



CASE STUDY

INSTRUMENT INVENTORY SOLUTIONS AND MEMORIAL HERMANN HEALTH SYSTEM



SURGICAL INSTRUMENT INVENTORY SOLUTIONS EMPOWER MEMORIAL HERMANN'S STERILE PROCESSING DEPARTMENT WITH COMPLETE, ACCURATE, AND SYSTEMATICALLY ORGANIZED INVENTORY DATA

In 2021, U.S. hospitals faced financial insecurity in the wake of the COVID-19 pandemic. In September 2021, researchers projected U.S. hospitals would lose an estimated \$54 billion in net income that year*. Hospitals can no longer depend on traditional price reductions from vendors to be the primary source of economic recovery. The pandemic's impact has required hospitals to quickly find new ways to significantly improve efficiency and financial health.

While surgical teams dedicate their efforts to caring for patients, there is an issue quietly reducing operational efficiency and increasing costs in facilities: inaccurate and incomplete instrument inventory data. Improving instrument inventory data is the first step toward significantly impacting the unprecedented financial pressures and losses caused by the lingering effects of COVID-19.

Without accurate data systematically organized in a standardized nomenclature, hospitals may find their instrument count sheets have missing, incorrect, or partial information concerning vendors, part numbers, or descriptions. As a result, hospitals cannot accurately determine what instruments they own, leading to unintended purchases of duplicate sets and instruments, and unnecessarily high inventory levels. Additionally, the lack of set standardization can lead to variation in care, operational inefficiencies, and increased costs.

Symmetry Surgical®, a leading healthcare technology and solutions supplier, and Jason Driver, associate vice president, Corporate Sterile Processing Operations, Memorial Hermann Health System, collaborated to improve instrument inventory data quality and provide analyses to identify and prioritize set and vendor standardization opportunities. These efforts would be the first pivotal step in enabling Memorial Hermann to meet departmental goals, including but not limited to implementing new instrument tracking systems and centralizing sterile processing centers to lower costs and improve efficiency.

BACKGROUND:

Before partnering with Symmetry Surgical and using its Instrument Inventory Solutions, the Memorial Hermann sterile processing departments were responsible for managing inventory data in their instrument tracking system. Each facility used different nomenclature when entering instrument data. This lack of standardization resulted in missing, incomplete, or incorrect instrument data and multiple listings for the same instrument or set under different names, including multiple listings for the same instrument or set under different names.

According to Driver, "In sterile processing departments where staff turnover is high and maintaining trained and educated staff is challenging, it became increasingly difficult to maintain standardization among the staff and ensure consistency in instrument nomenclature." Variations in data meant staff required significant training when they moved from one facility to the next as processing volumes drove labor fluctuations among facilities.

* **Supporting Article:** *Financial Effects of Covid-19: Hospital Outlook for the Remainder of 2021.* Kaufman Hall. September 2021.

Opportunity for Collaboration:

Memorial Hermann went to work prioritizing data clean-up, nomenclature normalization and set standardization. These objectives included the following:

Short-term (6-12 months):

- Realize efficiencies in current processes
 - Allow employees to move among facilities without the need for additional education and training on instrument naming and nomenclature
 - Reduce the number of instruments listed in the tracking system

Long term (2-4 years):

- Move to a new tracking system that serves all locations as one database versus a system that serves each hospital as an individual unit
- Build a centralized sterile processing center that services multiple facilities

Symmetry Surgical's onsite Instrument Specialist learned of these goals and recommended collaborating with Symmetry Surgical and utilizing Symmetry's Instrument Inventory Solutions. The Memorial Hermann and Symmetry Surgical teams moved forward with that plan utilizing the following process and analysis.

Process:

- Step 1: Memorial Hermann provided Symmetry Surgical with its current instrument inventory in an excel formatted report that could be quickly analyzed, corrected, and normalized.
- Step 2: Within two days, the proprietary program Count Sheet Commander™, Symmetry Surgical had analyzed 44,000 lines of data in the active inventory to identify any of data integrity issues.
- Step 3: Once Symmetry Surgical processed the data, the cleansed and normalized data was uploaded back into Memorial Hermann's system. Count Sheet Commander identified more than 3,000 lines of data missing both catalog number and manufacturer, and others missing both description and catalog number. This step required additional information from Memorial Hermann sterile processing department staff to finalize correcting all inventory data integrity issues.
- Examples of data integrity issues found in the active inventory are presented in Table 1 below.

Critical Findings/Analysis:

Count Sheet Commander™

- Solution objective: Provide complete, accurate, and systematically organized instrument inventory data so count sheets can be accurate and complete.

Details	Data
Data lines analyzed	44,000 data lines
Missing part numbers	1,571 missing
Missing vendors	2,101 missing
Number of lines with the same supplier and description but different part numbers	3,425
Mismatched descriptions/manufacturers/part numbers	8,390
Number of lines with different names for same vendor	2,041
Unused inventory	94 sets and 1,100 individual instruments
Missing instrument set types	152

Set IQ™

- **Solution objective:** Identify and prioritize set standardization opportunities.

Details	Data
Number of sets analyzed	2,066
Total number of sets with each having the same instrument types and count of each instrument type being the same	218
Total number of sets with each having the same instrument types but with some instrument types having a different count	91
Pairs of sets that have 90 – 100% of instrument types as an exact match, with count provided	42
Pairs of sets that have 80 – 90% of instrument types as an exact match, with count provided	42

Results:

Accurate Data

After analyzing Memorial Hermann’s instrument data with Count Sheet Commander and Set IQ, Symmetry Surgical presented Jason Driver and the Memorial Hermann team with accurate, complete, and systematically organized instrument data. This data included:

- Removal of inaccurate instrument duplicates
- Removal of inventory that looked active but was not available
- Reduced number of instrument descriptions or aliases
- Addition of Surginet numbers to instrument sets for case-pull accuracy, aligning sets with preference cards
- Included only active, available inventory
- Updated missing or inaccurate data, including vendor, part number, and description
- Removal of duplicate sets listed in the instrument tracking system

Waste Reduction

With the cleansed and standardized data, the Memorial Hermann team began an initiative to evaluate and remove instruments that did not meet an 80% utilization rate. The sterile processing department members collaborated with various service lines and reduced the number of instruments in sets, providing significant cost savings to the hospital. This process is on track to result in an annual savings of \$382,000.

Memorial Hermann reorganized its surgical instrument inventory to reflect the updated data. The data and the process are now considered a template and necessary step for the remaining Memorial Hermann campuses before the system moves toward a centralized database.

Standardization and Centralization

Jason Driver stated, “As Memorial Hermann continues to grow, the normalized nomenclature and instrument listing will allow the system to standardize sets across the entire system. By standardizing basic sets, the sterile processing department reduces same-day turnovers and allocates inventory where volume dictates.”

Moving forward, the Memorial Hermann team will repeat this process before key initiatives, including database centralization or a centralized sterile processing center for all Memorial Hermann campuses.



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