CaroMont Health’s Path to Accountable Care: A Pathway to Health

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May 17, 2011
CaroMont Health System
- Gaston Memorial Hospital, with 435 beds
- Courtland Terrace, a 96-bed skilled nursing community
- Gaston Hospice, includes the inpatient 12-bed Robin Johnson House
- CaroMont Medical Group, an extensive network of physician practices in five counties and two states with:
  - Nearly 200 employed physicians
  - 3,800 employees
  - Self-insured health plan

Vision
To be a nationally recognized leader and valued partner in promoting individual health and vibrant communities.

Mission
To provide exceptional healthcare to the communities we serve
Transformation from Hospital-Centric to Community-Centric with Triple Aim as Framework

Triple Aim
Triple Aim

- Improved Health of the Population
- Enhanced Patient Experience
- Reduced per Capita Cost of Care
Bundled Knee Goals and Objectives

- Develop core competencies to implement community-wide Triple Aim
- Lay the framework for larger accountable care organization development
- Build the foundation for future performance-based product opportunities

Knee Replacement Episode

<table>
<thead>
<tr>
<th>Preadmission</th>
<th>Hospitalization</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 Days</td>
<td>180 Days</td>
<td></td>
</tr>
</tbody>
</table>

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Critical Success Factors, Risks and Barriers

- Leadership and collaboration from clinical staff across the full episode
- Payers and providers must act as true partners
- Care re-design across the continuum must occur simultaneous to payment re-design
- Extensive modeling capabilities required to predict changes to quality and cost
- Elevating quality while managing to a budget may require a departure from care as usual
- Identification and real-time tracking of patients will be challenged by lack of IT integration across provider sites
- Completion of performance scorecard will require tracking of additional process/outcome elements
- Program optimization is iterative: lessons from careful examination of high cost episodes should be translated into rapid program improvements
Key Program Milestones and Timing

Phase I: Assess Episode, Cost, Utilization
Phase II: Understand Operating and Clinical Environment
Phase III: Redesign Care Pathway and Processes
Phase IV: Establish Metrics and Incentives
Phase V: Develop Implementation

90 Days
CaroMont Health Bundled Knee Program
Redesign Phases

Phase I:
Assess Episode Cost, Utilization

Collect and analyze data to understand current utilization and cost variation for knee replacement across the 210-day episode.
Phase I: Assessment of Episode Cost and Utilization

• Analyzed relevant claims data to understand cost drivers and variation
• Analyzed higher cost episodes to identify clinical outliers and develop strategies to improve quality/cost

Key Findings
• Data analysis spanned a 210-day episode of care
• Opportunities were two-fold:
  1. Patient education and patient contract
  2. Optimization of pre-identified patient co-morbidities
# Cost Outliers Emphasize Importance of Optimization and Selection

<table>
<thead>
<tr>
<th>Patient #</th>
<th>Cost Driver</th>
<th>Other Diagnoses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hospital Stay</td>
<td>BMI &gt;40, COPD, Drug Abuse, Chronic Airway Obstruction, Cardiac arrest, Sleep apnea, Posttraumatic respiratory insufficiency</td>
</tr>
<tr>
<td>2</td>
<td>OP PT</td>
<td>Osteoarthritis, Pain in Joint</td>
</tr>
<tr>
<td>3</td>
<td>HH, OP PT</td>
<td>Asthma, Hypertension, Hyperlipidemia, Post-hemorrhagic anemia, Pneumonia</td>
</tr>
<tr>
<td>4</td>
<td>ER Visit for Hemorrhage</td>
<td>Diabetes, Hypertension, Primary Hypercoagulable state, long-term use of anticoagulant, Post-hemorrhagic anemia</td>
</tr>
<tr>
<td>5</td>
<td>Hospital Services for Gastritis, Colonic Polyps, Melena</td>
<td>Long-term Antiplatelet use, Anemia</td>
</tr>
<tr>
<td>6</td>
<td>Hospital Stay, Readmission for VTE</td>
<td>Diabetes, Hypertension, Atrial Fibrillation, Drug-Induced Delirium, Hypercholesterol</td>
</tr>
</tbody>
</table>

*Note: Sg2 and GE Healthcare analytics*
Variation in Post Discharge Care Was Identified As a Key Opportunity

Post-Discharge Rehabilitation Costs/Duration per Patient

Note: Sg2 and GE Healthcare analytics
Redesign Phases Continued

Map out the full knee replacement episode, using observations and interviews to supplement analytics from Phase I. Identify opportunities to improve quality, efficiency and cost.

Phase II: Understand Operating and Clinical Environment
Phase II: Assessment of Clinical and Operating Environment

Interviewed clinicians and staff across the full episode to identify areas of variation and potential opportunities for improvement

Key Findings

- Expectations and education are critical to overall patient satisfaction
- Optimization clinic is not consistently utilized
- Earlier mobilization, discharge and rehabilitation may be possible, but post-op nausea and fatigue may be impediments
- Socioeconomic barriers may prevent more patients from being discharged directly to home
### Interviews Provided Insight Into Systematic Processes

<table>
<thead>
<tr>
<th>Director, Purchasing</th>
<th>Anesthesiologists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director, Perioperative Services</td>
<td>Director, Decision Support and Planning</td>
</tr>
<tr>
<td>Director, Home Care</td>
<td>Hospitalist, Optimization Clinic</td>
</tr>
<tr>
<td>Director, Case Management</td>
<td>Service Line Director</td>
</tr>
<tr>
<td>Manager, Social Work</td>
<td>Orthopedic Practice Administrator</td>
</tr>
<tr>
<td>Case Manager</td>
<td>IP Unit Manager</td>
</tr>
<tr>
<td>Orthopedic Surgeons</td>
<td>Director OP PT</td>
</tr>
<tr>
<td>Director, Rehabilitation Services</td>
<td>Director, Revenue and Reimbursement</td>
</tr>
<tr>
<td>AVP Quality Management</td>
<td>Director, Managed Care</td>
</tr>
<tr>
<td>Joint Care Plus Coordinator</td>
<td>Nurse Auditor</td>
</tr>
<tr>
<td>Director, Organizational Improvement</td>
<td>CFO</td>
</tr>
<tr>
<td>Director, Patient Financial Services</td>
<td>Corporate Controller</td>
</tr>
<tr>
<td>Director, Medical Surgical Services</td>
<td>General Counsel</td>
</tr>
<tr>
<td>AVP, Business Planning</td>
<td></td>
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</tbody>
</table>
Redesign Phases Continued

Phase II: Understand Operating and Clinical Environment

Work with key members of the clinical staff to redesign the care pathway. Quantify the financial impact of the redesign and determine potential episode budget.
Phase III:
Care Pathway and Clinical Process Redesign

• Facilitated care redesign work session to establish consensus on top improvement opportunities
• Simulation quantified the impact of improvement initiatives on episode cost

Key Findings
• Improvement opportunities were categorized into 5 domains
Knee Replacement Episode Process Map

Pre-Admission
- Referred to Surgeon
- Schedule Surgery
- Class
- Pre-op Surgeon Visit
- Optimization Clinic
- PSS/Labs
- Qualify for Surgery
- YES
- NO

Inpatient Stay
- Admission (HMI)
- Prep for Surgery
- Pre-OP Holding
- OR
- PACU
- Inpatient Bed
- Post-op Fast Track
- Post-op Day 1
- Post-op Day 2
- Post-op Day 3

Post-Discharge
- Discharge Disposition
- Home
- SNF
- Inpatient Rehab
- OP Therapy
- Home Health (+ PT)
- OP Therapy
- Post Op Visit 1
- Post Op Visit 2
- Post Op Visit 3

Note: Sg2 and GE Healthcare analytics
Five Improvement Initiatives Were Identified

1. Patient Engagement and Patient Contract
2. Risk Screening and Optimization
3. Acceleration of Return to Wellness
4. Reduce Variable Supply Costs
5. Increase Discharge to OP PT
Simulation Was Used to Model Impact of Initiatives

Base Model
Creation of base model to reflect current scenario and costs based on episode of care

Probabilty of occurrence of care instance
Frequency of care instances
Charges associated with each care instance

Bundled Cost
Calibrate the baseline bundled cost with actual data

Tested Scenarios
Testing of standard care pathways, financial savings opportunities and the impact on costs

Predicted bundled cost of different improvement scenarios

Note: Sg2 and GE Healthcare analytics
Redesign Phases Continued

Phase IV: Establish Metrics and Incentives

Develop a plan to enable the use of data to track and monitor performance related to both quality and cost.
Phase IV: Establishment of Metrics

- Established improvement priorities based on previous work sessions and findings
- Developed metrics and goals needed to support successful implementation

Key Findings
- A combination of cost, process and outcome measures will be needed to manage the episode of care
- Regular reporting from payer is also critical to success
### Performance Measures Detail

<table>
<thead>
<tr>
<th>Metric</th>
<th>Data Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of patients discharged to OP PT</td>
<td>Discharge disposition</td>
</tr>
<tr>
<td>Percent of patient for whom socioeconomic needs prevent discharge to OP PT</td>
<td>Discharge disposition; reason for discharge to home health or short term rehab</td>
</tr>
<tr>
<td>Percent of patients rating quality of care as excellent</td>
<td>Patient satisfaction score across episode, inpatient satisfaction as a proxy</td>
</tr>
<tr>
<td>Percent of patients who attend education classes</td>
<td>Attended education class (Y/N)</td>
</tr>
<tr>
<td>Percent of patients with coach who attends education class</td>
<td>Coach attended education class (Y/N)</td>
</tr>
<tr>
<td>Percent of patients with documented risk score</td>
<td>Risk Score</td>
</tr>
<tr>
<td>Average LOS, percent of patients with LOS &lt;3 days</td>
<td>LOS</td>
</tr>
<tr>
<td>Percent of patients with complications/events (readmission, ED visits, other complications)</td>
<td>Optimization status (OC, PCP, N/A), Risk score, LOS (to allow for segmentation of rates)</td>
</tr>
<tr>
<td>Percent of patients exhibiting signs of post-op nausea on POD 1</td>
<td>Count of patients unable to participate in PT due to nausea</td>
</tr>
</tbody>
</table>
## Performance Measures Detail

<table>
<thead>
<tr>
<th>Metric</th>
<th>Data Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental change in function/time interval by site of care</td>
<td>Functional status, date of measure, site of care of post-discharge rehab or discharge disposition as a proxy</td>
</tr>
<tr>
<td>Avg implant cost per case, by physician</td>
<td>Implant cost, physician name or identifier</td>
</tr>
<tr>
<td>Average variable cost per case</td>
<td>Direct cost</td>
</tr>
<tr>
<td>Average contribution margin per case</td>
<td>Contribution margin</td>
</tr>
<tr>
<td>Average cost of post-discharge care</td>
<td>List of claims and dollars paid out, date of discharge, date of service, allowed amount, discharge disposition (or episode cost minus hospital and surgeon, anesthesiologist fees as proxy)</td>
</tr>
<tr>
<td>% of patients with episode cost &gt; budget (may wish to segment by risk score and optimization status)</td>
<td>Episode cost per patient</td>
</tr>
</tbody>
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Redesign Phases Continued

Phase IV: Establish Metrics and Incentives

Craft an implementation plan to deliver the Bundled Knee Program to BCBS members.
Phase V: Implementation Plan and Documentation of Lessons

- Establish workgroups, tasks and timelines for implementation
- Document key lessons from this project that will enable CaroMont to expand to future payer-provider partnerships

Findings

- Steering committee and workgroup responsibilities to drive accountability
- Incorporate into existing governance
## Workgroups Will Be Responsible for Implementation

<table>
<thead>
<tr>
<th>Workgroup</th>
<th>Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steering Committee</td>
<td>• Ensure that implementation occurs successfully</td>
</tr>
<tr>
<td></td>
<td>• Guide and advise teams as needed</td>
</tr>
<tr>
<td>Performance Measures Team</td>
<td>• Develop bundled knee project scorecard for monthly review at the Steering Committee</td>
</tr>
<tr>
<td></td>
<td>• Enhance ability to measure quality and outcomes</td>
</tr>
<tr>
<td>Patient Tracking Team</td>
<td>• Establish a means to identify patients who are eligible for the bundled knee program across sites of care and data systems</td>
</tr>
<tr>
<td></td>
<td>• Reconcile to budget</td>
</tr>
<tr>
<td></td>
<td>• Interface with payer partner</td>
</tr>
<tr>
<td>Clinical Pathway Team</td>
<td>• Implement care pathway initiatives including:</td>
</tr>
<tr>
<td></td>
<td>- Update patient education material and develop the patient/provider contract</td>
</tr>
<tr>
<td></td>
<td>- Establish consistent risk screening and optimization requirements</td>
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<tr>
<td></td>
<td>- Adjust transition planning practices and engage physicians in more actively managing post-discharge care</td>
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</tbody>
</table>