

The drug wholesaler's new Florida distribution center rushes more medications faster to hospitals, pharmacies and retail stores statewide.



Doug Pace, general manager, McKesson, Lakeland

How McKesson *pumps up* distribution

By David Maloney, Senior Editor

Speed and accuracy are essential to any distribution operation. But expectations are turned up a notch or two when it comes to pharmaceuticals and related healthcare products.

Just ask Doug Pace, general manager at McKesson's new DC in Lakeland, Florida. He says it provides a faster response, increased accuracy and greater throughput than the company's previous DC in Tampa, which had become overcrowded and lacked desired efficiencies.

Furthermore, McKesson, the world's largest pharmaceutical wholesaler, needed a DC that could keep pace with Florida's population, which grows by a 1,000 every day. In addition,

every senior in the state takes an average of seven medications.

The materials handling in the facility (FCP Integrated Systems, www.fcpcis.com) is designed to effectively process prescription medicines, over-the-counter drugs, and health and beauty aids for hospitals, drug stores and retail chains throughout Florida.

Critical to Lakeland's success are DC-powered conveyors and an efficient sliding shoe sorter. The facility is also very strong on the information side. It includes picking directed by wireless terminals, verification stations that digitally record the contents of each outgoing carton,

and Palm Pilots that provide visibility of items shipped.

"We have gained productivity and the ability to locate product efficiently throughout the facility," says Pace. "We have been able to expand our controlled substance area and refrigerated area for our biotech products because of their growing importance to our customers. We also wanted to improve our handling for our Rx [prescription] products. This warehouse is geared to that process." The increased space in Lakeland allows for improved slotting of inventory



McKesson's integrator developed library-type ladders to allow employees to easily replenish the back of flow racks in the split-case pick area. The ladder crosses over a conveyor line below.

and room to grow along with the state's population.

The facility ships products six days a week. Much is sent to seven delivery hubs located strategically throughout the state. These facilities then sort deliveries for specific carrier routes. The combination of the

efficient Lakeland DC and the regional hubs allows retail and hospital customers to receive orders quickly, and keep their own inventory levels low.

"Our customers are skinny on their inventories," explains Pace. "We work with them on a just-in-time process. A hospital may only have eight doses of a particular drug. In essence, their back storeroom is now here in this warehouse."

Warehouses in the warehouse

To better process orders, Lakeland was designed with its mix of products in mind. A large security cage houses particular prescription medications, such as chemotherapy drugs that need to be stored and delivered separately from other medications. A cooler stores biotech products and other drugs that require refrigeration. And a vault is used to hold certain controlled drugs, as mandated by the Food and Drug Administration.

In each of these, processing of orders works as if they were separate small warehouses within the larger warehouse. Receiving, putaway, picking and packing are performed directly within the areas. Product is then held there until just before the over-the-road trailer is ready to depart the facility. At that time, the items are brought to the docks and deposited onto the trailer. The truck driver must be present for

the loading, as he is responsible for the contents once the trailer is sealed.

Other products, including health and beauty aids, are picked within a two-level pick module. These picks are directed by the facility's radio frequency data communication system and placed into reusable totes. The totes are then sent to the end customer, saving greatly on packaging costs. Emptied totes are retrieved at customer facilities upon delivery of the next orders.

Benefits at a glance

- Increased throughput capabilities
- More efficient processing of prescription products
- Faster order response allows customers to reduce their inventories
- More space permits better slotting and storage
- Facility is more energy efficient than old DC

By the numbers

- 2 miles of conveyor
- 6 days per week that facility operates
- 7 prescriptions (on average) taken by Florida residents over 65
- 8 minutes that it takes totes to travel from split-case area to docks
- 20 vehicles in fleet, including lift trucks, orderpickers and tuggers
- 24 voltage DC-operating conveyors
- 147 drive motors saved by using DC-powered rollers
- 350 feet per minute is sorter speed
- 45,000 square feet in mezzanine

The facility was also designed to be energy efficient. New DC-powered conveyors (Intelligrated, www.intelligrated.com) save between 30–70% of the electricity required by AC units, depending on volumes.

Instead of using belts, chains and conventional drive boxes, the conveyors feature small 24-volt DC motors built

continued on page 32

McKesson Pharmaceutical Lakeland, Fla.

FACILITY SIZE: 225,000 square feet (incl. 45,000 sq. ft. mezzanine)
PRODUCTS: Pharmaceuticals, medications, health & beauty products
DISTRIBUTION TERRITORY: State of Florida, including seven regional hubs

BEGAN OPERATIONS: February 2003
STOCK KEEPING UNITS: 25,000+
ORDERS PROCESSED: 30–35,000 daily
PEAK SEASON: Winter
EMPLOYEES: 100+ in DC operations
ACCURACY: 99.96%

RECEIVING

Products arrive at the inbound docks and are offloaded by lift trucks. Full pallets are given a license plate that is scanned. The warehouse management system assigns a location for the stock keeping unit (SKU), either in reserve storage or a forward pick location. Mixed receipts are repacked by single SKU and are placed manually onto staged pallets. Cases arriving not already palletized are also placed onto pallets.

Most items head to reserve storage in pallet racks, except those needed immediately for replenishment. Lift trucks deposit the loads into their assigned positions, scanning the location upon putaway.

Some items also are placed within a security cage at the dock until they can be processed into three special product storage areas. A cooler holds medicines that have to remain between 36 to 45 degrees F. Other medicines, such as chemotherapy drugs and certain prescription items, are stored within a security cage. Items that require extreme care as determined by federal regulations are stored in a vault.

About 5% of receipts are also crossdocked directly to staging areas at shipping. These are normally large-order SKUs and special buys.



Many prescription products arrive at Lakeland as mixed SKUs within cartons. These items are removed and divided into totes by individual SKU. A conveyor then takes the totes to putaway in the split case modules.

REPLENISHMENT

Replenishment of the forward pick areas occurs throughout the day to replace items picked the previous day. The warehouse management system also looks at the current day's orders and makes certain that enough stock is on hand within the pick areas to meet the demand. Portable radio frequency data communication (RFDC) devices direct replenishment.

Products for split-case picking are brought by the lift trucks to flow racks or shelving within the pick module. Items that will be selected as full cases are taken by lift truck or pallet jack to the bottom three levels of the reserve racks, which house forward case picking. These are dynamically assigned as determined by pick velocity. Fastest movers are placed as close as possible to shipping.

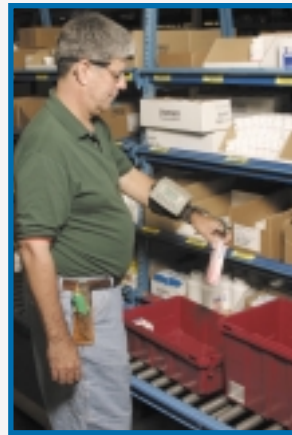
ORDER PROCESSING

Orders are filled in the evening hours during multiple waves, with most items picked in about seven large batches. These batches primarily consist of items that ship to the regional delivery hubs, where they will later be split into individual customer orders. Remaining items are picked in smaller waves determined by carrier route sequence.

Lift trucks select full pallets from the reserve racks using radio frequency devices. Order pickers also pull mixed SKUs of products from the same racks. Full cases in the forward case pick area, which comprises the lower levels of the racks, are picked to carts pulled by tuggers. The lift trucks, tuggers and order pickers take all of these picks from the racks to the staging lanes in shipping.

RFDC is also used to direct split-case picking in the two-level pick modules. The lower level contains prescription SKUs, while the upper level holds over-the-counter medications and health and beauty aids. Split-case items are selected into totes from the flow racks (fast movers) and shelving (slow movers). Pick-and-pass is used to gather the orders, with the tote conveyed to all zones that have products for the order.

About 20% of totes next stop at a verification station. The tote is opened and each product is



The WMS assigns which of two sizes of totes will be used for split-case picking. Only one size was used in the old building. Moving to two sizes allows greater cube utilization.

scanned and a digital photo is taken of the contents. All products then are diverted to four value-added stations where price stickers are added and the tote is strapped.

Completed totes are conveyed to a sliding shoe sorter that directs the orders to ten shipping docks according to carrier route. Other products are also loaded from the staging lanes onto the outbound trailers.

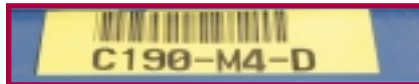
Products in the cooler, security cage, and vault are processed as if they were in their own small warehouses within the warehouse. Items within these areas are picked and packed directly within the zones, then taken by lift truck to the docks only moments before the trailer is ready to depart the building.

MODERN WAREHOUSE OF THE MONTH

High-value items are stored within a security cage. This area acts as a warehouse within the warehouse, with orders picked and packed directly within the cage.

into the rollers. Each powered roller then drives other rollers in a conveyor zone that is 30 or 36 inches long.

"The DC conveyors saved the need for 147 drive motors," explains Robert



McKesson uses bright yellow rack labels to make it easier for lift truck operators to quickly find the proper storage locations.

Burdick, facilities manager. "Energy and maintenance costs far outweighed the capital costs."

And the savings did not stop at installation. The system is designed to activate individual conveyor zones only when a product is present. At other times, the rollers shut off, which substantially reduces electrical needs and decreases noise levels.

The facility's sliding shoe shipping sorter also is designed to conserve energy and lessen noise, with use of DC motors.

"The sorter is so quiet that I can stand next to it and still have a cell phone conversation," says Pace.

Another technology the new facility utilizes is Palm Pilots to track outbound shipments. Products are scanned using the Palm Pilots as they are loaded onto trailers. The information is then made available to customers through a secure Web site so that items can be tracked throughout the delivery process. This also makes the customers' receiving easier, as the information can act as an advance ship notice of expected product.

"We get reports every morning on our deliveries," adds Pace.

Soon, managers will begin using other software to help them evaluate the slotting of products within the building. The system will also provide performance measurement tools that will aid in managing labor.

"We will gain even more productivity here then," predicts Pace.

System Suppliers

CONVEYORS AND SORTERS: Intelligrated Inc., 513-701-7300, www.intelligrated.com

MATERIALS HANDLING INTEGRATION: FCP Integrated Systems, 602-454-7400, www.fcps.com

LIFT TRUCKS, ORDERPICKERS & TUGGERS: Crown Equipment Corp., 419-629-2311, www.crownlift.com

RACKS: Ridg-U-Rak, 814-725-8751, www.ridgurak.com

SHELVING: Penco Products, Inc., 800-562-1000, www.pencoproducts.com

FLOW RACKS: King-Way Material Handling, 800-554-6632, www.king-way.com

SCANNERS & WIRELESS DEVICES: Symbol Technologies, 516-563-2400, www.symbol.com

FIXED SCANNERS: Accu-Sort Systems, 800-227-2633, www.accusort.com

TOTES: Orbis, 888-307-2185, www.orbiscorporation.com

CUBING SYSTEM: Quantronix, Inc., 800-488-2823, www.cubiscan.com

DOCK LEVELERS (AIR BAG): Kelley Dock Systems, 414-352-1000, www.kelleycompany.com

SECURITY CAGES: Wire Crafters, 800-626-1816, www.wirecrafters.com

LIFT TRUCK BATTERIES: Exide Technologies, 800-872-0471, www.exide.com

AUTOMATIC BATTERY CHANGER: MTC (Materials Transportation Co.), 800-433-3110, www.mtc-online.com

FOAM DUNNAGE: FP International, 650-364-1145, www.fpintl.com

BUBBLE DUNNAGE: Sealed Air Corp., 201-712-7000, www.sealedair.com

PRINTERS: Zebra Technologies Corp., 847-634-6700, www.zebra.com

FLOOR CLEANER: Tennant Co., 800-553-8033, www.tennantco.com



Click on this icon on our Web site, mmh.com, read how Apotex developed specific solutions for handling the pharmaceuticals it manufactures.