

Materials management

What's right number of inventory turns?

How many times does your OR "turn" its inventory? If you say 4 or less, you are probably losing money and wasting space, experts say. You also could be negatively affecting staff satisfaction and productivity.

If you don't know how many times your department's entire inventory is used and replaced each year, don't fret—you are not alone.

"A large percentage of hospitals know the number of turns in their general stores, but very few know how many (turns) there are on floors and in departments like the OR and cardiac cath lab," says Lisa Ashby, vice president of distribution marketing with Cardinal Health in McGaw Park, Ill, who spoke at the OR Business Management Conference in May in Albuquerque.

"When I think of turns, I see it as just one element of an overall inventory management process. It's a metric of how well you are doing."

While the number of turns in the average-sized hospital differs based on the numbers of beds, the range is about 2 to 8. An average 300-bed hospital averages about 5 turns per year, with the top 25% averaging about 7, according to data collected by Cardinal Health.

"Using a significant volume of any one supply generally means the turns are higher. That is because it's easier to predict what your future usage is, and you have a lower risk of excess or no-move supplies in your inventory," Ashby says.

Smaller institutions generally have a lower procedure volume and may have fewer turns because they do more "just-in-case" stocking. Medium-sized facilities may have a higher turn rate because their higher volumes generally mean more regular supply usage. As hospital beds increase above 400, average turns decline. "Larger hospitals and teaching institutions have more complex cases, and you have to keep many specialized products on hand," Ashby explains.

Calculating turns

Inventory turns can be calculated by taking total supply spending and dividing it by on-hand inventory. For example, if your OR spends \$1 million in supplies and you have on-hand inventory of \$250,000, you have 4 turns a year. In other words, you replace your inventory every 3 months.

But if your OR increased those turns to 8, you would have only \$125,000 in on-hand inventory, which would free up \$125,000 in cash and cut warehouse space in half.

"Cash is a financial barometer," Ashby says. "When you turn your inventory, you are increasing your cash flow that can be used for other purposes."

Taking an accurate on-hand inventory count can be accomplished by using either an automated, or perpetual, inventory management system, or by manually counting supplies. Automated systems include Lawson, PeopleSoft, Oracle, McKesson, or Cardinal's InventoryLink.

"A perpetual inventory is a real-time view of reducing and adding inventory," Ashby says. "We are hearing a lot of people over the last 12 months talk about clinical inventory management options."

To manage inventory supplies on nursing units or in departments, she says hospitals are turning to automated clinical supply systems like Omnicell, Cardinal's Pyxis SupplyStation, or McKesson Automation's SupplyScan.

Automating supply tracking and replenishment is the easiest and best way to make an accurate inventory accounting, she says.

Benefits of higher turns

By increasing inventory turns, ORs can increase cash flow, improve productivity,

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and reduce the need for large asset locations. "The higher the turns, the less inventory you have on hand, and the more space you have for revenue-generating services," she says.

Improving inventory management can also increase staff satisfaction. When staff can get the right product at the right time, they are more satisfied and more productive.

"I have not seen anyone put in inventory controls where the OR has not benefited financially," Ashby says.

For example, one hospital evaluating new inventory management processes found \$3.8 million worth of dead stock in their \$7.8 million on-hand inventory.

"Some had not moved in 6 months, and some had expired. The hospital negotiated a return (of old supplies) to vendors," she says. "There was a lot of money sitting there, and about half of the budget went back to the OR."

Cleaning up inventory

Earlier this year, Christiana Care Health System, Wilmington, Del, hired an outside firm to conduct a physical inventory of its 4 perioperative sites to determine for the first time the number of inventory turns, says Bob Martin, the system's supply chain manager for perioperative services. Christiana operates a 780-bed hospital, a 250-bed hospital, and 2 surgery centers on 2 hospital campuses with a total of 55 ORs.

As of June 30, the number of inventory turns in the ORs was 4.82, and Martin believes the average number of turns can be increased to up to 6 by June 30, 2005.

Freeing up cash flow, reducing the number of supplies on shelves, and improving productivity and staff satisfaction are the biggest goals for the project.

"The OR does a lot of direct purchases. We (materials management) hope to do more of that in the future. This will free up clinical time for the nurses," Martin says.

Christiana began its inventory management improvement program in November 2003 by increasing the number of supply deliveries to 5 days per week from 3 days.

Christiana also began using Cardinal's InventoryLink system for wound-closure management. From January 2003 to January 2004, inventory turns for sutures increased to 4.65 from 2.96, Martin says.

"This exceeded our expectations," he says. "We also reduced product lines by 21% by eliminating expired and obsolete products. Most importantly, we reduced the number of stat calls for those products by 91%."

Over the next year, Martin says Christiana hopes to reduce the amount of supplies in "unofficial locations" in the ORs.

"The OR nurses have been on board with this project," Martin says. "The nursing leadership wants (supply) managed and cleaned up. They are expensed for these supplies in their budgets."

Hospitals can learn from industry

Surveys show that the hospital industry is inefficient when compared with other businesses. For example, hospital ORs average about 4.8 turns per year compared with 23 for the automobile industry, 15.4 for the petroleum industry, 5.3 for apparel, and 8 for pharmaceuticals, according to the Center for Inventory Management, Stone Mountain, Ga.

"The higher number of turns translates to how efficient you are with managing inventory assets and cash investments," Ashby says.

A study published in December 1999 by the management firm Pittiglio Rabin Todd & McGrath in Waltham, Mass, found US companies have dramatically improved their inventory turns. Ashby says those improvements have continued with increased automation.

US inventory turns rose by more than 12% from 1994 through 1998 to an average of 5.4 annual turns, according to the report. During the same period, the aver-

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age cash-to-cycle time—the number of days between paying for supplies and getting paid for the product or service—improved by 10% to 100 days, the report stated.

Computer companies like Dell Computer Corp have turnover rates that range from 30 to 40 times per year. Turns are especially important for price-competitive industries like automobiles and electronics or those with low margins.

Increasing inventory turns generally results in one-time savings.

“If you get up to 8 turns, the optimum, you shrink your inventory. You can have large, one-time savings from inventory reduction. But capital savings can accrue over the years, and your ongoing impact is productivity and staff satisfaction improvements,” Ashby says. ♦

—Jay Greene

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Calculating inventory turns

Inventory turns = total supply spending divided by on-hand inventory

Example: \$1,000,000 total supply spending/\$250,000 on-hand inventory = 4 inventory turns a year (inventory is replaced every 3 months)

Total inventory value:

Total inventory value = average inventory value per OR x number of ORs + average additional inventory value of specialty ORs (open heart, transplant, pediatrics) x number of specialty ORs

Example: For a 10-room OR department with 2 open-heart rooms, where the average inventory value per OR = \$100,000, and the average additional inventory per specialty OR = \$50,000.

$\$100,000 \times 10 \text{ ORs} = \$1,000,000$

$\$50,000 \times 2 \text{ specialty ORs} = \$100,000$

$\$1,000,000 + \$100,000 = \$1,100,000 \text{ total inventory value}$

Source: Cardinal Health.

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How to increase inventory turns

Take a physical inventory

A manual physical inventory is the first step for the majority of hospitals that do not have automated supply systems.

"Some ORs do annual physical inventories and compare one year to the next. Some do cycle counting, where they count 20% of (stock) units every week or month," says Lisa Ashby, vice president of distribution marketing with Cardinal Health in McGaw Park, Ill.

When conducting a manual inventory, identify supply areas, establish a process to count products, and set par levels based on usage.

Do an ABC analysis

Do an ABC analysis to rank items in your inventory according to how rapidly they move: A items move the fastest, B items at a moderate pace, and C items the slowest.

"If you increase the inventory turns on the A items, that will increase your overall average turn rate," says Bill Myers, director of materials management for Mission Hospitals, Asheville, NC.

Identify no-move products

Identify products that aren't being used in a certain amount of time. For example, if items are not used in 6 months, they are taken out of inventory.

Increase consignment

Increase the level of items kept on consignment.

"If you don't own it, you don't count it in inventory," Myers says.

Orthopedics is the most common category of supplies kept on consignment. In a recent survey, 51% of materials managers said they keep orthopedic items on consignment, while 13% keep all implants on consignment, and 9% each use consignment for grafts, heart valves, and eye procedures. The survey was conducted by the Association for Healthcare Resource & Materials Management (AHRMM, www.ahrmm.org).

Reduce redundant supply locations

"One of the easiest ways to increase turns is to make sure stocking locations are correct," Ashby says.

Assign a point person

Assign someone with inventory management expertise to carry out the recommendations.

"You need to make par level changes, manage, and facilitate no-move products," she says. "If the OR doesn't assign someone or outsource this function, it will have limited success."

Develop a process

For long-term changes, develop a regular process to manage inventory. "Otherwise 12 to 18 months later, you will go through the same thing," Ashby says.