No Relevant disclosures
Consultant, Proctor - Thoratec, HeartWare
Research Support Thoratec (2012-3)

Acknowledge Michael Acker MD, for the gracious use of his slides
Focus on Economic/Finance

1. Review the evolving paradigm in Health Care Payments.
2. Review the changes in ECMO payment
3. Examine LVAD therapy cost/cost effectiveness.
4. What is your roadmap to quality and value?
## ECMO Valuation Has Changed

<table>
<thead>
<tr>
<th>Code</th>
<th>Glob</th>
<th>Short Descriptor</th>
<th>RUC RVW</th>
<th>CMS RVW</th>
</tr>
</thead>
<tbody>
<tr>
<td>33946</td>
<td>XXX</td>
<td>ECMO: initiation, veno-venous</td>
<td>6.00</td>
<td>6.00</td>
</tr>
<tr>
<td>33947</td>
<td>XXX</td>
<td>initiation, veno-arterial</td>
<td>6.63</td>
<td>6.63</td>
</tr>
<tr>
<td>33948</td>
<td>XXX</td>
<td>daily management, each day, veno-venous</td>
<td>4.73</td>
<td>4.73</td>
</tr>
<tr>
<td>33949</td>
<td>XXX</td>
<td>daily management, each day veno-arterial</td>
<td>4.60</td>
<td>4.60</td>
</tr>
</tbody>
</table>
ECMO Codes

• Grouped by type, age and approach
• Codes now increase the work value (RVU) of insertion, repositioning and removal as well as add-ons
  – Chimney graft for access, etc
• Separate the daily work (decreased)
• Limitations on concurrent billings
The bad news-
CMS finalized its intention to abolish the global period on October 31, 2014

More good news-
SGR is fixed!
90 Day Global

This is the most common designation for surgical procedures and prohibits billing for related services 1 day before and 90 days after the procedure since the global code for a procedure already contains the RVU value of the “typical” physician services provided during that period.

For example, this is a 90 day global:

33945 Heart Transplant

**Implications in practice expense, administrative burden and total payments concerning, and unclear at this point.**
Changes in the Healthcare Landscape & Why these changes matter to me

“Obama Care” - The Affordable Care Act

1. Expand health care coverage
2. Reform the delivery system, including insurance reform
3. Lower the overall costs of providing care; “bend the cost curve” by beginning to pay for QUALITY & VALUE, not episodes of care.
The Uninsured are decreasing
US Hospital & Insurer Earnings are Up

Source: Bloomberg
What is Value in Health Care?

“Achieving high value for patients must become the overarching goal of health care delivery, with value defined as the health outcomes achieved per dollar spent.”  
Michael Porter NEJM
What is Quality?

Juran's  Fitness for intended use.

Conformance:
- the degree to which a product characteristic meets preset standards.

• Reliability
- that the product will function as expected without failure;

Value for Price Paid?

• Features
- the extras that are included beyond the basic characteristics;

• Durability
- expected operational life of the product; and

• Serviceability

Deming states that the customer's definition of quality is the only one that matters. So, who is the customer?
Recognize what we provide and what we will be paid to provide

Service
Process
Skill
Technology
Quality of Life

Alleviate suffering
Specific goals
Recognize limitations
Before
During
After Therapy

Patient Experience

We must be thoughtful in what we do, who we do it to and when we stop.
Changes in the healthcare landscape will create a systematic focus on Heart Failure

There are a number of changes expected in the macro healthcare delivery landscape...

Increased number of covered lives, offset by
Increasing pressure on hospital margins given potential payor mix shift (e.g., Medicaid expansion)
  - Declining reimbursement and DSH payments
  - Payments models shifting from rewarding “volume” to rewarding “value” with centers of excellence
  - Increasingly costs sensitive consumer
  - Need to operate at “Medicare breakeven”

Consolidation into larger systems and networks
  - Up to 70% of hospital payments could be tied to one of 150 largest systems
  - Increasing alignment and employment of physicians within systems and networks

... As well as changes specific to heart failure management

**Hospital Readmissions Reduction Program**

Tracks Heart Failure, Acute Myocardial Infarction, Hip/Knee, COPD and Pneumonia 30-day readmissions
Charge capped at 3% of all DRG payments per hospital in FY2015,

**Hospital Value-Based Purchasing**

Incentive payments for providing high quality care or improving care after including AMI and HF Mortality
Funds for program collected by base operating DRG percent reduction of 1.0% for FY '13; Ramps up by FY'17 to 2%

1. [http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program.html](http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program.html)
**Most Hospitals are Expanding their VAD & ECMO Programs (or trying to).**

- There are now 139 DT Certified centers in the U.S.
- Hospitals who performed more than 10 VAD implants and heart transplants, 14-21 (67%) implanted more VADs than hearts
- Hospitals who performed less than 10 VAD implants and heart transplants, 17-12 (75%) also implanted more VADs than hearts
- Transplant volume is expected to stay the same or even decrease and can’t support hospital growth
- VAD volume has increased significantly in the past several years

*Source: CMS Medpar claims data from 2010, run in 2012*
Review of Financials

Revenue

Payments, including IME & GME

Direct Cost

Prices paid for billable services & supplies

Contribution to Overhead

Earnings to apply to overhead

+ Indirect Revenue

Funds not tied to specific patient stays, e.g., tobacco settlement funds, emergency access grants

- Indirect Cost

Costs not tied to specific patient stays, aka Overhead - building, equipment, admin, malpractice, utilities, advertising

Bottom Line

Gain/(Loss)

Funds available for investment/ expansion/ replacement & upgrades or losses to be subsidized
Payments = Cost to the other side of the money.

- Pro fee payments are procedure-specific
- Hospital payments aren’t
Pro Fee Coverage

- Procedural payment-unique operation in that follow-up daily care is billable

- Daily rounds
  - Day One
  - Acute
  - Less acute
  - Discharge day

- VAD interrogation

Varies depending on:
- LOS
- Number & type of procedure(s)
- Number of interrogations

2012 MPFS Final Rule RVUs (CY 2012 Addenda)
https://www.cms.gov/PhysicianFeeSched/downloads/Addenda.zip
Medicare payment basics

Hospital-specific base rate

- Indirect medical education
- Disproportionate share
- Regional wage rate adjustment
- Others

As a result:

- HUP rates are 61% higher
- PPMC rates are 38% higher
- Medicare payments are 17% higher at HUP than PPMC for the same procedure.

HUP - #8
PPMC - #185
University of Michigan - #24
New York-Presbyterian - #86
Massachusetts General - #97
Mayo St Mary - #150
Northwestern Memorial - #187
Medicare MS-DRG Payments Vary by Institution

FY 2013 CMS Median Payment for MS-DRG 1 ≈ $202,000
Medicare pays hospitals by MS-DRG

### Typical MCS MS-DRGs

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart or Heart/Lung Transplant</td>
<td>Implant total heart or internal VAD</td>
</tr>
<tr>
<td>Implant total heart or internal VAD</td>
<td>Remove and replace/repair external VAD</td>
</tr>
<tr>
<td>with MCC</td>
<td>wo MCC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECMO</td>
</tr>
<tr>
<td>Trach</td>
</tr>
<tr>
<td>Vent 96+ w O.R. procedure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>215</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace or repair component of implantable VAD</td>
</tr>
<tr>
<td>Implant BIVAD external</td>
</tr>
<tr>
<td>Insert temporary non-implantable extracorporeal circulatory device</td>
</tr>
<tr>
<td>Implant single ventricular (extracorporeal) external heart assist system</td>
</tr>
<tr>
<td>Repair heart assist system</td>
</tr>
</tbody>
</table>

MS-DRG 1 (higher payment) versus 2 depends on presence of at least one MAJOR co-morbidity
HF, VAD Patients Can Produce Positive Margins Through Due Diligence, Coding

High Complexity, Outlier VAD Cases Result in Higher Direct Costs, Extended LOS, Threatening Margins

Average Medicare Profit per Heart Failure Patient

FY 2012

Revenue per Case: $7,156
Direct Costs: $4,014
Contribution Profit: $3,143

Although many hospitals struggle with profitability of HF patients, initial evaluation of Medicare patients—comprising approximately 73 percent of the HF population—indicates a net profit of approximately $3000 per patient.

Average Medicare Profit per VAD Patient

2011, by ICD-9 code

Without Outliers: $21,471
With Outliers: $5,260

High complexity, extended LOS patients’ direct costs per case are 10% higher, drastically reducing VAD patient contribution margins.

VAD Case Profitability Dependent on Attention to Detail: VAD Billing and Coding

“The lifeline of the VAD program is Medicare reimbursement, so the hospital’s billing staff must understand the complexities of Medicare coding for all of the equipment, supplies, and services associated with implanting the VADs and taking care of the patients, and some larger programs should consider hiring dedicated billing staff that work only for the VAD program.”

Dr. Nahush A. Mokadam
Mechanical Circulatory Support Program Director at University of Washington Medical Center

Capturing MCCs critical to financial success

- MS-DRG 1 (higher payment) or MS-DRG 2 (lower payment)?
  - depends on presence of at least one “Major Complication and/or Co-morbidity” (MCC)
- MCCs
  - Medicare-defined list
  - Changes every year
  - Must be SECONDARY to primary dx
    - A co-morbid condition
    - NOT an exacerbation of the primary dx
  - Usually describes an acute manifestation of disease rather than chronic disease states

Best Practice: Create a process to review all MS-DRG 2 assignments prior to claim submission
### What are the common VAD MCCs?

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>N</th>
<th>% of Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>785.51</td>
<td>Cardiogenic shock</td>
<td>654</td>
<td>16.6%</td>
</tr>
<tr>
<td>428.23</td>
<td>Acute on chronic systemic heart failure</td>
<td>574</td>
<td>14.5%</td>
</tr>
<tr>
<td>518.81</td>
<td>Acute respiratory failure</td>
<td>327</td>
<td>8.3%</td>
</tr>
<tr>
<td>584.5</td>
<td>Acute kidney failure with lesion or acute necrosis</td>
<td>241</td>
<td>6.1%</td>
</tr>
<tr>
<td>570</td>
<td>Acute and subacute necrosis</td>
<td>10</td>
<td>0.4%</td>
</tr>
<tr>
<td>428.43</td>
<td>Acute on chronic combined ischemic heart failure</td>
<td>7</td>
<td>4.0%</td>
</tr>
<tr>
<td>038.9</td>
<td>Unspecified septicemia</td>
<td>12</td>
<td>3.6%</td>
</tr>
<tr>
<td>995.92</td>
<td>Severe sepsis</td>
<td>6</td>
<td>3.4%</td>
</tr>
<tr>
<td>486</td>
<td>Pneumonia, organism unspecified</td>
<td>18</td>
<td>3.2%</td>
</tr>
<tr>
<td>427.41</td>
<td>Ventricular fibrillation</td>
<td>17</td>
<td>2.7%</td>
</tr>
<tr>
<td>785.52</td>
<td>Septic shock</td>
<td>86</td>
<td>2.2%</td>
</tr>
<tr>
<td>348.30</td>
<td>Encephalopathy, unspecified</td>
<td>71</td>
<td>1.8%</td>
</tr>
<tr>
<td>995.91</td>
<td>Sepsis</td>
<td>66</td>
<td>1.7%</td>
</tr>
<tr>
<td>056.01</td>
<td>Encephalomyelitis due to rubella</td>
<td>57</td>
<td>1.4%</td>
</tr>
<tr>
<td>262</td>
<td>Other severe protein-calorie malnutrition</td>
<td>54</td>
<td>1.4%</td>
</tr>
<tr>
<td>507.0</td>
<td>Pneumonitis due to inhalation of food or vomitus</td>
<td>53</td>
<td>1.3%</td>
</tr>
<tr>
<td>427.5</td>
<td>Cardiac arrest</td>
<td>50</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

Medical records defines cardiogenic shock as:
- Inotrope dependence
- Cardiac index <2.2

Source: FY 2013 IPPS final rule MedPAR file (contains all hospital inpatient claims for Medicare beneficiaries from FY 2011)
## Hospital-specific Medicare MS-DRG Payment Amounts

### Approximate Payments from Medicare by MS-DRG

<table>
<thead>
<tr>
<th>MS-DRG</th>
<th>Description</th>
<th>2014 Pmt</th>
<th>2013 Pmt</th>
<th>Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heart transplant or implant of heart assist system with major complication or co-morbid condition (MCC)</td>
<td>$225,191</td>
<td>$242,283</td>
<td>- $17,092</td>
</tr>
<tr>
<td>2</td>
<td>Heart transplant or implant of heart assist system without MCC</td>
<td>$136,387</td>
<td>$129,503</td>
<td>+ $6,884</td>
</tr>
<tr>
<td>3</td>
<td>ECMO or tracheotomy with MV 96+ hrs or PDX except face, mouth &amp; neck w major O.R.</td>
<td>$157,210</td>
<td>$165,095</td>
<td>- $7,885</td>
</tr>
<tr>
<td>215</td>
<td>Other heart assist system implant</td>
<td>$132,027</td>
<td>$131,277</td>
<td>+ $750</td>
</tr>
</tbody>
</table>

- Payments for MSDKGs 1 & 3 are lower now than a year ago
- VAD without MCC but with ECMO = MSDKG 3 rather than MSDKG 2
- High cost cases may qualify for outlier payments
Financial profile for patient “DL”
*ECMO case*

A higher payment from another payor or MS-DRG improves the finances dollar-for-dollar.
**ECMO**

**ECMO as of 1/16/2015**

<table>
<thead>
<tr>
<th>Unit of Service:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>26</td>
</tr>
</tbody>
</table>

**Revenues:**

<table>
<thead>
<tr>
<th>Gross Revenues:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicare</td>
<td>5,025,279</td>
</tr>
<tr>
<td>Medicaid</td>
<td>1,043,420</td>
</tr>
<tr>
<td>Medicare Capitation</td>
<td>2,131,549</td>
</tr>
<tr>
<td>Commercial Capitation</td>
<td>-</td>
</tr>
<tr>
<td>Managed Care / Commercial</td>
<td>6,345,045</td>
</tr>
<tr>
<td>Government Insurance</td>
<td>-</td>
</tr>
<tr>
<td>Self Pay</td>
<td>297,032</td>
</tr>
<tr>
<td>Workman’s Comp</td>
<td>-</td>
</tr>
<tr>
<td>Other</td>
<td>461,634</td>
</tr>
<tr>
<td><strong>Total Gross Revenues</strong></td>
<td>15,303,959</td>
</tr>
<tr>
<td><strong>Gross Revenue/Case</strong></td>
<td>$ 588,614</td>
</tr>
</tbody>
</table>
### Net Revenues:

<table>
<thead>
<tr>
<th>Service</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicare</td>
<td>1,094,644</td>
<td>21.8%</td>
</tr>
<tr>
<td>Medicaid</td>
<td>37,132</td>
<td>3.6%</td>
</tr>
<tr>
<td>Medicare Capitation</td>
<td>429,486</td>
<td>20.1%</td>
</tr>
<tr>
<td>Commercial Capitation</td>
<td>-</td>
<td>0.0%</td>
</tr>
<tr>
<td>Managed Care / Commercial</td>
<td>4,048,436</td>
<td>63.8%</td>
</tr>
<tr>
<td>Government Insurance</td>
<td>-</td>
<td>0.0%</td>
</tr>
<tr>
<td>Self Pay</td>
<td>50</td>
<td>0.0%</td>
</tr>
<tr>
<td>Workman’s Comp</td>
<td>-</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other</td>
<td>5,976</td>
<td>1.3%</td>
</tr>
<tr>
<td><strong>Total Net Revenues</strong></td>
<td>5,615,724</td>
<td>36.7%</td>
</tr>
</tbody>
</table>

Net Revenue/Case: $215,989

---

### Costs:

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
<th>Per Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Variable</td>
<td>2,242,694</td>
<td>86,257</td>
</tr>
<tr>
<td>Direct Fixed</td>
<td>279,782</td>
<td>10,761</td>
</tr>
<tr>
<td><strong>Total Direct Expenses</strong></td>
<td>2,522,476</td>
<td>97,018</td>
</tr>
</tbody>
</table>

Direct Contribution Margin: $3,093,248 (118,971 per case)

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
<th>Per Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Indirect Costs</td>
<td>2,016,855</td>
<td>77,571</td>
</tr>
<tr>
<td><strong>Net Income (Loss)</strong></td>
<td>1,076,393</td>
<td>41,400</td>
</tr>
</tbody>
</table>
Drivers of Financials- ECMO

Hospital
- Equipment Cost
- Personnel
  - Perfusion vs Nurse based
  - Team
- Volume

Outcomes
- Success
- Failure
  - How Long???
5 Key Drivers of VAD Program
Financial Viability - RPMMS

R. Are you managing Heart Failure Readmissions to avoid any readmission penalty impact to your hospital?

P. Is your Commercial Payer mix >50% and is your commercial payer reimbursement >$430,000?

M. Is your initial VAD implant MS-DRG assignment >90% MS-DRG 001?

M. Is your 30 day Mortality at <9% for your DT population?

S. Is your median LOS <18 days?
#1: Is your median LOS <18 days?

The Advisory Board shows a break-even point for a hospital with a $167k MS-DRG 1 payment at 17.5 days.
Payor Mix is critical
Increasing Commercial payer profit - for now.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>$248,625</td>
<td>$267,158</td>
<td>$263,444</td>
<td>$307,480</td>
<td>$377,472</td>
<td>$436,530</td>
<td>$430,431</td>
<td>$543,433</td>
</tr>
<tr>
<td>Medicaid</td>
<td>$260,635</td>
<td>$205,597</td>
<td>$277,358</td>
<td>$254,059</td>
<td>$218,536</td>
<td>$128,967</td>
<td>$234,545</td>
<td>$204,610</td>
</tr>
<tr>
<td>Medicare</td>
<td>$260,697</td>
<td>$240,790</td>
<td>$263,586</td>
<td>$262,031</td>
<td>$248,364</td>
<td>$223,389</td>
<td>$231,331</td>
<td>$243,001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>152%</td>
<td>163%</td>
<td>163%</td>
<td>177%</td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>84%</td>
<td>63%</td>
<td>85%</td>
<td>81%</td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>90%</td>
<td>91%</td>
<td>86%</td>
<td>93%</td>
<td></td>
</tr>
</tbody>
</table>

Note: Data may not be statistically significant – applicable for trending
Hospital economics from inpatient bill reviews: All-payer average still shows profit, despite all other changes

Note: Data may not be statistically significant – applicable for trending
Hospital Incentives

HA Condition

Readmission

VBP penalties

VBP Rewards
Re-admission isn’t just a VAD problem - HF Re-admission

<table>
<thead>
<tr>
<th>Any Re-hospitalization</th>
<th>Total N(%)</th>
<th>NYHA Stage III N (%)</th>
<th>NYHA Stage IV N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>3,871 (23)</td>
<td>3,871 (32)</td>
<td>0</td>
</tr>
<tr>
<td>Yes</td>
<td>12,913 (77)</td>
<td>8,246 (68)</td>
<td>4,665 (100)</td>
</tr>
</tbody>
</table>

- 77% of all patients (NYHF III and IV combined) were re-hospitalized within 2 years following the index heart failure hospitalization
- 100% of NYHF IV patients were re-hospitalized within 1 year following the index hospitalization (by definition of Stage IV)
- The majority of NYHF III patients (68%) were re-hospitalized within 2 years following the index hospitalization

2010-2013 US Medicare 5% Standard Analytical Files (SAF)
Value-based payments will have a significant impact to providers’ revenue streams

Hospitals and health systems are facing 7% of their total MS-DRG based payments at risk within the next 2 years in addition to any commercial pay for performance revenues in play

<table>
<thead>
<tr>
<th></th>
<th>FY2013</th>
<th>FY2014</th>
<th>FY2015</th>
<th>FY2016</th>
<th>FY2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Based Purchasing (At Risk)</td>
<td>1.0%</td>
<td>1.25%</td>
<td>1.5%</td>
<td>1.75%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Value Based Purchasing (Bonus)¹</td>
<td>0.8%</td>
<td>1.0%</td>
<td>1.2%</td>
<td>1.4%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Readmission Payment (At Risk)</td>
<td>1.0%</td>
<td>2.0%</td>
<td>3.0%</td>
<td>3.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Hospital Acquired Conditions</td>
<td>N/A</td>
<td>N/A</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Range of Impact²</td>
<td>2.8%</td>
<td>4.25%</td>
<td>6.7%</td>
<td>7.15%</td>
<td>7.60%</td>
</tr>
</tbody>
</table>
Value-based payments will have a significant impact to providers’ revenue streams

**FOR EXAMPLE:** A 1,250 bed Midwest academic hospital, with $280M in Annual Medicare Inpatient Payments has an estimated **$79.8M** risk/opportunity in the 5 years between 2013 and 2017 from PPACA quality related reimbursement

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Value Based Purchasing (At Risk)</td>
<td>2.8M</td>
<td>3.5M</td>
<td>4.2M</td>
<td>4.9M</td>
<td>5.6M</td>
<td>21M</td>
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<tr>
<td>Value Based Purchasing (Bonus)</td>
<td>2.2M</td>
<td>2.8M</td>
<td>3.4M</td>
<td>3.9M</td>
<td>4.5M</td>
<td>16.8M</td>
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<tr>
<td>Readmission Payment (At Risk)</td>
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<td>5.6M</td>
<td>8.4M</td>
<td>8.4M</td>
<td>8.4M</td>
<td>33.6M</td>
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<tr>
<td>Hospital Acquired Conditions</td>
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<td>N/A</td>
<td>2.8M</td>
<td>2.8M</td>
<td>2.8M</td>
<td>8.4M</td>
</tr>
<tr>
<td>Range of Impact</td>
<td>7.8M</td>
<td>11.9M</td>
<td>18.7M</td>
<td>20M</td>
<td>21M</td>
<td>79.8M</td>
</tr>
</tbody>
</table>
Hospital Value-Base Purchasing Program

Hospital Value-Based Purchasing

The Fiscal Year 2015 Hospital Value-Based Purchasing (Hospital VBP) Program adjusts hospitals’ payments based on their performance on four domains that reflect hospital quality: the Clinical Process of Care Domain, the Patient Experience of Care domain, the Outcome domain, and the Efficiency domain. The Total Performance Score (TPS) is comprised of the Clinical Process of Care domain score (weighted as 20% of the TPS), the Patient Experience of Care domain score (weighted as 30% of the TPS), the Outcome domain score (weighted as 30% of the TPS), and the Efficiency domain score (weighted as 20% of the TPS).

The following data points are included in each data set:

A measure/dimension score
COSTS
Three primary cost factors

1. **Device cost** — *can vary widely*
   - Heartmate II and Heartware $\approx 80$–$90K$ per kit
   - Syncardia $\approx 100K$
   - R-VAD $\approx 34K$ (CentraMag)
   - ECMO — minimal device cost vs **Impella/Tandem**

2. **Length of Stay** — *varies widely*

3. **Site of Stay** — ICU days versus Med/Surg days
   - SICU days are twice as costly
Daily cost of the five basic phases of VAD care

- Implant day literally “off the charts”
- Pre-Op 1
  - Cath Lab (optional)
- Post-Op 1
  - SICU
- Pre-Op 2
  - CCU or Med/Surg
- Post-Op 2
  - Med/Surg

Direct Cost per Day

Day of Stay
Quality has a direct impact on financial viability due to decreased LOS, decreased ICU days, fewer drugs, fewer OR returns....
INDEX RESULTS BY VAD VOLUME 2013
We manage what we measure.

Dashboard Metrics
Quality & Safety
- Implant Volume
Operations
- Cases transferred in
- Cases on ECMO
- Outpatients tracked
- Discharge Status
  - Length of stay
    - Total
    - Post-Op
    - SICU
Financial
- Payer mix
- % cases MSDRG 1
- # cases MSDRG 2
- Market share
Keys to Success

- Decrease risk through:
  - Appropriate patient selection
  - “Right-time” implant
    - Intermacs II – IV rather than I
  - Document to achieve appropriate reimbursement
    - MS-DRG 1 versus 2
    - Prospective coding and review with clinicians
    - Daily charges for care through use of templates
  - Improve payor mix by outreach and affiliation strategy
  - Consider ECMO for BTD/cardiogenic shock cohort
  - DME for post op care
  - Improve quality-use of dashboards for monitoring of financial and quality metrics
    - Fewer total days, ICU days, drug, and complications
    - Minimize re-hospitalizations for HF, GI bleeding, thrombosis
    - Discharge to lower cost rehab centers when appropriate
Thank You