

# HOLOGIC™

The Women's Health Company

## Hologic Digital Technology Forms Cornerstone For Growing Women's Health Center

*By Steven K. Wagner*

During her 30 years in radiology, Peggy Reed has developed a number of guiding principles. One has served her particularly well as director of radiology at Montgomery County Memorial Hospital in Red Oak, Iowa, situated 45 miles east of Omaha: Don't be afraid to act upon your best instincts, especially when they're backed up with proven technology and you partner with a company as committed as you are.

When Reed joined the hospital in 2005, she took on the challenging task of converting all of the radiology department's analog imaging technology to digital. Since most of the radiology equipment was manufactured by a single vendor, a logical move might have been to stay with that company in order to ease the challenge that was facing the staff.

Reed decided otherwise, at least in the area of women's health. Before arriving at Montgomery County Memorial Hospital, Reed had no history with Hologic or its technology. However, she was aware of the Selenia® digital mammography system due to its growing reputation and she knew of Hologic's history as a producer of both bone and breast health systems. She began looking into the company with the hope of purchasing both modalities from the same vendor.

Reed and her associates began by researching the Selenia system online. Then, they evaluated it at several medical conferences-including the Radiological Society of North America Scientific Meeting. They examined it further during visits to several sites that were using the system. In the end they only found reasons why the Hospital should acquire the Selenia

system, and they did just that—also acquiring a Hologic SecurView™ diagnostic workstation with R2 CAD, a Hologic TechMate™ technologist workstation, and a Hologic Discovery™ bone health system.

Looking back, Reed is proud to say her instincts were correct. The Hologic Selenia and Discovery technologies are forming the cornerstone of a comprehensive women's health center that the hospital has begun to build. And when the time comes, Reed plans to give a Hologic stereotactic system and a Hologic biopsy device serious consideration.

"When we began the search for a new mammography system we had a very old Lorad (the forerunner to Hologic) mammography system. It made no sense to purchase another analog system when all of our other modalities were digital," Reed said. "I must say that with all of its capabilities, especially the outstanding image quality it provides, the Selenia really sold itself to us."

In fact, during Reed's presentation to the medical center administration, medical staff and board of trustees, she placed digital images captured using the Selenia system side by side with analog images, asking those who would approve or deny the purchase, "If you had a wife, daughter, sister or grandmother, on which system would you want her study to be done?" she asked. The response was unanimous: the Selenia digital mammography easily won out.

"The difference in image quality between the Hologic system and others is so obvious," Reed said. "There was no question which system to buy.

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A growing hospital Established in 1920 as a 15-bed facility, Montgomery County Memorial has tripled its overall patient load over the past two decades—from about 15,000 outpatients served in 1989 to more than 45,000 patients today. So busy is the Hospital, which has 25 critical access beds, that it currently is expanding virtually every department on campus.

Included in the project is new space for outpatient clinics, the emergency department, surgery and, of course, the radiology department. The expansion of radiology is welcome news for Reed, whose department is

staffed by two full-time radiologists and eight technologists. The chief radiologist is Linda S. Head, MD, an accrediting radiologist for the state of Iowa. Each year the department completes an estimated 2,000 imaging procedures, roughly three-fourths of them screening mammograms and the rest diagnostic procedures.

These days, the hospital clearly is emerging as a local leader in digital mammography. It operates the only digital mammography system in Southwest Iowa, and receives referrals from throughout the many surrounding communities—largely due to the Selenia system. Both of its mammographers are experts in breast imaging, and all five of its techs are certified in mammography.

"The image quality is the best available on the market," technologist Kattie Lewis said emphatically. "We're much better able to see the dense areas of the breast, the pectoral muscle near the axilla, and the inframmary fold."

### **The Selenia solution**

The system was installed in June 2007, and the process was straightforward. While no additional room reinforcement was required, a doorway had to be moved and the electrical system enhanced. From start to finish the process took about four weeks—well within the length of time that the Hospital had expected. There were no unforeseen glitches or delays.

Following installation, staff adjusted to the system with relative ease. "We'd had the Lorad system, and in many ways the Selenia operated similar to it," Reed said. "The overall transition for technologists was very easy." Lewis agreed. "The transition from analog to digital was seamless. I felt the applications specialists who trained us were exceptional and very knowledgeable about the Selenia. In addition, the support from our service engineer has been excellent—he has dropped everything to walk me through any issues or questions that have arisen."

Introduced in the U.S. in 2002, the Selenia combines the latest advances in digital imaging technology with sophisticated information management capabilities. It uses a direct-conversion detector, which eliminates the need to convert x-rays to light. That, combined with Hologic's high-transmission cellular grid technology, creates a system that provides exceptionally sharp, high-contrast digital images every time.

Other features include an optimal positioning capability driven by a shifting paddle, which enables proper positioning for both large and small imaging formats; a digital mammography detector that provides a 24 cm x 29 cm

field of view, allowing nearly all patients to be imaged with a single exposure; and intelligent processing.

As Montgomery County Memorial Hospital has found, the SecurView diagnostic workstation is key to maximizing the Selenia system's precision. SecurView enables the display and interpretation of digital mammograms from any vendor, the identification of regions of interest using sophisticated CAD tools, and the review of current and prior mammograms alongside breast images from MRI, PET and ultrasound with seamless file sharing. The diagnostic workstation also enables the customization of workflow and reading preference, image manipulation, the placement of annotations intuitively, and optimization of reporting tools.

"My biggest concern was interfacing the Selenia with our radiology information system (RIS), and Hologic had only installed one system that had interfaced with the brand of RIS we had," Reed said. "However, it interfaces exceptionally well—I have no regrets at all. When a product comes out that is so blatantly superior, I don't know how you cannot make the technical decision to go with it."

#### **Image excellence is the key**

Still, in her mind the bottom line will always be image quality. Reed believes there is no mammography system available that beats the image quality provided by the Selenia.

Lewis went a step further, saying it has enabled radiologists to identify lesions well before they become cancers. "We are now seeing areas of increased density or microcalcifications before they become malignancies," she said. "As a result we are providing the radiologist with a low-contrast, high-resolution image without increasing the patient dose."

Reed credits state-of-the-art Hologic detectors and advanced workstations—key components of any high-end system—with delivering optimized images, which in turn help physicians provide fast, accurate diagnoses. She also praised the system's small compression paddles, dual monitors for viewing initial and prior mammograms, a mammography QA system that is easy to perform, interpret and explain, a low radiation dose compared with other systems, and the ability to review radiologist annotations on the tech workstation. "Having the digital unit with the tech workstations has certainly decreased repeat exams, and the high-resolution monitors on the radiologist workstation provide excellent clarity," she said.

Of special interest to radiologists is the system's ability to provide improved penetration through dense breasts and thus reduce the number of callbacks in that population of women, Reed said. As a result, fewer cancers are missed and women are able to enter the system for treatment earlier than they otherwise might have. At Montgomery County Memorial Hospital, that translates to lives saved, she said.

The Selenia system has improved the department's work flow. Because the system is digital, traditional processing has been eliminated and women are able to leave the mammography room sooner—reducing their stress earlier and trimming about 10 minutes off each exam. Such efficiency allows the department to perform several more mammograms per hour, increasing profitability due to higher throughput and increased reimbursement and resulting in a significant return on investment.

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#### **Added efficiency a bonus**

The Selenia system also has improved the department's work flow. Because the system is digital, traditional processing has been eliminated and women are able to leave the mammography room sooner—reducing their stress earlier and trimming about 10 minutes off of each exam. Such efficiency allows the department to perform several more mammograms per hour, increasing profitability due to higher throughput and increased reimbursement and resulting in a significant return on investment. In fact, the Selenia has already paid for itself in just two years of service, making Lewis a better tech in the process.

"I am a better tech because I am looking at the image of the breast differently," she said. "I am not just seeing whether I have the breast on the film. I am looking at positioning more and making sure there are not folds obscuring the axilla or inframmary fold areas. Using the analog system, those areas might be obscured."

So satisfied is the Hospital with the Hologic Selenia that it now hosts site visits for hospitals that are interested in purchasing a system. So far, staff from four hospitals have visited the medical center, and one hospital already has purchased a unit.

"The Selenia has been a winner, there's no question about that," Reed said. "It has improved our efficiency, enhanced our level of service, and our physicians have increased their level of confidence-they are certainly seeing things they've never seen before, there's no doubt about that. We're getting the best images I've ever seen, and when you're dealing with breast cancer there's nothing more important than that."