

Small Hospital Successfully Competes With Larger Facilities Thanks to RIS/PACS with Integrated Voice Recognition



Radiologist Alice Chong, MD, dictates her findings using the Integrated Voice Recognition module of the CARESTREAM RIS/PACS at Chinese Hospital in San Francisco.



Chinese Hospital is located in the heart of San Francisco's Chinatown.

Paperless Process, Advanced Web Tools Drive Productivity Enhancements

The 54-bed Chinese Hospital in the Chinatown section of San Francisco delivers world-class patient care through its use of an innovative RIS/PACS platform with integrated voice recognition from Carestream Health, Inc.

In addition to implementing highly productive digital image and information management systems, the hospital went a step further to transform all elements in the imaging process, according to Dr. Roger Eng, MD, MPH, Chinese Hospital's Chief of Radiology.

"Many hospitals that installed RIS/PACS have not realized gains in productivity or enhanced the delivery of radiology reports and services," said Dr. Eng. "The radiology team needs to focus on achieving an efficient workflow from the moment the patient arrives until the report is read and delivered to the physician. That requires selecting and installing appropriate tools and making the commitment to use these tools to improve the process."

*"We designed our new workflow so that our staff would use digital methods to communicate and would not need any paper prompts. On the first day we went into full production with our KODAK CARESTREAM RIS/PACS, we were also paperless. That's a major achievement for a hospital of any size."
— Dr. Roger Eng, MD, MPH, Chinese Hospital's Chief of Radiology*

At the same time, Chinese Hospital eliminated film, it also went paperless. "We designed our new workflow so that our staff would use digital methods to communicate and would not need any paper prompts. On the first day we went into full production with our KODAK CARESTREAM RIS/PACS, we were also paperless. That's a major achievement for a hospital of any size, but one of the advantages of being small is that we can also be nimble."

Dr. Eng monitors radiology workflow in real-time from on-site and remote locations. "We are able to see how many cases are read and unread and how many minutes each unread case has been in the queue," he explains. "I can also monitor the pulse of the rest of the department at a glance—from patient waiting times to the productivity of a technologist or x-ray room."

Hospital radiologists are assisted by dedicated offsite radiologists within the group to ensure timely delivery of radiology reports—even during peak periods or after-hours. "Radiologists are in short supply. Our RIS/PACS solution allows us to employ remote radiologists who wish to work in a flexible practice environment tailored to their needs, not the radiology group's needs. Some of our radiologists want to work part-time from their homes, while others prefer to work an unusual schedule most traditional practices can't accommodate. As a hospital-based practice we cannot adjust the workload to meet our available resources, but we can adjust the resources to meet the demand," Dr. Eng explains.

Advanced Tools Available to On-Site, Off-Site Users

The extraordinary Web capabilities of the CARESTREAM PACS are vital to remote reading, according to Dr. Eng. "This PACS platform offers a consistent user interface and reading tools for both on-site and remote users. Providing Web-based access to

advanced diagnostic tools is important for a facility like ours that requires reading services from remote radiologists.”

Dr. Eng adds that all reading is done on diagnostic-quality workstations. “Radiologists don’t need to read from an expensive, specialized workstation but they do have to have diagnostic-quality viewing capabilities.”

“CARESTREAM RIS/PACS delivers full IVR capabilities. I know radiologists at much larger healthcare facilities who have waited years for their PACS supplier to implement IVR—and they still do not have it.”

— Dr. Roger Eng, MD, MPH, Chinese Hospital’s Chief of Radiology

Integrated voice recognition (IVR) is a critical element and one that Dr. Eng says is very difficult to find. “Integrated voice recognition allows exam results to be available in minutes. Balancing workload is the first step, but voice recognition makes it possible for ER physicians to have this diagnostic information available as they begin treatment and for clinicians to confer with patients immediately after the exam,” he explains.

Many vendors promise integrated voice recognition but few deliver it, Dr. Eng notes. “CARESTREAM RIS/PACS delivers full IVR capabilities. I know radiologists at much larger healthcare facilities who have waited years for their PACS supplier to implement IVR—and they still do not have it.”

The integrated RIS/PACS/IVR platform delivers improved usability and productivity since radiologists do not need to dictate patient and exam information. The RIS collects and automatically embeds all patient and exam data in the report to minimize clerical tasks and enable radiologists to spend more time reading exams.

Reports, Studies Available from PACS Portal

Physicians can access radiology reports and imaging exams from the hospital’s PACS portal. ER physicians regularly use this portal to view reports and exams on a dual-monitor workstation.

“Having the report available allows physicians to more accurately determine proper treatment and determine whether we should admit an urgent care patient or if he or she should be transferred to another hospital. Those decisions need to be made regardless of whether it’s

Tuesday morning or Sunday night, so radiologists and reports need to be available around the clock as well,” Dr. Eng notes.

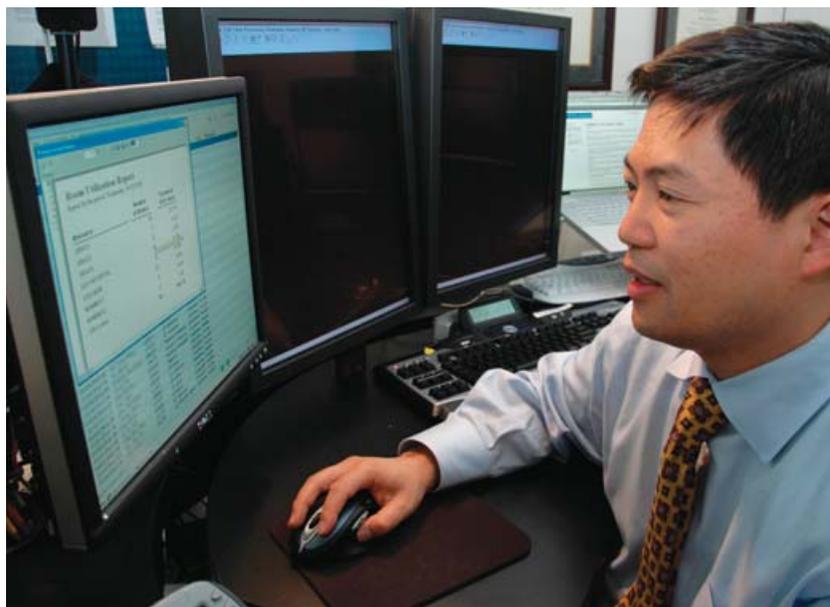
Real-time workflow monitoring is not restricted to unread exams but is also applied to patients as they move through the exam process. “The CARESTREAM RIS provides color coding so we can track when patients arrive, how long they have been waiting and when the imaging exam is complete. If a patient has been waiting more than 15 minutes, the display changes color so we know there is a problem. This information is displayed on wall-mounted LCD screens throughout the department much like an airport arrival/departure board.”

Transformation Began with Digital Imaging

The hospital installed computed radiography systems as the first step in its transition to a digital workflow. KODAK DIRECTVIEW CR 975 and CR 850 Systems provide digital imaging for general radiology and emergency cases. The two systems meet the hospital’s need for reliable, easy-to-use platforms that produce high-quality images, according to Dr. Eng.

Chinese Hospital was also an early adopter of digital mammography technology and in 2002 became the first private hospital in San Francisco to offer digital mammograms. The hospital has now implemented the optional mammography module for its RIS platform to automate patient scheduling, personalize patient communications and simplify preparation of reports required for MQSA certification.

Dr. Roger Eng, MD, MPH, Chief of Radiology at Chinese Hospital, examines one of the management reports available on the hospital’s CARESTREAM RIS/PACS system. He uses the reports to monitor the pulse of his department at a glance — from patient waiting times to the productivity of a technologist or x-ray room.





ER physician Elliot S. Nipomnick, MD, FACEP, uses the PACS portal to review pelvis and lumbosacral spine images minutes after they're acquired.

The hospital plans to upgrade its existing PACS workstation to a multi-modality KODAK CARESTREAM Mammography Workstation so that breast MRI, ultrasound and other exams can be reviewed on the same workstation as general radiology studies. The hospital will also implement a mammography viewing module for its PACS at the same time.

Positioned for Growth

Chinese Hospital performs 40,000 imaging exams in a space designed for half that volume. Imaging volumes have been expanding 15 percent a year for the last several years and that growth rate is expected to continue.

Fortunately, the hospital's radiology department is positioned for flexibility as well as growth. About half of its patients are scheduled in advance, and the remaining half is made up of ER patients, walk-in outpatients and unscheduled inpatients.

"We use digital technology to overcome many challenges, including our small size, fluctuating workflow and the need to compete with large, well-known San Francisco Bay Area providers for both patients and medical staff," said Dr. Eng. "Our experience indicates that implementing a fully featured RIS/PACS/IVR system, and redesigning our processes to use these capabilities to the fullest, equips us to offer the best possible care for our patients and exceptional service to our physicians."

More Information

To learn more about KODAK CARESTREAM Solutions, contact your Carestream Health representative or call 1-877-865-6325, ext. 655.

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