



APPLYING SUPPLY CHAIN
BEST PRACTICES IN THE
PERIOPERATIVE SETTING:
A WORK IN PROGRESS



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About Surgical Directions LLC

- We are dedicated exclusively to improving perioperative and anesthesia performance
- Surgical Directions is a collaborative team made up of:
 - Clinically active anesthesiologists, surgeons and CRNAs
 - Perioperative nurse executives
 - Perioperative business strategists, analysts and managers
- We have a depth of expertise and are nationally recognized for operating room management, best practice standards, supply cost reductions and physician leadership development
- We have extensive clinical and operational knowledge providing time-tested, practical recommendations tailored to our clients' cultural and market environments
- We have exceptional expertise in producing meaningful, time-tested organizational change – **over 520+ hospitals!**

ASSESSING YOUR SUPPLY CHAIN







Pre-Site Analysis

1. Fiscal year (defined)
2. Last inventory count and inventory valuation (date and raw data preferred)
3. Usage report by month for prior twelve months (raw data preferred)
4. GPO and Distributor – any associated tier defined tier levels
5. OR and General Ledger Software Applications (name and version)
6. Capitated implants – (written document on included items and participating vendors)
7. Consigned items and % of consigned goods
8. Reprocessing % and items reprocessed
9. Perpetual or periodic inventory
10. Number of annual inventory turns
11. Key Contacts
 - OR Director
 - OR Buyer
 - Materials Manager
 - Materials Director
 - VP of Finance



Score Card

How do we measure if our clients have supply chain opportunities....

Metric	To Be a Successful Client – Benchmarks	Rating
Par Levels	Par levels in place and effectively maintained	
Materials Location	All materials in one central location; near OR's	
Preference Cards	Per Physician: Accuracy: 90%<	
Inventory Turns	10 - 12	
Inventory System	Perpetual	
Materials Governance	Value analysis committee in place & effective	

Cost & Contribution Per Case Calculations

Request Raw Procedure Data:

1. Procedure date
2. Procedure name
3. Surgeon Name
4. Procedure costs broken down into as many categories as possible. We want to filter as close to just supply costs/case as we can.
5. Department/Service Location



On-Site Analysis:

1. Preference Cards/Pick Lists
2. All supply locations
3. Case pick and pull
4. PAR Levels
5. Implants
6. Suture
7. Mesh – Bio and Synthetic
8. Procedure packs, gowns and drapes
9. Surgical Gloves
10. Endomechanicals
11. Duplication of products
12. Waste



Drill Down

Level 1	Level 2	Level 3
Top 10 Surgeons:	Top 5 Procedures – volume	Top 5 procedures - cost
Reprocessing:	Blades, bits & burrs	Compression sleeves/Endomechanicals
GPO contracts:	Compliance percentage – pricing tier – distribution %	Comparative pricing against benchmarks
Consignment:	Implants	Instrumentation/Suture
Consolidation of supply locations:	Remove supplies from OR's	Just in time delivery (JIT) - Stockless
Reduction in PAR's:	PAR's matched to utilization to achieve 10 – 12 inventory turns	Kanban – 1 st in 1 st out FIFO vs. LIFO or FISH
Tracking Systems:	Instrumentation	Bar Code Supply Tracking/Charging

CASE STUDY EXAMPLE – USA HOSPITAL

Supply Chain - Findings

- Materials Management support
 - 16 FTEs dedicated by Materials Management in support of OR supplies
 - Order sheets: effective format and utilization of order sheets leading to limited inventory levels and appropriate order placement
 - Stocking: daily review and reorder of OR supplies creates efficient levels of OR inventory
- Inefficient and ineffective deployment of Pyxis machines
 - Excessive deployment of machines with inappropriate contents in the locations they have been implemented
 - Most machines experience poor compliance leading to ineffective reports and little useful information due to multiple factors
 - Cabinet contents create little incentive for staff compliance
 - Cabinet malfunctions delay pulling of supplies
 - Potential urgency of product leads to lack of 'pushing button'

Supply Chain - Findings

- Preference Cards
 - Preference cards are incorrect. They are pulling things that are not needed for surgery. They have a lot of returned items that have to be credited back to the OR. For example, Dr. House's orthopedic total joint returned items amount of \$1,287.37.
 - Next 3 cases were Dr. Welby's. A lot of returned items but small \$ amounts. 6.87 – 7.03. In a course of a day that adds up to a lot of extra money
- Action Plan
 - Set up a value analysis committee.
 - Oversee all of the perioperative purchasing practices.
 - Educate OR and materials management staff on appropriate par levels in the OR and the store room
 - Oversee clinical operations as well
 - Develop a materials products request form
 - Develop a longitudinal tracking form that has outcome measures and risks associated
 - Look into consignment of all the Synthesis implants
 - Look at the Biomet cortical screws to see if they can get them removed from the system and replaced by Synthesis (currently doing a Synthesis trial)
 - Nurse Jane will speak with Dr. House and his PA to invite them to participate within the committee

Supply Chain - Findings

- Inaccurate preference cards
 - Create inefficiency in case picking with incorrect supplies pulled for cases
 - Create difficulties in documenting cases and ensuring appropriate charge capture
 - Typically leads to excessive levels of wasted products (opened and unused)
 - Unable to document or quantify potential waste while on site due to limited level of engagement
 - Create need to stock additional/excessive products in the room creating additional unnecessary inventory levels
 - Products stocked in room to avoid upsetting surgeons by circulator leaving the room in search of needed supplies from the core
- Creating and maintaining accurate preference cards is **CRITICAL**

Follow Your Case Carts



Supply Chain Management - Findings

- Variety of case picking strategies depending on OR location
 - Case carts vs. room carts, hall carts and multiple supply sites etc.
 - Overall this is a duplicative process in each area leading to inefficient inventory levels vs. product availability when needed
 - Sterile processing within specific departments provides for quick turnaround of items as well as appropriate levels of instruments, thus minimizing delays





Supply Chain - Findings

- Sterile Processing
 - Substantial need for investment in new equipment/infrastructure in the North Tower to ensure the ability to continue to meet the demands of the OR's
 - Challenges
 - Difficult to successfully recruit and train qualified and competent individuals in sterile processing
 - Additional burden in volume and complexity of instrument sets increasing the demands on productivity
 - Supply expense is continually a challenge with little ability to impact expense as CPD simply purchases what is requested

Supply Chain - Findings

- Sterile Processing (continued)
 - Successes
 - Competent and highly capable staff can perform all tasks within the departments
 - Manager, Supervisor, and Coordinator structure creates additional expertise during shifts and can actively support OR needs
 - Strong collaboration between CPD and OR management and staff
 - Utilization of SPM to facilitate instrument assembly and provide data for training and staff education
 - Opportunities
 - New custom pack contract and implementation should reduce supply expense if implemented appropriately
 - Custom pack rule: contents limited to items costing <\$15
 - Improvements in preference cards/picklists can create additional efficiencies in case picking

Supply Chain - Findings

- Value Analysis Teams
 - Created at a service line level with physicians chairing the meetings
 - Perception by several individuals that physician chairs approve all products in order to avoid confrontation by peers
 - Teams lack guidance on objective criteria to 'score' products to make entry decisions






Supply Chain - Findings






- SurgiTrack
 - Implementation is being investigated in specific areas
 - Picklist accuracy necessary for effective implementation
 - Prior to moving forward, detailed analysis related to potential labor savings is necessary due to efficient productivity already in place in Sterile Processing
- Unitized delivery systems can further reduce inventory on hand, reduces touch points and streamlines case pick and prep

Final Report


Supply Chain Ratings: USA Health System vs. Benchmarks

Metric	Benchmark	USA Observations	Rating
Just in Time inventory	<p>Perpetual Inventory or hybrid perpetual inventory model</p> <p>10-12 Annual Turns</p> <p>Optimal PAR levels established based upon historical usage with adequate 'safety' stock for transport/out-of-stock provision</p> <p>Obsolescence and expired items </= 5% of total spend</p>	<ul style="list-style-type: none"> General ledger application is Oracle. A two-way interface/perpetual system has not been achieved. Supplies are stored in a BHS warehouse. PAR levels can be further reduced with increased scrutiny and compliance. Supply Chain VP is competent with clear vision of department. 	
Accurate supplies pulled for each case	<p>90%+ accuracy of preference cards which drive the pick lists</p>	<ul style="list-style-type: none"> Preference cards stated and observed to be fairly consistent. Closer scrutiny to returned items and waste is required. 	
Optimal charge capture	<p>Pyxis®, Omnicells®, and bar code scanning to decrement and replace stock</p> <p>Charge by exception</p> <p>Custom pack waste observation</p> <p>Broken box opportunity for infrequent</p>	<ul style="list-style-type: none"> Technology is utilized and leveraged. Each hospital has a recycling program in place. BHGP and BHTC have bags attached to the operating suite door for items not used in the case to monitor effectively. 	

Final Report ()

<p>Reprocess items to reduce spend</p>	<p>Optimize reprocessing</p>	<ul style="list-style-type: none"> Utilizing Stryker Sustainability. Out-of-stock items require further evaluation. 	
<p>Instrument Tracking to reduce lost item and identify repair opportunity</p>	<p>Utilization of SurgiTrack®, Censitrac®, Impress or Assist tracking applications</p> <p>Bar coding and RFID technology to assist in the inventory management of instrumentation and equipment</p>	<ul style="list-style-type: none"> Utilized Surgitrack® from Owens and Minor. 	
<p>Optimized economies of scale</p>	<p>Leverage purchasing power of group purchasing organizations (GPOs) and distribution</p>	<ul style="list-style-type: none"> Leveraged purchases through GPO – Novation®. Approval for self-distribution. 	
<p>Aligned surgeon incentives to reduce costs</p>	<p>Utilized strategic alignment models, such as Centers of Excellence (COEs) and co-Management arrangements to share savings for capital, fellowships and research</p>	<ul style="list-style-type: none"> Initiatives are in place with 50% of realized savings pooled into the represented COE. 	
<p>New product entry evaluation</p>	<p>Strong, surgeon-engaged Value Analysis Committee for new product entry. Peer reviewed for safety and efficacy in comparison to like product, if available.</p> <p>Communicated back to new product submitter in a timely fashion.</p>	<ul style="list-style-type: none"> Culture of accommodation has developed over the years whereby surgeons got what they wanted without close scrutiny. A new VAT and COE program has curtailed carte blanche spending. 	

Final Report (cont.)

<p>Vendor controls to mitigate influence</p>	<p>Tight vendor management controls through products such as RepTrax®.</p> <p>Distinctive scrubs or bonnets to clearly differentiate vendors from staff</p> <p>Implant representatives in the OR must call out the price of the implant prior to utilization</p>	<p>Hospital has different color bonnets and scrubs.</p> <p>Vendors must sign in with ID badge for hospital access.</p> <p>Vendors do not currently call out implant costs in the OR.</p>	
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Surgical Directions noted that the supply chain management of BHS is relatively strong. The vice president of supply chain is knowledgeable and competent.

Recommendations

- There are opportunities to further refine the procurement process by optimizing preference card/pick lists to ensure supplies and equipment are pulled correctly. There are redundant preference cards in the system. Recommend a preference card task force to standardize nomenclature, sequence, narrative and update process across the system. Suggest an onboarding or orientation for all new surgeons with preference cards as part of the process.
- As noted elsewhere, BHS lacks a single standardized pathway for scheduling cases. Poor scheduling processes lead to missing and inaccurate information, which increases the risk of safety problems and inaccurate case carts (missing or wrong supplies).
- As noted elsewhere, BHS does not hold a multi-disciplinary "daily huddle" for reviewing cases before surgery, one, two and three days out. Without proactive clinical review of the schedule, case carts can be assembled inaccurately.
- Standardization at all three sites is in process. Clinical input on pulling and replenishing supplies to ensure compliance is recommended.

Supply Chain - Recommendations

- Update preference cards
 - Identify appropriate individuals and establish weekly “office” hours dedicated to updating preference cards
 - Prioritize preference cards based on volume and initiate update process
 - Identify hours worked related to process for variance justification
 - Develop administrative cost center or utilize specific pay code to code time in order to track hours and adjust productivity metrics
 - This project is essential for success in effective supply chain management within the operating rooms
- Address compliance issues with Pyxis machines in order to develop useful reporting capabilities for establishing pars and streamlining ordering process
 - OR staff education related to importance of compliance combined with an effort to reduce the number of items housed in Pyxis machines create incentives for appropriate compliance

Supply Chain - Recommendations

- Implement redesigned Value Analysis Teams
 - Purpose of VATs
 - Evaluate, assess, and control the entry of new products within Surgical Services from a cross-functional perspective
 - Control overall inventory and drive 'standardization' efforts
 - Ensures information systems, picklists, and chargemasters are updated prior to product entry
 - Ensures vendor control and cost containment
 - Decisions related to product entry should be based on consensus through scoring criteria based on alignment of overall hospital goals (i.e. quality, safety, financial performance, etc.)
 - Standardized scoring grids should be developed and employed for all requested products creating objectivity in decision-making
 - Standardize duplicative product SKU's (esp. commoditized products)
 - When not reviewing new products, teams should focus on addressing cost variation between surgeons and inventory control

Supply Chain - Recommendations

- Markup policy
 - Explore and analyze potential impact related to revising existing markup policy
 - How does this impact existing managed care contracts? Are there price increase limitations written into existing agreements?
 - What is the potential reimbursement impact related to hitting stop/loss on those agreements?
 - Are there discounts from charge contracts in place?
 - Are there any implant carve-out contracts and how would increasing the markup impact those agreements?
 - Is there a potential impact related to Medicare outlier payments?
 - For each 10% increase in the markup rate on items with a cost >\$500, USA Hospital would realize an increase in gross revenue of \$3 million
 - Analysis should be performed to determine the impact this would have on the bottom line of the organization

Top 10 Nuggets to Improve Your Supply Chain

1. Remove clinical staff from supply chain ordering and stocking, picking and pulling functions and shift the responsibility to materials management – introduction of all supplies via VAT.
2. Automate supply tracking and charging systems.
3. Leverage consignment to optimize cash flow and reduce obsolescence.
4. Implement reprocessing wherever possible.
5. Implement unitized and just in time delivery systems to reduce on-hand inventory and carrying costs.
6. Significantly reduce the number of supply locations.
7. Standardize all commoditized products.
8. Benchmark high cost supply items (i.e. Implants) and hold vendors accountable.
9. Limit the number of preference cards, assure accuracy and MAINTENANCE program with SURGEON SIGN-OFF.
10. Incentivize the OR Business Manager to reduce overall supply expense.

Case Study – Karen Santos, RN

HOW TO TACKLE IMPLANT ANALYSIS

It Is All About the Data

1. Data must be accurate and reliable
2. Surgeons must take an active role in working with you and the vendor to tackle implants
3. Consider no more than 2 to 3 implant vendors per specialty
4. Set capitated prices based upon national benchmarks
5. Move implants to consignment
6. Strictly prohibit add-ons without prior approval before the procedure
7. Benchmark surgeon procedure costs and contribution margins against their peers
8. Assure all new products are vetted through a Value Analysis Committee

Variation Reduction Strategies

- First identify the high variation areas – typically Pharmacy, Implants, MedSurg Supplies, OR Time, LOS and Anesthesia
- Focus on closing the gaps

- Challenges:
 1. Surgeon understanding and acceptance of data
 2. Variations in patient acuity can make comparisons difficult

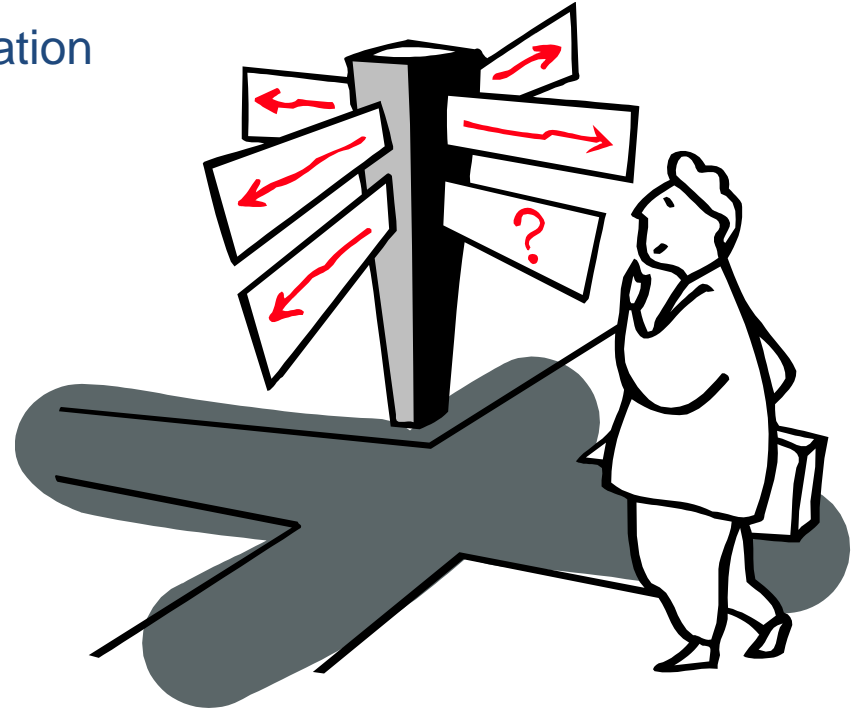
Identify Alternatives

- Target a Standard Price for all Constructs
 - Benefit: Surgeons maintain choice of venders
 - Disadvantage: Cost savings are not optimized
- Vender Reduction
 - Benefit: Cost savings are optimized by driving volume to lowest cost
 - Disadvantage: Minimizes surgeon choice



Gain Commitment

- You must obtain common agreement from surgeons in the following:
 1. Adherence to the chosen strategy
 2. Sustaining the commitment over time
 3. Transparency in pricing and utilization

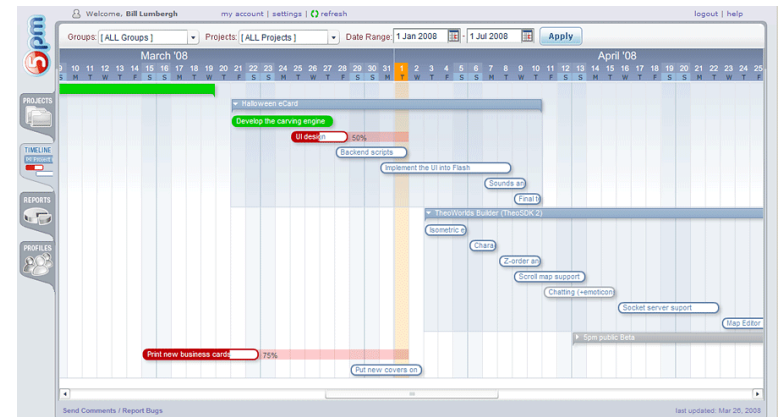


Tiger Teams



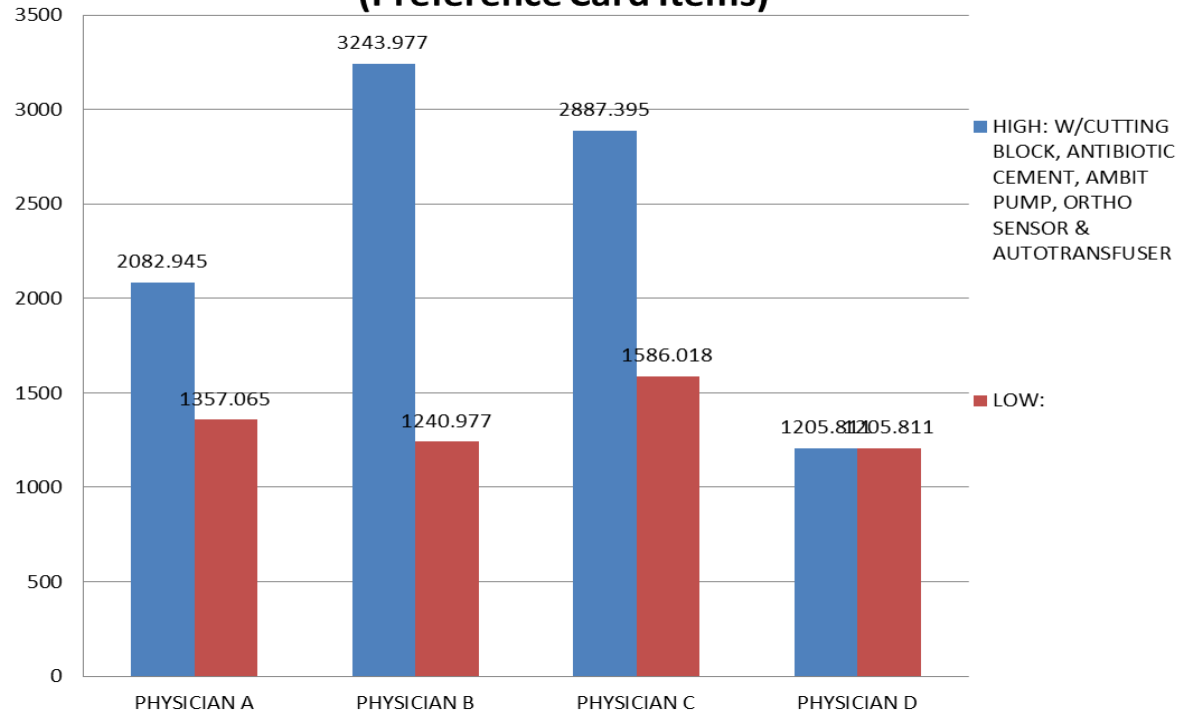
Implementation

1. Send RFP's to vendors for pricing
2. Benchmark pricing with like facilities
3. Present data to surgeons
4. Determine the strategy
5. Gain commitment from surgeons to the strategy
6. Develop a timeline for implementation
7. Complete negotiations with the vendors
8. Implement the plan



Preference Card Variation

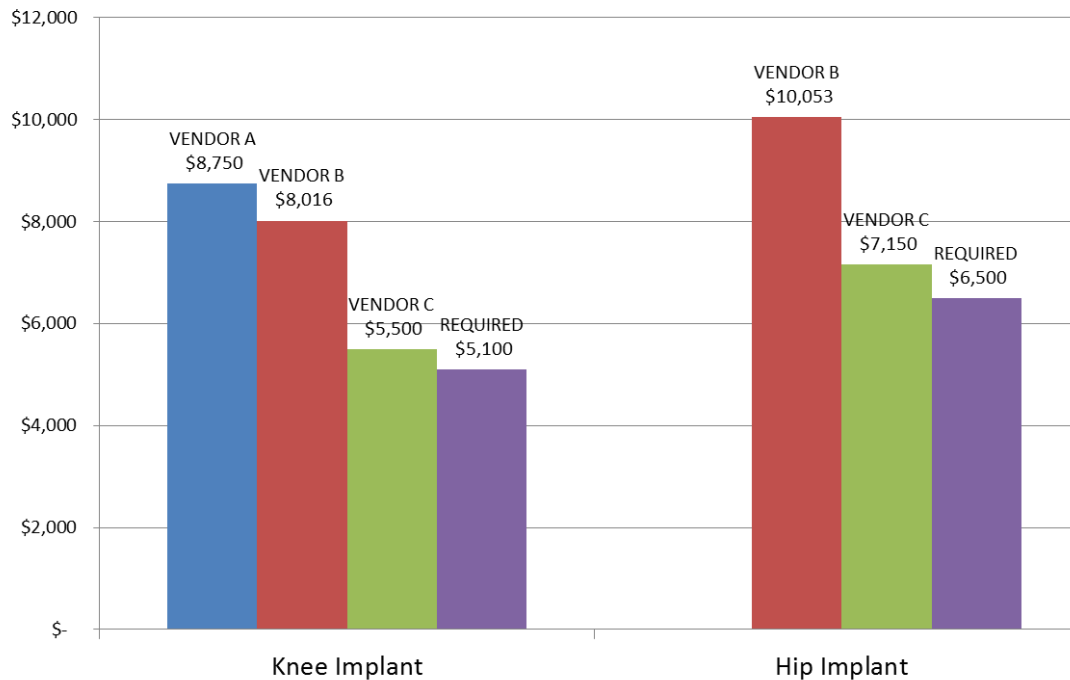
**Total Knee OR Medical Supplies Excluding implants
(Preference Card Items)**



	PHYSICIAN A	PHYSICIAN B	PHYSICIAN C	PHYSICIAN D	
HIGH: W/CUTTING BLOCK, ANTIBIOTIC CEMENT, AMBIT PUMP, ORTHO SENSOR & AUTOTRANSFUSER	\$ 2,082.95	\$ 3,243.98	\$ 2,887.40	\$ 1,205.81	
LOW:	\$ 1,357.07	\$ 1,240.98	\$ 1,586.02	\$ 1,205.81	
LIKELY REDUCTION:	1735	1345.527		1200.99	TOTAL
NET EFFECT	\$ 1,802.98	\$ 1,796.27	\$ 1,205.81	\$ 1,263.56	
VOLUME	66	58		72	
TOTAL OR MATERIALS COST SAVINGS	\$ 114,510.00	\$ 78,040.57		\$ 86,471.28	\$279,021.85

Implant Cost Comparison

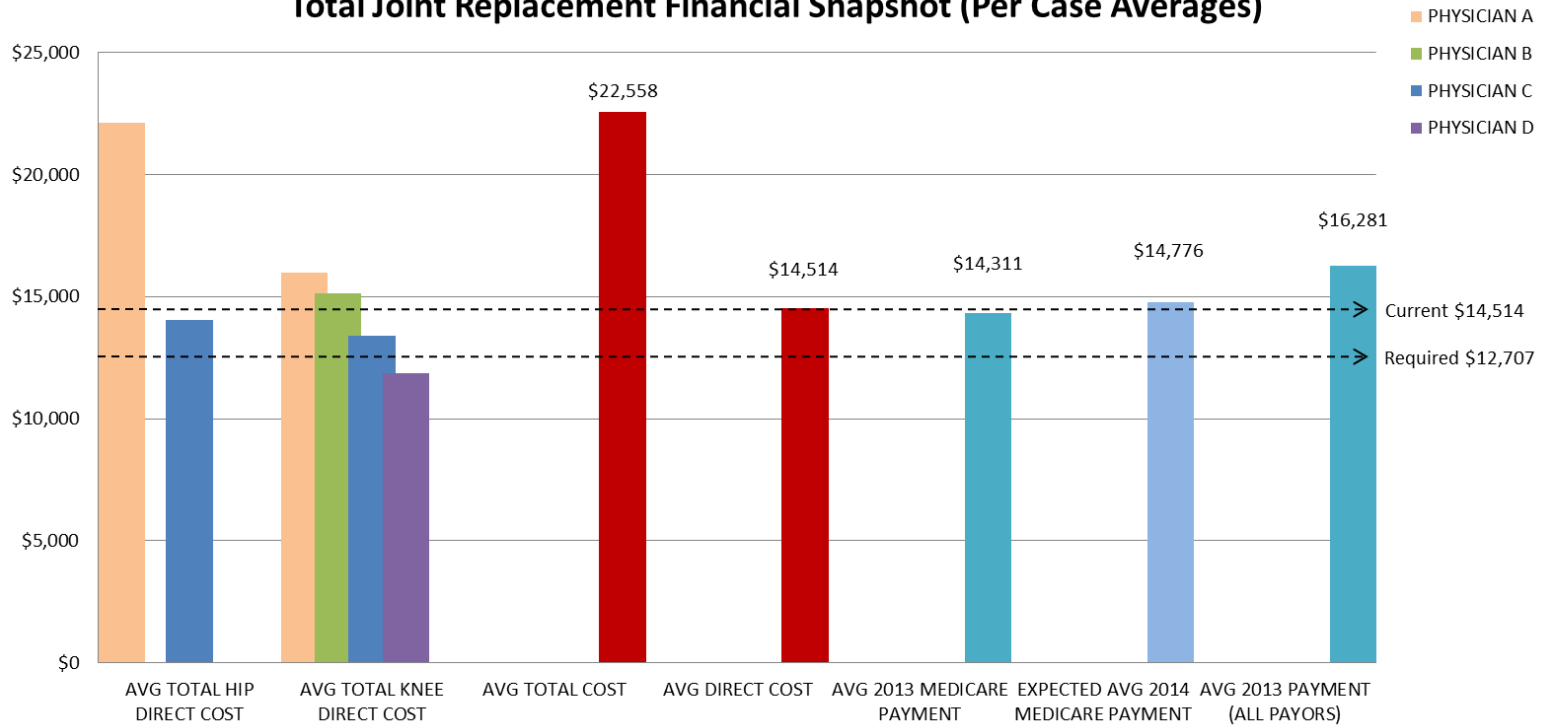
Total Joint Implant Cost Comparison



	VENDOR A	VENDOR B	VENDOR C	REQUIRED	% of Medicare			
					VENDOR A	VENDOR B	VENDOR C	REQUIRED
Knee Implant	\$ 8,750	\$ 8,016	\$ 5,500	\$ 5,100	59%	54%	37%	35%
Hip Implant	\$ -	\$ 10,053	\$ 7,150	\$ 6,500	0%	68%	48%	44%
Knee Weight	100%	72%	72%	72%				
Hip Weight	0%	28%	28%	28%				
Total Weighted Avg	8,750	8,586	5,962	5,492	59%	58%	40%	37%

Overall Joint Replacement Financial Snapshot

Total Joint Replacement Financial Snapshot (Per Case Averages)



	AVG TOTAL HIP	AVG TOTAL KNEE	AVG TOTAL COS	AVG DIRECT CO	AVG 2013 MEDI	EXPECTED AVG	AVG 2013 PAYMENT (ALL PAYOR
PHYSICIAN A	\$22,102	\$15,980					
PHYSICIAN B		\$15,122					
PHYSICIAN C	\$14,033	\$13,415					
PHYSICIAN D		\$11,866					
AVERAGE			\$22,558	\$14,514	\$14,311	\$14,776	\$16,281

Lessons Learned

- Vendors will sabotage your efforts and try to convince surgeons to veer away from the plan.
 - Tactic: Hold them accountable and provide transparency to the group to shut this down
- Vendors may not respond to the RFP.
 - Tactic: Notify them in writing with the RFP that no response will be indication that they are forfeiting future business at your hospital.
- Vendors come in at the last minute with a new pricing proposal.
 - Tactic: Set clear deadlines and stick to them. Set that requirement and expectation in the RFP.

For questions or comments, please contact:

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