Does blockchain have a role in healthcare?

By **Fred Bazzoli**
Published **June 08 2016, 6:44am EDT**

More in **Cybersecurity**

It's the technology that's most closely associated with the Bitcoin, and it's been playing a growing role in the financial industry.

Now, there's a growing realization that blockchain technology could help answer many of the vexing questions in healthcare regarding keeping better track of patients' electronic records and improving the security with which they're shared.

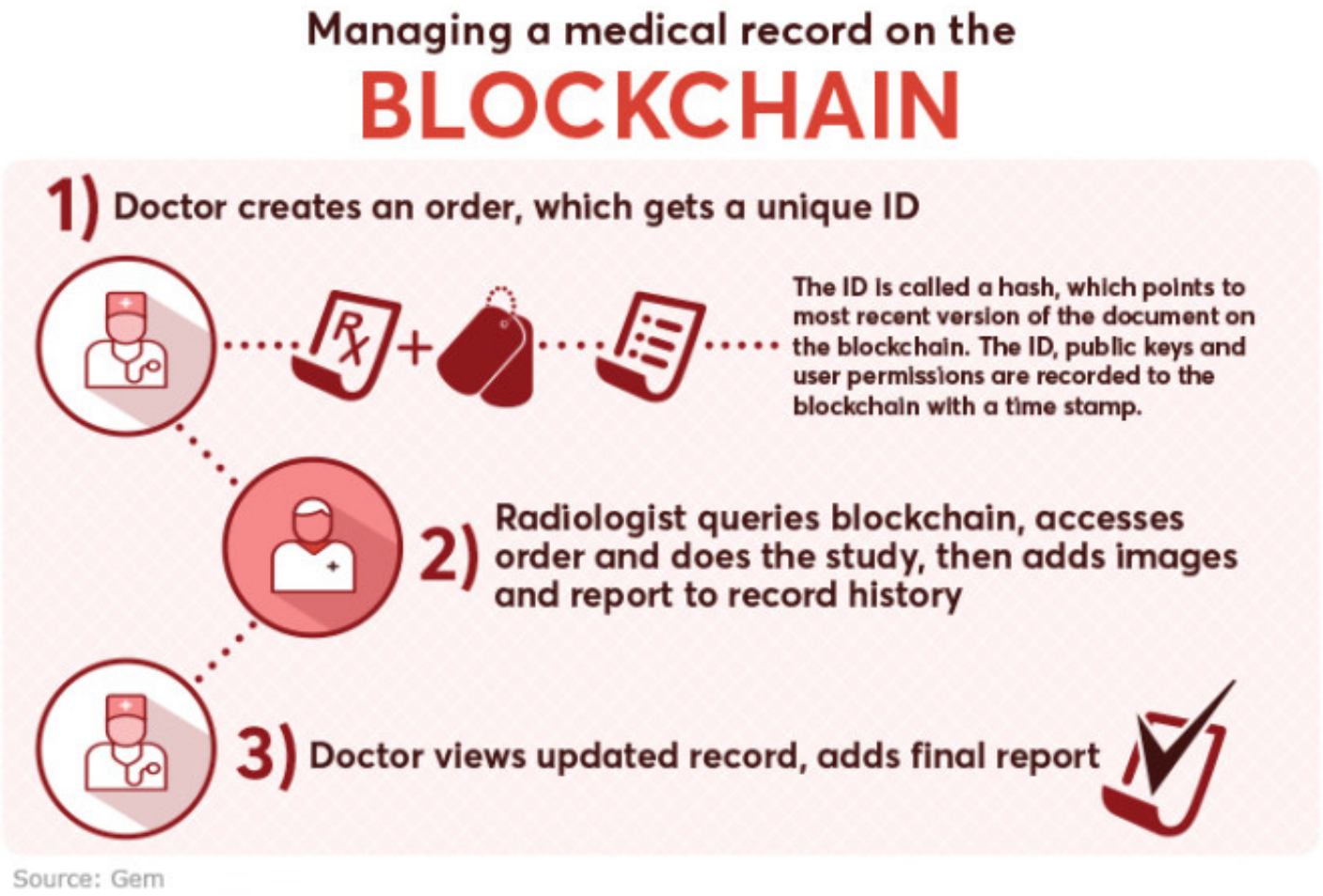
Other capabilities of the technology could include automating workflows and offering better identity systems, for both patients and providers.

Discussions are in early stages for using blockchain technology. Gem, a company that offers an operating system that connects users to blockchain networks, has started a network for healthcare, called Gem Health. Within recent weeks, Gem has partnered with Philips and its' Blockchain Lab, which was established this year after six months of exploratory research into blockchain technology. The Philips lab, located in Amsterdam, offers a dedicated

developers work together on research and exploration of potential use cases for the technology.

Gem launched its network "to raise discussion and a collaborative network that is a safe

place to experiment and build pilots," said Micah Winkelspecht, founder and CEO of Gem. "We've started trying to change people's perceptions about the use of blockchain in healthcare technology. Most of the discussion with blockchain has been around financial transactions.



"There's actually quite a few companies experimenting with blockchain technology in the healthcare space; they're just doing it in silos," Winkelspecht added. "There was a need for someone to curate the discussion in the healthcare industry."

Blockchain operates as a distributed, secure transaction ledger that uses open-source technology to maintain data. Records are shared and distributed over many computers of entities that do not know each other.

Instead of using data storage that requires information to be kept in a centralized environment, with a central authority holding the data, the entire network of combined

computers is responsible for the integrity of the data.

Blockchain uses a simple approach to store highly sensitive information. The distributed database maintains a list of data records, but the list isn't static and can be increased to add more records. The database consists of data structure blocks, which hold the data; information contained in the database is time-stamped and validated. Each block includes a "hash" identifier from the previous record block, and those hashes help link the blocks together into a virtual chain.

Transactions are stored on the block chain; transactions are created by the participants who use the system. Blocks record and then confirm when, and in what order, transactions are logged on the chain.

In healthcare, blockchain technology would offer the flexibility to incorporate the information from patients who receive treatment from various providers, which would be able to virtually connect to one network, work on shared information and collaborate with peers, without exposing information to theft or forgery, Winkelspecht said. That's because blockchains use a protocol that produce a log of network activity that is both secure and able to be relayed across distribution networks.

Blockchain would allow providers to work on patient data, and their interactions would be recorded in secure manner, paired with a log of network activity that provides an indisputable record of who posted records and include evidence of when changes were made.

Winkelspecht said the attributes of blockchain technology make it applicable to handling clinical data, processing claims, handling universal identities, managing genomic data, and other data challenges that are particularly difficult for the healthcare industry.

"There's a massive amount of demand for building connected services across the healthcare continuum," he said. "There's demand for the ability to connect the entire continuum of care and have greater control on access."

The approach for handling data in healthcare is changing, Winkelspecht said. "Right now, the model is built around centralization of data, and it's not in the patient's control. There's now a lot of demand on the patient side for increased control, or at least increased transparency. Blockchain can provide a strong working model for providing a patient-centric approach."

However, some challenges will persist, said Jody Ranck, CEO of Krysalis Labs. "Blockchain won't fix interoperability overnight," he added. "Some believe that it's a way for patients to take more control over their data, and give them more control over who they share data with."

Ranck lists a variety of potential applications for blockchain within healthcare:

- Medical banking between dis-intermediated parties
- Distributed EHRs
- Inventory management
- Forming a research "commons" and a remunerative model for data sharing
- Identity verification for insurance purposes
- An open "bazaar" for services that accommodates transparency in pricing

While the discussion for use within healthcare is only beginning, both Ranck and Winkelspecht believe the industry could adopt it quickly, if use cases can be developed and show it can meet existing needs.

"I still think we have a ways to go before people understand it, and the infrastructure is evolving," Ranck said. "It's a fine analogy to say that there's been uptake in the banking sector, which is also very conservative; it's just as slow as healthcare. I think we're reaching a level of frustration with the existing (data sharing) infrastructure. Blockchain can't answer all these issues, but there are strategies that it can address, such that blockchain could be the infrastructure that, in five to 10 years, could really change the landscape for data sharing in healthcare."

Fred Bazzoli

Editor in Chief, Health Data Management

More from this Author

DeSalvo to step down from top position at ONC

Group practice IT expenses reach $32,500 per physician

Women's HIT pay gap widens over the past 10 years

Comments

Login or Register

Sign up for newsletters

Newsletter/Frequency Morning Rou

Email Address

Subscribe

Register

Like what you see? Make sure you're getting it all

Health Data Management delivers insightful analysis of the technology trends, tools and strategies that are shaping healthcare's future.

Register

Health Data Management

SourceMedia