

# BENCHMARK BRIEFINGS

**kardex**remstar

## SITE

Children's Hospital Colorado  
Aurora, CO

## APPLICATION

Hospital Supply Chain Distribution

## EQUIPMENT

Three Horizontal Carousels with Pick to Light Technology and FastPic Inventory Management Software

## SUMMARY

Implementing horizontal carousel technology in the stockroom saves 42% floor space, reduces labor requirements and most importantly improves the patient experience



Three 52 foot long horizontal carousels with pick to light technology and FastPic order processing software manage all low units of measure inventory.

## Picking 52 Million Pieces A Year Is No Small Task For Children's Hospital Colorado

Managing the supply chain in any organization can be a tough job, but at Children's Hospital Colorado in Aurora, CO the supply chain is directly related to patient care; making it a critical function within the hospital. With three Kardex Remstar horizontal carousels, pick to light technology and FastPic order processing software, the materials management stockroom picks and delivers over 141,000 pieces a day.

Founded in 1908 in Denver, Colorado, Children's Hospital Colorado recently moved to a new facility in the suburb of Aurora. Every detail of Children's Hospital Colorado was built to maximize the patient experience, helping kids get better faster and reducing stress on the whole family. Children's Hospital Colorado has grown with the community from 30 beds in 1908 to 298 beds today with plans to add another 124 beds next year.

### Proven Technology

"Our research determined that the horizontal carousel system we were using in Denver was the best solution for us. It was proven technology that had supported our materials management operations for over 15 years. We chose to replicate the system in the new facility," says Richard Hire, Director of Materials Management.

In Aurora, Children's Hospital Colorado installed three 52 foot long horizontal carousels from Kardex Remstar, integrated with pick to light technology and FastPic order processing software to manage all low units of measure inventory (broken case pieces). The bulk case inventory and larger supplies are stored in an adjacent shelving area. With 1,700 SKUs, all of the stockroom inventory is managed by PeopleSoft software.

### Order Handling

The stockroom is responsible for three types of orders: automated supply cabinet restock orders, clinician orders and ambulatory cabinet restock orders.

The hospital has 147 automated supply cabinets located on the patient floors. Nurses access the cabinet with a password, take the supplies they need and identify the patient receiving the supplies. Three to four times a day an automated ERP system inventories each cabinet and sends a replenishment order to the stockroom.

The clinicians on the floor can also place orders for supplies that are not inventoried and stocked in the automated supply cabinets, such as diapers. The clinician places the order through a computer terminal on the floor and the order is sent to the stockroom.



"Without the horizontal carousels we'd have at least 8 more order pickers running around and searching shelving for items and it would take 10 times longer," says Hire.

The stockroom also supports the non automated ambulatory cabinets, storing low usage supplies. The stockroom sends a runner each morning to physically inventory the ambulatory cabinet and create a restock order.

### Automated Picking & Fulfillment

The picking process in the stockroom is the same for all three order types. The order is released to the FastPic inventory management software and with the click of a button the three horizontal carousels spin and position for the first pick. As the order picker is directed by pick to light to make the first pick, the other carousels are positioning for the next item to be picked. The FastPic software organizes the picking, keeping the horizontal carousels working one step ahead of the order picker, creating very little wait time between picks.

Approximately 70 % of the order is picked from the horizontal carousel area, leaving 30% to be picked from the bulk area, by the runner before delivery. As a department standard, all orders are filled and delivered within two hours of when the order was placed.

### Maximizing Space & Productivity

The entire horizontal carousel system occupies 1,690 square feet and is operated with one order picker. To replicate this system capacity using shelving would have required 42% more floor space. "Without the horizontal carousels we'd have at least 8 more order pickers running around and searching shelving for items and it would take 10 times longer," says Hire.

### 24/7 Access To Supplies

If the power goes out or the machine fails it is critical to still be able to get the supplies to the floors to care for the patients. "We deliberately had the horizontal carousels installed far

enough apart so that in case of a power failure we can still access the supplies by walking up and down the aisles like shelving," says Hire, "With the exception of our scheduled parts and maintenance on the carousels, we've had 100% uptime."

### Replenishment Made Easy

Replenishment reports for the stockroom are run twice a day. A replenishment report is sent from PeopleSoft software to the stockroom for review. When additional product is needed for the carousels, the order picker picks from the bulk shelving and is directed by pick to light technology as to where in the horizontal carousel to put or restock the item. For supplies that need to be reordered, the replenishment request is sent to purchasing and received into either the horizontal carousel area or the bulk area when the supplies arrive the next day to be replenished in the carousels.

### Expanding The Stockroom

Children's Hospital Colorado is building a new wing to house The Colorado Institute for Maternal and Fetal Health; growing the hospital to 500 beds. "Expansion isn't a problem for us, one of the reasons we bought the system is that it's scalable and easy to expand as the hospital grows," says Hire. The stockroom plans to add another horizontal carousel, increasing productivity without increasing labor requirements.

"We see the horizontal carousels as a patient value investment," says Hire, "The stockroom is part of the value chain and our main focus is to keep the nurse at the bed with the patient ensuring we provide the best patient experience possible, and the horizontal carousels in the stockroom help us do just that."



"The system is proven technology that has supported our materials management operations for over 15 years; we chose to replicate the system in the new facility," says Hire.