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Mercy Medical Center

SOLUTION

Hospital's COLD System Saves $20,000/Year in Paper and Microfilm Costs

A computer output to laser disk (COLD) system is saving Mercy Medical Center - North Iowa $20,000 annually in paper and microfilm/microfiche costs. The hospital expects to save an additional $80,000 per year when it implements an imaging system in 2001. These savings do not include benefits that are harder to quantify such as faster access to reports and medical records and a reduced need for document storage space. The COLD system captures internal reports generated by the hospital information and laboratory management systems and downloads them to a hard drive. This information is now accessed from individual's PCs rather than being distributed on paper. The system is also replacing microfilm and microfiche as the permanent repository for documents that must be stored, such as patients' bills and lab test results. The imaging system, from the same vendor, will capture digital representations of paper documents such as patient charts and personnel records and store the images in the COLD database. By eliminating the microfilming costs for these documents, the imaging system will pay for itself in the first year of operation.

Mercy Medical Center - North Iowa, is located in Mason City, Iowa. The 350-bed hospital has more than 2,600 employees. Last year it had 1,182 births, 25,667 emergency room visits, 43,061 acute patient days, 10,704 surgery cases, and 638,461 clinic visits. Some of the services provided by this facility and its clinics include: aging services, behavioral health services, cancer services, diabetes education, employee wellness programs, home health care, neurodiagnostic and sleep disorder lab, radiology, and telemedicine. Mercy Medical Center - North Iowa was recently honored as one of the top cardiovascular hospitals in the nation by HCIA-Sachs Institute, a Baltimore-based health care information firm. The hospital was selected for the honor on the basis of its superior clinical, operational, and financial performance.

Past practices

The Patient Accounts Department of Mercy Medical Center - North Iowa uses the Med Series IV hospital information system (HIS) from Shared Medical Systems to prepare patient bills as well as the financial summaries used by management such as day-end reports and departmental reports. The hospital runs Med Series IV on an IBM AS/400 midrange computer. The hospital's laboratory uses the Sunquest laboratory management system running on an IBM RS/6000 computer. Lab personnel use this program to archive patient reports and as well as reports related to lab operation.

In the past, the reports generated by these systems were printed on paper for distribution to those who needed the information. The costs associated with this practice included that of the paper and the labor involved in the copying and distribution. However, storage represented an even larger expenditure. Not all of the documents generated by these systems needed to be stored but for those that did, such as patient bills and lab test results, the archival method was a combination of microfiche and microfilm. The hospital paid a fee to an outside contractor who made microfiche/microfilm copies of the documents. The annual fee for copying the necessary HIS and laboratory documents was $20,000. There were also storage costs, as well as the time spent looking for additional storage space. "We were always looking for places to store all this information that we're required to keep," says Maggie Herman, a systems analyst at Mercy Medical Center - North Iowa.

There were other limitations besides the costs associated with paper, microfilm, and microfiche. Because reports were hand delivered, there was somewhat of a delay between when a report was generated and when it reached recipients. Also, it was difficult to find information in stored documents, for several reasons. One was that the storage facility was not located in the main part of the hospital. The person needing the information had to leave his or her desk and go to the storage site. It could even be difficult to find specific information within paper documents. "One of our lab clerks had to go through 900 pages of documents at end of every month and look for two specific charge numbers," says Herman. Data security was compromised by fact that both microfiche and microfilm documents could be damaged and misfiled.

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METAFILE The Total Solution Application Overview

Finally, this archival method affected service. When a patient or an insurance company needed a copy of a bill that had been purged from the computer and stored on microfilm, it wasn't possible to respond to the request immediately.

These issues led the hospital to search for technology that would "let us get away from paper as much as possible," according to Herman. A team of individuals from various departments led by Herman researched the technology and learned that a COLD system would address many of the limitations of the current approach by reading the report files generated on the AS/400 and RS/6000 computers and distributing them over a network. It could also serve as the archival mechanism, storing the information in digital format and eliminating the need for microfilm and microfiche. An imaging system would complement the COLD system by making it possible to scan and digitally archive documents such as patient charts and employment applications that must be created in hardcopy format.

Herman's team evaluated four vendors' systems. The team chose software from Metafile Inc., Rochester, Minnesota, for a number of reasons. One of the main ones was that Metafile's COLD and imaging systems shared the same database. "Some of other vendors' programs weren't so tightly linked, and if you wanted to search for something, you'd have to search the COLD database and the imaging database separately," Herman explains. Metafile's programs also seemed to be the most user friendly. They also met other selection criteria including a full text search capability, ability to work with multiple systems (such as Sunquest Lab and Med Series IV), support for different levels of security, ability to use over a wide area network, and support for a variety of storage media including hard drive, CD-ROM, and DVD-RAM.

Fast information access

Since installing the COLD system, Mercy Medical Center - North Iowa has stopped printing many of the dayend and monthend processing reports and distributing them manually. The COLD system reads the files created by the HIS and laboratory management systems and converts them to compact, searchable files. The software automatically scans a specified location for the files, and if they are found, automatically downloads them to a Windows NT server. The information is available to hospital employees at their desktop PCs. They no longer wait for reports to be printed and distributed but can access the information almost as soon as it is created.

Reports are currently stored on a hard drive, but the hospital is eventually going to install a DVD tower to serve as the permanent storage medium. By using the COLD system and a digital archival method, the hospital has eliminated $20,000 of its annual microfiche and microfilm costs. And the continual search for storage space is no longer a concern. Perhaps more importantly, access to stored information is now almost immediate. Rather than getting up from a desk and going to a distant storage site, a user simply performs a search with MetaViewer from his desk. The system's full text search capability makes it possible to search for a specific number or name anywhere in a document. The clerk who used to spend hours searching through 900 pages now finds the charge numbers she needs in minutes. By providing this kind of convenience to hospital employees, the COLD system is also benefiting patients, doctors, and insurance companies. When one of them has a question about a past bill, for instance, Patient Accounts employees can find the information through their PCs and respond instantly. This eliminates the time they used to spend taking down the necessary details, going to the archives to find the relevant information, and calling the person back later with the answer.

The COLD system is also being used to backup the laboratory information management system (LIMS). It makes it possible to determine patient blood types and groups when the LIMS is down. The laboratory also uses the cold system to produce reports required to comply with regulatory agencies.

The hospital is currently in the process of setting up access to Metafile in remote clinics via their wide area network (WAN) . Currently Mercy Medical Center - North Iowa sends via courier or faxes copies of monthly reports to approximately 40 clinic sites all across North Iowa. These clinics will soon view their monthly reports with MetaViewer resulting in easier and more timely access to the reports.

Soon the hospital will install the Metafile imaging system to digitally capture hardcopy documents created by the medical records, human resources, and education departments. This will add 100 more users to the 30 who currently access the Metafile database. When the imaging system is implemented, the hospital will no longer need to make microfilm or microfiche copies of patient charts, personnel records, and competency reviews. These and other HR and Education Department documents currently account for $80,000 in microfilming costs annually. By avoiding that expense, the hospital will recoup the costs of the imaging software, the scanner, and the DVD storage in one year.

With the computer output to laser disk (COLD) system already in place, Mercy Medical Center - North Iowa is saving at least $20,000 annually in easily quantified paper and microfilm/microfiche costs. Faster access to information and reduced storage space requirements afford additional savings, leading hospital management to conclude that the COLD system will pay for itself in three years.

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