

Improving Data Integrity Leads to Lower Supplies Costs

**HAWAII
PACIFIC
HEALTH** | KAPI'OLANI
PALI MOMI
STRAUB
WILCOX



HEALTHCARE ORGANIZATION

Integrated Delivery System

PRODUCTS

- ▶ Health Catalyst® Data Operating System (DOS™) Platform

SERVICES

- ▶ Professional Services

EXECUTIVE SUMMARY

Annually, U.S. hospital supply chain overspend costs an estimated \$25.4 billion, which represents 30 percent of all hospital spending. Leaders at Hawai'i Pacific Health (HPH) understood the importance of improving supply chain data and its relationship to the organization's financial health. However, siloed, inaccurate data from disparate sources inhibited the identification of meaningful improvement efforts. The health system worked to identify opportunities to reduce costs in the operating room (OR) supply chain across the organization, assembling a team to identify mechanisms for locating and reducing variation. Incorporating an analytics platform offered deeper insight into supply chain management and areas for improvement. HPH has achieved the following results:

- ▶ 9,460 non-use items removed, and 2,832 standard supplies added to data system—eliminating 50 percent of free text orders.
- ▶ 60 percent relative reduction in observed versus expected number of special orders.
- ▶ 1,909 preference cards standardized.

HOSPITAL SUPPLY CHAIN SPENDING ON THE RISE

Approximately 30 percent of all hospital spending in the U.S. goes to supply chain overspend, which equals \$25.4 billion each year. In hospitals, supply chain spending is second only to labor costs and is expected to rise.¹

The supply chain interfaces with and impacts every department. Despite the interconnectedness of supply needs, goals and objectives are frequently misaligned across departments, resulting in siloed and inefficient supply chain management.^{2,3} The most discretionary type of spending involves medical and surgical supplies, and presents the greatest opportunity for process

“ Access to meaningful, accurate data has helped improve credibility and increase physicians’ willingness to participate and reduce variation.

Liana Peiler, MD, MHCDS
Medical Director
Supply Chain Management
Hawai’i Pacific Health

improvement. Top hospital performers consistently leverage evidence-based protocols and data analytics to reduce variation in pricing, product use, and clinical outcomes.¹

HPH is one of the largest health care providers in Hawaii with four major medical centers and over 70 locations statewide. The provider’s mission is to create a healthier Hawaii through community outreach beyond the walls of its facilities as well as investments in research, education, training, and care for the underserved in the community.

SILOED, INACCURATE DATA IMPEDES SUPPLY CHAIN ADVANCEMENTS

While HPH leaders understood the financial importance of supply chain management, siloed and inaccurate data from disparate sources inhibited meaningful improvement efforts. Content expertise existed in the OR, supply chain, and master index, but the lack of consistent standard data definitions across the organization created a barrier between the OR and supply team groups, resulting in mistrust in the data and ineffective collaboration.

No standard process was in place for evaluating and purchasing new supplies. Over 100 new supplies were added monthly, making it difficult to match cost to supply. Many supplies were not identified and categorized as discrete values within the supply management system. Supply orders for the OR could be entered into the system by either selecting discrete values, or by free text data entry, creating barriers to tracking and aggregating information.

Preference cards, which are documented supply lists for each procedure that assist OR staff in setting up instruments and supplies as well as provide data to track costs and patient charges, were not standard and required a manual process to create preference cards for new providers. These cards were also inconsistent and often outdated. No dedicated person was responsible for updating and monitoring preference cards at either individual hospitals or systemwide.

The existing data left HPH unable to create logical or defensible supply chain solutions. To be successful at controlling supply chain costs long term, HPH needed to substantially improve the accuracy of its data. Inability to provide accurate data left clinicians in the dark and unable to help in efforts to reduce unnecessary spending.

“ We can provide our physicians with an accurate picture of supply chain use and information about their preference cards across specialties and case types in a more efficient manner. We now have meaningful, accurate data, and a platform for productive discussions. We’ve put the data and infrastructure in place to allow us to implement the [CORUS™ Suite](#) and move to activity-based costing.

David Stumbaugh
Vice President, Supply Chain
Management & Pharmacy
Hawai'i Pacific Health

IMPROVING SUPPLY CHAIN DATA TO REDUCE COSTS

HPH engaged with Health Catalyst to identify opportunities to reduce OR supply chain costs across the health system, assembling a team to identify mechanisms for locating and reducing variation. After extensive discovery work, it became clear that the data were not “clean” enough to drive improvement efforts, prompting the guidance committee to request the improvement team develop a plan to improve the foundational supply chain data and verify the validity of the data used for improvement.

Using the Health Catalyst® Data Operating System (DOS™) platform and a robust suite of analytics applications, HPH gained insight into supply chain management. The analytics platform integrates data from HPH’s EMR and multiple supply chain systems.

Establishing workgroups to address OR supply chain opportunities

To manage and control supply chain costs over time, HPH recognized that it first needed to increase the amount of discrete supply documentation in the OR, improve preference card accuracy, and establish a request/review process for new supplies. With these efforts in mind, the organization established four separate workgroups to address four distinct opportunities within the OR:

- 1. Decreasing variation in ordering OR supplies.** With a newfound understanding of the inconsistency and wide variability of values in the supply chain system data, HPH engaged team members from quality, supply chain, and the OR to decrease variation. The team first focused on reducing free text order entries by enabling/encouraging discrete documentation of commonly ordered supplies.
- 2. Standardizing ordering new supplies.** Representatives from supply chain, OR, and Health Catalyst developed a new supply order form, and established a formal process for reviewing and evaluating supply requests. A process was established to approve standard supply requests and identify what ones needed in-depth consideration by evidentiary review or a capital request analysis. The team meets twice each week to assess supply requests, ensuring a timely review.
- 3. Improving and maintaining preference cards and related OR workflow.** OR managers, directors, and liaisons, along with supply chain members formed the workgroup to improve the preference card system and OR workflow. To ensure

“
We’ve grown substantially in our ability to learn from the data, understand the data, and ask questions of the data. Our teams are now getting to the right questions, and the right answers, much faster.”

Emiline LaWall, PhD
Project Manager
Information Technology
Hawai’i Pacific Health

ongoing preference card management, each of the four hospitals hired an OR liaison. This role is accountable for the accuracy of preference cards and ensuring they are kept up to date in a uniform way.

A systematic process is used for reviewing cases and updating preference cards. HPH “matched” providers who perform like type surgeries. For each provider/surgery and or procedure match, five cases were observed and documented. Observation data was submitted to surgical team leads for review and the designated resource person updated the cards with the correct designation of whether to routinely open the item or to have it available for use in the OR, but not opened until needed for that patient’s care.

Additionally, HPH has also started comparing variation between physicians and ORs, taking time to investigate and understand the sources of variation, assessing if it is intentional and appropriate. In cases where the variation is unintentional, HPH then uses data from the analytics platform to identify if the variation is negatively impacting clinical or operational performance, and if so, may prioritize it for improvement.

4. **Materials management.** Representatives from the supply chain, EMR experts, and the charge description team collaborated to improve capture of supply items linked to costs, improving discrete documentation in the EMR, ensuring appropriate charge capture.

These workgroups met weekly to identify tasks and next steps, collaborating to efficiently move work forward.

Throughout the improvement project, HPH engaged with and updated eight diverse stakeholder groups. Each one interacts with the supply chain data differently, and it is critical they be aware of any changes to source system data. To meet their varied needs, the team established formal communication plans, using standard messaging tools to convey changes to the source system data and associated processes.

Incorporating analytics to inform supply chain improvements

With standard data and processes in place, HPH and Health Catalyst collaborated to develop an analytics application. More than 100 users at HPH use this tool to aid their daily work as well as improve and maintain the “health,” or readability, of the supply data (see Figure 1).

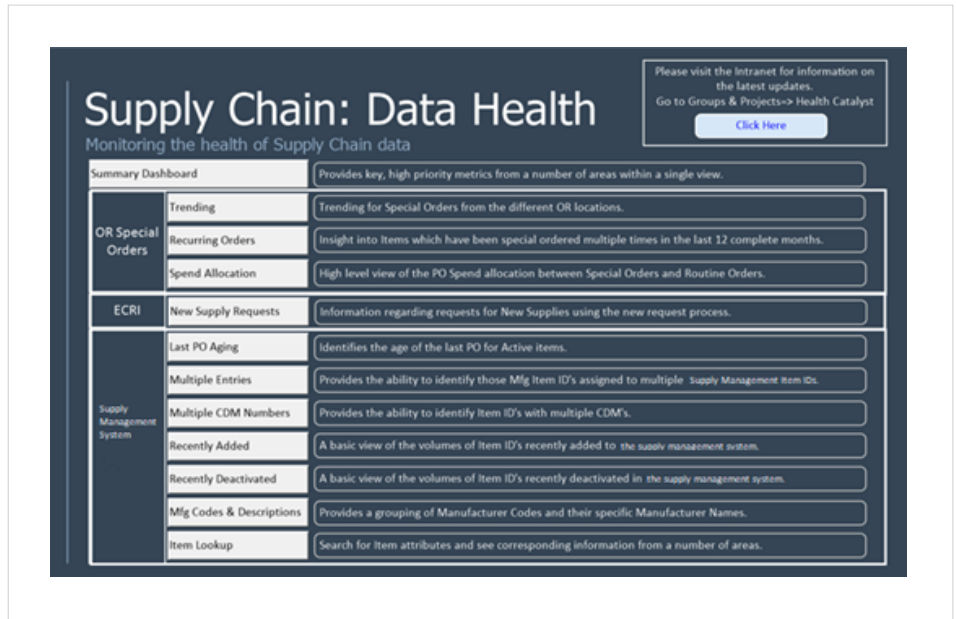


Figure 1: Supply Chain: Data Health analytics application

HPH can easily visualize the number of observed versus expected special orders, the difference in spend allocation for special versus routine orders, and quickly intervene to get the organization back on track (see Figure 2). HPH can drill into the data and easily obtain detailed special-order information for each of its four facilities.

FIGURE 2. SUPPLY CHAIN: DATA HEALTH ANALYTICS APPLICATION OR SPEND ALLOCATION VIEW

- 1 OR spend allocation by location.
- 2 OR spend by individual facility.

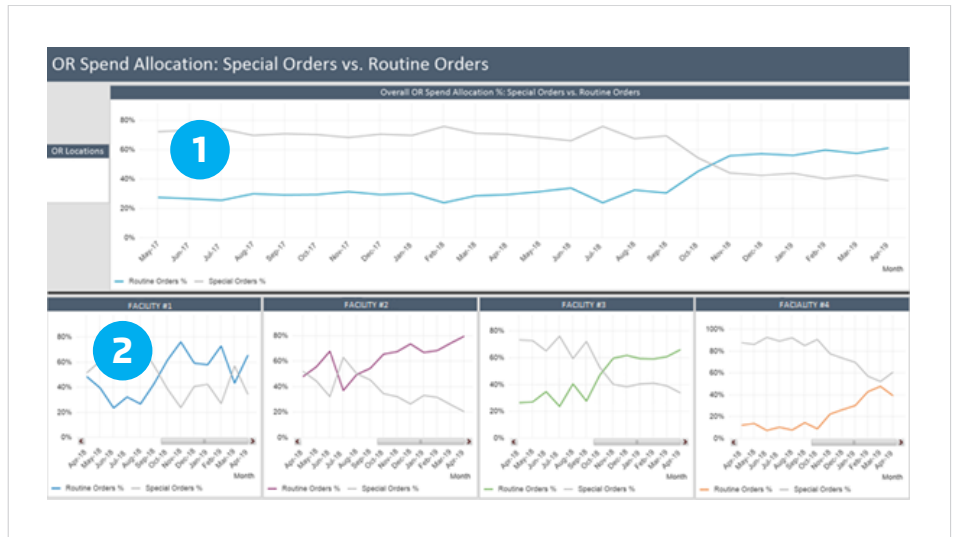


Figure 2: Supply Chain: Data Health analytics application OR spend allocation view

HPH also uses the analytics application to monitor the new supply process, including the number of new supply submissions, the average days to a decision, and the amount of new supply requests by facility and review stream (see Figure 3).

FIGURE 3. SUPPLY CHAIN: DATA HEALTH ANALYTICS APPLICATION NEW SUPPLY REQUESTS

- 1 Submissions data.
- 2 Submissions by month.
- 3 Average number of days to decision.
- 4 Number of submissions in pending status.
- 5 Supply decisions.
- 6 Product requests by facility.
- 7 Product requests by review stream.



Figure 3: Supply Chain: Data Health analytics application new supply requests

RESULTS

HPH gained a deep understanding of its supply chain processes and data, which allowed it to improve and maintain the reliability of this information, leading to meaningful and sustained improvements across the system. In just six months, HPH has achieved the following results:

- 9,460 non-use items removed, and 2,832 standard supplies added to data system—eliminating 50 percent of free text orders.
- 60 percent relative reduction in observed versus expected number of special orders.
- 1,909 preference cards standardized.
- \$94K in cost savings.

This initiative has improved interdepartmental collaboration and trust. Additionally, HPH now has access to well-understood and trusted data that can be used to help drive improvement—reducing waste and controlling costs.

WHAT'S NEXT

HPH plans to ensure that processes and improvements are sustainable and replicable. Next, HPH will take on improving supply chain data in its other procedural areas, including endoscopy and the cath lab, and is preparing to implement activity-based costing. 📌

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ABOUT HEALTH CATALYST

Health Catalyst is a leading provider of data and analytics technology and services to healthcare organizations, committed to being the catalyst for massive, measurable, data-informed healthcare improvement. Our customers leverage our cloud-based data platform—powered by data from more than 100 million patient records, and encompassing trillions of facts—as well as our analytics software and professional services expertise to make data-informed decisions and realize measurable clinical, financial, and operational improvements. We envision a future in which all healthcare decisions are data informed. Learn more at www.healthcatalyst.com.

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