Setting the Stage for the Future

Michelle Woodley RN, MSN
VP, Clinical Informatics
St. Joseph Health
St. Joseph Health

Our hands touched so many in our communities — 155,000 inpatients, 5.1 million outpatient encounters and 2.2 million medical office visits.

We were honored to be at the births of more than 18,000 babies and we were at the side of 2,800 individuals as they passed to eternal life. It was a full year, a year of great activity and of great hope.
Through all these accomplishments and challenges, we have continued to extend the healing ministry of Jesus in the tradition of the Sisters of St. Joseph of Orange.

Each and every day, we work to:

- Save a life
- Help a family heal
- Meet one another’s spiritual needs
- Bring more of our community together
- Make a difference in the lives of those we serve
- Be a community that serves, that speaks, that celebrates and prays in such a way that others—regardless of their religious belief—encountering this community experience a revelation of life’s deepest truths... about human dignity, community, success, power, growth, sacrifice, love, suffering, debility and death.

Experiencing a harmony between their heart’s deepest resonances and this community’s character, persons go from this encounter more healed, more whole, more able to live, to love, to hope and to die.
OUR JOURNEY
Pathway

Laying the Foundation
- Standardize
- Utilization

Utilizing the Data
- Optimize
- Dashboards

Transforming Care
- Rules/ Alerts
- Prescriptive Analytics
Laying the Foundation - Standardization

- August 2012 Standardization Summit
- Sept 2013 first of three regions goes live
- June 2014 (9 months) system live across all 14 ministries
- Industry unprecedented timeline and scope
Helpful Tools

• Focus Groups
• SBAR – Rapid Decision Tool
• Benchmark data - Utilization
SBAR Process

- Situation
- Background
- Assessment
- Recommendation

• Review for approval of Recommendation
Utilizing the Data- Optimization and Analytics

• Several Optimization Initiatives
  – ED Optimization
  – Care Plan Collaborative
  – Discharge Process

• Requests

• Business Clinical Analytics Real-time Dashboards
Helpful Tools

• eChange and Governance Groups
• Rules and Alerts
• Real-time Data Dashboards
### eChange Clinical Dashboard

**Search:**

<table>
<thead>
<tr>
<th>Request ID</th>
<th>Urgent</th>
<th>Request Date</th>
<th>Requestor Name</th>
<th>Status</th>
<th>Request For</th>
<th>Smart Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1013502</td>
<td>Yes</td>
<td>01/11/2016</td>
<td>Daniela Terme</td>
<td>Submitted</td>
<td>Pharmacy/Smart Board/Pysys Connect (PHA)</td>
<td>Please add Gentamicin (Gentobide) 2 grams / 52.0 mL to meditech (and please add it to the gentocin set in meditech).</td>
</tr>
<tr>
<td>1013501</td>
<td>No</td>
<td>01/11/2016</td>
<td>Exam Lawy</td>
<td>Submitted</td>
<td>Pharmacy/Smart Board/Pysys Connect (PHA)</td>
<td>Please activate LEVO330 for NSM.</td>
</tr>
<tr>
<td>1013500</td>
<td>No</td>
<td>01/11/2016</td>
<td>Larry Wesen</td>
<td>Submitted</td>
<td>Loc./Service Accommodation/Provider Ops (MS)</td>
<td>AHP Provider Dictionary Change - K Bailey.</td>
</tr>
<tr>
<td>1013506</td>
<td>No</td>
<td>01/12/2016</td>
<td>Lindsey Chamberlain</td>
<td>Submitted</td>
<td>Pharmacy/Smart Board/Pysys Connect (PHA)</td>
<td>Remove conivert and atrovent infusers from NSM and NNM.</td>
</tr>
<tr>
<td>1013513</td>
<td>No</td>
<td>01/06/2016</td>
<td>Monica Sonnie-Hoeh</td>
<td>Submitted</td>
<td>PACS - Radiology</td>
<td>Add Dental procedures to EDIS/Trauma category for Mission</td>
</tr>
<tr>
<td>1013514</td>
<td>No</td>
<td>01/06/2016</td>
<td>Alice Kim</td>
<td>Submitted</td>
<td>Pharmacy/Smart Board/Pysys Connect (PHA)</td>
<td>StCaf GenMed Surg Admit and GenMed Surg Blk has Echo Completes order with Reason for Exam defaulted to Heart &amp; it needs to be changed to Other.</td>
</tr>
<tr>
<td>1013512</td>
<td>Yes</td>
<td>01/06/2016</td>
<td>Alicia Ameo</td>
<td>Completed</td>
<td>Pharmacy/Smart Board/Pysys Connect (PHA)</td>
<td>Fluorescein dosage.</td>
</tr>
<tr>
<td>1013511</td>
<td>No</td>
<td>01/06/2016</td>
<td>Monica Sonnie-Hoeh</td>
<td>Submitted</td>
<td>Medical Records (MR)</td>
<td>LOAD MISSING 2016 HCP6 INTO MEDITECH ABS DICTIONARY.</td>
</tr>
<tr>
<td>1013510</td>
<td>No</td>
<td>01/06/2016</td>
<td>Melanie Giffen</td>
<td>Submitted</td>
<td>Loc./Service Accommodation/Provider Ops (MS)</td>
<td>Removing Heparin In 50,000 unit/10 ml from SYMI dictionary.</td>
</tr>
<tr>
<td>1013509</td>
<td>Yes</td>
<td>01/06/2016</td>
<td>Christine Hardt</td>
<td>Completed</td>
<td>Physician Desktop (PDM)</td>
<td>Request to update Provider Dictionary - Green.</td>
</tr>
<tr>
<td>1013508</td>
<td>No</td>
<td>01/06/2016</td>
<td>Bernard Sabinas</td>
<td>Completed</td>
<td>Pharmacy/Smart Board/Pysys Connect (PHA)</td>
<td>Change status - facility information for TAYRA201 to YYYA - Ramen Tayani, MD.</td>
</tr>
<tr>
<td>1013507</td>
<td>No</td>
<td>01/06/2016</td>
<td>Lindsey Chamberlain</td>
<td>Submitted</td>
<td>Gen LAB/Path/MicroABGs (LAB/PATHMIC)</td>
<td>Activate Meditech drug Trabectedin 1 mg Vial for SYMI.</td>
</tr>
<tr>
<td>1013506</td>
<td>No</td>
<td>01/06/2016</td>
<td>Lindsey Chamberlain</td>
<td>Submitted</td>
<td>Pharmacy/Smart Board/Pysys Connect (PHA)</td>
<td>JDLIQ new analyzer ABL30 Meditech dictionary build.</td>
</tr>
<tr>
<td>1013505</td>
<td>No</td>
<td>01/06/2016</td>
<td>Gina Colag</td>
<td>Submitted</td>
<td>Loc./Service Accommodation/Provider Ops (MS)</td>
<td>NBM wants to automatically print TPN batch.</td>
</tr>
<tr>
<td>1013504</td>
<td>No</td>
<td>01/06/2016</td>
<td>St. Jude Medical Center</td>
<td>Submitted</td>
<td>Pharmacy/Smart Board/Pysys Connect (PHA)</td>
<td>Add St. Jude Medical Center access to Dr. D'Amico (DUPH402), prior type - ADT, on staff, admit, admit, phys order, elev, sig b.</td>
</tr>
<tr>
<td>1013503</td>
<td>No</td>
<td>01/06/2016</td>
<td>St. Jude Medical Center</td>
<td>Submitted</td>
<td>Loc./Service Accommodation/Provider Ops (MS)</td>
<td>Add St. Jude Medical Center access to Dr. Grampp (GRAP0002), prior type - ADT, on staff, admit, admit, phys order, elev, sig b.</td>
</tr>
<tr>
<td>1013502</td>
<td>No</td>
<td>01/06/2016</td>
<td>Lindsey Chamberlain</td>
<td>Submitted</td>
<td>Pharmacy/Smart Board/Pysys Connect (PHA)</td>
<td>Change order strings for eponin in OPD.</td>
</tr>
<tr>
<td>1013501</td>
<td>No</td>
<td>01/06/2016</td>
<td>Sandra Stier</td>
<td>Submitted</td>
<td>Gen LAB/Path/MicroABGs (LAB/PATHMIC)</td>
<td>2 New Tissues - all regions test-free - Just Do It - EQIS - LSB.</td>
</tr>
</tbody>
</table>
Clinical and Business Governance

Health System Operations Standards Committee (HSOSCC)

Enterprise Physician Advisory Council

Regional Physician Advisory Councils

Clinical Governance Groups
(8 Ancillary, 11 Nursing)

Revenue Cycle Governance Group

Financial Services Governance Group
Real-Time Dashboards
# Real-Time Dashboards

## Executive Quality Overview

<table>
<thead>
<tr>
<th>Category Measure</th>
<th>Current</th>
<th>Trend</th>
<th>YTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CQM Compliance</td>
<td>7/17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Objectives</td>
<td>10/15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menu Objectives</td>
<td>6/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Readmissions</td>
<td>22.2% (273)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortalities</td>
<td>1.6% (20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HACs</td>
<td>11.0% (138)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MU CQM Compliance

<table>
<thead>
<tr>
<th>Category Measure</th>
<th>Current</th>
<th>Trend</th>
<th>YTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTE Prophylaxis</td>
<td>81.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTE ICU Prophylaxis</td>
<td>97.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTE Anticoag Overlap Tx</td>
<td>69.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTE UFH Monitoring</td>
<td>80.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTE Education</td>
<td>79.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTE Hospital Acquired</td>
<td>18.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STK Anticoagulants</td>
<td>93.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STK Anticoagulants</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MU Core Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Current</th>
<th>Trend</th>
<th>YTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPOE Rad</td>
<td>38.0%</td>
<td></td>
<td>40.9%</td>
</tr>
<tr>
<td>VS Height and Weight</td>
<td>73.7%</td>
<td></td>
<td>75.7%</td>
</tr>
<tr>
<td>Demographics</td>
<td>71.6%</td>
<td></td>
<td>73.1%</td>
</tr>
<tr>
<td>eMAR</td>
<td>42.3%</td>
<td></td>
<td>41.7%</td>
</tr>
<tr>
<td>VS Blood Pressure</td>
<td>75.2%</td>
<td></td>
<td>75.6%</td>
</tr>
<tr>
<td>Smoking Status</td>
<td>70.0%</td>
<td></td>
<td>70.4%</td>
</tr>
<tr>
<td>CPOE Meds</td>
<td>58.6%</td>
<td></td>
<td>59.8%</td>
</tr>
<tr>
<td>Care Summary Transaction</td>
<td>62.2%</td>
<td></td>
<td>62.5%</td>
</tr>
</tbody>
</table>

### MU CQM ED Throughput

<table>
<thead>
<tr>
<th>Measure</th>
<th>Current</th>
<th>Trend</th>
<th>YTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Time: Arrival to Depart for Discharge</td>
<td>167</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median Time: Arrival to Depart for Admission</td>
<td>138</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median Time: Admit Decision to Depart</td>
<td>56</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MU Menu Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Current</th>
<th>Trend</th>
<th>YTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>eRx</td>
<td>43.3%</td>
<td></td>
<td>42.8%</td>
</tr>
<tr>
<td>Family History</td>
<td>43.7%</td>
<td></td>
<td>44.6%</td>
</tr>
</tbody>
</table>

### Outcome Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Current</th>
<th>Trend</th>
<th>YTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readmissions (30 Days)</td>
<td>22.2%</td>
<td></td>
<td>22.1%</td>
</tr>
<tr>
<td>Mortalities (30 Days)</td>
<td>1.6%</td>
<td></td>
<td>1.8%</td>
</tr>
<tr>
<td>HACs (Total)</td>
<td>11.0%</td>
<td></td>
<td>11.0%</td>
</tr>
</tbody>
</table>

### Outcomes: Top 10 Primary Diagnosis Categories

- Acute CVD
- Back pain
- Coron artery dissecation
- Obstetric complications
- Stroke
- Other
- COPD
- Other
- Other
Real-Time Dashboards
Utilizing the Data - Added Benefits

• Cancer Research Registries and Trials
  – Recruitment of patients for participation could be accelerated by mining clinical databases to locate eligible patients.
  – Design of clinical trials can be improved by using clinical databases to ensure optimal coverage of different patient populations within the trial.

• Donor matches
Transforming the Care
Prescriptive Analytics- The Promise

Two Main Goals or Promises
• Improve patient outcomes
• Lower costs

Use of algorithms based on relational databases
So What Is Prescriptive Analytics

• Using data to know what might happen
  – Allows modification of conditions to a desired outcome
• Demonstrated benefits in many industries
• Usage in health care lagging behind
• Prescribes a course of action that would produce an optimal result, considering constraints and other variables
Who All Is In The Game of “Prescriptive Models”

• Insurers
• Technology firms
• Hospitals
• Health systems
• Physician offices
• Patients
With Healthcare It Gets a Little Scary

• How good is the data
• Plans to alter the natural outcome- SciFi or Not?
• New method of potentially curing disease raises its own set of ethical questions
• Predict could eliminate hereditary diseases but prescriptive analytics could further hone
Is it in the near future?

• Zuckerberg, the co-founder of Facebook, and his wife, Priscilla Chan, will give billions to advance various social causes over their lifetime

• Zuckerberg and Chan wrote in an open letter to their newborn daughter—is that "one day, you or your children will see what we can only imagine: a world without suffering from disease."
So how wonderful if it leads to...

• **Personalization of Care**
  – Improve care by tailoring it to the needs of individual patients

• **Personalized Medicine**
  – tailoring drug regimens and other treatments based on the genetic characteristics and prescriptive analytics
New Prescriptive Analytic Companies

• Industry seeing spawning of new companies of data scientists
• Formulating relational databases with high degrees of predictability
• Imagine a world where you could predict with 70-80% accuracy that someone would have a heart attack within the next 6 months if variables were not altered
• Those days are HERE!
The Future

• Building of large databases partnering with prescriptive analytics companies
• Formulating most difficult questions and areas of focus
• Using the power of the computing to run algorithms and prescribe on most impactful interventions
The Evolving Journey

Analytics Capability Maturity Model

Potential Value

What happened?
- Descriptive Analytics
  - Supports summarization and display of relevant historical information
  - Identify best practices, problem areas, root causes, etc. based on historical observations

What will happen next?
- Predictive Analytics
  - Advanced analytics techniques for detection of future events, trends, and patterns
  - Deep insights for early warning and monitoring based on relevant data

What actions can I take?
- Prescriptive Analytics
  - Ability to identify best course of action often based on competing objectives and limited resources
  - Conduct trade-off and scenario analysis to support evidence and data-driven decision making

Analytics Maturity
Hold On To Your Seats
“I've come to believe that each of us has a personal calling that's as unique as a fingerprint—and that the best way to succeed is to discover what you love and then find a way to offer it to others in the form of service, working hard, and also allowing the energy of the universe to lead you.”

–Oprah Winfrey, television host, producer and philanthropist
Thank You