

PERSPECTIVES

BLOCKCHAIN'S POTENTIAL FOR A BETTER HEALTHCARE SYSTEM

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Abstract

In a recent panel, Booz Allen joined FDA's Director of Data Mining and Informatics, HHS Deputy National Coordinator for Health Information Technology, and PNC's Senior Vice President of Healthcare Product Innovations to discuss how blockchain technologies can improve healthcare quality, cost, and outcomes.

Experts weigh in on immediate blockchain use cases

Booz Allen recently hosted a panel of policy leaders and practitioners from both the public and private sector to discuss blockchain's potential in healthcare.

The panelists all acknowledged that without the advantages offered by blockchain, information availability can only take healthcare so far. Today's pressing challenge is how to ensure the accuracy, authenticity, and reliability of critical information—at scale.

This discussion at the [Capital Health Tech Summit](http://www.capitalhealthsummit.com/) (<http://www.capitalhealthsummit.com/>) offered insights in three areas that can help leaders put blockchain to work as a potential game changer for healthcare:

1. Target Small, but Strategic Wins

Dr. Jon White from the Department of Health and Human Services (HHS) cautioned against seeking a total replacement of the current healthcare economy with any technological advance. Take the shift from faxes and hand-written prescriptions to e-prescribing; the sector achieved significant operational improvement without

upheaval and while ensuring that the benefits of this new technology accrued to patients, providers, and payers alike. The goal for blockchain at this early stage is to place bets on small victories that, when they succeed, prove what is in the realm of the possible.

Mary Butler-Everson of PNC explained that blockchain can help eliminate the non-value added activities that burden several stakeholders and even competitors. She gave an example from the banking industry: Major credit card issuers found common cause with the automated clearing house—a critical yet standard function—and adopted shared infrastructure. In healthcare, she advised, the equivalent might be blockchain-based approaches to beneficiary eligibility or patient prior authorizations. Done the way they are today, these two use cases represent non-value added activities to multiple stakeholders.

2. Underestimate Change Management at Your Peril

As with most new technologies, particularly those that impact existing workflows, deploying the technology itself is only part of the challenge. **Dr. Henry “Skip” Francis from the Food and Drug Administration (FDA)** is currently leading his agency’s blockchain implementation, and raised the importance of easing user adoption to deliver on the promise of blockchain-based solutions.

In addition to anticipating and alleviating concerns that jobs may be replaced or diminished, Dr. Francis emphasized the value of training and enfranchising different user profiles. As part of implementing the FDA’s blockchain solution, he explained how important it was that researchers, doctors, hospital administrators, technologists, and statisticians were considered in the design and implementation of the solution. Ultimately, his agency’s blockchain solution was developed with a spectrum of stakeholders in mind, in a way that achieved alignment and ultimate success.

3. Enable Improved Data Liquidity with Blockchain

Dr. White noted that interoperability of health information is a “top national priority.” Indeed, the VA and many private hospital systems have been leading the embrace of the popular FHIR HL7 standard to securely transmit health data. As a result, doctors and hospitals can share electronic health record (EHR) data beyond the boundaries of siloed, centralized databases.

Blockchain technology can take interoperability a step further to improve the exchange of data between healthcare organizations. A team at Booz Allen is working with the FDA to develop a blockchain-based information sharing platform that enables the secure exchange of sensitive data across healthcare settings (We’ll share more about that project below). And what’s more, the integrated use of smart contracts—executable software on a blockchain—gives data owners the power to set selective permissions for better access controls.

Real-World Applications

Perhaps the most exciting takeaway was the rare discussion of blockchain in practice. Setting aside hypothetical use cases, Dr. Francis discussed his team’s real-world blockchain deployment, which is scaling up throughout this year.

He shared an example of why real-time and secure data sharing became such a critical issue to the agency’s mission of conducting patient outcome surveillance. During the 2009 H1N1 pandemic, the FDA rapidly approved the release of new vaccines to stem the contagion, but monitoring the drug’s effectiveness involved a time-consuming manual process to collect and analyze sensitive patient data contained in thousands of pages of documentation submitted by hospitals to the CDC and the FDA’s Center for Drug Evaluation and Research.

Because of the need to more effectively assess countermeasure drugs during medical events, Dr. Francis explained that the FDA recently implemented a blockchain-based solution with Booz Allen that facilitates real-time exchange of encrypted, permissioned health data between the agency and partner hospitals—generating reliable assessments within 24 hours. And, owing to the unique auditability of blockchains, the solution also enables crucial epidemiological work to determine how and when contagious infections initially spread.

Blockchain technology will continue to change the way we share information in healthcare. As issues continue to rise around data security, accuracy, and access, blockchain applications can help healthcare organizations focus on what matters at the end of the day—the patients—and worry less about single points of failure.

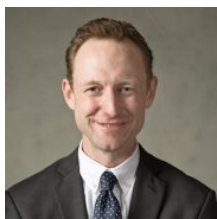
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