Project Sonar

A Care Management Platform for Chronic Disease
Mini-Summit XI at National VBP/P4P Summit
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Lawrence R. Kosinski, MD, MBA, AGAF, FACG

Managing partner, Illinois Gastroenterology Group (IGG)
48 Member Physician Group in Chicago

Member, Advocate Sherman Hospital Board of Directors

Member AGA Governing Board
Chairman - AGA Crohn’s Disease and UC Task Force

Founder SonarMD, LLC.
GI Service Line – The Gastroenterologist’s View

Colon Cancer Screening is the Elephant in the Room
- Colonoscopy drives >50% of GI revenue
- Declining Revenues/Compressed Margins
- Alternative Screening Tools are Developing

Corrective Actions
- We seek out payment bundles
  - Which can commoditize our main revenue stream
  - Which our payers may not be able to implement
- We create process based Registries
  - Which really don’t provide value
  - In Colonoscopy there may not enough clinical variation to demonstrate value

CRC
HCV
GERD
IBD
### IGG Top 10 ICDs by GI Practice Reimbursement

<table>
<thead>
<tr>
<th>ICD9</th>
<th>Diagnosis Description</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>V76.51</td>
<td>Special screening for malignant neoplasms, colon</td>
<td>24%</td>
</tr>
<tr>
<td>211.3</td>
<td>Benign neoplasm of colon</td>
<td>15%</td>
</tr>
<tr>
<td>555.2</td>
<td>Crohn's Disease</td>
<td>14%</td>
</tr>
<tr>
<td>556.6</td>
<td>Ulcerative Colitis</td>
<td>11%</td>
</tr>
<tr>
<td>V12.72</td>
<td>Personal history of colonic polyps</td>
<td>11%</td>
</tr>
<tr>
<td>530.81</td>
<td>GERD</td>
<td>8%</td>
</tr>
<tr>
<td>578.1</td>
<td>Rectal Bleeding</td>
<td>6%</td>
</tr>
<tr>
<td>787.91</td>
<td>Diarrhea</td>
<td>4%</td>
</tr>
<tr>
<td>280.9</td>
<td>Iron deficiency anemia, unspecified</td>
<td>4%</td>
</tr>
<tr>
<td>V16.0</td>
<td>Family history of malignant neoplasm of gastrointestinal tract</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>54% of the costs are related to colorectal cancer</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

**Screening and Surveillance**

**25% of the costs are related to IBD**
We’re only seeing the tail on the Elephant!

And it’s a pretty small tail

We have to think like the payers
Crohn’s Cost of Care Analysis

21,000 Patient Payer database
Two years of experience
• $240M in annual expenses for Crohn’s Disease
• $11,000 per patient per year

>50% of all expenses paid are for Hospital Services
• Likely to be primarily complication related
• This is the fastest growth area of expense
• Less than 1/3 of patients admitted to the hospital for a complication were seen by a physician in the 30 days prior to the admission

Biologics 10% of total expenditures
Gastroenterologists receive 10% of all Professional Payments and only 3.5% of Total Payments
• But we are the most knowledgeable of its management
• Is there an opportunity to improve care at the Provider level?
• A potential for a shared savings program exists
PROJECT SONAR – A Care Management Platform for Patients with Chronic Disease

Physicians
- Clinical Decision Support Tools
- Guidelines

Patients
- Portal Based Tools
- Nurse Care Managers

Data

Assessments
Order sets
Alerts
Guidelines
Reports
Contact info
AGA Crohn’s Disease Care Pathways Project

Control Costs
- Control Hospital Admissions
- Control ER Visits

Control Hospitalizations

Control Complications
- Control Inflammation
- Identify the High Risk Patient

Control Inflammation
- Manage Care
  - Care Managers
  - Use of Biologics
  - Diagnostic Evaluations
  - CBS Tools
  - Order Sets
  - Engage the Patient

Engage the Patient
- Portals
- Hovering Tools
Project Sonar Timeline

Jan 2012
Began meeting with BCBSIL to obtain cost data on Crohn’s

May 2012
Received large database from BCBSIL with cost data on 21,000 patients

Mar 2013
Presented concept of Project Sonar to BCBSIL

Oct 2013
Meeting at BCBSIL to discuss structure and data

Feb 2014
LOI signed between BCBSIL and IGG

Apr 2014
Final Agreement signed with BCBSIL

Sep 2014
Final patient attribution list provided

Dec 2014
Declaration on financial shared savings period

June 2015
Agreement signed with Takeda and Xcenda to validate platform

2012

July 2012
Began developing CDS tools and patient engagement tools

Jan 2013
Discussion of Project Sonar on 50 LK patients

2013

Data Analysis
AGA Crohn’s Disease Care Pathway
Project Sonar Testing

Jan 2014
Early data showing decrease in hospitalization

Mar 2014
Meeting with Takeda to discuss data

Aug 2014
AGA Crohn’s DA Care Pathway published

2014

Patient Enrollment
Live

Dec 2014
Final patient data available on platform

2015

June 2015
Sonar MD App/Platform Deployed
Project Sonar Summary

- One of the First Intensive Medical Homes for a Specialty Group in US
  - Partnership between IGG and Blue Cross Blue Shield Illinois
  - Deployed for use in patients with Crohn’s Disease

- Major Components of an IMH
  - Team-based Care of a Population
    - Nurse care manager (NCM) team
    - Committed team of Physicians
  - Guideline driven care model
    - AGA Crohn’s Disease Care Pathway
    - Clinical Decision Support (CDS) Tools integrated into the IGG EMR
  - Patient Engagement Tools
    - Communicate with patients through structured data “Pings” to assess symptomatology using Patient Portal
    - Identify opportunities for early interventions
    - Reduce potentially avoidable ER, IP utilization
  - Powerful Data Analytics
BCBS Intensive Medical Home Program Details

**Attribution Period**
- The payer attributes our patients to us
- They were our existing patients that are under this payer for at least 12 months

**Enrollment Period**
- A Supervisit is performed on each attributed patient during this period
- A risk assessment is performed
- A treatment plan based on the risk assessment using the AGA Crohn’s Disease Care Pathway

**Performance Period**
- Each patient is “touched” on a monthly basis
- Hospitalizations are be closely monitored
- ER Visits are tracked
- Biologic Use is monitored to match risk assessments
Intensive Medical Home Business Model

Payments
- Supervisit Payment
- Supplemental PMPM Payment used to establish Clinical Infrastructure

Team-based care
- Nurse Care Manager
- Physician Champion

Performance Measurements
- Quarterly Claims Data
- Quarterly Pharma Data
- Performance determines future PMPM Payments
Proprietary CDS Tools Tie it all Together

### Extent of Disease
- **Small Intestine:**
  - Biopsy
  - Diffuse
- Colon:
  - Biopsy
  - Colitis
- Other Locations:
  - Biopsy

### Disease Burden Assessment
- **Inflammation:**
  - Assess:
- **Comorbidities:**
  - Assess:
- **Date Assessed:**
  - Today

### Therapy Options
- **Risk Therapy:**
- **Remission Therapy:**
- **Cancer Therapy:**

### Most Recent Sonar Score
- **Score:**

### Inflammatory Burden Risk Assessment
- Symptoms:
  - Fever
  - Low Hb

### Biologic Use
- Disable:
- Enable:
- Initiate New Biologic:

### Immunizations
- **Influenza:**
  - Completed: 11/02/2012
- **Pneumococcal:**
  - Completed: 11/03/2012
- **HIV:**
  - Completed: 10/11/2012
- **HPV:**
  - Completed: 05/09/2015

### Labs:

### Date

### Graphs:

### Chart:

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Sonar MD

sonarmd.com
The Patient Experience is Essential

Initial Visit Details
• Health and Wellness Goals
• Action Plan
• Barriers to Attaining Goals
• Plan to Address Barriers
• Depression Screen

Ongoing Patient Experience
• All Patients assigned a Nurse Care Manager
• All Patients “touched” at least Monthly
• All Patients have a Personal Representative
Project Sonar

Patient Engagement and Hovering Tool
Sonar Score

For the last seven days please describe each of the following:

Number of loose stools per day: 0 1 2 3 4 5

Abdominal pain or cramps: None Mild Moderate Severe

General Well Being: Generally Well Slightly Under Poor Very Poor Terrible

Select all the symptoms you have had below:

- Arthritis or Joint Pain
- Eye Pain
- Painful Stool or Bumps
- Fever over 100 degrees
- Are you on any drugs for disease?

Total 0

Calculate
Web-based Patient Engagement Tools

Sonar MD

Sonar Score Slope

CDAI = Sum((2S)+(5P)+(7G)+(20Sum(c) + (30D))

Algorithm for automated responses drives behavior

What patients tell you (subjective) is different from what really happens (objective) reporting
Portal Response Rate 27%  Application Response Rate 66%
Legend of effects
- Hospitalization
- HOPD Infusions
- No specific driver
Putting it all Together

Predictive Analytics

<table>
<thead>
<tr>
<th>CDCP Risk Factor</th>
<th>Odds Ratio</th>
<th>95% Confidence Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflammation risk: albumin</td>
<td>19.4</td>
<td>3.9  97.8</td>
</tr>
<tr>
<td>Inflammation risk: joint pain</td>
<td>5.7</td>
<td>2.2  14.5</td>
</tr>
<tr>
<td>Comorbidity risk: inflammation</td>
<td>11.5</td>
<td>1.5  87.8</td>
</tr>
<tr>
<td>Comorbidity risk: stricturing</td>
<td>5.4</td>
<td>2.2  13.4</td>
</tr>
</tbody>
</table>

Project Sonar Financial Summary - Claims from Dec 1, 2014 - Sept 30, 2015

<table>
<thead>
<tr>
<th>Crohn’s Payments</th>
<th>Total Crohn’s Payments</th>
<th>Average Per Patient Payment</th>
<th>Total Normalized Crohn’s Payments</th>
<th>Normalization Difference</th>
<th>Inpatient Payments</th>
<th>Emergency Room Payments</th>
<th>Infusible Biologics</th>
<th>Injectable Biologics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Period</td>
<td>$2,118,308.65</td>
<td>$13,936.24</td>
<td>$1,932,069.37</td>
<td>($186,239.28)</td>
<td>$210,967.47</td>
<td>$52,363.19</td>
<td>$892,443.30</td>
<td>$560,980.84</td>
</tr>
<tr>
<td>Study Period</td>
<td>$1,884,758.63</td>
<td>$12,399.73</td>
<td>$1,741,326.02</td>
<td>($143,432.62)</td>
<td>$90,410.85</td>
<td>$24,465.00</td>
<td>$972,485.87</td>
<td>$423,561.72</td>
</tr>
<tr>
<td>Difference</td>
<td>($233,550.02)</td>
<td>($1,536.51)</td>
<td>($190,743.36)</td>
<td>($42,806.66)</td>
<td>($120,556.62)</td>
<td>($27,898.19)</td>
<td>($137,419.12)</td>
<td>($137,419.12)</td>
</tr>
<tr>
<td>Percentage Difference</td>
<td>-11.03%</td>
<td>-11.03%</td>
<td>-9.87%</td>
<td>-22.98%</td>
<td>-57.14%</td>
<td>-53.28%</td>
<td>8.97%</td>
<td>-24.50%</td>
</tr>
</tbody>
</table>
Publications

• **Advances in Inflammatory Bowel Disease: December 2015**
  • Validation of the American Gastroenterology Association’s Crohn’s Disease Care Pathway Risk Assessment Metrics against Crohn’s Related Costs
    o Validated by Xcenda in conjunction with Takeda
    o Accepted for Poster Presentation
  • Project Sonar: Improvement in Patient Engagement Rates Using a Mobile Application Platform
    o Demonstrated the value of the platform as compared to the use of the patient portal
    o Accepted for Poster Presentation

• **DDW 2016 Abstracts**
  • Project Sonar: Reduction in Cost of Care in an attributed cohort of patients with Crohn’s Disease
    o 11% decrease in cost of care
    o 57% decrease in inpatient costs
    o 53% decrease in Emergency Room costs
  • Project Sonar: Psychosocial Effects on Cost of Care for IBD
    o 12% increase in cost for patients identified at enrollment as having depression symptoms
    o The difference remains constant over the study period despite an 11% decline in total cost
Conclusions

Project Sonar is a successful example of Population Health

• Hospitalization rate cut by more than 50%
• Cost to Payer decreased 10% based upon lower utilization
• Improved Patient Satisfaction

Why were we successful?

• Providers practicing according to guidelines
  o Using CDS Tools
  o Team-based Care Model
  o Appropriate use of Risk Assessments
• We engage the patients
  o Every patient is proactively “touched” once a month
  o We intervene before they even realize that they are in need of care
About SonarMD, LLC

• Software and Platform Development Company
  o Founded in Jan 2014 to develop a scalable platform for Project Sonar
  o Partnered-with/Powered-by Mutare Health
  o Designed to expand Project Sonar out of IGG

• Components of the Platform
  o Web-based Patient Engagement Platform
  o Clinical Decision Support Tools (CDS)
  o Powerful Data Analytics
    • Risk Assessment
    • Predictive Modeling
    • Demonstrate value to patients, payers, purchasers, providers
SonarMD - Structure

Sonar MD

Clinical Integration Network
- Qualified Clinical Data Registry (QCDR)
  - PQRS Reporting (4-9% Medicare)
  - Alternative Payment Models (5%)

SonarMD Consortium
- Payers
- Other Risk-takers
- Pharma Companies
- Device Manufacturers
- Other Entities
  - Bundlers
  - Conveners

SonarMD Medical Group
- IMH Programs
- Value Based Initiatives
- Research Projects
- CER
- ACE Programs
- Bundled Payments
- Episodes of Care
- SonarMD Platform Participation
- IMH Participation where obtained
- Pharma Studies
- Preferred Drug Pricing
- New lines of business (Obesity)

Clinical Integration Network
- Qualified Clinical Data Registry (QCDR)
  - PQRS Reporting (4-9% Medicare)
  - Alternative Payment Models (5%)
Putting population health in practice
The Sonar MD platform delivers care management algorithms to help providers and patients dramatically improve the management of chronic diseases in the new era of value-based care.