Health System Analytics: Leveraging Data to Improve Hospital Operations and DSRI-P Performance

Webinar eBook
Panelists

Elizabeth Wolff, MD, MPA
Senior Vice President of Care Transformation, Quality, and IT, Richmond University Medical Center

Raj Lakhanpal, MD, FACEP
Chief Executive Officer, SpectraMedix
Member, HIMSS Clinical & Business Intelligence Committee
Agenda

1. RUMC Clinical/Business Intelligence
   Objectives and Challenges

2. Hospital Operations and Analytics

3. Improving Care of DSRIP Subpopulations

4. Questions and Answers
RUMC Profile

Affiliate of The Mount Sinai Hospital and Mount Sinai School of Medicine

Serves Staten Island

470 bed healthcare facility

Two campuses – main and behavioral health services

Three disparate EHRs

- Meditech in the hospital
- eClinicalWorks in the clinic
- EDIMS in the Emergency Department
Objectives

RUMC Leadership needed information to plan and manage
- Hospital operations
- DSRIP performance

To achieve this, Executives and IT Staff sought
- An Enterprise Data Warehouse and Business Intelligence Solution to consolidate data and empower analysis and reporting of performance metrics
- Solutions to provide actionable information that enable them to identify opportunities to reduce:
  - Hospital acquired conditions and infections
  - Preventable readmissions
  - Length of Stay
  - Provider and patient drill-downs

Challenges

Data is in multiple formats, from multiple data sources and spread across disparate settings

IT staff is inundated with report requests and struggles to quickly provide the actionable information needed
- Reports are compiled manually and can take weeks or months to turn around
- By then requester requirements may change and a new report is needed

Reports provided are not easily consumable or actionable
- Often a list or spreadsheet with multiple rows and columns of data
Hospital Operations and Analytics
### Old RUMC Report Format

#### Long Stays Report

<table>
<thead>
<tr>
<th>Account Number</th>
<th>PlayID</th>
<th>BedID</th>
<th>LocationName</th>
<th>AdminID</th>
<th>AdmissionTime</th>
<th>DischargeTime</th>
<th>ChargeTotal</th>
<th>dbo_DM_Admission_Name</th>
<th>InsuranceGroup</th>
<th>userID</th>
<th>LOS</th>
<th>Diagnosis</th>
<th>DiagnosisName</th>
</tr>
</thead>
<tbody>
<tr>
<td>0368</td>
<td>01</td>
<td>EF3</td>
<td></td>
<td>150,790,52</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>100,545,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N02</td>
<td>04</td>
<td>INCURABLE STATION</td>
<td>840,93</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>BCR</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N02</td>
<td>04</td>
<td>INCURABLE STATION</td>
<td>486,28</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N02</td>
<td>04</td>
<td>INCURABLE STATION</td>
<td>655,04</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N02</td>
<td>02</td>
<td>INCURABLE STATION</td>
<td>452,14</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS81</td>
<td>01</td>
<td>PSYC INPATIENT</td>
<td>152,99</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPS1</td>
<td>02</td>
<td>EF3</td>
<td>104,02</td>
<td>84,5</td>
<td>MEDICARE</td>
<td>MCD</td>
<td></td>
<td>84,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

© SpectraMedix, 2009-2016. The contents of this presentation are confidential and cannot be copied without prior written permission from SpectraMedix.
Predictive Modeling

Stratify RUMC patient populations to support inpatient care coordination, population health management and enhanced reporting

• Customized processes to apply risk models to RUMC data
• Calculate patient risk scores on a regular basis

USE CASE

Readmission Risk Prediction

Provide RUMC’s inpatient care and discharge planning teams with a daily risk stratification for readmission risk of all inpatients.
Analytics Platform Dashboards

Readmissions Risk Profile: Total Discharges

Value-based Purchasing Scorecard

Physician Scorecard

Contact us for a Product Demonstration:

Marc Bryant, Director, Sales
609-336-7733 Ext. 313
Marc.Bryant@SpectraMedix.com
www.SpectraMedix.com
ROI Expectations

Reduction in LOS as a result of:
- Risk stratification of patient population for better LOS control
- Alignment of resources for high LOS providers and clinical conditions
- Concurrent coding to provide real-time target length of stay

Decreased readmission penalties as a result of:
- Identifying patients at high risk of readmissions
- Development and tracking of effective intervention strategies
- Aligning resources
- Improved discharge planning

Prevention of HACs as a result of:
- Quantify dollars at risk which can be used to justify additional resources
- Shining a spotlight on HAC reduction opportunities

Improve VBP earn back as a result of:
- Improved clinical quality scores
- Patient safety indicators
- Patient Satisfaction (HCAHPS)
Improving Care of DSRI P Subpopulation
RUMC’s DSRIP Goals

- **Identify High Risk Patients** to:
  - Reduce unnecessary hospitalizations including ED visits and inpatient admissions
  - Reduce preventable readmissions

- **Integrate clinical and behavioral health services**

- **Improve population health**

- **Integrate DSRIP actively engaged patients** into RUMC EDW to improve care

- **Improve Value-based Purchasing Scores for DSRIP Years 2-5**
  - model for greater payments from DSRIP
How Does Data Inform Population Health?

Top 5 Data Points for Population Health Management

- **Clinical Data**
  (Biometric, Lab, HRA Data)

- **Adherence Data**
  (Care plans, medication plans and preventive care)

- **Financial/Satisfaction Data**

- **Utilization Data**

- **Operational Data**

Our Approach

- Use **Disease Registries** to Monitor Longitudinal Progress
- **Hotspot** to identify Disease Patterns
- Identify Access and Performance Opportunities
- **Predictive Modeling** – Risk Mitigation
- Engage Public Officials / LGUs
- MCO
Laying the Foundation for a Successful Transition to Value-based Care

Working together to manage risk and empower RUMC executives and care teams to:

- Easily transform EHR and ED data into valuable information
- Monitor operations and enhancing quality
- Understand where improvement is necessary
- Take better advantage of numerous quality based incentive programs
- Improve clinical quality and patient care at RUMC
How to Engage with SpectraMedix

Contact us directly:
Marc Bryant, Director, Sales
609-336-7733 Ext. 313
Marc.Bryant@SpectraMedix.com
www.SpectraMedix.com

At the 2016 New York miniHIMSS Conference
Attend our DSRIP Presentation with SI PPS
Demo our Solutions at our Booth
(Check our website presentation and booth details to come)