BLOCKCHAIN FOR HEALTH CARE

Improving care with blockchain

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Today’s instructors

Jay Schulman
Principal, Risk Consulting
National Leader – Blockchain Services
RSM US LLP
Chicago, Illinois
jay.schulman@rsmus.com
+1 312 634 3484

Richard Kes
Senior Manager, Audit Services
Health care Industry Analyst
RSM US LLP
Minneapolis, Minnesota
richard.kes@rsmus.com
+1 612 629 9006

Matt Wolf
Director, Financial Advisory Services
Health Care Industry Analyst
RSM US LLP
Minneapolis, Minnesota
matt.wolf@rsmus.com
+1 612 376 9880

Anthony Begando
Chief Executive Officer
ProCredex
Atlanta, Georgia
abegando@procredex.com
+ 1 678 575 4495
Learning Objectives

• Recognize what makes a successful blockchain implementation
• State new OCR guidance on improving coordinated care and learn how blockchain can help
• Describe how blockchain is anticipated to be adopted in health care
Agenda

• Introductions
• What is blockchain
• Current uses
• How blockchain is anticipated in health care
• Deep dive example: Provider credentialing
• What HC organizations should be thinking about now
• Next steps
So what exactly is a Blockchain anyways?

A Blockchain is a ledger where transactions are recorded and confirmed anonymously. It’s a record of events that is shared between many parties. More importantly, once information is entered, it cannot be altered.
Bitcoin was merely one of the first applications

“Blockchain is to Bitcoin, what the internet is to email. A big electronic system, on top of which you can build applications. Currency is just one.”

—Sally Davies
Cryptocurrency

Blockchains are good for:

- Storing value (Bitcoin)
- Computing transactions (Ethereum)
- Storing Information (Food Trust)
How does this apply to you?

• Storing value
  - Using “coins” to facilitate money transfers
  - Multi-country transactions could be conducted in cryptocurrency

• Computing transactions
  - “smart contracts” – if this, then that
  - When we think about claims reimbursement on a blockchain that’s a smart contract

• Storing Information
  - Blood type, genetic information, insurance pre-authorization, anything where the order of the data and integrity of the data matters

But HIPAA!
Blockchain in use today

Walmart & IBM are working on 2 pilots around food traceability & transparency

Pork
Traceability/safety

Mango
Traceability/global trade

Expansion
CPG/Fresh/Protein

Concurrently with news of its consortium with ten leading retail and food companies, which besides Nestlé and Walmart includes Dole, Driscoll’s, Golden State Foods, Kroger, McCormick and Company, McLane Company, Tyson Foods, Unilever, + Others
Blockchain adoption in health care
Blockchain use cases in health care

- Electronic health records
- Opiates
- Mental health
- 3rd party payor payments
- Credentialing
Credentialing in Healthcare

- **Mandated**: Must be performed by any organization delivering or paying for patient care.

- **Slow**: 4-6+ Month initial process. Reperformed biennially (triennially for insurers).

- **Expensive**: Hospitals forfeit $600-900k in net revenue* per physician hire. Payers spending $2.3BN† on PDM.

- **Redundant**: Practitioners continuously manage 15-25+ credential sets with business partners.

Source: *Merritt Hawkins 2016 Inpatient/Outpatient Revenue Survey / †Berkeley Research Group
Financial Impact on Health Systems

- The following illustration outlines the net revenue impact typical credentialing processes have on a mid-sized health system employing and/or contracting 600 staff physicians.

- Key metrics:
  - 12% Annual turnover (18.2% national average)
  - 5 Month (107 billable day) on-boarding cycle time
  - $7,500 Average physician daily net revenue
  - 20% Retroactive billing allowance for Medicare/Medicaid patients

- Even modest reductions (i.e., 20%) in cycle time have significant returns.
<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Credentialed Physicians</td>
<td>600</td>
</tr>
<tr>
<td>Annual Turnover Rate</td>
<td>12%</td>
</tr>
<tr>
<td>Annual New Physician Appointments</td>
<td>72</td>
</tr>
<tr>
<td>Calendar Days From Recruitment to Payer Enrollment</td>
<td>150</td>
</tr>
<tr>
<td>Billable Days From Recruitment to Payer Enrollment</td>
<td>107</td>
</tr>
<tr>
<td>Average Physician Daily Net Revenue</td>
<td>$7,500.00</td>
</tr>
<tr>
<td>Forfeited Net Revenue During Physician Onboarding</td>
<td>$802,500.00</td>
</tr>
<tr>
<td>Retroactive Payer Reimbursement Allowance (CMS, Medicaid)</td>
<td>20%</td>
</tr>
<tr>
<td>Retroactive Payer Reimbursements</td>
<td>($160,500.00)</td>
</tr>
<tr>
<td>Total Net Revenue Forfeiture During Onboarding</td>
<td>$642,000.00</td>
</tr>
<tr>
<td>Aggregate Annual Forfeited Net Revenue</td>
<td>$46,224,000.00</td>
</tr>
</tbody>
</table>
Our Solution

A digital marketplace to help healthcare organizations exchange verified credentials information within an environment that ensures trust and aligned incentives.
ProCredEx

- Reduces time, effort, cost, redundancy, and complexity
- Configures to meet unique needs
- Does not displace existing systems and processes
- Scales to industrial levels
- Leverages distributed ledger, advanced data, and machine learning technologies
Aligned Incentives

Practitioners

- Reduced Burden
- Lower Costs
- Private
- Supports Mobility

Delivery Organizations

- Increase Revenue
- Lower Costs
- Improve Capacity
- Lower Risk

Payers & Networks

- Monetize Data
- Lower Costs
- Aligned Data
- Simplified Contracting
Credentialing Ecosystem

Primary Data Sources

Payers, Networks, & CMS Contractors

Data Aggregators

Outsourcers (CVOs)

Practitioners

Credentialing Software Platforms

Healthcare Delivery Organizations

- Connecting market constituents
- Creating new channels for data distribution/sales
- Providing framework for commerce
Organizationally Specific Context

Wellingud Health System

- Rules
- Processes
- Requirements
- Forms
- Data

- Established Credentialing Systems & Processes
- Bylaw & Policy-driven Credentialing Rules
- Aligned with Operational Capabilities
- Unique Interpretation of Data and Artifacts
- Exceptionally Difficult to Change
Simplifying Complexity

- Hospital System: SLA (a)
- Payer: SLA (b)
- Outpatient Clinic: SLA (c)
- Provider Group: SLA (d)

- Portfolio (a,c)
- Portfolio (b,c,d)
- Portfolio (a,b)

- MD
- PA
- CRNA
Monetizing Verification “Assets”

**Practitioner Credentials Portfolio Artifacts**

- Delineation of Privileges
- Document Image Artifact Metadata

**Artifact Verifications**

**Verification**

- Verification Details
- Verification Resource
- Verification Method
- Verification Outcome
- Asset Stake

- Verification Details
- Verification Resource
- Verification Method
- Verification Outcome
- Asset Stake

St. Mary’s Hospital

Eastside Hospital
Product Architecture

- .NET Architecture
- Hybrid data model
- Advanced rules engine
- High performance distributed ledger protocol
- HTML-5 UX runs on any device
- RESTful APIs
- HIPAA / HITECH Compliant
- Massively scalable
Why Distributed Ledger Technology?

Traditional Stack
- User Experience
- Logic
- Data

DLT-enabled Stack
- User Experience
- Logic
- Trust

Moves Trust to the software
Scaling the Business

• Market Must Emerge With a **Significant Supply** of Data and Verification Assets

• Significant Scale Achieved Through:
  – Recruitment of National Payers and Super-Regional Healthcare Firms
  – Integration With Existing Data Aggregators & Software Firms
  – Developing Implementation Partners to Drive Scalability
  – Creating Financial Incentives For Early Adoption
  – Member Diversity

• Minimized Disruption of **Existing Business Processes**
• Create Incentives for Collaboration in Light of Competition
• **Realized** through the formation of our “Design Partner Program”
RSM Health Care Analysts’ Critical Themes in 2019

**Causes**
- Value-based reimbursement
- Consumerism and retail-ization
- Labor trends
- Regulatory and legislative changes
- Cost and demographic changes

**Effects**
- Disruptors
- Merger and acquisition mania
- Alternative deals

**Enablers**
- Data analytics
- AI
- Medical Science Innovation
What health care organizations can be thinking about now

• Health care provider margins

• Risk appetite

• Innovation investment thresholds
THANK YOU FOR YOUR TIME AND ATTENTION
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