Thanks for joining us - the webinar will begin shortly!
Safety Net Analytics Program
Tools for Safety-Net Analytics
Learning Session #13 – September 29, 2015
Program Updates

1. **November 10th Knowledge Building Session - San Francisco Bay Area**
   - Location (likely Oakland) firmed up by Friday
   - Christopher Boone, CEO - Health Data Consortium
   - Focus on Peer Learning and Sharing
   - Gallery of Innovations

2. **Upcoming Learning Sessions - Lunchtime (12:00 – 1:00) Webinars**
   - **October 8th** (Thursday) – Selecting Analytics Tools: What to Look For
     Dale Sanders, Vice President – Health Catalyst
   - **October 27th** (Tuesday) – Case Study: The Build Option, Lifelong Medical Care
     Dr. Ben Mansalis, Associate Medical Director – Lifelong Medical Care

3. **Advanced Empanelment – Maintaining Panels (recorded)**
SNAP Structure

- **Module 1:** Assessment and Roadmap
- **Module 2:** Managing Data as a Strategic Asset
- **Module 3:** Analytics for Performance Improvement
- **Module 4:** Trends, Tools and Technology
Navigating the River of Data: Opportunities and Tools for Safety-Net Analytics

September 29, 2015

Alex Horowitz & John Weir
Intrepid Ascent

Presentation for the Center for Care Innovations
Safety Net Analytics Program (SNAP)
Outline

• Industry Changes Driving Demand for Data Analytics

• Data Analytics in Context

• Technical Solutions and Approaches

• Considerations for Your Technical Architecture
Industry Changes Driving Demand for Data Analytics

Healthcare Reform Currents and Where They are Flowing
Healthcare Reform Currents

- Reactive, episodic care → Proactive care
- Treatment of individuals → Health of populations
- Isolated, data silos → Data-driven performance
- Fee-for-service → Value-based payment
- Paternalistic → Person-centered
Analytics in Population Health Management

**Risk Management**
- Clinical Risk (e.g. prevalence and utilization)
- Financial Risk (e.g. comorbidities, polypharmacy)
- Performance Reporting (e.g. performance across population)

**Care Management**
- Disease Registries
- Care Gap Reporting
- Care Coordination
- Clinical Decision Support
- Patient Engagement

- Organization Performance
- Strategic Initiatives
- Triple Aim Alignment
- Chronic Disease Management Programs
- Quality Reporting
- Payer Contracting
- Incentive Payments
- Patient Satisfaction
- Targeted Outreach
How Analytics Technology Drives Action

Outcomes Improvement

Care Management

Population Defined

Care Gaps

EHR/PMS
Payer Data
PBM Data
HIE

Stratify Risks

Patient Engagement
Ingredients for data-driven care quality improvement and population health initiatives

- Executives must own the vision
- Stakeholder collaboration

Leadership commitment

Specific motivation

Outreach

- Engage people in their care with person-centered approaches
- Coordinated messages
- Multiple touchpoints
- Platform agnostic

Data / IT Infrastructure

- Technology tools
- Data quality
- Common measures
- Data-sharing mechanisms

- Reported outcomes are based on accurate data, apples-to-apples
- If you share your performance, it won’t be used against you
- Data privacy and security laws / best practices followed

Coordinated teams and workflows

Trust

- Team-based care
- Data-aware organizations
- Workflow alignment
- User-friendly, integrated IT products

Engage people in their care with person-centered approaches
Data Analytics in Context

Defining Analytics Use Cases
Trends in the Landscape
Trends in the Landscape

• Transition away from standalone analytics
  • Consolidation towards Population Health Management (PHM) platforms, HIE platforms/services, and even some EHRs
  • Cost benefit of ‘Homegrown’ solutions less and less feasible due to complexity
  • Clinical and financial/risk-based analytics combining to becoming one-and-the-same

• Cloud based services reduce time to production, management and maintenance

• Predictive modeling to stratify and target initiatives and populations
  • Building profiles for personalized healthcare
  • Patient behavior and compliance

• Increasing focus on data visualizations / dashboards as a primary component
  • Having separate vendors for this function, like Tableau, no longer necessary
Data Analytics in the PHM Context

• Analytics is a core component of PHM, but is not the only component
  • Care Coordination
  • Chronic Disease Management

• Data Infrastructure pre-requisites to an effective PHM system include
  • Data Liquidity – Moving data out of source systems
  • Data Density – Collecting enough data to perform meaningful analytics
  • Data Governance – Building security and trust frameworks around the data

• Flow-down functionalities include
  • On-Demand Quality Reporting
  • Care Management Dashboards
  • Cross-Platform Communication
  • Financial/Risk Stratification
Analytics in the Quality Improvement Context

- **Benchmark Reporting**
  - Compiling Claims and EHR data
  - Identify Opportunities
  - Establish the baseline

- **Practice Comparison**
  - Understand obstacles and areas of effectiveness / improvement

- **Performance Monitoring**
  - Insight into high performers and best practices

- **Patient Gap Analysis**
  - Understand volume of patients, resource requirements, target populations

- **Patient Stratification**
  - Segment population and determine levels of intervention needed

- **Patient Engagement**
  - Low risk patient Outreach automation
  - High risk - high touch care management
  - Disease targeted education/visit campaigns

**EXECUTIVE INSIGHTS**

**MANAGEMENT REPORTING**

**CARE TEAM ACTION**

Near Real Time Monitoring & Visualization Along the Continuum Supporting CQI
# QI Reporting Requirements

<table>
<thead>
<tr>
<th>Domain</th>
<th>Measure</th>
<th>National Quality Forum (NQF)</th>
<th>CMS Physician Quality Reporting System (PQRS)</th>
<th>CMS Medicare EHR Incentive Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin When Appropriate</td>
<td>Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic Percentage of patients aged 18 years and older with IVD with documented use of aspirin or other antithrombotic</td>
<td>#0068</td>
<td>#204</td>
<td>CMS164v2</td>
</tr>
<tr>
<td>Blood Pressure Screening</td>
<td>Preventive Care and Screening; High Blood Pressure Percentage of patients aged 18 years and older who are screened for high blood pressure AND a recommended follow-up plan is documented based on the current blood pressure readings as indicated</td>
<td>n/a</td>
<td>#317</td>
<td>CMS22v2</td>
</tr>
<tr>
<td>Blood Pressure Control</td>
<td>Hypertension (HTN): Controlling High Blood Pressure Percentage of patients aged 18 through 65 years who had a diagnosis of HTN and whose blood pressure was adequately controlled (&lt;140/90) during the measurement year</td>
<td>#0018</td>
<td>#236</td>
<td>CMS165v2</td>
</tr>
<tr>
<td>Cholesterol Management</td>
<td>Preventive Care and Screening; Cholesterol — Fasting Low Density Lipoprotein (LDL) Test Performed AND Risk-Stratified Fasting LDL Percentage of patients aged 20 through 79 years who had a fasting LDL test performed and whose risk-stratified fasting LDL is at or below the recommended LDL goal</td>
<td>n/a</td>
<td>#316</td>
<td>CMS61v3, CMS64v3</td>
</tr>
<tr>
<td>Cholesterol Management – Diabetes</td>
<td>Diabetes Mellitus: Low Density Lipoprotein (LDL-C) Control in Diabetes Mellitus Percentage of patients aged 18 through 75 years with diabetes mellitus who had most recent LDL-C level in control (less than 100 mg/dL)</td>
<td>#64</td>
<td>#2</td>
<td>CMS163v2</td>
</tr>
<tr>
<td>Cholesterol Management – Ischemic Vascular Disease</td>
<td>Ischemic Vascular Disease (IVD): Complete Lipid Panel and Low Density Lipoprotein (LDL-C) Control Percentage of patients aged 18 years and older with Ischemic Vascular Disease (IVD) who received at least one lipid profile within 12 months and who had most recent LDL-C level in control (less than 100 mg/dL)</td>
<td>#0075</td>
<td>#241</td>
<td>CMS182v3</td>
</tr>
<tr>
<td>Smoking Cessation</td>
<td>Preventive Care and Screening; Tobacco Use Percentage of patients aged 18 years and older who were screened about tobacco use one or more times within 24 months and who received cessation counseling intervention if identified as a tobacco user</td>
<td>#0028</td>
<td>#226</td>
<td>CMS138v2</td>
</tr>
</tbody>
</table>

Source: One Million Hearts Campaign Clinical Quality Metrics
Technical Solutions and Approaches

Defining Analytics Functionality
Vendor “Ancestry” in the Landscape

- More tolerant of “Big Data” requirements
- Often rich in data grouper and registry/cohort formation capabilities
- Risk scoring is native functionality
- Limited clinical depth

- Better Data Parsing Capabilities
- Can Handle More Data Formats
- Often based on “Data Cube” or similar typology
- Data often persists as a longitudinal record
PHM Vendor Functionality Landscape

<table>
<thead>
<tr>
<th>RISK MANAGEMENT</th>
<th>CARE MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Risk</td>
<td>Dynamic Registries</td>
</tr>
<tr>
<td>Financial Risk</td>
<td>Care Gaps</td>
</tr>
<tr>
<td>Value Based Payments</td>
<td>Utilization</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EHR</th>
<th>ALLSCRIPTS, EPIC, CERNER</th>
<th>ALLSCRIPTS, EPIC, CERNER, ECLINICALWORKS, ATHENAHEALTH, GREENWAY, NEXTGEN, GE HEALTHCARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEST OF BREED &amp; ENTERPRISE</td>
<td>IBM, CRIMSON, OPTUM, MCKESSON (MEDVENTIVE), HEALTH CATALYST, WELLCENTIVE, I2I SYSTEMS, VERISK, LIGHTBEAM, ADVISORY BOARD, TRUVEN, PREMIER, LUMERIS, MEDECISION, ORACLE, MILLIMAN, PENTAHO</td>
<td>I2I SYSTEMS, IBM (INCL. PHYTEL, EXPLORYS), MCKESSON (MEDVENTIVE), WELLCENTIVE, OPTUM, LIGHTBEAM, ADVISORY BOARD, RELAYHEALTH, HUMEDICA, KRYPTIQ, MEDECISION, CARADIGM, CITIUS TECH, ORION, PENTAHO</td>
</tr>
<tr>
<td>CLAIMS BASED “ANCESTRY”</td>
<td>IBM, ADVISORY BOARD, MCKESSON, TRUVEN, ORACLE, MILLIMAN, WELLCENTIVE, LIGHTBEAM, MEDECISION</td>
<td>CLINICALLY BASED “ANCESTRY”</td>
</tr>
</tbody>
</table>

Information presented in this slide was derived from limited industry assessments and may not represent all functionality available, contact individual vendors for more information.
## PHM Vendor Functionality Examples

<table>
<thead>
<tr>
<th>VENDOR</th>
<th>RISK MANAGEMENT</th>
<th>CARE MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clinical Risk</td>
<td>Financial Risk</td>
</tr>
<tr>
<td>McKesson (MedVentive)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NextGen (HQM)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>eClinicalWorks</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Optum</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tableau</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>I2i Systems (Tracks + popIQ)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>IBM (incl. Phytel &amp; Explorys)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Wellcentive</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

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Safety-Net Considerations

• Clinics are generally not vertically integrated organizations
  • Data aggregation is costly and time consuming, HIE tools enabling data liquidity are not commonly deployed in non-enterprise settings
  • Building organizational expertise is essential, but difficult in less vertically-integrated organizations

• Safety-Net business drivers have greater emphasis on QI programs, whereas payment reform is a larger driver in others

• Many existing QI platforms are already in place in the safety-net, can these be expanded to meet new needs, or is a new system needed?

• High mobility of patient populations, lower adherence to medical homes, some patient identifiers not reliable (i.e. SSN)
Navigating Market Ambiguities

• No one size fits all
  • PHM vendors categorize across EHR, best-of-breed and enterprise platforms
  • Vendor convergence to meet the broad array of needs in a maturing market
  • KLAS and others agree that no one vendor meets all core functions typically sought by large healthcare organizations
  • In reality, organizations have existing systems and the effort to integrate rather than rip/replace makes the market trend towards bundling a difficult shift

• Every vendor will identify themselves – and their services – differently
  • Terms like “Population Health Management” or “HIE” are widely used but do not mean the same thing to vendors – know exactly what functionality you need
Pitfalls to Avoid

• Data Integration Comes First
  • Consolidate your data within your organization
  • Invest in increasing data quality across your organization – do not depend on analytics vendors to clean the data

• Use broad vendor searches to understand which vendors will meet you where you are today without replicating existing functionality

• Choosing an analytics platform should fit into the broad QI and PHM context, this is where the river is flowing

• Once a platform has been selected, don’t try to boil the ocean: pick broad reaching targeted initiatives to get started and build core competency
Considerations for your Technical Architecture

Defining Analytics Implementations
Most Common Organizational Barriers

• 31% of organizations report “Culture and Politics” as a serious barrier*
• 29% report “Fragmented Ownership” as a serious barrier*
• 27% report “Access to Skilled Resources” as a serious barrier*

* Source: Deloitte Center For Health Solutions 2015 US Hospital and Health System Analytics Survey (June 2015)

These barriers can be addressed through a comprehensive organizational approach to data analytics, care management, and system transformation.
## Typical Data Infrastructure Adoption Progression

<table>
<thead>
<tr>
<th>EHR-BASED REPORTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded reports for MU, HEDIS, etc.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>ENHANCED EHR, BASIC REGISTRIES, HIE, CARE MANAGEMENT TOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHR based Clinical Decision Support using Alerts and Reminders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POPULATION HEALTH MANAGEMENT TOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action-oriented dashboards showing population- and cohort-level outcomes while highlighting patients in need of careful management, with ability to drill down to individual patients and their care plans</td>
</tr>
</tbody>
</table>

+ QI/Clinical Analytics

+ Cohort-Based/Risk Analytics
**Ingredients for data-driven care quality improvement and population health initiatives**

- **Leadership commitment**
  - Executives must own the vision
  - Stakeholder collaboration

- **Specific motivation**
  - Reporting requirements
  - Value-based payment
  - Grant funding

- **Outreach**
  - Engage people in their care with person-centered approaches
  - Coordinated messages
  - Multiple touchpoints
  - Platform agnostic

- **Data / IT Infrastructure**
  - Technology tools
  - Data quality
  - Common measures
  - Data-sharing mechanisms

- **Coordinated teams and workflows**
  - Team-based care
  - Data-aware organizations
  - Workflow alignment
  - User-friendly, integrated IT products

- **Trust**
  - Reported outcomes are based on accurate data, apples-to-apples
  - If you share your performance, it won’t be used against you
  - Data privacy and security laws / best practices followed
Shared Resources Models

• Some non-vertically integrated organizations have successfully partnered with others to collectively utilize shared analytics functionality
  • Heath Center Controlled Networks
  • Health Center IT Collaboratives

• Others have worked with organizations occupying other healthcare system “Layers” to develop community resources
  • Regional HIE-based infrastructure
  • Managed Care Plan-based infrastructure
Example 1: Uni-Organizational Infrastructure
Example 2: Shared Infrastructure

HCCN Organizational Boundary

- Clinical Analytics
- Risk-Based Analytics
- Care Management

Clinical and Claims Data Warehouse

Claims Data from Managed Care Plan

QI Metrics Reporting Tool “A”
- Care Coordination Platform “A”
- EHR “A”

QI Metrics Reporting Tool “B”
- Care Coordination Platform “A”
- EHR “A”

QI Metrics

Care Coordination
In Summary

• Moving from simple EHR reporting and silo registries to an increasingly mature model focused on targeted and eventually predictive growth is becoming a two step process vendors consolidate services under the Population Health Management banner

• Full organizational commitment from the outset and comprehensive strategies are key
  • Align future visibility with strategy with your organization’s specific motivations to determine the right set of services to look for in the market–
  • Avoid “Fragmented Ownership” of analytics resources through a comprehensive approach!
  • Understand market ambiguities and use broad vendor searches to survey the market
  • Understand if shared resources are right for your organization/context

• Establish clear goals and use the technology to get you there
  • What are the questions you want answered though analytics? Start with the end in mind and develop organization expertise incrementally.
Contact Information

Alex Horowitz
Principal Technology Strategist
Intrepid Ascent
alex@intrepidascent.com

John Weir
Consultant
Intrepid Ascent
john@intrepidascent.com

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