

Emerging Healthcare Leaders Webinar

Blockchain & Healthcare: What is it, How does it impact healthcare, How can we benefit from it?

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Meet Our Speakers



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Learning Objectives



Objective 1

Understand what blockchain is, and how it works.



Objective 2

Discuss the potential benefits and use-cases of blockchain in the healthcare industry.



Objective 3

Illustrate the potential risks of implementing blockchain in the healthcare industry.



Objective 4

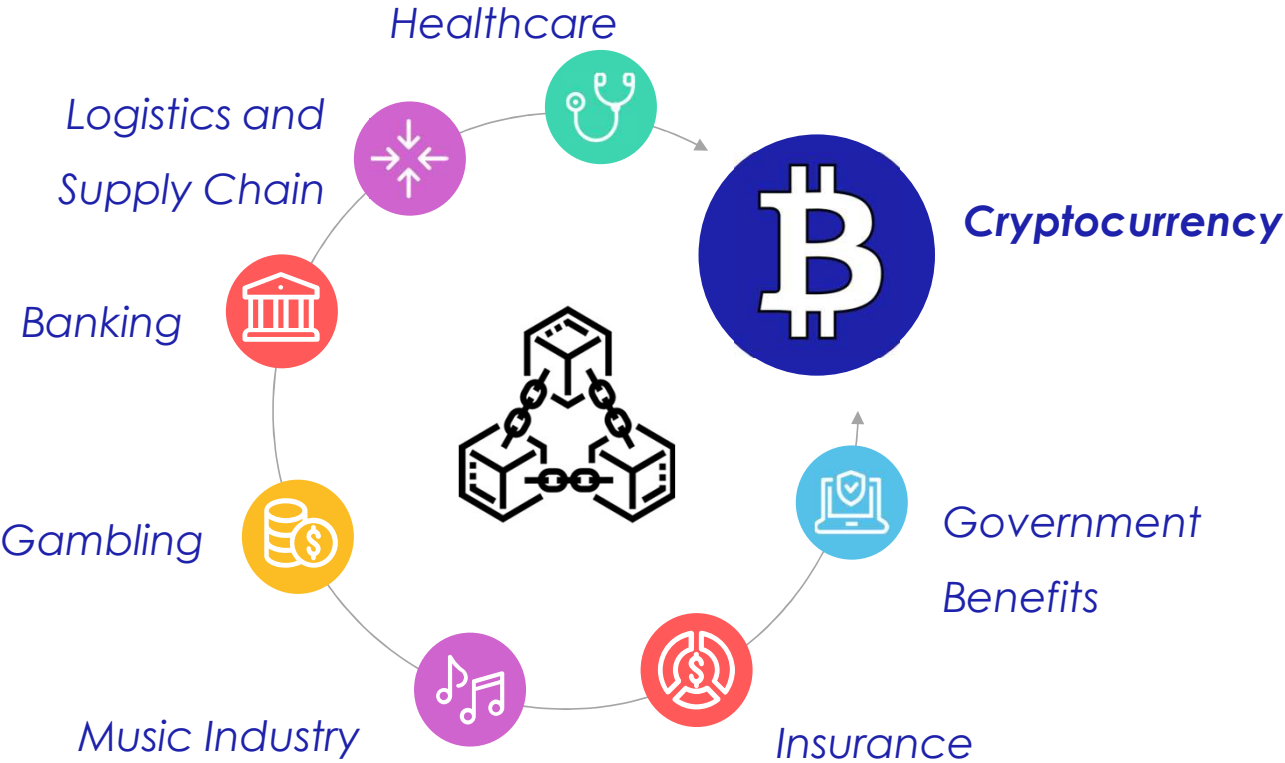
Identify and consider real life examples of healthcare organizations using blockchain technology, and where this technology is headed in the future.

Global & Industry Impact

300M
USERS

22%
POPULATION
OWNS
BITCOIN

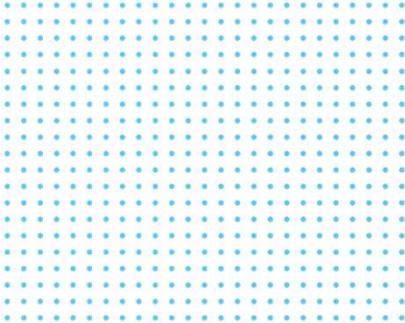
81
COUNTRIES



Intro to Blockchain

Cash				Accounts Recievable			
15-Jan	\$400	5-Jan	\$25	3-Nov	\$250,000	15-Nov	\$322
		7-Jan	\$500	20-Nov	\$100		
30-Jan	\$6,000						
30-Jan	\$200						
Accounts Payable				Dividends Payable			
15-Mar	\$4,000	5-Mar	\$250	3-Oct	\$150,000	15-Oct	\$382
		7-Mar	\$50	20-Oct	\$700		
30-Mar	\$500						
30-Mar	\$2,000						

General accounting ledger



Key Terms

Ledger
Record of transactions



Consensus Mechanism
Proof-of-Work & Proof-of-Stake



Block
Unit of data/record
holding set of transactions



Miner
Blockchain user/node
that validates blocks



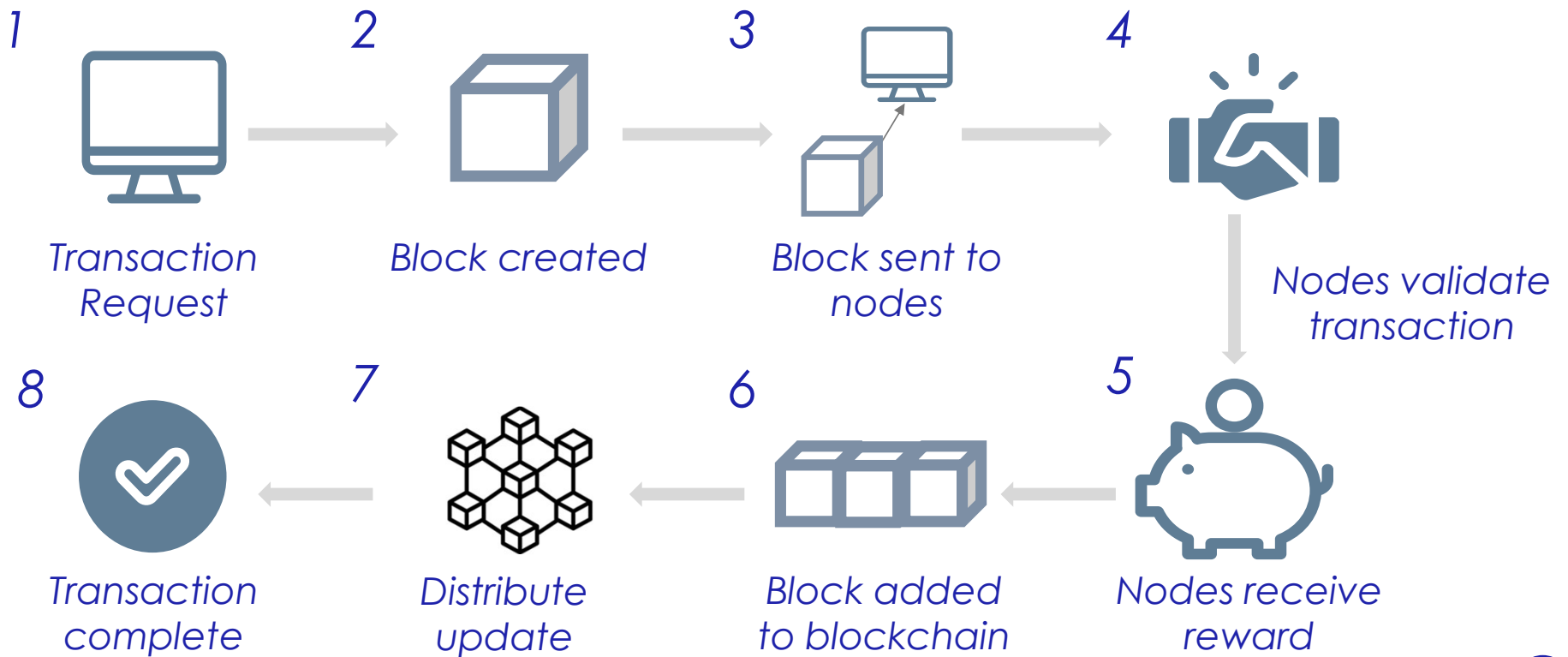
Hash
Digital fingerprint; adds
security



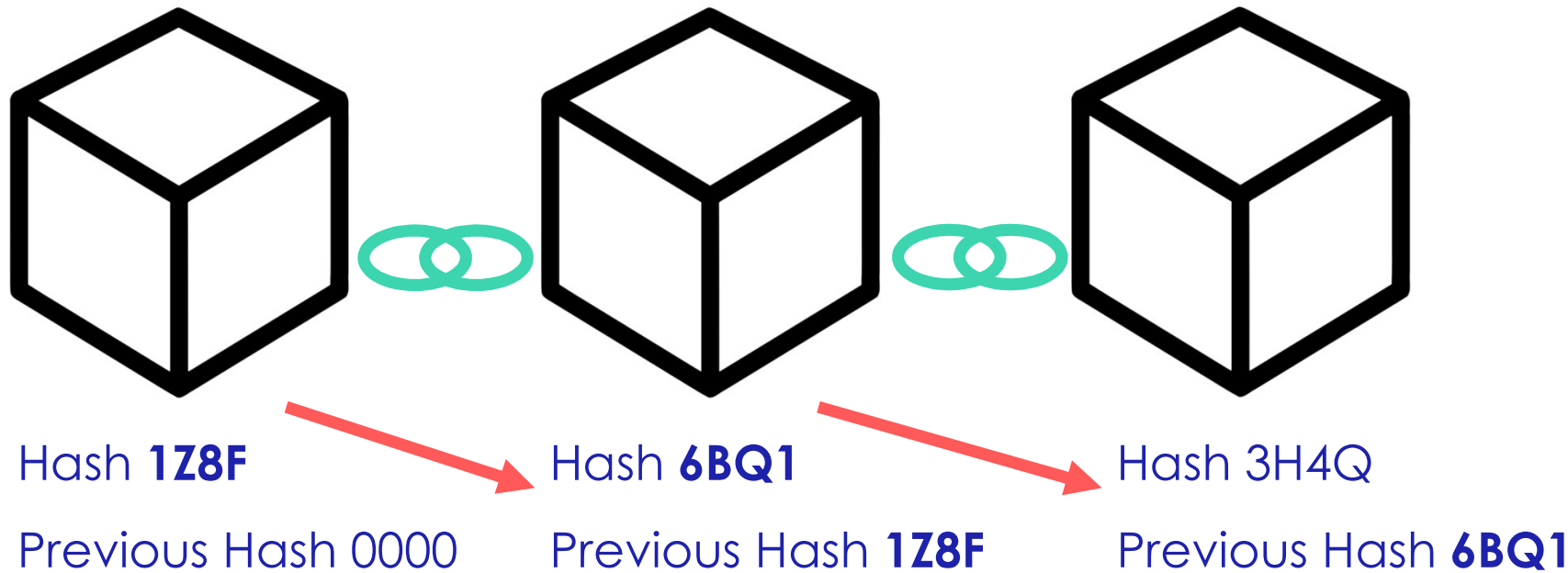
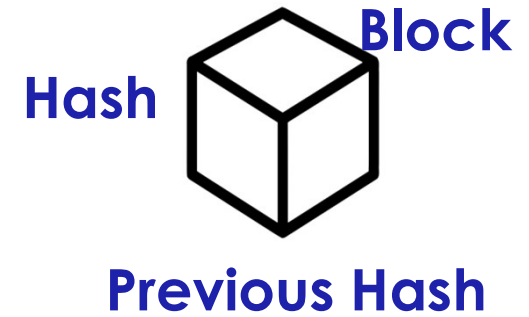
Blockchain
Digital distributed ledger



How does a transaction get onto the blockchain?



Blocks, Hashing, and the Blockchain



Consensus Mechanisms and Decentralized Networks



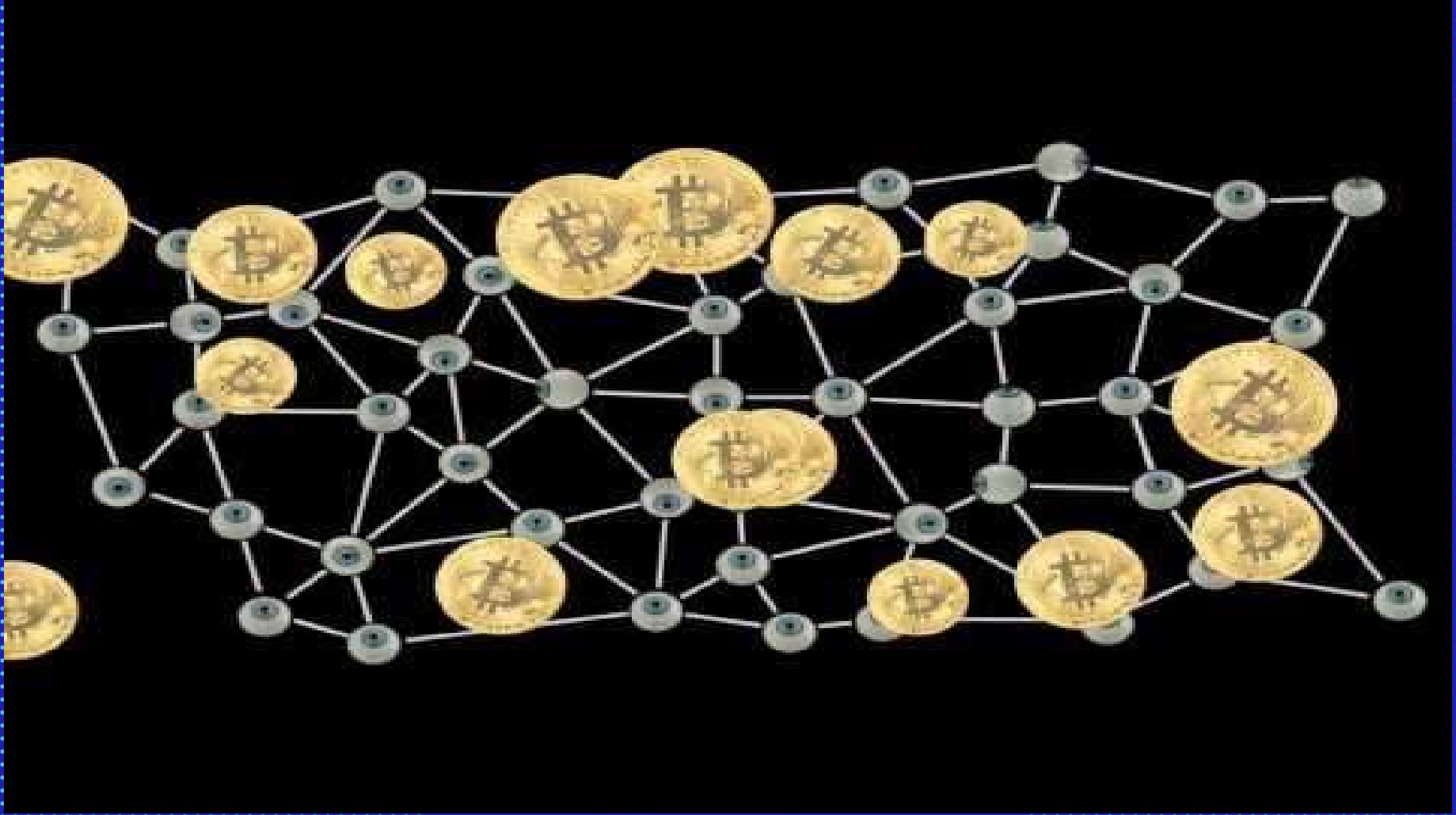
Centralized Overlay
Central peer facilitates the interactions



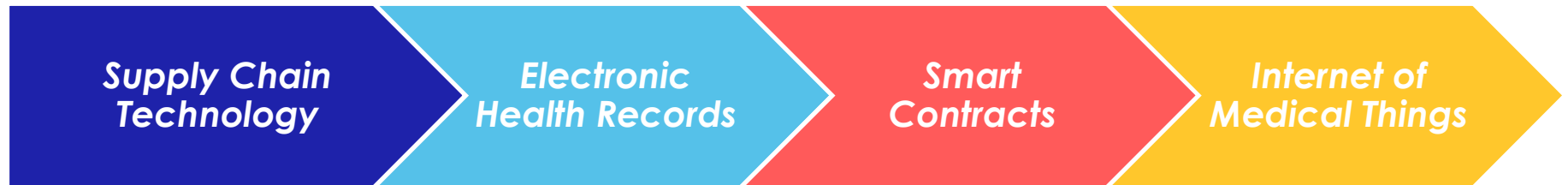
Decentralized Overlay
No central authority, all peers treated equally.



Hybrid Overlay
Hierarchical topology



Uses in Healthcare



Supply Chain Technology

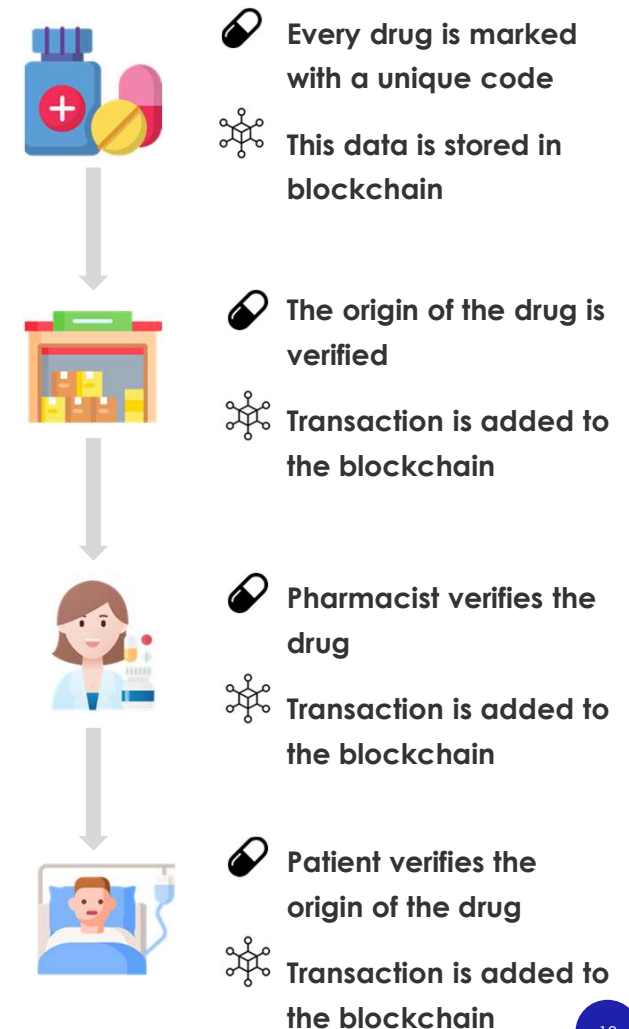
Problem: Medications & Medical Supplies Travel system to system in different locations

- Can cause distribution of counterfeit prescription medicines and devices leading to thousands of deaths.

Solution: Blockchain can verify authenticity of medicines, expiration dates, and other important information.

Current Examples:

- National Health Services in UK
- Everyware Ltd, & Hadera Hashgraph
- MediLedger
- IBM



Electronic Health Records

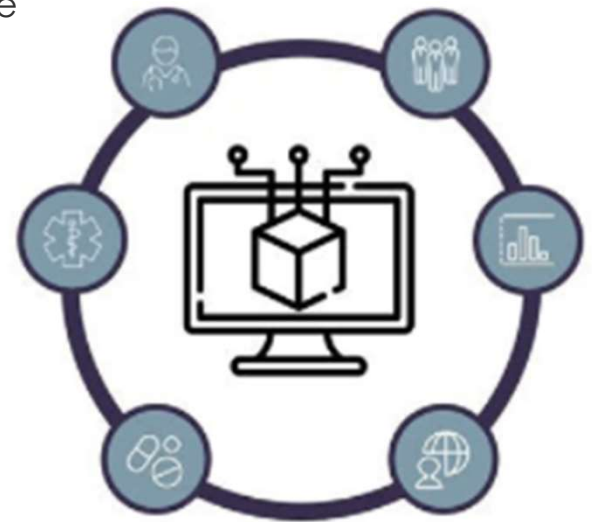
Problem: Often times, patients do not have their healthcare managed in one health system.

- Leads to gaps in patient's medical history and makes providers prone to medical errors
- According to Johns Hopkins University, medical errors & poor care coordination was the third leading cause of death in the US.

Solution: All medical records can be interconnected through a blockchain-based EHR system.

Current Example

- HealthChain



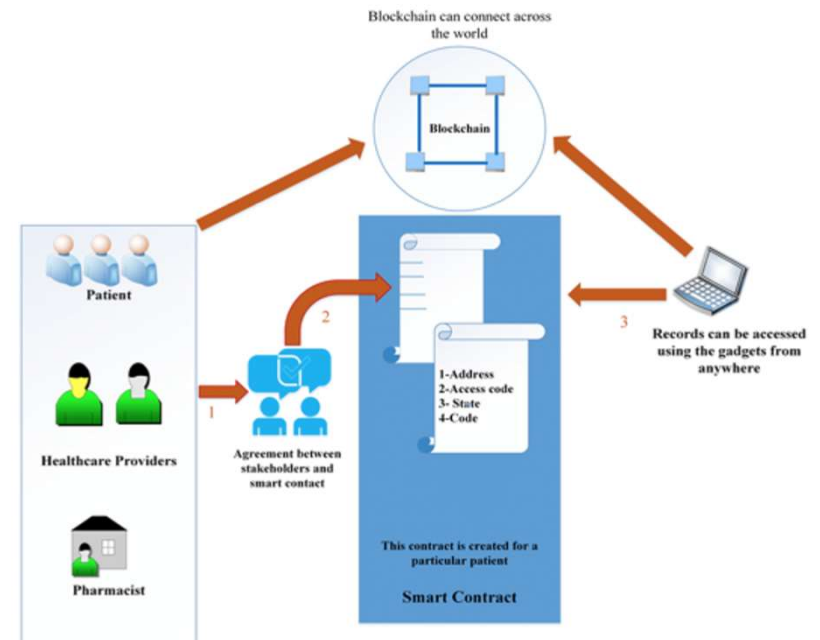
Smart Contracts

Problem: We use an outdated process for prior authorizations

- Current process can be timely, costly, and requires usage of multiple systems.

Solution: With smart contracts, an automated authoritative system can be used for prior authorizations.

- This will greatly reduce the amount of time needed in the Revenue Cycle management



Internet of Things

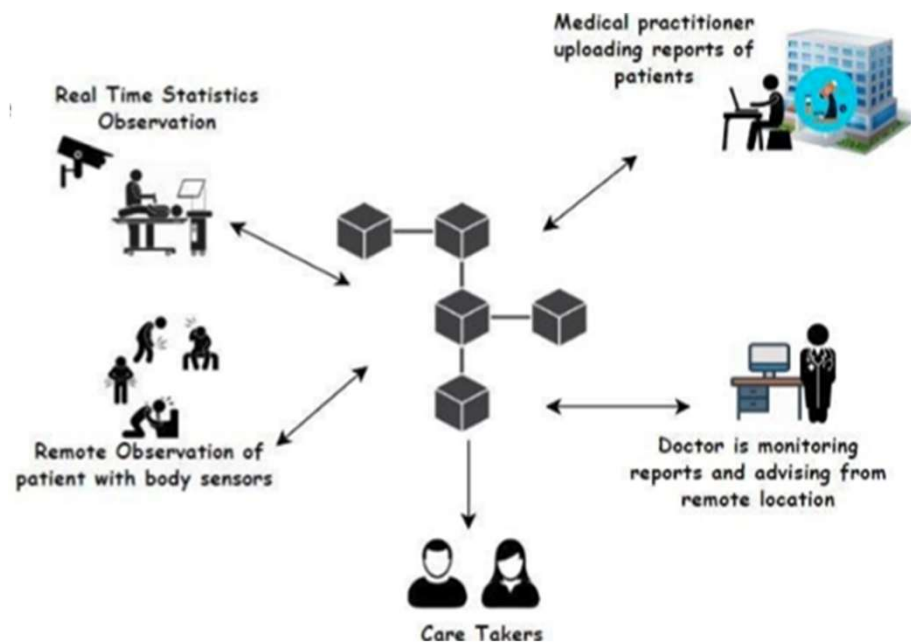
Problem: More types of applications and systems are used today.

- Patients information has an increased risk of breach.

Solution: Blockchain technology can secure all information from various devices and allow permitted users access to patient information when needed.

Current Example:

- IOTA - Internet of Things Application



Regulatory Considerations



***HIPAA
Compliance***



***GDPR
Compliance***



***Anti-Money
Laundering***

Benefits

Security

- Authorized users
- Maintaining privacy
- Access denial to unauthorized users

EHR Interoperability

- Data sharing
- Smart contracts can be used to automate data



Decentralized System

- Omits a central administrator
- Control given to the users
- Security, accessibility, data privacy

Data Provenance

- Single, longitudinal patient records
- Traceable and robust data

Benefits

Cut Costs

- Reduce days in AR
- Reduce labor for medical records management

Stop Counterfeit Drugs

- Secure and trusted tracking system that identifies proof-of-origin of a product



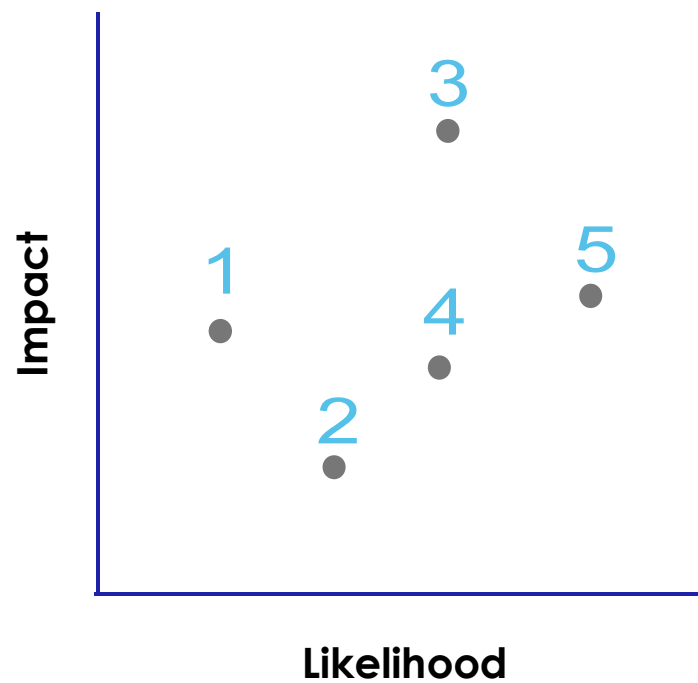
Provider/Patient Relationships

- Holistic picture of patient's health
- Care coordination

One Medical Record System

- Prevent medical record duplication and mismatching

Downsides & Risks



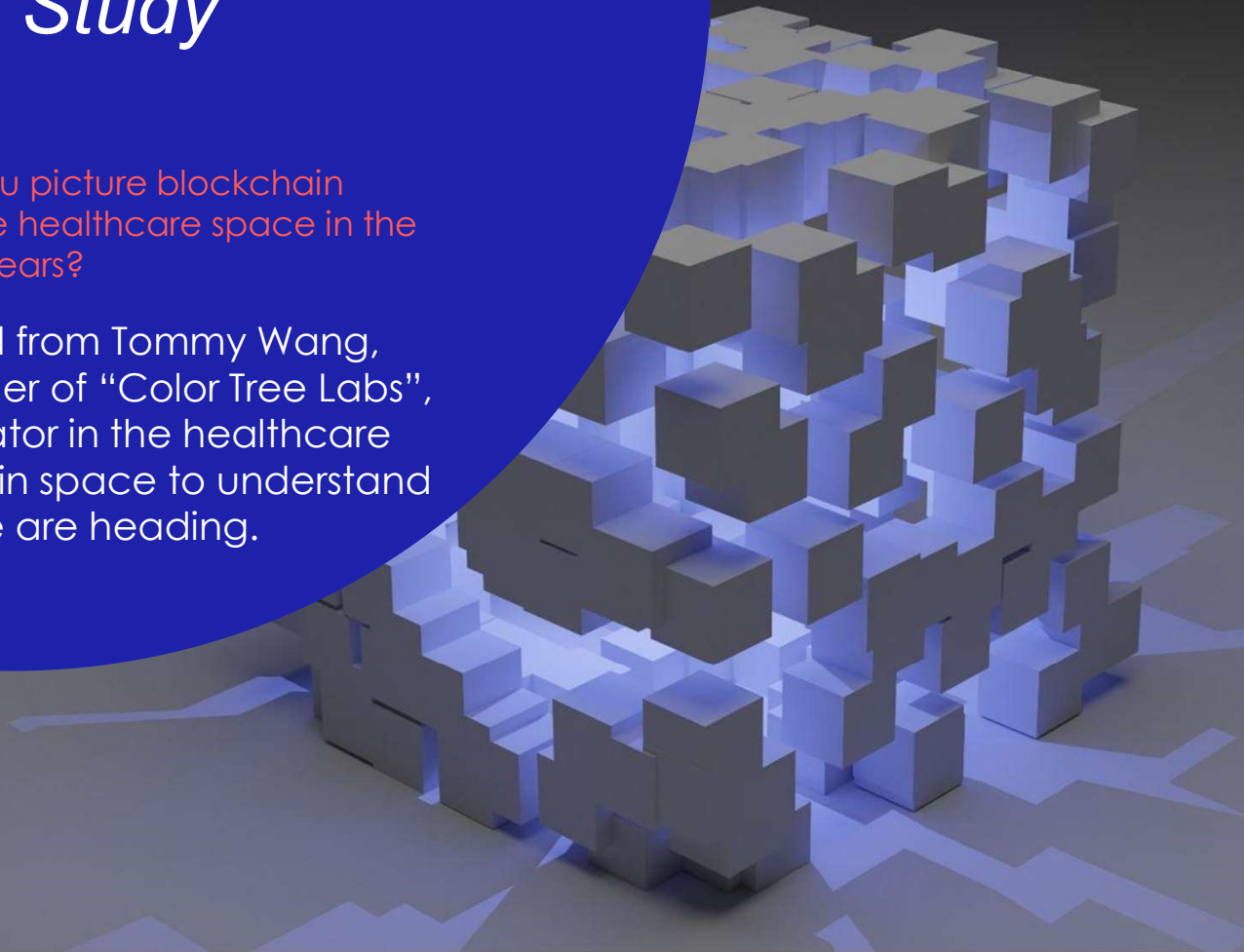
1. Suitability for large data sets
2. Limitations to data uses
3. Data privacy and regulatory barriers
4. No single data controller; distributed ledger
5. Speed and scalability

An example of blockchain in healthcare in the future

Case Study

How do you picture blockchain altering the healthcare space in the next 5-10 years?

We heard from Tommy Wang, the founder of “Color Tree Labs”, an innovator in the healthcare blockchain space to understand where we are heading.



What makes blockchain different from the other available methods of data management?

1 Higher Efficiency

2 Lower Costs

3 Global Transparency



“Blockchain's greatest asset is the distributed ledger”

In Summary

1

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2

Objective 2

Discuss the potential benefits and use-cases of blockchain in the healthcare industry.

3

Objective 3

Illustrate the potential risks of implementing blockchain in the healthcare industry.

4

Objective 4

Identify and consider real life examples of healthcare organizations using blockchain technology, and where this technology is headed in the future.

Thank you!

Questions?

Add your question into the Q+A section

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