

BENCHMARK BRIEFINGS

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SITE

Kaiser Permanente Medical Testing Laboratory
Rockville, MD

APPLICATION

Storage of specimens, archive biopsy slides and tissue blocks, reagent materials and lab supplies

EQUIPMENT

Two dual access and one refrigerated vertical carousel and three Shuttle® VLMs with FastPic® software and QuickPick® Technology.

SUMMARY

Improved ergonomics and employee safety, average 77% in floor space savings and increased productivity by 56%

Two dual-access vertical carousels provide storage for biopsy slides and tissue blocks, three Shuttle VLMs store laboratory supplies such as gloves, masks and lab coats and a refrigerated vertical carousel stores reagents used in testing operations.



Vertical Storage and Retrieval Systems Help Kaiser Permanente Lab Meet Cost, Ergonomic and Efficiency Goals

When Kaiser Permanente's Mid-Atlantic region decided to consolidate its regional testing laboratory operations, management looked at alternative approaches to storing specimens, biopsy slides, tissue blocks, reagents and laboratory supplies.

Kaiser Permanente is the largest integrated health care and health maintenance organization in the U.S., serving some 8.2 million members per year. The Mid-Atlantic Region, the fourth largest of the eight geographic regions served by the organization in the U.S., handles medical testing for members located in Baltimore; Washington, D.C.; southern Maryland and northern Virginia.

It's a very large operation, and prior to the consolidation, regional testing was conducted in four separate facilities. Because operations were dispersed, there was duplication in ordering supplies. The traditional rack and shelving system used in the laboratory locations required a large amount of floor space. In addition, the shelving created ergonomic concerns for employees who routinely retrieved slides and tissue blocks, which must be retained for 10 years. Stored on the shelving in drawer-style racks, one rack of 100 slides weighed about 30 pounds. The constant bending and reaching to retrieve these heavy racks was a potential source of employee fatigue and injury.

"When we consolidated the laboratory operations, we looked for ways to improve the use and efficiency of the space we

needed for storage. A primary goal was to keep the costs of constructing the new facility as low as possible," said Jane Lewis, Kaiser Permanente Regional Lab Senior Operations Manager. "Plus, we were moving to a two story operation, and we knew that the way we stored slides would create too much weight on the second floor of our new facility."

Kaiser Permanente chose Kardex Remstar vertical carousel storage and retrieval systems and FastPic inventory management and control software to help improve space efficiency at the new laboratory. Two dual-access Kardex Remstar vertical carousels installed back-to-back provide storage for a combined inventory of biopsy slides and tissue blocks. The biopsy slides and tissue blocks were previously stored on in drawer style racks that required 1,200 square feet of floor space. The two Kardex Remstar vertical carousels that now store the biopsy slides and tissue blocks occupy a footprint of about 247 square feet, including the access area, resulting in an 80% reduction in floor space.

A refrigerated Kardex Remstar vertical carousel is used to store reagents used in testing operations at an optimum temperature. It is installed beside three Kardex Remstar Shuttle Vertical Lift Modules (VLMs) used to store laboratory supplies such as gloves, masks and lab coats.

The three Kardex Remstar Shuttle VLMs that store laboratory supplies replaced shelving that occupied about 2,500 square feet of floor space. The reagent materials were originally



The dual access design allows technicians to retrieve specimens or samples from either the first or second story improving the overall efficiency of the system.

stored in 27 36" wide x 26" deep standard refrigerators, occupying some 175 square feet of floor space. Combined, the refrigerated vertical carousel and three Shuttle VLMs occupy only about 712 square feet, a space savings of 74%.

Keeping Employees Healthy

Although the initial reason for re-evaluating storage and retrieval options was to improve materials utilization, Kaiser Permanente was also seeking to provide a more ergonomically designed storage and retrieval system for employees.

Technicians are required to access specimens on a daily basis. Previously, when blood specimens, biopsy slides or tissue blocks were needed, they would search the shelving for the proper rack number to locate the proper sample. "The former storage systems required employees to reach and bend to retrieve items. We want to keep our employees safe and healthy," said Ms. Lewis. "Kardex Remstar vertical storage and retrieval systems are designed to reduce the bending and reaching that is associated with rack and shelving systems," she added.

Now, the retrieval process is simple and straightforward, and a lot less strenuous. Blood specimens are stored in a 125-position archive tray. Technicians key the appropriate tray number into the system. The proper tray is automatically delivered to the ergonomically positioned pick window. Kardex Remstar pick lights graphically indicate the precise location of the blood specimen or tissue sample requested. Dual access design allows technicians access either one of the workstations on either floor.

Managing Resources

"Since we operated out of multiple facilities, we found a lot of duplicated effort in ordering, storing and retrieving items, plus we found that our higher paid technical staff, responsible for

performing medical testing, was often spending time away from that job to place orders," said Ms. Lewis.

"In the past, we'd have four different locations ordering lab coats, for example, and we always had more than we needed," Ms. Lewis said. "Because we were manually restocking shelves, we would have particular difficulty with stat (emergency) orders. Integrating the vertical carousels and VLMs with with FastPic inventory management system the laboratory has realized significant materials utilization efficiencies.

The laboratory also experienced some difficulty with rotating stored items. Occasionally, using the former system, some stored items were not retrieved until after their expiration date. By law, dated materials used in testing operations must be used prior to their expiration date or they must be discarded.

"The installation of the Kardex Remstar automated vertical storage and retrieval systems, together with FastPic inventory management software, solved those problems for us," said Erwin J. Cabling, Materials Coordinator. "Now, we don't need to rotate stock. The software directs the vertical storage and retrieval systems to the location of the earliest to expire item and pick lights direct the technician to the specific item."

In addition to improved inventory control and management, manpower productivity has improved as well. "Previously, we had six technicians each spending one and a half hours per week ordering supplies. Now, using the Kardex Remstar automated storage and retrieval system, we have one logistics specialist spending about four hours per week ordering and restocking the system," said Ms. Lewis. This has resulted in a 56% improvement in productivity.

The integration of automated storage & retrieval solutions has allowed Kaiser Permanente to consolidate regional testing operations in four facilities while gaining efficiencies.



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