virtual reality and telehealth technologies bring collective expertise to the bedside, and have sparked growth in the home-based healthcare and health/wellness market, including technologies aimed at remotely assessing home modification needs and daily activities that allow seniors and the disabled to live at home, avoid hospital readmission and prevent the kind of falls and injuries that lead to institutional care. The future of healthcare is being designed to extend the care continuum to where it will be the most effective – at home – on a practical, day-to-day level.

For payers, virtual and digital healthcare technologies mean reduction in preventable medical costs. For physicians, adopting telehealth applications, for example, will improve the patient-doctor relationship, reduce the time spent waiting for actionable healthcare data and streamline workflow.

## *Augmented Reality*

The use of augmented reality, a variation of virtual reality, is being developed to bring virtually created images of a patient into the operating room and project a 3-D image of the actual patient so that the surgeon can see the structure beneath the surface. Also, surgeons can practice complicated maneuvers on the virtual patient before performing the actual procedure. During surgery, the virtual system tracks the surgical instruments and their exact location. With this precise information, the surgeon can make smaller incisions and reduce recovery periods.

## *Digital Environmental Cloning*

Another use of virtual technology involves the digital cloning of medical facilities to eliminate geographic limitations. The University of Iowa, for example, has launched a project to replicate their health sciences colleges, library, hospitals, clinics, and medical curriculum in a virtual environment. This will allow access to up-to-date

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information at the point of care—no matter where that may be. Eventually, virtual reality technology will make it possible for medical care to transcend the traditional hospital as virtual medical communities make resources available electronically to a potentially unlimited audience outside hospitals. For now, virtual environments are helping to provide resources to rural physicians and keep them up-to-date on advances in the medical field.

### *Going Forward*

Consider the aging Baby Boomer generation: tech-savvy, active individuals who would rather spend their retirement years playing tennis or taking their grandchildren shopping than bouncing back and forth to hospital appointments. Facebook and other social media have already played a key role in encouraging healthier lifestyles, but its co-founder and CEO Mark Zuckerberg is just one visionary who is betting on virtual reality technology. Others, such as Dr. Patrick Soon-Shiong, CEO of digital health rollup NantHealth, are investing millions into virtual reality gaming companies, citing the vital interconnectedness of the rapid adoption of mobile devices and social media platforms, and the use of novel algorithms to create machine vision for enhancing healthcare.

Given the spike in chronic conditions and medical complications tied to improper post-discharge care, the timing couldn't be better. To recap, the healthcare technology revolution is enabling healthcare consumers to:

- Monitor vital signs at home and transmit that data to the appropriate provider
- Live at home in conditions that help them and their caregivers prevent long-term institutional care
- Allow visits with healthcare providers via a virtual reality platform and receive high-quality medical care without having to leave their homes or offices, and thereby reducing down-time, cost and anxiety

Given the rise in patient-centered healthcare – a concept that hinges on giving individuals more control over their healthcare – virtual reality and telehealth technologies are ideal engagement tools that extend the reach of healthcare into the home, and bring the exam room to the patients.

For more information, visit [Remain Home Solutions](#) [1].

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[1] <http://www.remainhomesolutions.co/>

