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# Is Blockchain the right technology for healthcare?

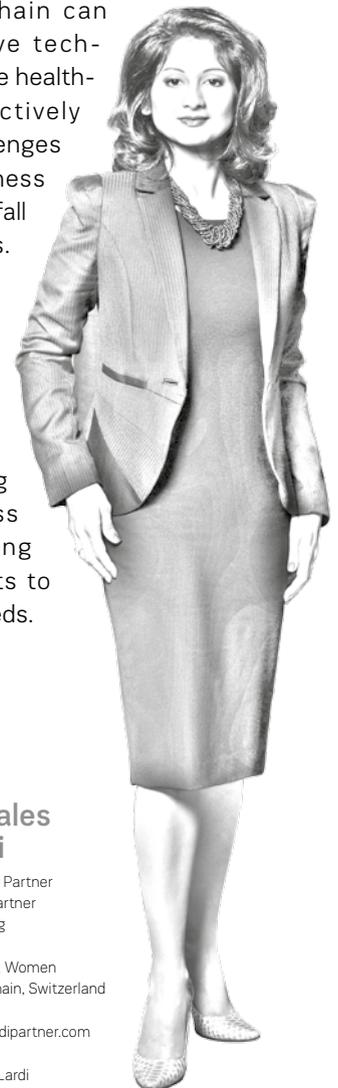
Blockchain technology is touted as being potentially revolutionary, but what's the view for the healthcare sector? Known for being an industry that's slow to adopt and adapt to new tech, could there be any value in Blockchain for healthcare? HealthManagement.org spoke to four Blockchain experts for their views.

**B**lockchain technology initially gained recognition in the framework of the cryptocurrency Bitcoin. However, the benefits of Blockchain go far beyond offering a simple payment method for medical bills and healthcare with cryptocurrencies. Blockchain is an immutable, digitally-distributed ledger system that provides the medical industry with real-time, universal records.

Application of Blockchain technology will allow all stakeholders in the healthcare industry to access a single source of records that are timestamped and tamper-proof, from anywhere in the world. In addition to patients being able to fully manage their data and control who gets access to it, they will be able to remain anonymous and, potentially even monetise their data. For example, there are new marketplace models that allow patients to receive tokens (cryptocurrency payments) in exchange for use of their data in pharmaceutical trials.

Blockchain creates new security and data privacy standards that never existed before. In order to tamper with records, all nodes in a Blockchain network need to be changed, making it extremely difficult to carry out. This prevents incidents that have plagued healthcare institutions where hackers accessed computer systems and held data ransom. The combination of Blockchain with other disruptive technologies such as artificial intelligence and internet of things enables real-time data collection, transparent supply chain management, increased integrity of clinical research results, optimised processes for payments, claims management, and regulatory compliance, to name a few.

I believe Blockchain can be a transformative technology solution for the healthcare industry, effectively addressing key challenges and disrupting business models that currently fall short of global needs. However, as with any technology solution, Blockchain is just an enabler. Successful transformation for the industry will depend on creating sustainable business models and changing traditional mind-sets to focus on people's needs.



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Firstly, there is no such thing as “the right technology for healthcare.” However, there are appropriate technologies to address specific challenges in healthcare, at least as long they are not replaced by the next technology. Blockchain is a distributed ledger. A distributed ledger is a database spread across several nodes where each node replicates and saves an identical copy of the ledger. Blockchain organises the database in blocks and validates addition to the database through a consensual method between nodes. Blockchain could address the problem of identities: a trusted source for the ID’s of citizen, care providers, and other stakeholders. This is a major problem in the healthcare sector which becomes even worse when it goes transborder. Blockchain cannot solve the problem of data interoperability, but it can address accessibility of data and trace exchanges. This would suppose however to have a trusted source for citizens and providers identities, which is not yet the case. Blockchain could help developing a global, shared and dynamic approach to consent management, crossing the boundaries of research and care. There are some other points, but the important message is that Blockchain is a great technology that will really help addressing specific important challenges of the healthcare system.

As a field that prides itself on data, technology, and being on the cutting edge, cardiology has the potential to benefit highly from a new infrastructure built to help implement evidence-based medicine. By decentralising information about patient care, research, cost effectiveness, and clinical outcomes, Blockchain technology truly has the power to recreate the foundation on which our system operates, providing a turbo boost in a field ripe for innovation. It could be the “X factor” that brings us to a next level we can’t even imagine. Overall, I see Blockchain playing an important role in cardiology in the years to come.”

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It is impossible for me to overstate the importance of Blockchain to the healthcare industry. Healthcare will increasingly move into the digital area, and that means sensitive healthcare data needs to be collected securely, shared, analysed and adequately controlled.

For all those steps, distributed ledgers are highly useful. For example, using immutable Blockchain technology, all stakeholders in the healthcare vertical can easily share data with anyone without the fear of data corruption or tampering. There will always be absolute proof and confidence that a medical

record, research data or anonymised genomic data, cannot be altered. Blockchain-based micropayments can help to incentivise people to participate in medical research by contributing their anonymised data to clinical trials. Using smart contracts and automated digital consents, patients can be empowered to manage their own health. Blockchain will also improve the pharma supply chain, enable trust-free collaboration, improve interoperability and help to fight counterfeit drugs and insurance fraud. Blockchain in healthcare will be particularly disruptive if it is combined with other technologies, ie artificial intelligence. Despite some resistance, there cannot be any doubt that Blockchain should and will disrupt and improve many parts of the healthcare ecosystem. ■

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