Applying Blockchain to Health Care
Mass Data Health Exchange webinar
January, 2019
Presenter

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1. What is blockchain?
2. How does it work?
3. When should it be used?
Optum is helping to advance the next generation of digital health care

- Monitoring of Marked-Risk Infants (MoMI)
- UnitedHealthcare Motion
- Real Appeal
- DexCom
UnitedHealth Group is helping to advance the next generation of digital health care

Optum is a part of UnitedHealth Group. UnitedHealth Group invests $10B+ each year in technology, innovation, research and development, and open-sourced innovation.

Blockchain is Just One Example
What is blockchain?
Blockchain ≠ Bitcoin
Blockchain by example: Transferring money

Alex owes Bob $100
Intermediaries and the cost of reconciliation

Alex’s Ledger

- $100

Intermediary

Bob’s Ledger

+ $100

3 days to settle
Intermediaries and the cost of reconciliation

What if there was a single ledger to reduce reconciliation?
And what if it were tamper proof? And resilient to failures?

Public Blockchain

A shared, distributed anonymous ledger
OR secure transactions validated through known participants

*Permissioned Blockchain*

A shared, distributed *permissioned* ledger
Add smart contracts to execute business logic

Reduce costs and improve quality through automation
Business-defined events can trigger smart contracts

Expiration

July 26
Wednesday

Triggering Event

Automate business logic through events
Blockchain is made up of four parts

1. A distributed database
   - Improved resiliency, security and integrity
2. An append-only structure
   - A shared source of truth with immutable records
3. Smart contracts
   - Process automation and cost reductions
4. Incentives
   - Align participant motivation, transfer value or funding
When should it be used?
Blockchain is most useful when loosely coupled organizations want to confidently share and audit information and automate mutually beneficial processes.
Imagine the health care blockchain possibilities ...

- Bank
- Care coordinator
- Primary care provider
- Specialist
- Reference labs
- Primary payer
- Secondary payer
- Patient
Billing and insurance-related costs

- Interacting with payers
- Filing claims
- Prior authorizations
- Administration
- Billing

$471 billion

NIH: BMC Health Serv Res. 2014; 14: 556. Published online 2014 Nov 13.
Without blockchain

• Databases with redundant and out-of-sync data
• Manual reconciliation of data
• Batch processing of transactions
• Redundant record requests
• Manual validation/verification
• Process status checks
• Payment integrity issues
• Data security concerns
The potential of blockchain

• New cross-industry, decentralized collaborations to tackle common issues, system-wide costs and common BIR costs

Realizing …

• Systemic cost savings to free resources to focus on services that will add value for patients and the industry
Improving Provider Data accuracy:

A collaborative approach using a permissioned Blockchain
An alliance to **share attestations** and updates across the industry through a **blockchain**

- Improved directory quality
  - Lower risk for fines
  - Improved access to care
  - Fewer pended claims
- Reduced payer costs
- Less frequent provider outreach

**Built and powered by Optum**
Provider data challenges

- Patients seek care from out-of-network providers
- Providers endure unnecessary billing and administrative complications
- Health information exchanges (HIEs) and organizations cannot effectively enable the secure sharing of patient information
- Health plans have higher than necessary administrative burden and costs, and risk violating state and federal requirements

*$“Streamlining Provider Data Management Could Save Billions…but Is It Possible?”, Health Plan Week, Vol 27, No. 4 (January 2017).
CMS reviewed 54 out of 126 provider directories in 2016 with information on 5,832 providers\(^1\)

- Percentage of provider records with incorrect information: 47%
- Percentage of providers listed at incorrect practice locations: 31%
- Percentage of provider records with incorrect information in 2017, despite a threat of penalty: 52%

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The Blockchain Pilot potential benefits

**For payers**
- Cost savings from fewer chased attestations (letters, calls, emails, visits)
- More high-value sources of provider data
- Cost savings from elimination of current synchronization efforts of internal database
- Improved provider experience with the payer

**For providers**
- Cost savings from fewer chased attestations (letters, calls, emails, visits)
- More high-value sources of provider data
- Cost savings from elimination of current synchronization efforts of internal database
- Less of a burden on providers to update data to payers

**For patients/consumers**
- Support consumer decision-making with more accurate information
- Better provider search experiences
- Improved claims payment experiences
- NPS

**For the industry**
- A new enterprise blockchain platform that can be leveraged for other efforts
- A new distributed partnership model that can be used to tackle other industry-wide Vdata issues

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Thank you

Q&A