Data is your most strategic asset.

Introducing the Healthcare Data Operating System for massive outcomes improvement.

16 May 2018
Digital Disruption is Transforming Industries

- The world’s largest taxi company… owns no taxis
- The world’s largest voice/video communications companies… own no telco
- The most popular media company… owns no content
- The largest lodging company… owns no property
- The USA’s largest retailer… owns no inventory
- The world’s largest software vendors… don’t write the apps

Thanks for the inspiration, Ron Kalifa of Worldpay; and IBM
The Five-year Forward View is Data-centric

- Population health Management
- Consumer driven healthcare
- Value based healthcare
- Person-centered care
- Advanced analytics
- Interoperability
- Research & Genomics
- Personalized medicine
- Artificial Intelligence

“EMR data represents ~8% of the data we need for population health and precision medicine.”

-- Alberta Secondary Use Data Project 2017
Data Drove $74 Million in Cost Savings

$74M in operational improvements

14% decrease in length of stay with increased census

Data-driven, transparent culture established

“Through our Delivering on the Vision Initiative, we wanted to improve revenue or reduce expense by a net of $61.4 million. That was our goal, and we gave ourselves 18 months to achieve it. We have far surpassed that target. Health Catalyst’s solution has played an integral part in our ability to sustain our gains and deliver even further beyond our goal.”

~ Mark Mullarkey, Senior Vice President
So, what are the challenges?

- Where/what is the data?
- Is it joined up and standardized/normalized?
- Is there a “single source of truth?”
- How do I access it?
- How do I use it?
- Do people even understand it?
- How are insights shared with the right people to drive improvement:
  - at the right time
  - In the right place
  - In the right modality
The Data Operating System

Health Catalyst Applications

- Leading Wisely
- Touchstone Benchmarks
- Care Management
- Population & Registry Builder
- Atlas
- ACO Financials
- Patient Safety
- CORUS Cost Accounting
- Patient Engagement
- Measures Manager
- SAMD & SMD
- Analytic Accelerators

Marketplace

- Client-built Applications
- Third-party Apps
- Reusable Content
- AI Models

Fabric Application Services

- EMR Integration
- FHIR
- Security, Identity & Compliance
- Registries
- Terminology & Groupers
- Patient & Provider Matching
- Value Sets & Measures

Catalyst Analytics Platform

- Data Ingest
- Data Pipelines
- Data Export
- Source Connectors
- Data Lake
- Hadoop/Spark

Fabric Data Services

- Metadata
- Standard, Extensible Data Models
- Data Quality
- Real-time Streaming
- Artificial Intelligence Pipelines
- Data Governance
- Pattern Recognition
- NLP
- Real-time Processing
- HL7
Core Capabilities

• Connectivity
• Communications
• Security
• Video
• GPS
• Accelerometer
• NLP
• Applications
• Open
• Interoperable
• Etc...

Common Theme?

All capabilities generate or consume data…
Images

In the Cloud

Real-time

Streaming

Locally Stored/In the Cloud

Text

Tasks, activities, alerts, reminders

Near Real-Time; codified

Streaming

In the Cloud

Real-time

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Powerful Attributes of the Data Operating System

- Reusable clinical and business logic
- Real-time and Streaming Data
- Integrates Structured and Unstructured Data
- Insights delivered within workflow
- Microservices architecture
- Artificial Intelligence and Machine Learning
- Agnostic to Data Source
The Health Catalyst Approach to Transformation


Leadership, Culture, and Governance

Where do we focus?

What should we be doing?

Best Practice

How do we change?

Adoption

How are we doing?

Analytics

Outcomes Improvement

Financial Alignment

How are we financially compensated?
“Health Catalyst continues to show healthcare vendors and providers alike that data has the power to create change. Health Catalyst customers consistently report strong outcomes, even saved patient lives, driven by Health Catalyst’s strong software and, even more importantly, their guidance in creating change.”
## Demonstrable Results

<table>
<thead>
<tr>
<th>Institution</th>
<th>Financial Impact</th>
<th>Testimonial</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPMC</td>
<td>$42 million of cost reduction opportunities</td>
<td>“Without the level of financial transparency that activity-based costing gives us, there is no way to hold anyone accountable for financial performance. <strong>Transparency creates a culture of accountability.</strong>” ~ Rob DeMichiei, EVP and CFO</td>
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<td>OSF</td>
<td>$9-12 million in performance improvement/cost avoidance</td>
<td>“Successful adoption of analytics has transformed our culture. With each improvement initiative, we establish ownership and accountability from the outset at all levels of the organization, from executives to frontline staff. Everyone ends up working out of the same playbook for the same purpose.” ~ Mark Hohulin, Senior Vice President, Healthcare Analytics</td>
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<tr>
<td>Texas Children’s Hospital</td>
<td>$74M in operational improvements; 14% decrease in length of stay with increased census</td>
<td>“Through our Delivering on the Vision Initiative, we wanted to improve revenue or reduce expense by a net of $61.4 million. That was our goal, and we gave ourselves 18 months to achieve it. We have far surpassed that target. <strong>Health Catalyst’s solution has played an integral part in our ability to sustain our gains and deliver even further beyond our goal.</strong>” ~ Mark Mullarkey, Senior Vice President</td>
</tr>
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<td>Allina Health</td>
<td>26,000+ inpatient days saved; $13.4 million in direct operating expenses saved; Hospital capacity (bed availability) created for 5,000+ admissions</td>
<td>“LOS improvement is an initiative that has both financial and quality benefits. It takes long-term commitment from multidisciplinary clinical teams who are provided regular data and dashboards to make sustainable improvement. There is no method that adds capacity faster than working on progression of care. And most patients are not asking to stay in the hospital longer!” ~ Dennis O’Hare, MD, LOS Executive Sponsor</td>
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<tr>
<td>Mission Health</td>
<td>32% reduction in sepsis mortality; 20% improvement in sepsis bundle compliance rate; 7% reduction in LOS</td>
<td>“By placing a strong emphasis on data in the selection of improvement projects, we have been able to maximize the value of each one.” ~ Arun Murugesan, Manager, Clinical &amp; Business Analytics,</td>
</tr>
</tbody>
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