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Executive

Uncribbing the Tools at DePuy Orthopaedics

By deploying an automated point-of-use dispensing solution at its New Bedford plant, this medical devices company is driving down the cost of MRO.

By Editorial Staff

DePuy Orthopaedics, a Johnson & Johnson company based in Warsaw, Ind., is a manufacturer of orthopedic implants, medical devices and instrumentation. The company's manufacturing facility in New Bedford, Mass., consists of a single-story building some 90,000 square feet in size and employing about 300 people.

Early in 2003, as the company's management looked for ways to reduce costs while also improving productivity and output at the New Bedford plant, DePuy executives turned their attention to the consumable supplies used in the manufacturing process at the facility.

At the same time, they saw opportunities to improve the process used at the facility for handling the consumables. Supplies were distributed from one centrally manned stock location called the "tool crib." Excessive quantities of inventory were required to guard against stock-outs and machine downtime, and employees maintained "private stocks" of tools at their work areas, adding to the excess consumption numbers.

In addition, operators had to make frequent visits to the crib to request tooling and supplies, but they were required to shut down their machines while they were away and turn them back on when they returned. This machine downtime would average 10-15 minutes per visit, and with approximately 200 machine operators making up to three trips per day, the facility was experiencing a substantial amount of machine downtime.

Focusing on Point-of-Use

The production and supply chain management team at DePuy took on the challenge of re-engineering the

consumable supplies process, and they developed a list of five major goals for the project, including: reducing machine downtime due to operators awaiting needed tools and supplies; ensuring round-the-clock access to required materials for employees; reducing on-hand inventory; empowering employees while providing end-user accountability for supplies; and effecting a substantial increase in reporting accuracy around consumable supplies.

Surveying the landscape of potential solutions to their consumables challenge, the DePuy team came to focus on automated point-of-use dispensing technology. Richard A. Perry, manager of MRO strategic sourcing at DePuy, had become familiar with the point-of-use dispensing solutions – essentially, large cabinets with a varying number of access-controlled drawers – while visiting various industry trade shows, and he came to believe that this technology could be the right solution for DePuy. Subsequently, David Rivers, a systems engineer with DePuy, found an automated point-of-use dispensing exhibit at a conference organized by APICS, the operations management association formerly known as the American Production and Inventory Control Society.

Running the Pilot

After an exhaustive study conducted by Perry and Rivers to learn about the specific technology provided by the major suppliers in the automated, point-of-use dispensing industry, the New Bedford facility elected to go with a provider of the solutions based in Southern California. Perry said that the selected provider met the following criteria on DePuy's requirements list: modern, state-of-the-art cabinet designs; no in-house server required; Web-enabled solution; user-friendly

operation; superior management reporting features; proven track record; and low overall cost.

DePuy's production floor is organized into six business units, and the production and supply chain team selected the largest business unit in the plant for the first implementation of the solution at DePuy. Then they set a 90-day period to validate the project, beginning in July and ending in October 2003. The test unit was programmed to provide users with access to the tools and supplies they required to do their specific jobs, while the employees were empowered to take whatever they needed, whenever they needed it, directly at the point-of-use. With the automated dispensing system connected to the Web, the solution provided management with up-to-the-minute inventory information, as well as extensive reporting and accurate accounting.

In addition, the system allowed DePuy to automate its purchasing process for the supplies dispensed through the point-of-use system: The company shared usage reports with its suppliers through the Web-enabled link to the system, and an individual supplier would receive electronic messages indicating the restock status of all items they provide. As items reached re-order levels, replenishment quantities could be shipped, and DePuy put in place a payment process with suppliers to cover all replenishment items, with individual blanket orders triggering the payment process for all items shipped.

At the end of the evaluation period, a review of the results of the pilot found that the point-of-use system had effectively reduced required inventory of consumable supplies from three-and-a-half months (and \$119,000) to two months (and \$81,000). In addition, downtime for machinery fell from eight hours per week to 1.9 hours per week, and shortage adjustments dropped from an average of 625 per week to just 76 per week. "The test unit implementation outperformed expectations," Perry says, adding, "Any skepticism as to whether the point-of-use cabinets could make a real difference faded after less than two months of actual use."

Rolling out the Cabinets

Following the pilot program, DePuy opted to deploy the point-of-use cabinets in the five remaining business units, rolling the implementation out for the remainder of 2003 and through July 2004.

DePuy rigorously tracked the results of the project, and by the end of 2004 the company estimated that the point-of-use systems initiative had resulted in inventory reductions totaling nearly half-a-million dollars, while savings on the company's tool spend amount to a quarter million dollars. Downtime savings added up to \$145,000, according to DePuy's calculations, while additional savings from shortage adjustments, new efficiencies in requisitioning and purchasing (in part through vendor consolidation), and the elimination of the tool cribs (with the attendant overhead) amounted to nearly \$150,000 in additional savings.

Perry also notes that prior to the deployment of the cabinets the company had an attendant manning the tool


cribs on the first and second shifts only, while operators on the third shift would end up relying on a supervisor or lead individual to withdraw their supplies. With the point-of-use solution in place the attendants were no longer necessary, and, moreover, all shifts were given equal access to the supplies.

On an ongoing basis, Perry credits the project with six-figure annual savings on top of the return on investment of several times what the company expected. Those results include the reduction of total on-hand inventory at the plant to one to two weeks, down from three to five months, and a reduction in machine downtime from eight to 21 hours per week to 0.089 hours a week for the plant as a whole.

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The success of the automated point-of-use dispensing units prompted DePuy to supplement the initial implementation with three "virtual cribs" to manage less-expensive, low-volume items. These secure areas allow users to enter the locked crib door by swiping their badge. Once inside, a user logs into a handheld scanner to dispense or return supplies, and upon completion of the transactions, the user returns the scanner to its docking station and exits the crib. The virtual cribs provide the same reporting data as the point-of-use cabinets.

The Bottom Line

Asked about the implications that the point of use solution has had for DePuy, Perry said the reduction in machine downtime and the resultant higher productivity had an impact where it counted most for the company's executives. "The bottom line reductions in supply expenses made it easier for management to meet or beat their financials," Perry concludes. 



Dick Perry, manager of MRO strategic sourcing at DePuy Orthopaedics, contributed to the preparation of this article. Perry has held various materials management positions with Johnson & Johnson, and in addition to attending Bryant College, he attended the Operations Institute at the Duke University Fuqua School of Business. An active APICS member, his involvement includes Chapter President and Regional Officer.

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