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Warehouse system improves reliability

North Mississippi Health Services new state-of-the-art warehouse provides cost control advantages and improves fill rates.

By Nancy Torner

Building a state-of-the-art warehouse for medical inventory, ordering stock in bulk direct from suppliers, managing the operation with a software application designed for medical warehouses and revamping the product selection system is enabling North Mississippi Health Services (NMHS) to control costs and fill rates, boost reliability of its supply chain and enhance patient care.

Mike Switzer, corporate supply chain officer at North Mississippi Health Services, Tupelo, oversees the hospital's warehouse operations. After implementing Warehouse Management Software, both accuracy of picks and efficiency improved.

"The fill rate coming out of our warehouse is 99.98 percent compared to 91 to 93 or 94 percent from our vendors," Mike Switzer, NMHS corporate supply chain officer says. Buying direct eliminates distribution fees, and having the correct medical supplies when needed means better outcomes for patients.

The closest town that can supply NMHS is about two hours away and winter ice storms can cut off all deliveries from Memphis, making efficient self storage a key initiative. NMHS serves 22 counties in north Mississippi and northwest Alabama from headquarters in Tupelo, Miss. It is composed of six hospitals, four nursing homes, a surgery center and more than 30 clinics. A 30,000-square-foot warehouse built off-campus in 2007 in Tupelo has replaced an 11,000-square-foot warehouse that operated more like a storeroom where similar items were bunched together, inviting errors, Switzer says. In the new warehouse, similar items are never placed above, beside or below each other, nearly eliminating the wrong items being picked.

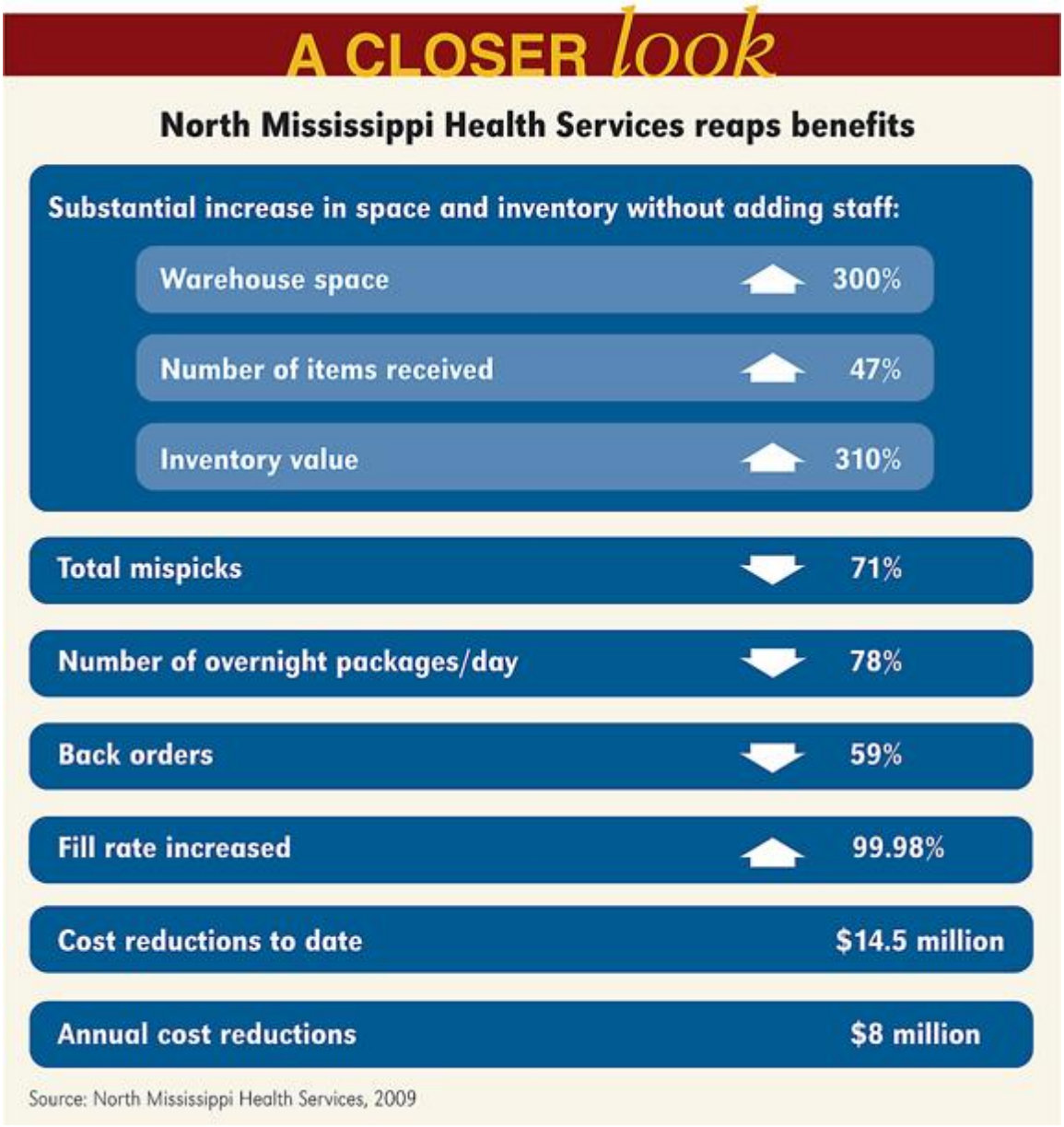
Added storage space also enables buying in bulk, saving up to 25 percent on purchases and reducing overnight shipping costs. "We used to get 250 to 350 overnight packages just at the main hospital. Now it's about 75," he says. Additionally, standardization across the system has occurred by replacing a 70-member supplies committee with a selection system that actively involves physicians, nurses and support staff.

Comparing the new system in May 2008 with the former one in May 2007, total pick errors dropped from 34 to 18, while the inventory beginning balance rose from $647,398 to about $2 million, issue units rose from 440,570 to 673,780 and fill rates rose from 99.93 percent to 99.98 percent. Of the 18 pick errors, none were the wrong item; they were the wrong unit of measure resulting from the absence of manufacturer bar codes. "When our folks get an order and it calls for a box, well, is a box a package or is it a case? And they'll pick the wrong unit of measure," Switzer says.

The 34 pick errors under the former system "were truly mispicks, where they sent the wrong item." To support the operation, NMHS uses Warehouse Management System from Tecsys Inc., headquartered in Montreal. Tecsys can provide applications strictly for warehouse distribution centers as well as for entire

distribution channels, says John Reichert, product manager for the Warehouse Management System. “We can do the ordering, the procurement with contracts, cart management and online requisitions, and we can go so far as doing accounts payable and accounts receivable for the distribution environment. It depends on what they have in the hospital and how they’ve organized the distribution center.”

When NMHS first approached Tecsys, the hospital service was in the process of implementing Oracle’s PeopleSoft application to run a number of its hospital systems. However, it was clear that NMHS could reap a large and immediate return on investments strictly from the warehouse application, Reichert says. “So we tied to their existing system in very short order with an application that when they move to PeopleSoft, [will allow us to] tie in with PeopleSoft,” he says. “We’ve helped them reduce the number of wrong picks going to the hospitals; we’ve significantly reduced their labor costs relative to delivery to the hospitals and allowed them to significantly increase volume both in pure volume and in items handled.”



The Tecsys application allows NMHS staff to pick orders for different hospitals and nursing stations simultaneously. “Through bar-code scanning, they make sure that they have exactly the right items and right quantity, and they put it in the right tote for the right nursing station,” Reichert says. Because delivery trucks typically make multiple stops, the application organizes trucks so deliveries are grouped and easy to off-load. “Our application organizes all of those steps to make sure we’re most efficient on the labor and that we can do multiple orders at the same time.”

Direct response

The application also helps reduce costs by eliminating middlemen and enabling hospital systems to manage requisition, selection and delivery processes, Reichert says. Most hospitals want to lower costs, but they are unsure of how to do it. Typical hospital information systems fail to provide the level of inventory control needed.

“We can give them examples of what we’ve done in the past, take a look at what they are doing and give them an idea of what type of return they can get,” he says. “North Mississippi has one of the most advanced operations in the country,” Reichert says. The NMHS warehouse stocks more than 2,000 line items worth more than $2 million. Between $2.5 million and $3 million in inventory moves through the facility monthly, and all inventory turns over about 19 times annually, Switzer says.

Goods are delivered on reusable plastic pallets and in plastic totes, which reduces the risk of infections and insect problems by keeping cellulose out of hospitals. Also, cardboard is recycled.

Warehouse construction costs were about $4 million, but savings from the new operation will pay for the structure in about two years. First-year costs for the software application were about $400,000, including a $12,000 monthly fee for Tecsys to host the system on its server. “This was the fastest way to allow us to get up and running,” Switzer says. Future costs will be considerably less, partly because NMHS is transferring the system to its in-house server.

Considerable setup work was necessary before bringing goods into the warehouse. Creating the application database required measuring all warehouse storage space for size and weight capacity, and measuring and weighing every storage item.

“Then you have to determine which items have expatriation dates, because it will track that for you, and which items need to be tracked by lot or serial number,” he says.

NMHS also specified zones for storage of backup stock, refrigerated items and forward pick locations, where items are stored low in flow racking where staff can access them from the floor level.

Staff wear electronic wrist devices and index-finger, laser-ring readers in the warehouse, leaving their hands free to lift items. Those in receiving wear radio-frequency printers to print bar codes and other labels to attach to incoming goods.

The Tecsys application tracks goods from warehouse receiving to shipping and guides staff along the most efficient route when picking goods. “It tells you where to slot the goods and it also tells you where to pick the goods,” Switzer says. Selections are based on first expiration, first out and on first item in, first out.

A Johnson Air Rotation System heats and cools the warehouse without ductwork and keeps the building at a constant 69 degrees. Three internal aircraft propellers move air 24 hours a day. Dust is filtered out continually and the difference in temperature from floor to ceiling is less than 2 degrees, compared with a typical fluctuation of 20 degrees to 30 degrees. Wire guidance in the floor automatically moves forklifts down aisles without steering. When planning a warehouse, Switzer recommends visiting several facilities before settling on an application. “You have to see what’s really going to work for you,” he says. He also advises against moving into an existing “dirty old warehouse” and if necessary, hiring a consulting firm. “Too many try to turn to the distributors. Yes, they know how distribution works, but it’s not always what’s best for the hospital.

“It’s really tying all the loose pieces together. You’ve got to map it out. How does it happen now, where do you have too many touch points, what repetitive action should be eliminated, what are better ways to do it, how can you make it leaner and more efficient? What you’re really looking for is the right item at the right place at the right time. Our folks love it [the system]. They can’t imagine going back to the old way.”

Nancy Torner is a freelance writer based in St. Paul, Minn.

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