

2020 TMF Abstracts

Category 1- Finance

ABSTRACT C1-A

ANTICIPATED OUTCOMES OF USING EX-VIVO LUNG PERFUSION (EVLP) ORGANS

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Purpose: We assessed the cost savings generated by additional organ availability due to utilizing ex-vivo lung perfusion organs in comparison to existing lung transplantation practice. By increasing organ availability and transplanting at lower lung allocation score (LAS), healthcare costs could be reduced.

Method: We developed a Markov model using Monte Carlo microsimulation to obtain cost estimates for 6, 12, 36, and 60-month timeframes for patients starting from the time of listing for lung transplantation. We included two arms, one for usual lung transplantation practice and an intervention arm allowing for 50% increased organ availability with acceptance of EVLP organ donation. Health states were stratified by four LAS categories: <40, ≥40 to <60, ≥60 to <80, and ≥80. Patients were allowed to move between LAS categories prior to transplantation. Model parameters, such as probabilities and costs, were obtained from existing literature on lung transplantation and internal lung transplant registries, supplemented by additional cost data from our practice. We simulated 100,000 hypothetical patients, with the model representing the average adult patient listed for a first lung transplant. Costs were valued in 2018 US Dollars. Future costs were discounted at 3% annually.

Results: Mean costs of EVLP after 6 months is \$143,997 compared with standard of care cost of \$113,859, after 12 months is \$190,081 compared with standard of care cost of \$163,759, after 36 months is \$229,514 compared with standard of care \$216,430, and after 60 months is \$225,339 compared with standard of care cost of \$218,386. The use of EVLP organs increases the transplant rates and decreases the mortality in the transplant list (10.1% in the EVLP group

vs 14.1% in the standard group). There was a trend towards longer survival time after transplant in the EVLP group vs standard of care (mean of 45.7 vs 45.2 months respectively). Time spent awaiting transplantation was reduced in the EVLP group at each time point compared with standard of care. There was a higher cost using EVLP organs compared to standard of care, but decreases over time. The cost difference was minimal at LAS scores 60 to <80 and ≥80 at the 36 and 60-month time point.

Conclusions: Use of EVLP organs for transplantation is expected to increase transplant rates; reduce time on the wait-list and wait-list mortality; and might increase survival time after transplant. The cost of using EVLP lungs is higher compared with existing lung transplantation practices. The difference of costs is minimal at higher LAS.

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ABSTRACT C1-B

TRANSPLANT BILLING OPTIMIZATION

Beth Schenkel, UIHC Organ Transplant Center, Iowa City, Iowa

Problems identified by third party survey of transplant billing process completed in 2018:

- Fragmented responsibilities and expertise
- Inconsistent workflows
- Incorrect routing logic
- Duplication of effort
- Lack of communication

Recommendation:

Develop a transplant billing task force and governance committee to **redesign** key transplant billing processes and **improve coordination** of all transplant revenue cycle functions, including coding and financial reporting of charges

Solutions:

1. Structured communication strategy

- Agenda & Cadence
- Participants
- Tools & Sustainability

Governance structure

The Oversight Committee implemented a dedicated Transplant Governance structure on 12/5/2018 to serve as the decision-making body for long-term Transplant performance improvement consisting of the below groups.

- Core team structure – working group
- Operational Process Development Committee - decision making group for issues the core group could not resolve
- Transplant Leadership Committee – to be used when hospital leadership support would be needed

Immediate Gains

- Terms were built for a DT VAD bundled episode.
- Roles and responsibilities were established for terming the transplant guarantor, bundled episode, and transplant coverage.
- Transplant credit work queue deep dive was able to be done, issues causing credits resolved.
- New billing situations were able to be discussed and established.

- Finance joined the meeting to regularly review the charges posted to the Medicare cost report, increasing confidence in the data collected.

2. System build – overview

- Gap Analysis – all pain points reviewed.
- The entire workflow from start to finish was mapped out with all issues listed.
- Once agreement was reached, the build began.
- Training documentation was developed and roles were assigned to keep the material updated.

Example – SAC fee workflow

Issues

- SAC fee creation needed a higher level of consistency.
- Unusual transplant combinations required review.
- This was a manual process done by coding department.

Resolution

- SAC fee was set to drop automatically with OR workflow.
- A charge review work queue was created for the financial counselors to verify the organ charge dropping matched the service. Their workflow includes making corrections if needed.

Controls & Outcome

- Revenue guardian work queue was created to flag any transplant accounts without a SAC fee.
- Reporting workbench was used to confirm all transplants have SAC fees.
- Communication issues resolved, charges are now correctly reflecting services.
- Charges are now dropping timely, within 7 days of transplant.

Beth Schenkel

I presented this material at Epic XGM in May 2019.

ABSTRACT C1-C

USE OF SIX SIGMA TO IMPROVE THE HLA BILLING PROCESS RESULTING IN SUBSTANTIAL RECOVERY

William Maixner, MHA, VCU Health Hume-Lee Transplant Center, Richmond, VA

Purpose: The tissue-typing lab (HLA) is mission critical for our solid organ and bone-marrow operations. Financial and operational sustainability is imperative to ensure long-term success of our transplant center. After implementation of a new administrative service line structure, a deep dive was conducted on HLA finances to identify opportunities for improvement. It was noted that from FY 16 to FY 18, there was a large decrease in net income. Our goal was to use six sigma processes to identify the issue, implement changes, and sustain outcomes.

Method: A six sigma project was created titled, “Improvements in Revenue Collection of the HLA Lab”. The six sigma methodology was followed – Define, Measure, Analyze, Improve, and Control.

A team was created to include HLA lab personnel and leadership, transplant center leadership, and financial experts.

Examples of process included process mapping (SIPOC), prioritizing, and cause and effect diagrams (Figures 1 and 2).

Figure 1

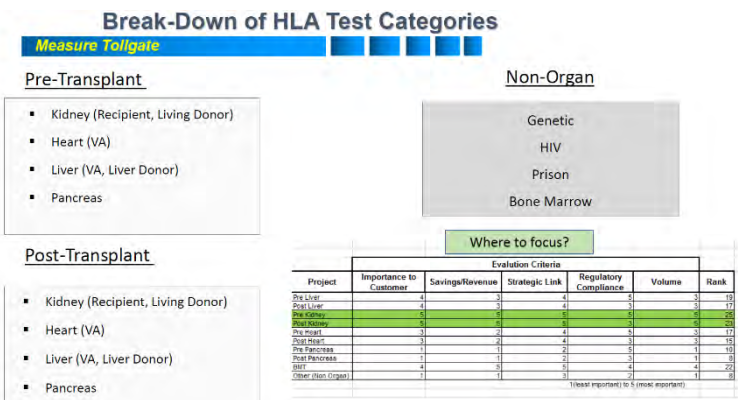
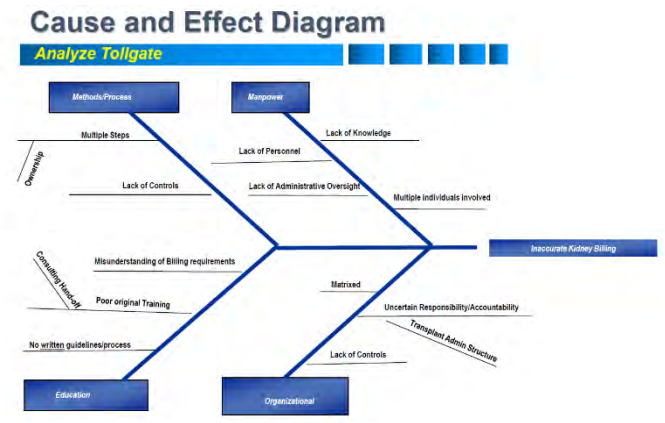


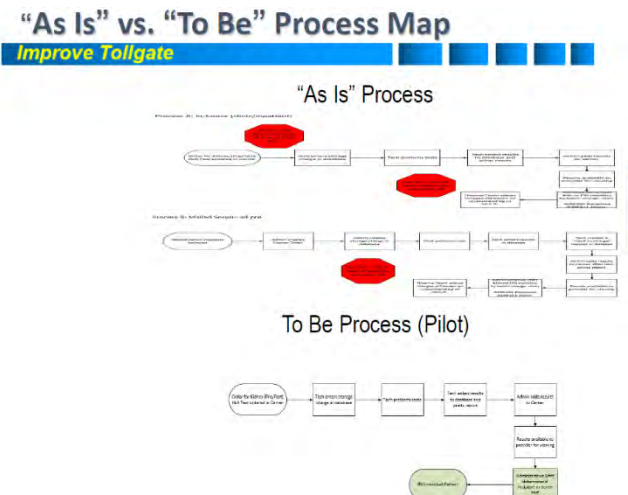
Figure 2



Results: Through use of six sigma methodology, the team was able to identify that renal billing was the major contributor to difference in revenue from FY 16. After detailed investigation, the team found that after changes made in late FY 15, all kidney tests (including pre commercial and post) were not being billed due to misunderstanding of billing rules. Liver and heart tests, though smaller volume, were billed correctly.

In mapping our billing processes, we were able to cut certain steps and adjust those with the largest potential impact. In doing so, we altered our renal billing process to appropriately bill and maximize revenue opportunity (Figure 3).

Figure 3



Based on initial realization and annualization, we estimate realization of up to \$2 million in previously missing revenue (Figure 4).

Figure 4

HLA Laboratory Billing Process Enhancement			
		Kidney Charges Only 8 months actual	Annualized
Post-Transplant Charges- Amount Estimated at 10% of Total Charges*			
		\$ 797,067	\$ 1,195,601
Pre-Transplant Charges Amount		\$ 7,103,607	\$ 10,655,410
Charges written-off to Institutional Account (Not Billed)**		\$ 7,900,674	\$ 11,851,011
Post-Transplant			
	Estimated Payment (25% liq; All Payors)	\$ 199,267	\$ 298,900
Pre-Transplant: Charges			
	Medicare Portion 73%	\$ 5,185,633	\$ 7,778,449
	All Other Payors Portion 27%***	\$ 1,917,974	\$ 2,876,961
Pre-Transplant: Estimated Payments (historical reimbursement rates)			
	All Other Payor Portion 27% (60% Liq)	\$ 1,150,784	\$ 1,726,176
Total Estimated Annual Net Increase (Non-Medicare + All Payor)			\$ 2,025,077
*Estimate correlates with actual charge data from January and February 2019		** Adjusted for \$700K to account for full February 2019 month	*** Split 73/27 Based on Medicare Usable Organs 2018

Conclusion: Overall, the use of six sigma was important to identifying and improving the billing practices in the HLA lab. New work flows include continued effort and attention in constantly evaluating and improving our HLA lab business practice.

Importantly, due to the team-based framework, HLA leadership and transplant program administration teams are jointly and fully engaged. Our next steps will include the creation of a dedicated HLA lab finance team, application of the six sigma process to HLA billing of bone-marrow transplant tests, and continued development of financial best-practices.

Reflecting on the entire project, there is recognition that similar six sigma methodologies should be applied on a broader scale within our transplant center.

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