Baptist Health Turns To Lucas As A WMS Alternative

Baptist Health South Florida is an internationally recognized healthcare network with 10 hospitals, more than 100 physician practices, and outpatient facilities spanning four counties from Palm Beach to the Florida Keys. Like other U. S. integrated delivery networks (IDNs), Baptist Health has adopted a self-distribution strategy with a central Distribution Center serving its facilities. Direct distribution helps to contain supply chain costs, and to reduce the amount of valuable space used for storing inventory at hospitals.

Shortly after starting up a new 157,000 square foot DC in 2014, operations and IT teams at Baptist started seeking software solutions to improve manual material handling processes. After exploring warehouse management systems to complement their PeopleSoft ERP from Oracle, they opted to install the Lucas Warehouse Optimization Suite.

The Lucas system has provided larger productivity and accuracy benefits than expected, and it also allowed Baptist Health to use its PeopleSoft system as a single system of record for inventory management and tracking across their network. According to Dale Adamson, AVP of Logistics and Distribution, “We got seventy percent of what we wanted in a new WMS with Lucas, but at one-eighth of the cost.”

The Lucas solution includes unique AI-based optimization that is embodied in Jennifer™, the brains, voice and orchestration engine of the solution. Additionally, the solution includes multi-modal voice-directed applications and a management console.

Results since implementing Lucas have **exceeded expectations:**

- Productivity has **doubled** in the main piece-picking area of the DC
- Bulk picking productivity has **improved 20%**
- Picking accuracy has **increased to 99.99%**
- Inventory accuracy **improved 20-30%** by location
- Hospital deliveries **arrive earlier** and are **more predictable**

Improving Warehouse Operations Without Changing Inventory Systems

According to Adamson, Baptist had been planning to consolidate network distribution over the past ten years, in part to reduce the amount of space used for inventory at each of the hospitals. "All of our hospitals are hurting for space, so this was a way to free up space within the hospitals while still maintaining 72-96 hours worth of critical supplies on hand."

The Baptist Health DC opened in 2014, with their existing PeopleSoft ERP for inventory control and other warehouse management functions. In addition to central distribution, the 157,000 ft^2 facility provides printing, IT asset management, and other centralized services for the hospital network.

After starting up the new DC, the Baptist Logistics and Distribution team started evaluating solutions to improve efficiency and accuracy of hands-on processes. At the time, picking and other processes were directed by paper using printed pick lists from PeopleSoft.

The Baptist team evaluated WMS systems to standardize processes within the DC, improve labor productivity, and increase shipping accuracy. All of the WMS systems they considered would replace PeopleSoft as the system of record for the warehouse. Keeping a WMS in synch with Peoplesoft would require multiple points of integration. This raised red flags for the operations and IT teams.

"Our big concern was having a different source of truth in the warehouse versus the rest of the network," says Adamson. Based on the recommendation of one of their warehouse consultants, Baptist decided to evaluate the Lucas solution and voice directed applications.

With Lucas, PeopleSoft would remain the system of record for inventory management. "Lucas could provide most of the functionality we were looking for in a new WMS, with one point of integration, a six-month implementation, and a fraction of the cost," says Adamson.

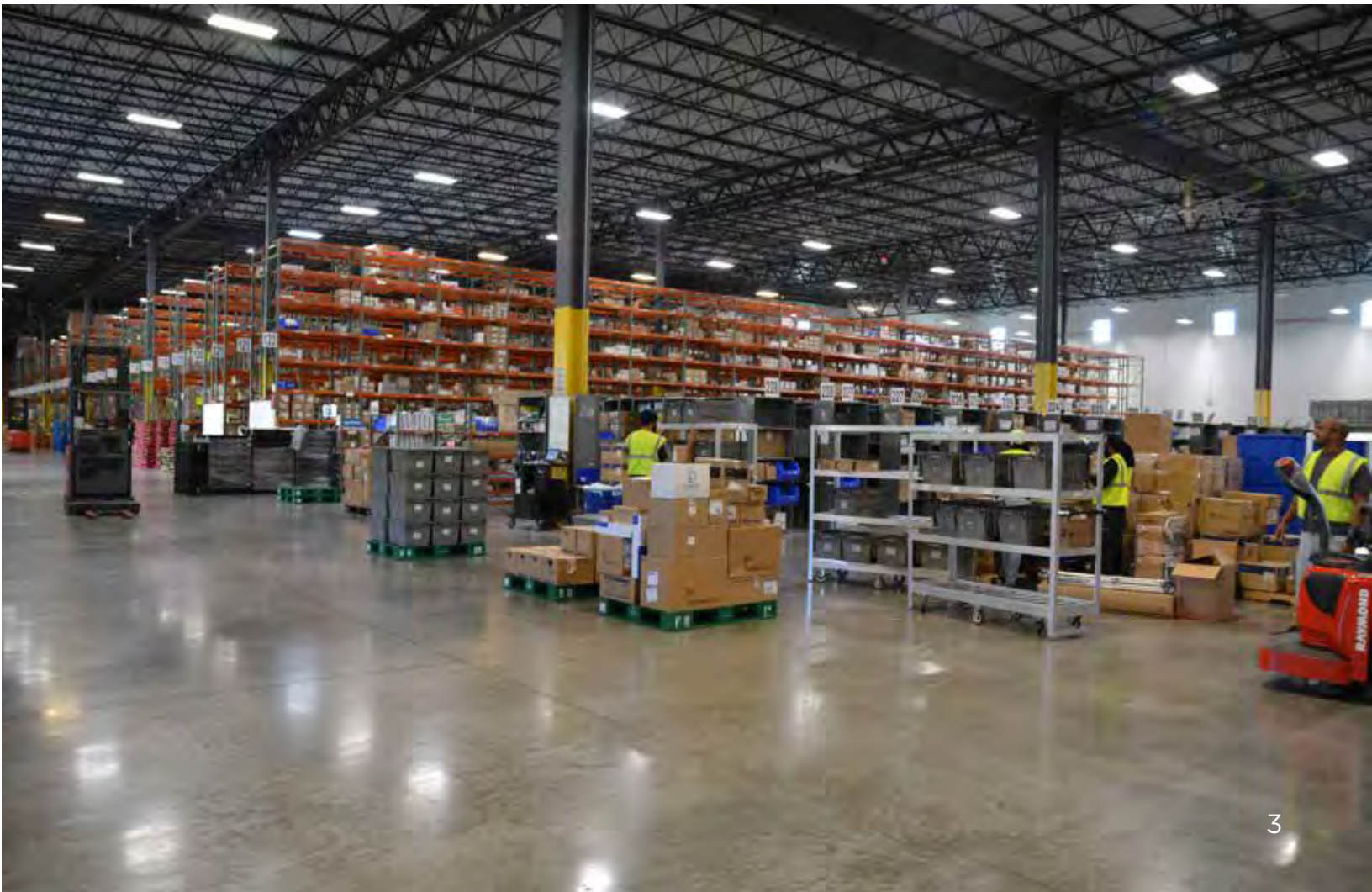
Manual Processes Prior to Lucas

In the original paper-based picking process with PeopleSoft, supervisors would first sort and group printed orders by hospital, hospital supply station, clinic or other shipping destination. Workers would often choose their "favorite" hospital or route to pick, and the execution of the picks was left to the discretion of the pickers.

"There was a lot of sorting and stapling of paper before picking. And managers would have to audit every piece of paper after picking to find out-of-stocks," says Arturo Aleman, Operations Supervisor in the low unit of measure (LUM) area. Order pickers "would pick it the way they wanted to, not in any standard order. If there were picking errors, we couldn't always trace them, since pickers didn't always write their initials on the pick list. And sometimes the paperwork disappeared."

Likewise, the replenishment process was highly manual. "We would write the stock outs on a board after getting the pick lists at the end of assignments. Any discrepancies had to be manually entered in PeopleSoft by our inventory control people." In addition, the hospitals would receive those shorted items 2 days later than expected.

Productivity reporting was also based on manual input in PeopleSoft, using handwritten notes on the pick sheets. Adamson notes that the sheets that didn't have initials were attributed to a "ghost picker" who often accounted for a disproportion of total lines picked for a day.



Identifying and Maximizing Improvement Opportunities

The first step in the Lucas implementation project at Baptist was an Engineering Study and Design Workshop that was conducted by Lucas solution engineers on site with the Baptist Health IT and operations teams. The study provided a preliminary functional overview of a Lucas system at Baptist Health, and identified changes to warehouse layout or processes that could drive the best possible operational results. As part of this engagement, Lucas also visited the largest hospital in the Baptist network, to understand how DC operations impact customers.

Based on Baptist's products and order profiles, Lucas engineers suggested that LUM productivity could be dramatically increased by using larger carts that could hold 12 totes instead of three. To accommodate the larger carts, Lucas also suggested that Baptist widen some aisles. The study also suggested re-locating certain items and re-numbering and re-labeling the LUM and bulk areas to make them more sequential and "intuitive" for warehouse staff. LUM picking volume is roughly 20 times greater than bulk, based on picks per day.

Project Implementation

After the study was completed, a Lucas project team worked with Baptist operations and IT to finalize the functional and interface specifications – including voice-flows for the different applications: picking (LUM, Bulk and Employee Sales), replenishment, put-away, cross-dock and cycle count. While Lucas engineers configured and tested the solution, the Baptist team prepared for implementation by, among other things, upgrading and improving the wireless network to provide connectivity throughout the DC, and providing test data that Lucas could use in testing the solution prior to roll out and implementation. In all, site prep, configuration, integration, and testing took two months.

In parallel to site and IT preparations, the operations team was preparing hourly employees for the go-live, educating them about the mobile technology and introducing them to the voice-directed processes they would be following. According to Adamson, Baptist puts a lot of emphasis on employee engagement in order

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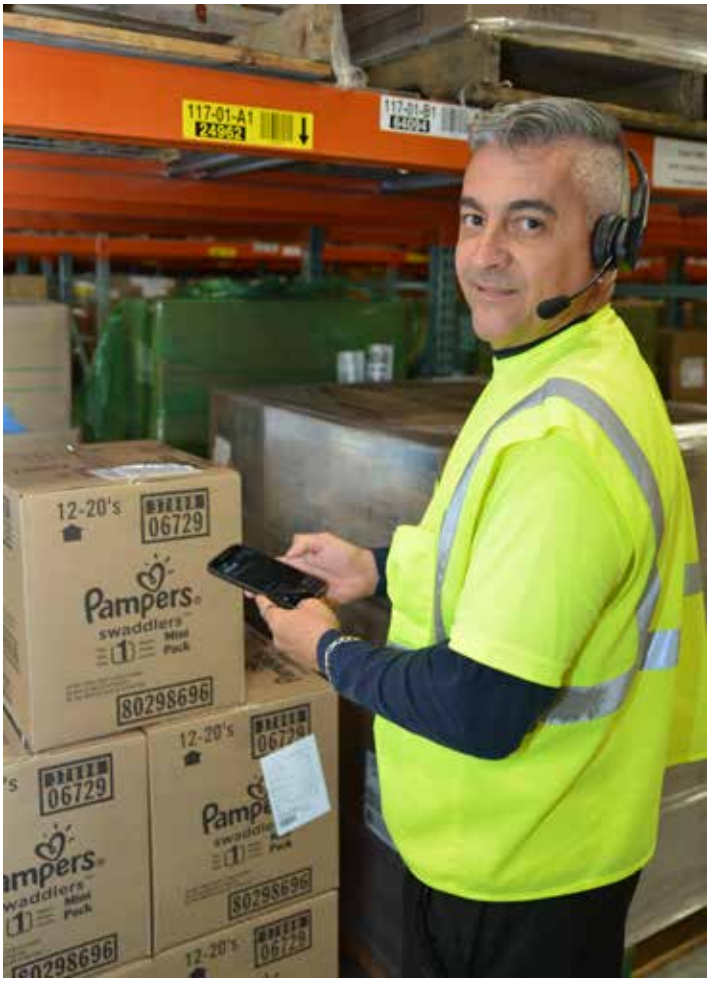
to retain their workforce. Managers had particular concerns about user adoption, especially among a few non-native English speakers.

On-site system implementation included user acceptance training, followed by go-live across all areas in one day. For most employees, the change-over to voice was immediate. A few of the non-native English speakers were initially reticent to use the system, but Adamson says that within 30 days they were fully on board with no issues. Says Aleman, “Some people were skeptical about it, and didn’t want to change. But after a few weeks they wouldn’t want to go back to paper. The only thing they miss is the music we used to play in the warehouse.”

Lucas Warehouse Optimization In Production

The Lucas system uses order, inventory and task information from PeopleSoft, and Jennifer™ prioritizes the orders and organizes work assignments based on rules configured for Baptist's needs. PeopleSoft is still used for receiving (which is the only warehouse process that is not executed by Lucas), and from receiving products are putaway in bulk and/or forward pick locations, and some product is cross-docked directly to outbound staging locations by workers. Replenishment is orchestrated by Jennifer™ and executed by workers in a two stage process. In addition, when pickers in the LUM area report a stock out, Jennifer™ orchestrates replenishment in coordination with PeopleSoft.



Building Better Batches With Jennifer™

As noted earlier, Lucas recommended that Baptist pick larger batches within their LUM area to increase pick density, which required widening some aisles and using larger carts. To fully optimize the process, Jennifer™ uses location, priority and other relevant factors in real-time to calculate which orders should be grouped together to maximize pick density and minimize travel.

Jennifer™ identifies the highest priority order and matches it with 11 other orders to create a picking assignment with the least possible travel. The batch optimization and creation processes happens in real time as a picker asks for work.

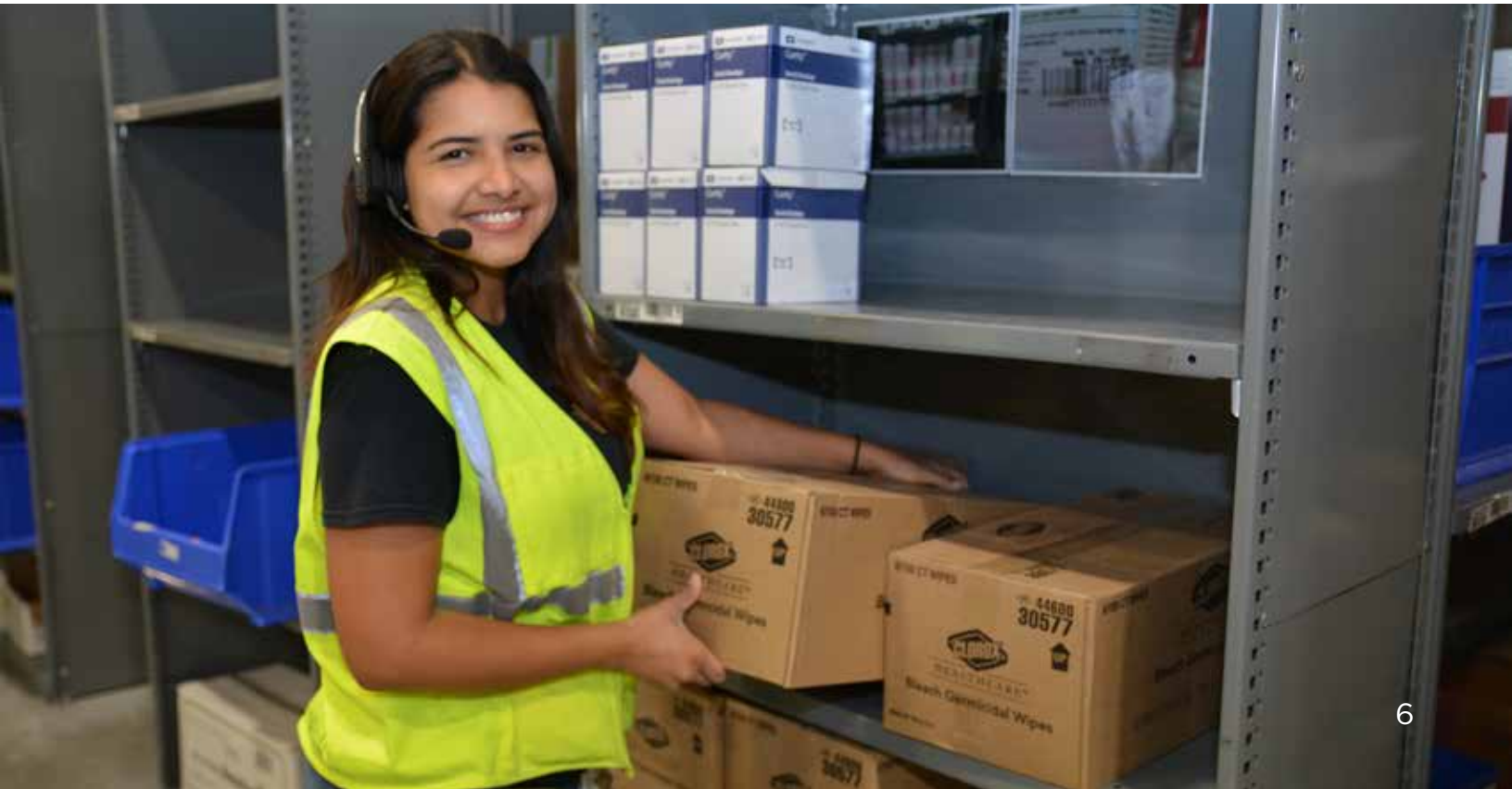
Voice Picking and Real-Time Management Visibility

To begin picking in the LUM area, pickers set up their carts with order totes, scanning an LP on the tote and speaking the cart location (A1, A2, A3… through D3). After the cart is set up with totes, Jennifer™ directs the picker to the first pick location. Users confirm locations using 3-digit checkstrings on the shelf location. Jennifer™ directs the picker to put items in the correct tote position and users confirm the put location/tote and quantity by voice. For items that are required for more than one order tote, Jennifer™ will notify that this is a multi-put item.

The Lucas system eliminated clerical time spent printing and managing printed pick sheets, and it also prevented pickers from choosing their "favorite" orders to pick. Further, the system created uniform, optimized picking processes. In addition, with system-directed picking and other processes, managers have real-time visibility into work through the Lucas management console.

Supervisors and managers are able to monitor the progress and distribution of picking work throughout a shift. "We can see the status of orders, and move work around if necessary," says Aleman. "We also look at productivity and share that data with the pickers and other workers. We publicize who the top pickers are."

Aleman explains that they are also using the messaging tools within the management console to send messages to employees. For example, to call employees to a meeting or to remind them to complete employee surveys.



Results: Productivity, Inventory Accuracy, and Predictability For Customers

According to Adamson, the Lucas solution has led to a dramatic increase in productivity. “What it used to take 12-14 people to pick in one shift, we can now do with 8-10 people.” The previous average picking rate in the LUM area was 50-56 lines per hour (LPH). Today it is 100-110. “That is a 100% improvement, and in bulk picking, the number is about 20 percent.”

In addition to improved picking productivity, accuracy has improved to 99.99% and the volume of returns from hospitals has declined to “a few totes per week, if that,” Adamson says.

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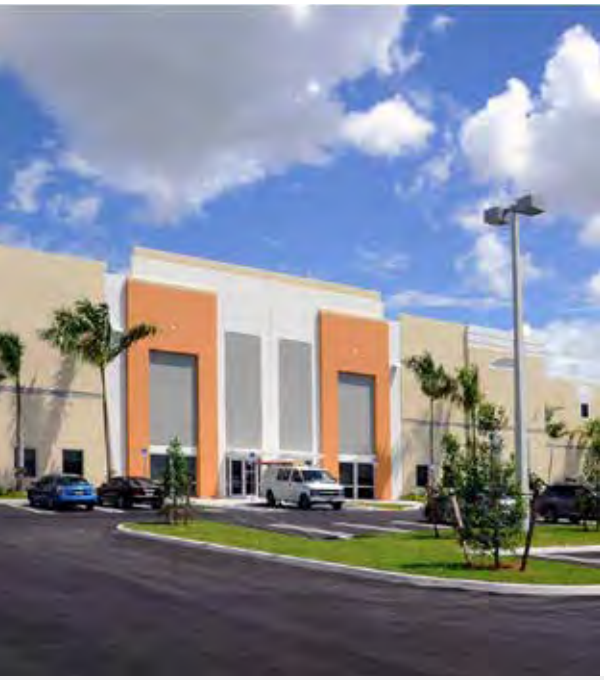
“The hospitals tell us they rarely ever have an error,” adds Adalberto Martinez, Director of Logistics and Distribution. “The hospitals also benefited from an improvement in the timing of deliveries. This is important because a lot of our products are time sensitive. Now they are getting their deliveries 1 to 2 hours earlier, at least. Hospitals have changed their staffing schedules to accommodate that.”

Adds Adamson, “On top of that, we just did a physical inventory, and our accuracy is up 20-30% by pick location. We credit that to better accuracy with Lucas, in putaway, replenishment, and picking.”

Finally, despite concerns that some workers would be alienated by the need to change how they were working and to use unfamiliar new technology, every single employee has embraced the solution. And all have seen improved performance.

The bottom line for Adamson is that the Lucas Warehouse Optimization Suite allowed Baptist to keep their system of record intact, improved accuracy and productivity, and made work easier and better for all staff, hourly material handlers, inventory control staff, and supervisors. “If anyone is looking to keep their current system of record for inventory, the Lucas solutions lets you do that. We got 70% of what we wanted in a new WMS with Lucas, but at 1/8 of the cost.”



About Baptist Health

Baptist Health South Florida is an internationally recognized healthcare network and one of the largest not-for-profit healthcare providers in the United States. Headquartered in Coral Gables, Florida, the Baptist Health network includes 10 hospitals, more than 100 physician practices and outpatient facilities spanning four counties from Palm Beach to the Florida Keys.

As a faith-based organization, Baptist Health provides more than $291 million annually in charity care and other community benefits and supports numerous free clinics throughout its service areas. Baptist Health also has one of the largest international programs in the country, serving more than 12,000 patients from Latin America and the Caribbean.

About Lucas Systems

Lucas Systems helps companies transform their distribution center operations and continuously adapt to changing market dynamics. We dramatically increase worker productivity, operational agility, and customer satisfaction.

Our solutions are built on 23-plus years of deep process expertise and smart software using AI and voice technologies. Our solutions feature Jennifer™, the brain, voice, and orchestration engine that drives performance improvement gains. Make the smartest moves at the lowest cost with Jennifer™.