**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. Value = Health Outcomes / Cost of delivering the outcomes

**What is TDABC?**

Unlike current methodologies, which are department-based and designed for fee-for-service models, Time-Driven Activity-Based Costing (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.

**References**


**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.

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**TDABC Process Overview**

1. Identify medical condition and patient population to examine
2. Define scope of the "patient care cycle," including time period and services provided
3. Develop process maps for each activity in care cycle; identify resources utilized in each step
4. Obtain time estimates for each process step using EHR time stamps and observation
5. Estimate cost of each resource
6. Determine the practical capacity of each resource and calculating capacity cost rate (CCR)
7. Multiply resource CCR by process time to compute total costs over care cycle

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**VIR-PPP TDABC Value Stream Map**

Time-Driven Activity-Based Cost Map: VIR Port Placement (August 2014)

**RCC v. TDABC Cost Comparison**

The TDABC process calculated costs for VIR-PPP to be 66% of current adjusted organizational costs using the RCC accounting methodology.