

# The Next Frontier For Healthcare: Blockchain, AR and VR

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The healthcare industry is primed for a revolution as the convergence of blockchain, cryptocurrency, virtual reality and artificial intelligence begin to take hold.

U.S. healthcare spending is estimated to reach \$8.3 trillion by 2040, up from \$4 trillion in 2020, due to the adoption of new and emerging health technologies. The medical industry has traditionally been slow to adopt new technologies, until proven safe. However, this is beginning to change with more companies starting to experiment with the technology in order to improve transparency and accountability within healthcare systems.

## Blockchain for transparency

There are a number of flaws in the medical industry: healthcare hierarchy, data ownership and data security to name a few. There have also been occurrences where a mix of health records or unknown history in an emergency could lead to potentially life-threatening situations.

Blockchain is quickly becoming a critical need for the digitization of healthcare. It can allow decentralized communities controlled democratically via smart contracts – meaning that everyone has a record of what’s happened in the digital world. By creating a network and regulating it by patients, third parties are excluded and increasing adoption.

This can go for storing and managing health or insurance information, making it an ideal tool for ensuring transparency and accountability within healthcare systems. The power would be put in the patient's hands, allowing them to manage their own care through a patient-centered model.

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## Cryptocurrency for borderless payments and security

The plastic surgery industry is a booming business, with billions of dollars exchanging hands every year. However, the industry faces a few major problems. One issue is the need for privacy and keeping procedures confidential. Another obstacle is cross-border transactions. It can be difficult to conduct surgeries in different countries because of different laws, taxes and regulations. Cryptocurrency solves both.

Surgeons are jumping to accept cryptocurrency largely due to the fact that it allows them to operate globally and accept payments from anywhere. For privacy, the majority of such requests come from clients coming from overseas, particularly from the Middle East, and those seeking culturally sensitive procedures.

With widespread adoptions and mandatory inclusions of cryptocurrency strategies, the health industry won't be too far behind. Various bank CEOs have changed their narrative on cryptocurrencies in the last six months. Institutions are now accumulating larger positions into cryptocurrency, with more trading desks opening up cryptocurrency arms, as well as beginning to market themselves as cryptocurrency experts.

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# Virtual reality and augmented reality in the healthcare industry

There are many use cases for augmented reality (AR) and virtual reality (VR) in the healthcare industry, but some of the most popular are digital twinning, telemedicine and medical training.

VR is a computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a VR headset. AR is the integration of digital information with the user's environment in real time. Remember Snapchat filters where you could see an avatar or object in your space through your phone, without it being there? It is achieved by live direct or indirect view of the physical world, where elements are added to (or sometimes removed from) the actual scene, by digital means. AR is more than just an overlay on top of reality, and it can be more immersive, almost replicating a real life stimulation.

Digital twinning is using a virtual model or simulation of any object, system, or process. It's created using real world data to discover more about its real-world counterpart – which could be the patient themselves in the metaverse. This would allow doctors to observe how treatments are affecting a person's physical body from anywhere in the world – even if they are not physically present at the treatment site. AR-based surgical apps can improve the safety of patients during surgery by providing surgeons with real-time information on the patient's vitals, procedures' details, equipment locations and other requisite data. AR-based virtual interfaces empower doctors to visualize the locations of organs, tumors and other abnormalities on the patient's body.

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Telemedicine is when doctors can treat patients remotely by using video conferencing or virtual reality technology. This can be done through a smartphone app, or even through a headset like the Oculus Rift. AR and VR can also be used to help patients manage their own health care outside the hospital setting by giving them tools to log their own vitals, track their diet or even perform exercises at home with a virtual trainer.

As for medical training and education, VR and AR offer a realistic experience that will revolutionize health care in the coming years. These technologies can be used to train doctors, nurses, and other health professionals on how to perform a variety of procedures. They are used to training surgeons, providing realistic simulations of medical procedures outside the body before going in.

## **AI for personalized patient care**

Artificial intelligence is being widely used in healthcare to help diagnose diseases, offer personalized treatment options and improve patient outcomes. It has the potential to revolutionize the healthcare industry by making it more efficient and cost-effective.

One of the most important benefits of AI in diagnostics is that it can help provide accurate diagnoses for patients with rare diseases and treatment decisions, all while removing the human bias. Some of the medical vision applications are estimated to save at least 80% of the time it takes for physicians to reach the final diagnosis. It can help doctors to diagnose diseases, predict the risk of stroke and heart attack, as well as recommend treatment options for cancer patients. Memorial Sloan Kettering Cancer Center (MSKCC) and IBM have agreed to collaborate on the development of a powerful tool built upon IBM Watson that will provide medical professionals with improved access to current and

comprehensive cancer data and practices.

The healthcare industry is on the cusp of an exciting revolution. The convergence of blockchain, cryptocurrency, virtual reality, and artificial intelligence (AI) will have a positive impact on healthcare and thereby the lives of all people. When combined, these three technologies can create an immersive patient experience by which patients can improve their mental and physical health, communicate with doctors on a deeper level, and provide further access to medical services.

In short, decentralized healthcare is the future.

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