Background and Rationale

Unsustainable escalation of expenditures and new legislation has increased demand for innovative approaches to understand and control costs while improving the value and quality of health care. Value is measured as health outcomes per dollar expended. In order to measure patient outcomes, it is necessary to understand the true cost of delivering care.

What is TDABC?

Unlike current methodologies, which are departmentalistic and lacking a true understanding of true costs, TDABC is a managerial accounting approach that measures the actual cost of delivering care to a patient. It allows almost all resources (personnel, equipment, facility and indirect/support costs) to be directly attributed to the organization’s output of patient care services.

Methods

TDABC and RCC accounting methodologies for vascular interventional radiology (VIR) port placement procedures (PPP) were compared with the goal of improving the accuracy of cost information associated with patient care. Value stream process maps were developed for VIR-PPP care cycles, including sequence and duration of clinical and administrative activities and corresponding resource usage. Capacity cost rates (cost per minute) for all resources (personnel, space & equipment, consumables and indirects) were calculated using organizational cost data.

Total Cycle Cost using TDABC Methodology

<table>
<thead>
<tr>
<th>Step</th>
<th>Personnel Cost ($)</th>
<th>Space and Equipment Cost ($)</th>
<th>Consumables Cost ($)</th>
<th>Total Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to Day of Procedure</td>
<td>$23.99</td>
<td>$47.03</td>
<td>$8.77</td>
<td>$91.79</td>
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<tr>
<td>Preparative Intraoperative</td>
<td>$313.34</td>
<td>$108.50</td>
<td>$37.09</td>
<td>$558.93</td>
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<tr>
<td>Postoperative Recovery</td>
<td>$50.00</td>
<td>$2.21</td>
<td></td>
<td>$52.21</td>
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<tr>
<td>Indirect Costs</td>
<td></td>
<td></td>
<td></td>
<td>$179.30</td>
</tr>
<tr>
<td>TOTALS</td>
<td>$461.91</td>
<td>$322.60</td>
<td>$681.47</td>
<td>$1,265.98</td>
</tr>
</tbody>
</table>

Primary Care Value Stream Map: Time-Driver Activity-Based Cost Map: VIR Port Placement (August 2014)

Results

Value = Health Outcomes
Cost of delivering the outcomes

Total Cost = $1,056.74

RCC v. TDABC Cost Comparison

The TDABC process calculated costs for VIR-PPP to be 6% of current applied organizational costs using the RCC methodology.

Conclusions

Through rapid deployment of this innovative methodology, we learned how to design, plan, and carry out the TDABC financial analysis process. The TDABC cost accounting approach allowed better understanding of true costs of the VIR-PPP healthcare service.

Future Application of TDABC

Health systems that embrace value-based delivery models will be better equipped to address challenges and opportunities in the new healthcare landscape. The TDABC process offers many potential advantages when approaching:

- Bundled payment implementation
- Negotiation of risk-adjusted managed care contracts with insurance payers and large employers in the local and regional market
- Population health management
- Process improvement, resource optimization, industry benchmarking and cost control and care standardization
- Recognition and promotion of specific unique services offered by our institution

We are commencing use of TDABC in other defined episodes of illness across our organization as well as in unique situations of long-term continuum of care for chronic conditions such as diabetes and mental illness.

References


Time-Driven Activity-Based Cost Accounting Methodology Employed to Transform Vascular Interventional Radiology Service at a Large University Academic Medical Center

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