Blockchain + Smart Contracts in Healthcare

By Jordan Byrne

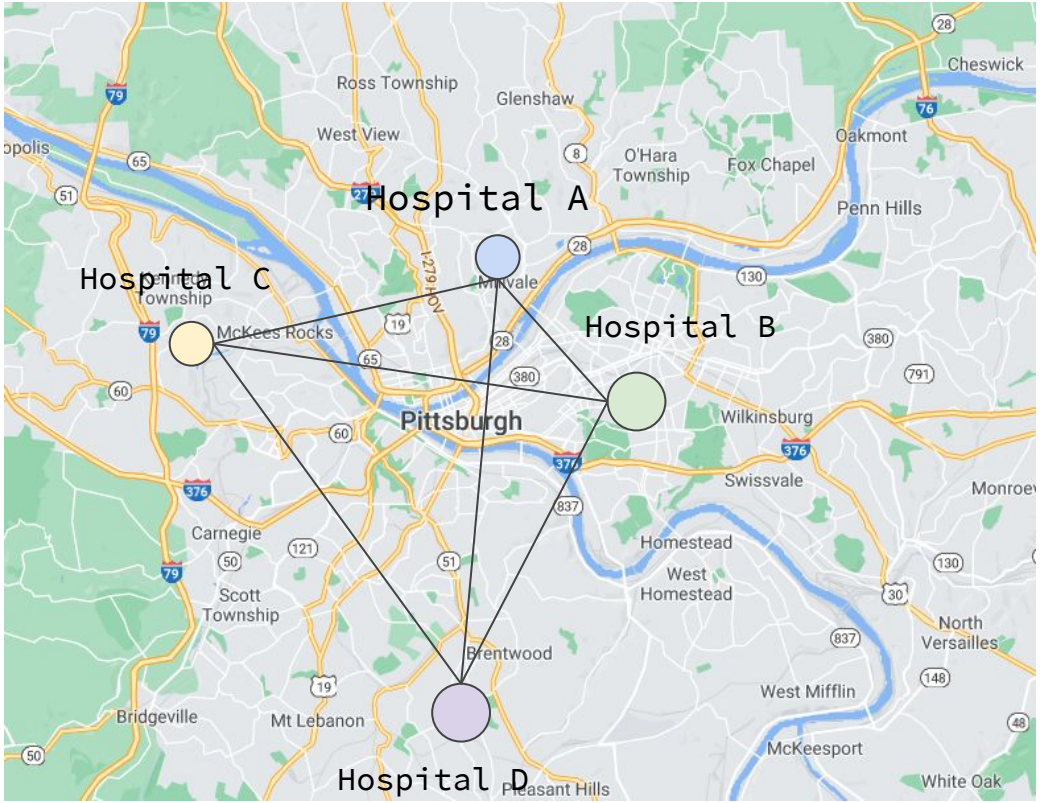
Blockchain Concept to store medical data

- Utilize a private blockchain to securely store medical data in a decentralized fashion
- Utilize smart contracts to intelligently ensure that all authorized parties can access private medical data ie: (patients, insurance, doctors, family members, etc.)
- Utilize blockchain + encryption to ensure all data is secure and anonymous

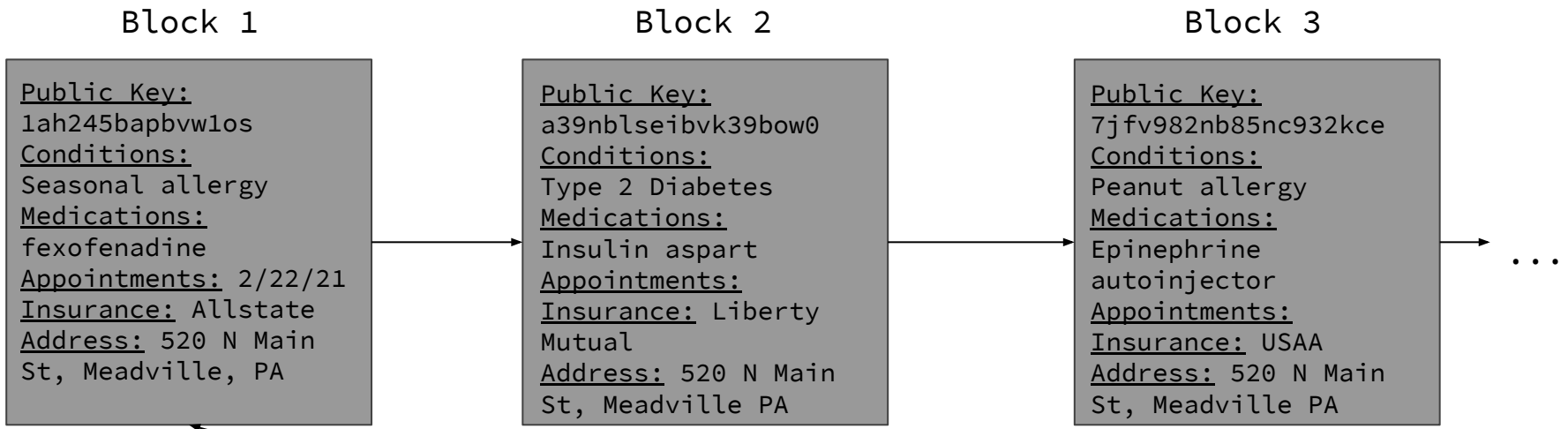
Advantages:

- Improved security and privacy since all blocks are identified by an anonymous public key
- Decentralization improves data reliability even if one server goes down (important for avoiding ransomware attacks that take down hospital systems)
- Immutable nature of blockchain ensures data reliability

Decentralization Concept



Blockchain + Smart Contract



Access only authorized if requirements in smart contract met

Access Attempt Successful! ✓

Doctor Accessing Patient Data Block 1

Can only access data in block 1 if:

- Patient has given authorization for data (with a digital signature generated from the private + public key)
- Patient has an appointment scheduled with the doctor

All Conditions are met! Doctor given access to records.