Session #8 – Overview Of The Healthcare Analytics Market

Hotel Wi-Fi
- HASummit14
- PW: analytics

1. Current Session
2. Thumbs Up
3. Submit a Question
4. Poll Question

App Questions?
- 3 app helpers
- Raise hand with mobile device
- Walk to back
Jim Adams
Executive Director, The Advisory Board

Jim leads the Health Care IT Suite for The Advisory Board Company. His areas of expertise include business strategic planning and implementation; IT-enabled accountable care and population health management; IT strategic planning and implementation; and business intelligence and analytics strategies. He serves on national committees and advisory boards for health care organizations and is a frequent speaker on strategic health care and health IT topics.
Poll Question #1

1. What is your current role, function, or department within your healthcare organization?
   a) IT
   b) Clinician
   c) Operations
   d) Finance
   e) Senior Leadership
   f) Analyst
   g) Not applicable
Road Map

1. Beyond Population Health Management – The Coming Retail Revolution

2. BI Requirements and Challenges

3. The Ever-Changing BI Marketplace
Our Existing Business Model

Staying Afloat Through Cross-Subsidization

Traditional Hospital Cross-Subsidy

Commercial Insurance
- Above-cost pricing
- Robust fee-for-service volume growth

Public Payers
- Steady price growth
- Only one component of our total business

Above Cost

Below Cost

149%
Hospital Payment-to-Cost Ratio, Private Payer, 2012

86%
Hospital Payment-to-Cost Ratio, Medicare, 2012

A Strategy Dependent on Well-Worn Channels

Roles of Payers, Providers, Patients Traditionally Stable

Assumptions Underlying Provider Growth Strategy

**Entrenched Payer**
- Maintain broad provider networks
- Pass excess cost growth on to employers through brokers

**Established Provider**
- Expect steady public-payer, commercial price growth
- In-network for most plans

**Price-Insulated Patient**
- Open access to broad provider network
- Seek care with little concern for out-of-pocket payment

Source: Health Care Advisory Board interviews and analysis.
Nearing the Limits of Extractive Growth Strategies

• Legacy Growth Levers Increasingly Time-Limited

Traditional Hospital Growth Strategies
Scale and Pricing Power

Consolidate Market Position

Emerging Limitations:
• High degree of existing consolidation in major markets
• Heightened scrutiny of hospital mergers
• Limited capital available for acquisitions

Lock Up Referral Streams

Emerging Limitations:
• Fewer physicians remain unaffiliated
• Increased scrutiny of practice acquisitions
• Elevated competition from other health systems, physician aggregators

Demand Price Increases

Emerging Limitations:
• Shrinking population of commercially insured patients
• Rise of stealth and contingent rate cuts
• Activist purchasers refusing price increases

Source: Health Care Advisory Board interviews and analysis.
Impending Collapse of the Cross Subsidy

Three Trends Threatening the Traditional Provider Business Model

1. Health Insurance Exchanges
   - Impending Collapse of the Cross Subsidy
     - Medicare Payment Innovation
       • A growing wave of Medicare beneficiaries
       • Reductions in FFS payments
       • New mandatory and optional risk-based payment models
       • Growth of Medicare Advantage
     - Market-Based Medicaid Reform
       • Growth of Medicaid Managed Care
       • Commercialization through “Private Option”
     - Increased Commercial Market Competition
       • Many private employers shifting to private exchanges or converting to self-funding
       • New dynamic individual market on both public and private HIXs
       • New channels for competition in group market

Source: Health Care Advisory Board interviews and analysis.
Poll Question # 2

2) Which of these three trends is most likely to impact your business model?
   a) Medicare payment innovation
   b) Market based Medicaid reform
   c) Increased commercial market competition
A Burgeoning Retail Market

Disrupting Traditional Channels of Coverage

Projected Size of the Potential Retail Market

2018

- Public Exchange: 25M
- "Private Option" Medicaid Expansion: 5M
- Private Exchange: 40M
- Medicare Exchange: 17M
- Total Retail Market: 87M


Based on number of lives falling into the “Medicaid expansion gap” in non-expansion states.

Based on the number of Medicare Advantage enrollees.
Inputs

- PCP<sup>2</sup> Office Visits
- Specialist Office Visits
- Care Management
- Imaging & Lab
- Emergency Care
- Inpatient Procedures
- Outpatient Procedures
- Rehabilitation
- Long-Term Care
- Pharmacy

Products

**Acute Care Episodes**
- High-quality, low-cost treatment of acute illness
- May include pre-acute, post-acute services, readmission

**Ongoing Care Management**
- Longitudinal, comprehensive health management
- Includes chronic disease care, wellness, prevention

1) Population health management
2) Primary care physician.

Source: Health Care Advisory Board interviews and analysis.
Winning Share at Two Points of Sale

Multiple Opportunities To Appeal to Decision-Makers

Decision Processes Involved in Provider Choice

**Network Assembly**
- Being chosen by payers, employers, exchange operators, custom network builders, and accountable physician entities to be offered as a network option

**Network Selection**
- Being chosen by individuals during enrollment

**Care Decision**
- Being chosen by patients at the point of care

1. Secure Enrolled Lives
2. Win Share of Volumes

Source: Health Care Advisory Board interviews and analysis.
Capturing New Channels of Growth

Key Decision-Makers in Traditional and New Growth Channels

Secure Enrolled Lives

Established Provider

Win Share of Volumes

Relationship-Based Referring Physician

Traditional Growth Channels
- Entrenched Payer

New Growth Channels
- Custom Network Builder
- Activated Employer
- Vulnerable Payer
- Exchange Operator
- Accountable Physician Entity
- Individual Insurance Shopper
- Cost-Conscious Referring Physician
- Price-Sensitive Consumer

Source: Health Care Advisory Board interviews and analysis.
No Longer Insulated From Market Forces

Catalyzing a Shift in Network Demands

Characteristics of a Traditional vs. Retail Market

**Traditional Market**

- Passive employer, price-insulated employee
- Broad, open networks
- No platform for apples-to-apples plan comparison
- Disruptive for employers to change benefit options
- Constant employee premium contribution, low deductibles

1. Growing number of buyers
2. Proliferation of product options
3. Increased transparency
4. Reduced switching costs
5. Greater consumer cost exposure

**Retail Market**

- Activist employer, price-sensitive individual
- Narrow, custom networks
- Clear plan comparison on exchange platforms
- Easy for individuals to switch plans annually
- Variable individual premium contribution, high deductibles

Source: Health Care Advisory Board interviews and analysis.
Beyond Population Health Management – The Coming Retail Revolution

BI Requirements and Challenges

The Ever-Changing BI Marketplace
Operational Improvement Is Not Sufficient for Transformation

Foci of Current BI Efforts Still Relevant

<table>
<thead>
<tr>
<th>Foci</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Management</td>
<td>16%</td>
</tr>
<tr>
<td>Revenue/Contract Reporting</td>
<td>20%</td>
</tr>
<tr>
<td>CDS/Evidence-Based Pathways</td>
<td>14%</td>
</tr>
<tr>
<td>Quality Reporting</td>
<td>26%</td>
</tr>
<tr>
<td>Operational</td>
<td>24%</td>
</tr>
</tbody>
</table>

Currently, providers do not have sufficient data about the clinical or financial experience of their patients; these data are important to manage patient care and financial risk effectively as well as to support **rapid-cycle performance evaluation and targeted improvement efforts**.

Commonwealth Fund Study, July 2011

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1) Health Care IT Suite BI Survey, April 2012.
3) Population health management.
4) Clinical decision support.

Source: Health Care IT Suite research and survey analysis.
### BI Technologies Key to Redefining “Value”

#### Examples of Key BI-Related Capabilities for the Four Retail Imperatives

<table>
<thead>
<tr>
<th>Desirable Network Attributes</th>
<th>Essential</th>
<th>Nice to Have</th>
<th>Future Need</th>
</tr>
</thead>
</table>
| Geographic Reach and Clinical Scope | • Service line planning  
• Facility planning  
• Referrals analysis | • Network modeling (for narrow networks) | • Facility optimization  
• Population-based planning |
| Clinical and Service Quality | • Quality scorecards  
• Patient satisfaction and loyalty monitoring  
• Site-specific CDS | • CDS on integrated data  
• Access / scheduling optimization  
• Predictive modeling for consumer behavior | • Persuasion modeling for consumer behavior  
• Personalized care  
• Cognitive support  
• Social media analytics |
| Low Unit Price | • Pricing monitoring and benchmarks  
• Supply chain monitoring  
• Resource monitoring | • Cost accounting  
• Supply chain optimization  
• Resource optimization | • Real-time costing data  
• Dynamic pricing tools |
| Total Cost Control | • Contract modeling  
• Risk stratification  
• Physician performance  
• Service line performance  
• Registries | • Cost accounting  
• PHM scorecards  
• Real-time risk identification  
• Real-time referral analytics | • Patient-reported data  
• Patient-reported outcomes |

Source: Advisory Board Company research and analysis
# Analytics Enabling Population Health Management

## Examples of Tools and Processes with Analytic Underpinning

<table>
<thead>
<tr>
<th>1</th>
<th>Identify Population</th>
<th>2</th>
<th>Map and Track</th>
<th>3</th>
<th>Deliver Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCP attribution</td>
<td></td>
<td>Disease or PHM(^1) dashboards</td>
<td></td>
<td>Registries</td>
</tr>
<tr>
<td></td>
<td>Risk segmentation</td>
<td></td>
<td>Registries</td>
<td></td>
<td>Assisted interventions</td>
</tr>
<tr>
<td></td>
<td>Frequent utilization</td>
<td></td>
<td>Smart portals</td>
<td></td>
<td>Clinical decision support</td>
</tr>
<tr>
<td></td>
<td>Chronic conditions</td>
<td></td>
<td></td>
<td></td>
<td>Cognitive support</td>
</tr>
<tr>
<td>4</td>
<td>Coordinate Cross-Continuum Care</td>
<td>5</td>
<td>Engage Patients</td>
<td>6</td>
<td>Administer, Monitor, and Report</td>
</tr>
<tr>
<td></td>
<td>Real-time monitoring/alerts</td>
<td></td>
<td>Predictive/persuasive engagement</td>
<td></td>
<td>Contracting (pre/post)</td>
</tr>
<tr>
<td></td>
<td>Registries</td>
<td></td>
<td>Patient satisfaction</td>
<td></td>
<td>Performance scorecards</td>
</tr>
<tr>
<td></td>
<td>Risk reassessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pathway optimization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) PHM = population health management.

Source: The Advisory Board Company research and analysis.
Making the Case for Care Management Capabilities

Assuring Employers of Ability to Manage Future Costs

Four Ways to Demonstrate Care Management Capabilities

- **Investment in Data Analytics**
  Shows capability to assess patient risk and pinpoint interventions

- **Clinical and Claims Data Integration**
  Illustrates advantage over traditional health plan

- **Demand for Out-of-Network Claims Data**
  Shows commitment to continuously manage care for attributed population

- **Telehealth Platforms and Programs**
  Demonstrates ability to keep low-acuity cases in most appropriate care site

“In our market, there is plenty of talk about ‘accountable care’, but we are differentiating with the organizational commitment and the infrastructure investment to sustain a new economic model.”

*Chief Marketing Officer*

*Large Health System in the West*

Source: Health Care Advisory Board interviews and analysis.
Collecting Data for Analysis, Sharing Data for Care

Building a Network of Owned and Affiliated Entities

Varied Mechanisms of Exchange

Public and Private HIEs, HL7¹ Messages, CDA/CCD,² Custom Development

1) Health Level 7.

Source: Health Care IT Suite research and analysis.
# Expanding the Data Collection Net

## It Only Gets More Complex

<table>
<thead>
<tr>
<th>Internal Structured Data</th>
<th>External Structured Data</th>
<th>Internal Unstructured Data</th>
<th>External Unstructured Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction Data</td>
<td>Claims</td>
<td>Progress Notes</td>
<td>Social Networks</td>
</tr>
<tr>
<td>Excel/Access</td>
<td>Pt Satisfaction</td>
<td>Procedure Notes</td>
<td>Email</td>
</tr>
<tr>
<td>Medical Device Sensors</td>
<td>Survey Data</td>
<td>Discharge Summaries</td>
<td>Online Reviews</td>
</tr>
<tr>
<td>CAD/CAM</td>
<td>CDA Documents</td>
<td>Word Documents</td>
<td></td>
</tr>
<tr>
<td>Diagnostic Images</td>
<td>Public Data</td>
<td>Scanned Consents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Benchmarks</td>
<td>Email</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contracts</td>
<td></td>
</tr>
</tbody>
</table>
## The BI Maturity Model; 2014 Edition

<table>
<thead>
<tr>
<th>BI architecture</th>
<th>Fragmented</th>
<th>Enterprise Perspective</th>
<th>Advanced Analytics</th>
<th>Big Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>None or several point solutions</td>
<td>Central infrastructure basics implemented</td>
<td>BI core and self-service infrastructure in place</td>
<td>Optimized infrastructure which may include data marts, ODSs, and a mobility platform</td>
<td></td>
</tr>
</tbody>
</table>

| Data sources / data currency | Transaction application from one system or BI tool specific from limited number of internal source systems | ETL established to combine data from primary sources such as EHR and revenue cycle | ETL established for secondary data sources and varied currency including more frequently than daily | External sources including web, patient-generated, and genomics collected as real time and streaming data |

| Types of analysis / use of analytics | Automated internal reporting | Enterprise KPIs, automated external reporting, segmentation (e.g. risk stratification) | Predictive, prescriptive analytics, data exploration, and hypothesis generation | Analytics combining multiple and complex data sources, cognitive analytics, analytics for personalized medicine |

| Data models | No or limited single-purpose transformation | Consolidated approach of basic models including dimensional, late binding, and in-memory models | Multiple, optimized data models | No schema |

| Data governance | None or limited departmental decisions about use and usability | Common policies and standards, centrally-managed priorities, shared documentation, focus on data quality and consistency | Data normalization, source system changes, and maintenance established | Active stewards of internal and external data, complex analysis review, data management practices are pervasive |

| Tools | Independent choices for limited purposes; redundant products | Centralized tool acquisition process for basic data acquisition, management, and visualization | Advanced analytic tools including self-service | Specialized, targeted capabilities including Hadoop and tools for unstructured data |

| Skills | SQL, Excel, basic data modeling, basic visualization | In-depth knowledge of physical and logical data modeling, basic statistics, and MDM use | In-depth knowledge of statistics and operations analysis, procedural programming | Apply NLP, genomics, and rules engine programming; ability to combine disparate data types |

| Culture / enterprise data literacy | Value of data under-appreciated; decisions based on no or limited data | Champions emerging and growing emphasis on data governance and fact-based decisions | Training on data literacy, identifying BI opportunities, data exploration, and data-driven changes | Engrained understanding of BI capabilities and limitations |

| BI governance / organizational structure | Local control | Central agenda and funding; core BI and leadership teams established | Resources harmonized between central core and stakeholder departments; strong governance processes in place | Includes relevant, external resources; significant presence of distributed analytics (SSBI) |

Red cells indicate the primary distinguishing characteristic of each maturity phase.

EHR = electronic health record; ETL = extraction transformation loading; KPI = key performance indicator; MDM = master data management; NLP = natural language processing; ODS = operational data store; SQL = structured query language.
Top 3 Challenges

- Data Governance, Culture, Organization

Findings and Observations

- Institutions with less BI maturity are more likely to have data governance as the #1 challenge
- There is an inverse correlation between transformation challenges and the presence of a BI strategic plan

Source: Health Care IT Suite research and analysis.

1) N=41.
Road Map

1. Beyond Population Health Management – The Coming Retail Revolution

2. BI Requirements and Challenges

3. The Ever-Changing BI Marketplace
Poll Question #3

3. How many BI vendors does your (or a typical) health system have?
   a) 1
   b) 2-5
   c) 6-10
   d) More than 10
Fragmented BI Software Market

• Our Survey Confirms That No One Is Using a Single Solution

- Allscripts Analytics Module
- Aster
- Crimson
- Dimensional Insight Pro Diver
- Embarcadero
- Epic Cogito
- Epic Clarity
- EPSi
- Explorys
- HCD
- HealthCatalyst
- IBM - Cognos
- IBM - DB2
- IBM for centralized data warehouse
- IBM InfoSphere
- IBM NLP
- IBM p770
- Informatica Powercenter
- Information Builders
- InfoSol Infoburst
- Inhouse-designed SQL repository
- MCCM
- MedInsight
- Medisolv
- Meditech Data Repository
- Medventive
- MicroStrategy
- MSBI
- Oracle - DBMS
- Oracle - HDWF and Omics Data Bank
- Oracle - OBIEE
- Phytel - Verisk
- PremierConnect Enterprise
- QlikView/Visual Analytics/Exploration
- SAP Business Objects Enterprise
- SAP Business Objects Excelsius
- SAP Business Objects Suite (Crystal, InfoView, Web-i, Explorer)
- SAP Data Services ETL
- SAP Information Steward (Profiling/Quality)
- SAS/SAS (Advanced Analytics)
- Siemens DSS
- Tableau

<table>
<thead>
<tr>
<th># of vendors</th>
<th># of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 2</td>
<td>12 (43%)</td>
</tr>
<tr>
<td>3-4</td>
<td>7 (25%)</td>
</tr>
<tr>
<td>&gt;= 5</td>
<td>9 (32%)</td>
</tr>
</tbody>
</table>

Source: Health Care IT Suite research and analysis.
### Survey Results for Architecture and Tools

#### Architecture and Partners

#### Percentage of BI Tool Inventory and Purchasing Plan

<table>
<thead>
<tr>
<th>Category</th>
<th>No Plan to Purchase</th>
<th>Included in Purchasing Plan</th>
<th>Currently in Test Environment</th>
<th>Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extract, Transform, and Load</td>
<td>4</td>
<td>15</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Access Control and Auditing</td>
<td>8</td>
<td>12</td>
<td>15</td>
<td>68</td>
</tr>
<tr>
<td>Visualization Tools</td>
<td>23</td>
<td>15</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Person Matching/Merge</td>
<td>9</td>
<td>26</td>
<td>9</td>
<td>57</td>
</tr>
<tr>
<td>Vocabulary and Semantic Management</td>
<td>9</td>
<td>39</td>
<td>9</td>
<td>44</td>
</tr>
<tr>
<td>Master Data Management</td>
<td>18</td>
<td>32</td>
<td>9</td>
<td>41</td>
</tr>
<tr>
<td>Natural Language Processing</td>
<td>18</td>
<td>41</td>
<td>9</td>
<td>32</td>
</tr>
<tr>
<td>Predictive Modeling</td>
<td>16</td>
<td>52</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Advanced Analytics/Statistical Visualization</td>
<td>9</td>
<td>64</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>Prescriptive Modeling</td>
<td>25</td>
<td>70</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Health Care IT Suite research and analysis.
Different Roads to Take on Your BI Journey

You’ll Live in the Overlaps

Solution Considerations

- Multiple point solutions
- Assess whether self-development outpaces a rapidly growing vendor market
- Cloud computing: cost vs. security
- Right-size solution set for your organization’s needs and capabilities

Resource Considerations

- IT skill set requirements
- Business / clinical expertise
- Speed to delivery
- Need to customize
- Partnership culture

Source: Health Care IT Suite research and analysis.
Use Deliberate Criteria to Choose Your BI

• Match the Approach to Your Organization's Strengths and Goals

1. Enterprise Development Platform
   Broad-based functional capability to use as a basis for self development to support a belief that analytics is a differentiator

2. Analytics-as-a-Service
   Application (often bundled with infrastructure) including process and analytic components, for aggregation and comparison

3. Point Solutions
   Stand-alone components with narrow but deep subject matter expertise

4. EMR Subsystem
   Analytic and process routines tightly integrated with the transaction systems

Source: Health Care IT Suite research and analysis.
Poll Question #4

4. Which of these four approaches best matches your organizational strengths and goals?
   a) Enterprise development platform
   b) Analytics-as-a-service
   c) Point solutions
   d) EMR subsystem
   e) Unsure or not applicable
## Core Strategy: Enterprise Development Platform

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Potential Pros</th>
<th>Potential Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise Strategy</td>
<td>Belief that analytics can be a clear differentiator</td>
<td>Requires considerable attention and focus from the entire organization</td>
</tr>
<tr>
<td></td>
<td>Flexibility supports still-evolving strategies</td>
<td></td>
</tr>
<tr>
<td>Expertise</td>
<td>Provides a platform for industry leadership</td>
<td>Requires business/clinical, analytic and IT expertise with a desire to innovate</td>
</tr>
<tr>
<td>Cost</td>
<td></td>
<td>Greatest startup costs</td>
</tr>
<tr>
<td>Governance</td>
<td>Required participation may help drive cultural change</td>
<td>Provides no framework for governance</td>
</tr>
<tr>
<td>Time to Value</td>
<td>Possibility to iterate quickly for additional functionality</td>
<td>Slow initial time-to-value</td>
</tr>
<tr>
<td>Transition Effort</td>
<td>Full control of historical export and transition routines</td>
<td>May be difficult to transition to less customized solutions</td>
</tr>
<tr>
<td>Agility</td>
<td>Highest degree of analytic flexibility and adaptability; good for heterogeneous system environment</td>
<td></td>
</tr>
</tbody>
</table>

### Sample Vendors
- IBM
- Oracle
- Recombinant (by Deloitte)
- Healthcare Data Works
- Health Catalyst
- Caradigm

Source: Health Care IT Suite research and analysis.
### Core Strategy: Analytics as a Service

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Potential Pros</th>
<th>Potential Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise Strategy</td>
<td>Inter-organizational benchmarking and comparative analytics</td>
<td>Currently limited abilities for single analytic perspective on patient care and costs</td>
</tr>
<tr>
<td>Expertise</td>
<td>Outsource the details of analytics and data management</td>
<td>Outsourcing limits ability to tailor fit to organizational needs</td>
</tr>
<tr>
<td></td>
<td>Offers comparative analysis</td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td>Less startup expense than platforms</td>
<td>Costs may increase quickly</td>
</tr>
<tr>
<td>Governance</td>
<td></td>
<td>Requires strong centralized data governance to support accurate aggregate analysis</td>
</tr>
<tr>
<td>Time to Value</td>
<td>Time to value is addressed by basic starter kits</td>
<td>Starter kits may be incomplete</td>
</tr>
<tr>
<td>Transition Effort</td>
<td>Contract should ensure efficient data packaging and transfer</td>
<td>In-house skill set gaps</td>
</tr>
<tr>
<td>Agility</td>
<td>Best for reasonably homogenous system environments</td>
<td>Limited analytic flexibility and adaptability for more complex use cases</td>
</tr>
</tbody>
</table>

**Sample Vendors**
- Explorys
- Humedica
- Lumeris
- Premier Alliance
- Truven Health Analytics

Source: Health Care IT Suite research and analysis.
# Core Strategy: Point Solutions

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Potential Pros</th>
<th>Potential Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise Strategy</td>
<td>May be used as an interim solution against a larger integrated plan</td>
<td>Does not provide a single analytic perspective</td>
</tr>
<tr>
<td>Expertise</td>
<td>Provides expertise and specific analytics in vertical business and clinical areas</td>
<td>Analytics may not be generalizable</td>
</tr>
<tr>
<td>Cost</td>
<td>Buy just what is essential</td>
<td>Multiple solutions may be costly and more complicated to maintain</td>
</tr>
<tr>
<td>Governance</td>
<td>Narrow focus</td>
<td>Challenges governance models to create unified data picture and use</td>
</tr>
<tr>
<td>Time to Value</td>
<td>Reduced time to value</td>
<td></td>
</tr>
<tr>
<td>Transition Effort</td>
<td>Smaller footprint allows easier migration</td>
<td>New solution may be challenged to go as deep</td>
</tr>
<tr>
<td>Agility</td>
<td>Can surround with other products and services</td>
<td>Limited ability to customize</td>
</tr>
</tbody>
</table>

## Sample Vendors

- AltaSoft
- Allscripts
- MedeAnalytics
- Medventive
- Midas+
- Omincell
- The Advisory Board (Crimson)
- Cloudera
- Qlikview

Source: Health Care IT Suite research and analysis.
## Core Strategy: EMR Module

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Potential Pros</th>
<th>Potential Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enterprise Strategy</strong></td>
<td>Strong support for operational analytics</td>
<td>May not be able to meet all analytic needs</td>
</tr>
<tr>
<td><strong>Expertise</strong></td>
<td>Operational improvements should benefit from knowledge of transaction systems</td>
<td>Current offers lack advanced analytic capabilities</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td></td>
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<tr>
<td><strong>Governance</strong></td>
<td>Requires tight integration with operational governance</td>
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<tr>
<td><strong>Time to Value</strong></td>
<td>Basic functionality should be quick to implement</td>
<td>Solution sets are still limited</td>
</tr>
<tr>
<td><strong>Transition Effort</strong></td>
<td></td>
<td>May be difficult to transition away because of the power of embedded workflow support</td>
</tr>
<tr>
<td><strong>Agility</strong></td>
<td>Vendor-supplied enhancements may outpace internal development capabilities</td>
<td>Ability to incorporate and allow actions to be taken on external data is unproven</td>
</tr>
</tbody>
</table>

**Sample Vendors**

- Epic
- Cerner
- MEDITECH
- Siemens
- Allscripts

Source: Health Care IT Suite research and analysis.
BI Market Evolution: Convergence

Similar to EMR Evolution: Combine the Strengths of Each Approach

NOW

EDP\(^1\)—Allows maximum **customization**

AaaS\(^2\)—Delivers **broad-functioning** standardized and integrated platform with few customization paths

Point Solutions—Provides **domain expertise** within packaged solutions offering a narrow focus on a defined specialty

EMR Module—Offers **closed-loop** functionality that is tightly integrated with the transaction system

LATER

Analytics platforms integrating data from all points on care continuum, working in real time to inform decision-making processes, hypothesis formation, and exploration

---

1. Enterprise development platform.
2. Analytics as a service.

Source: Health Care IT Suite research and analysis.
Know Your Destination, Then Choose Your Path

• Partners and Tools to Meet Your Business and Clinical Goals

- Enterprise A chooses to use existing but separate EMR and revenue cycle modules and create its own data marts to combine data when necessary while it plans a full conversion to a unified platform.

- Enterprise B purchases a cloud-based AaaS solution to satisfy speed to value and current skill set gaps.

- Enterprise C chooses a series of late-binding data marts to provide maximum flexibility for its still-emerging business planning process.

Source: Health Care IT Suite research and analysis.

1) Analytics as a service.
Low Total Cost A Difficult Balance to Strike

Long-Term Trend Control Requires Short-Term Investments

The Tension Between Unit Price and Total Cost

Short-Term Investments
- IT infrastructure
- Care management staff
- Care coordination programs
- New access points

Long-Term Payoff
- Cost trend control
- Improved health outcomes
- Improved patient satisfaction

The Bottom Line
“If you can’t deliver lower cost, you’re out of the running.”

Patrick Carter, MD
Medical Director for Care Coordination and Quality Improvement, Kelsey-Seybold Clinic

Higher Immediate Unit Prices

Lower Future Total Cost

Source: Health Care Advisory Board interviews and analysis.
Poll Question #5

5. On a scale of 1-5, how do you think your organization is managing the short-term IT-related investment vs. total future cost benefit balance?
   1) Very little short-term investment
   2) Some short-term investment
   3) Moderate short-term investment
   4) Good short-term investment
   5) Very strong short-term investment
   6) Unsure or not applicable
The Missing Link for Population Health?

Retail, Population Health Strategies Converge

Winning at Point of Network Selection

Successful Population Health Management → Lower Total Cost → Lower Premium → Network Selection

Experience → Engagement

Source: Health Care Advisory Board interviews and analysis.
### Key Take-Aways

<table>
<thead>
<tr>
<th></th>
<th>BI is Essential to Population Health Management and Retail Revolution</th>
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<tbody>
<tr>
<td>1.</td>
<td>Population Health Management will require new applications of analytics in support of risk assessment and management, population health monitoring and patient engagement.</td>
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<td>2.</td>
<td>In addition to PHM-focused needs, the retail revolution will require BI-related capabilities to address additional requirements such as for low unit prices, adequate geographic reach and clinical scope, and service quality.</td>
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<tr>
<td>3.</td>
<td>Use the BI Maturity Model to ensure the value of your current BI investments while developing the capabilities for the Advanced Analytics and Big Data phases.</td>
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<tr>
<td>4.</td>
<td>Although important, BI is not just about having the right tools. Address your biggest challenges in dimensions (rows) of the BI maturity model, such as those related to data governance, cultural transformation, and BI-related skills.</td>
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<td>5.</td>
<td>Identify the BI “core strategy” or architectural approach that best addresses your organization’s capacity, capability and goals while appropriately utilizing other core strategic approaches.</td>
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<td>6.</td>
<td>Plan for the future by developing plans that consider patient-reported data, events-driven architecture, social media, streaming data and machine learning.</td>
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<td>7.</td>
<td>Balance principles with pragmatism. Health care BI is an immature and rapidly evolving area so progress may be made by taking “two steps forward and then one step back.”</td>
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Analytic Insights

Questions & Answers
1. On a scale of 1-5, how satisfied were you overall with this session?
   1) Not at all satisfied
   2) Somewhat satisfied
   3) Moderately satisfied
   4) Very satisfied
   5) Extremely satisfied

2. What feedback or suggestions do you have?
## Upcoming Breakout Sessions

**2:25 PM – 3:25 PM**

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Speakers</th>
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<td>* This is a hands-on session</td>
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<td>10.</td>
<td>How to Make Analytics a Strategic, C-Level Imperative</td>
<td>Jon Brown, VP and Associate CIO, Mission Health Gene Thomas, VP &amp; CIO, Memorial Hospital Gulfport</td>
<td>Grand Ballroom A</td>
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<td>11.</td>
<td>Creating Physician Engagement</td>
<td>Bryan Oshiro, MD, CMO, Health Catalyst Chris D. Spahr, MD, Enterprise Quality Executive, CHW</td>
<td>Savoy</td>
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<td>* This is an interactive feedback session</td>
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