Cardiovascular Network

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Chairman, Strategic Operations
Our Approach

The Cardiovascular Specialty Network is comprised of representatives from each provider group with the initial goal of developing a consensus on best practices. Long-term goal is to challenge each group to continuously improve on cost and outcomes.

Key differentiators:

- Actively Managed and Physician-led: Organization and Patient Care
- Evidence-based: Literature and Experience Based
- Process Measured and Managed Locally and Centrally
Quality is at the Core

Defining, extracted real-time outcomes data from across the country and centrally aggregated.

- Invested capital in technology infrastructure
- Clinical data aggregation and risk adjustment
- Expanded clinical metrics
  - Functional Status measures
  - Return to work
- Request for longitudinal cost data
### National Network vs. Traditional COE’s

<table>
<thead>
<tr>
<th></th>
<th>National Network</th>
<th>Traditional COE’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Management</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Provider Vetting</td>
<td>✓</td>
<td>=</td>
</tr>
<tr>
<td>Physician Led</td>
<td>✓</td>
<td>=</td>
</tr>
<tr>
<td>Data Reviews</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Process Interventions</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Comprehensive Data Sets</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Triage Process</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Pricing and Logistics</td>
<td>✓</td>
<td>×</td>
</tr>
</tbody>
</table>

**Source:** Based on RFI’s that Cleveland Clinic completes to participate in the COE programs and other publicly available information from the COE program websites
The Value Equation

Traditional Definition

Value = Outcomes / Cost

Value = Quality + Patient Experience + Functional Status

+ Event + Episode + Ongoing Care

Cost Reduction

5 - 10% per case

Cost Avoidance

10 - 15% of cases

*Return to work and quality of life
Overall Program Metrics:
March 2010 – December 31, 2014
Who Came?

117 completed procedures and surgeries
37 states represented
8 patients waiting clinical assessment and service
20 patients not recommended for surgery

…from across the spectrum of complexity
## Quality Outcomes - Mortality

### Key Conclusions:
- Actual mortality much better than expected.
- Patients who are very sick (higher severity of illness) and/or have complex procedures have a higher expected mortality rate.

### Table: Volumes & Mortality

<table>
<thead>
<tr>
<th>Categories</th>
<th>Volume</th>
<th>Actual Mortality</th>
<th>Cleveland Clinic Average Mortality</th>
<th>STS Average</th>
<th>Expected Mortality (STS**/UHC*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG</td>
<td>20</td>
<td>0%</td>
<td>0.5%</td>
<td>1.7%</td>
<td>2%</td>
</tr>
<tr>
<td>Aortic Valve Replacement (AVR)</td>
<td>14</td>
<td>0%</td>
<td>0.0%</td>
<td>11.5%</td>
<td>3%</td>
</tr>
<tr>
<td>AVR + CABG</td>
<td>4</td>
<td>0%</td>
<td>0.9%</td>
<td>2.5%</td>
<td>5%</td>
</tr>
<tr>
<td>Mitral Valve Repair</td>
<td>21</td>
<td>0%</td>
<td>0.0%</td>
<td>0.5%</td>
<td>1%</td>
</tr>
<tr>
<td>Aorta Surgery</td>
<td>23</td>
<td>0%</td>
<td>2.9%</td>
<td>No Data</td>
<td>5%</td>
</tr>
<tr>
<td>Septal Myectomy</td>
<td>4</td>
<td>0%</td>
<td>0.5%</td>
<td>No Data</td>
<td>2%</td>
</tr>
<tr>
<td>CABG + Valve(s)</td>
<td>6</td>
<td>0%</td>
<td>1.0%</td>
<td>No Data</td>
<td>5%</td>
</tr>
<tr>
<td>Valve - Multiple / complex</td>
<td>12</td>
<td>0%</td>
<td>2.3%</td>
<td>No Data</td>
<td>4%</td>
</tr>
<tr>
<td>Pediatric Open Heart</td>
<td>1</td>
<td>0%</td>
<td>2.0%</td>
<td>No Data</td>
<td>No data</td>
</tr>
<tr>
<td>Other Major Cardiac</td>
<td>10</td>
<td>0%</td>
<td>3.0%</td>
<td>No Data</td>
<td>4%</td>
</tr>
<tr>
<td>Other Major Vascular</td>
<td>2</td>
<td>0%</td>
<td>1.0%</td>
<td>No Data</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Total Discharges</strong></td>
<td><strong>117</strong></td>
<td><strong>0%</strong></td>
<td><strong>1.8%</strong></td>
<td><strong>3.4%</strong></td>
<td></td>
</tr>
</tbody>
</table>

*University HealthSystem Consortium (UHC) Database, 2010-2014 discharges

**Society of Thoracic Surgeons Adult Cardiac Database
Key Conclusions:

- Costs of readmissions are variable and difficult to ascertain. Costs are most likely $11,000 - $18,000 per readmission based on current literature.

Key Conclusion:
- Cleveland Clinic exceeds the HCAHPS 90th percentile in all but Physician Communications, where the results are about equal.
Key Conclusions:
• Patients have reported 3-month and 6-month post-operative improvements in all five Domains in the Quality of Life/Functional status surveys as compared to their pre-operative baseline data.
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• Patients have reported 3-month and 6-month post-operative improvements in all five Domains in the Quality of Life/Functional status surveys as compared to their pre-operative baseline data.
What did the patients say?

**Overall rating**
- 80% reported: Very good, better experience than having surgery at home

**Reasons for using the benefit**
- 90% reported: #1 Savings
- 80% reported: #2 Quality

**Medical care at CC**
- 100% reported: Highest rating

**Would recommend?**
- 100% reported: yes
Impact Beyond Clinical Outcomes

Initial results show return to work time was equal to or less than national average.

*Society of Thoracic Surgeons reports 6 to 12 weeks as average for return to work for working-age patients having CABG and valve procedures.

(STS, What to Expect after Cardiac Surgery, 2009.)
Performance on Non-Target Procedures

<table>
<thead>
<tr>
<th>Event</th>
<th>90 days</th>
<th>180 days</th>
<th>365 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCF Non-Target</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Non-Target</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Allowed Amount

- CCF Non-Target
- Market Non-Target

Graph showing the allowed amount over time for CCF Non-Target and Market Non-Target procedures.
Leveraging Data to Measure and Improve Value

• To drive ongoing improvement, we must collaborate on data analysis
• Data sharing will be a key component of the future program
Cardiovascular National Network

A Nationwide, Clinically Integrated Network of Hospitals, Healthcare Systems & Providers

- A quality-driven, high-performance tiered network of hospitals and providers for national contracting
- Engaged providers that meet quality targets
- Quality oversight to ensure appropriate service delivery, utilization and cost of services at network hospitals

Access to the network available for purchasers willing to offer a preferred benefit
Network Hospitals’ Clinical Outcomes

- All Network Hospitals exceed the 90th percentile of STS Quality Rating Overall for CABG
- Tracking clinical outcomes monthly through Armus database
- Created a Quality Oversight Committee with surgeons and cardiologists from each Network Hospital to establish clinical protocols for patient triage
- Developed a business review in alignment with CCF approach to ensure consistent approach in measuring and managing Network Hospitals
- Replicated CC's Patient Experience at each Network Hospital and monitor compliance as part of the Business
- Surgeons essentially duel-privileged through CC
National Network: STS Risk Adjusted Quality

Source: Society of Thoracic Surgeons Adult Cardiac Database; July 2013 – June 2014
The Value Equation

Value = \frac{\text{Quality} + \text{Patient Experience} + \text{Functional Status}^* + \text{Convenient Access}}{\text{Event} + \text{Episode} + \text{Ongoing Care}}

Traditional Definition → \text{Value} = \frac{\text{Outcomes}}{\text{Cost}}

Cost Reduction
5 - 10% \text{ per case}

Cost Avoidance
10 - 15% \text{ of cases}

*Return to work and quality of life
Cleveland Clinic

Every life deserves world class care.