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*Using the Selenia digital mammography system as a camera, we captured the delicate beauty and symmetry of the internal structure of wildflowers. The resulting composition takes on a beautiful translucent life—giving us a whole new way of seeing.*

## Women's Health Solutions Designed to Grow with You

For the third year in a row we've collected a few of the many amazing stories written in 2007 that looked at the impact of Hologic breast cancer detection and intervention and bone health products on radiologists, technologists, administrators, and patients around the world.

The 19 stories in this year's collection and the 23 stories published previously, discuss how sites prepare for and implement digital mammography, breast biopsy and osteoporosis assessment. The authors look at workflow and image considerations, and service experiences of small and large sites. More pictures and stories from these install sites are posted on [www.hologic.com/wh/prodnews.htm](http://www.hologic.com/wh/prodnews.htm).

A special thanks to these customers for sharing their experiences in print and online. And thanks to publications like *Advance for Imaging and Oncology Administrators*, *AuntMinnie*, *Imaging Technology News*, and *Outpatient Care Technology* in the United States and *eHospital*, *el Hospital*, *European Hospital*, *Imaging Management* and *Hospital Post* in other areas of the world for bringing these stories to us.

If you have a story to tell, we'd like to hear from you. Please email [womensimaging@hologic.com](mailto:womensimaging@hologic.com).

# Boston-Based Newton-Wellesley Hospital

## Transitioning to a Totally Digital Environment

The over-riding philosophy guiding the entire approach to patient care for the Women's Imaging Center of Newton-Wellesley Hospital (NWH) is the need to create a comprehensive medical environment where a woman can receive all of the services she needs in one location and in one day. "It means," said Dr. Alan Semine, Chief of Breast Imaging, "providing the best technology possible, and the most qualified clinical staff...all the while, keeping the patient's perspective in mind, so that whatever needs to be addressed can be addressed during the same visit."

For Newton-Wellesley, located in the suburbs of Boston, this comprehensive approach allows patients to receive any necessary follow-up procedures quickly. "If a woman comes in for a mammogram, and we find she needs additional views, an ultrasound, or a biopsy, we'll do it during the same visit," said Dr. Semine. "The time frame in which a diagnosis is rendered makes a big difference to the patient."

### **Making the Digital Transition**

As part of this on-going commitment to providing the best care possible, the staff of the Women's Imaging Center knew they had to make the transition from a traditional analog work environment to providing digital mammography. In fact, one of the reasons Dr. Semine came to the Imaging Center was because

Newton-Wellesley Hospital understood the value of digital imaging, and was committed to moving into the digital world. "All of radiology is becoming digital," Dr. Semine said, "and it is important that mammography departments also benefit from the potential of the digital environment."

Newton-Wellesley has seven Selenia digital mammography systems, three dedicated radiologist diagnostic workstations with R2 CAD and eight technologist workstations. Dr. Semine knew that if they were going to make the transition, and make it work for the patient, it was going to take time to integrate the new systems into the existing workflow. "We didn't want to change the way we approached patient care," said Dr. Semine. "Going digital before we had the proper processes in place was a serious concern."

"Hologic was very receptive when we suggested early on in our digital mammography journey that we would need some type of electronic communication between radiologist and the mammographer obtaining additional views. Because of this the Hologic technologist workstation was developed," said Dr. Semine. Newton-Wellesley Hospital has opted to install technologist workstations in each exam room as well as one in the mammography work area. This allows the mammographer who is taking additional views to review the images in the

exam room—similar to bringing analog images that have been circled into the exam room for review.

### **Making the Leap with Hologic**

Because digital mammography was, at the time, an emerging technology, the transition of the Imaging Center from analog to totally digital was a deliberate process. "Digital was not quite ready for prime time," Dr. Semine stated. After months of research, including site visits, and meetings with technology vendors and medical professionals, the decision was made to move ahead with the purchase of the Hologic Selenia digital mammography technology. "We were confident that we would go with Hologic," Dr. Semine said, "because the image quality is really the best on the market."

"We looked at all the vendors, and what they could bring to our patients here," said Rich Guarino, Director of Radiology at Newton-Wellesley Hospital.

In fact, the Center was so impressed with the quality of the digital images from the Selenia that it committed to the purchase of the first unit on the contingency that the Hologic Selenia technology received approval from the FDA. "We definitely made a leap of faith with Hologic," Guarino said.

"We're no longer printing images or burning CD's, increasing the efficiency within the department."

Deborah Lockhart, Operations Manager of Women's Imaging, went on to note that the goal of Newton-Wellesley Hospital is to provide superior patient care using cutting-edge technology. "We have accomplished this with the Hologic Selenia system. Another NWH top priority is to reduce our patient's anxiety in a friendly and helpful manner. Selenia technology has helped us achieve this goal as well. Each mammographer has the ability to view her patient's images without leaving the exam room, taking additional images if necessary, reducing patient wait time and unnecessary anxiety."

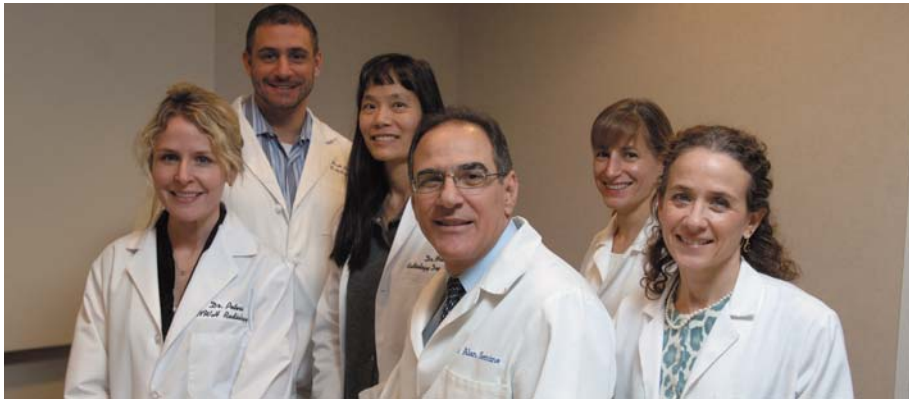
### **Advantages of Digital Images**

According to Dr. Semine, the digital images from the Selenia system are far superior to analog film systems. "The most important aspect of the digital image is that it can be manipulated by the radiologist," said Dr. Semine. "You're able to interact with it much more effectively, and bring out features that you never could with analog."

The radiologists of the Women's Imaging Center, in association with Hologic, recently completed a study in the use of complementary imaging soft-



*"The most important aspect of the digital image is that it can be manipulated by the radiologist," said Dr. Semine. "You're able to interact with it much more effectively, and bring out features that you never could with analog."*



**The Newton-Wellesley radiologists feel it is critical to provide the best technology available and the most qualified clinical staff**

were to enhance still further the detail in the images generated by the Selenia FFDM system. "Providing physicians with the technology to see more detail with better clarity is quite valuable," Dr. Semine said. "Improving the display of visual information inherent in digital mammograms can ultimately help physicians detect breast cancers more effectively."

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***"We bought the Selenia system based on image quality, and how that quality improves patient care."***

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The Women's Imaging Center has found that the digital environment allows for a seamless integration of their Hologic R2 Computer Aided Detection (CAD) software, improving the image interpretation workflow for their radiologists. "I worked with CAD since it first became available," Dr. Semine said. "Once it's been incorporated into the workflow, it proves to be valuable and makes even more of a difference in the digital environment."

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***"Our workflow has improved as a direct result of the Selenia technology."***

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### **Working Through the Growing Pains**

The transition from analog to digital mammography for Newton-Wellesley Hospital was a gradual journey. Deborah Lockhart said, "We knew that the Hologic Selenia system was the answer, the image quality is superb and the unit itself is user friendly. How this transition would impact our department and how we were to work through this transition was the question. The goal was to make this transition from the analog to digital environment as smooth as possible.

"The Hologic team has been extremely helpful and supportive through this transi-

tion. I could not have asked for a better company to work with—they are a great team: willing to help and listen to ideas and suggestions."

With the implementation of any new technology, a certain amount of growing pains are expected, and the first Selenia system installed in the Center was no exception. What made all the difference is that Hologic understood this and worked closely with the doctors, administrators and technologists at the Center to improve the new technology, and integrate their suggestions into subsequent updates.

One improvement was the need for better communication between the radiologist and the imaging technologist at the acquisition station. "We worked closely with Hologic to validate the concept of a technologist workstation and demonstrate the improvement in workflow," Dr. Semine said. The Hologic technologist workstations allowed the Selenia technology to imitate, in a way, the analog environment. "We can now circle areas in the breast on the digital image that we would like the technologist to provide additional views of," Dr. Semine said, "and push it right back to the technologist's work station. This has improved the efficiency of the digital environment."

### **Improving the Delivery of Patient Care**

According to Cheryl Cain, Breast Imaging Facilitator at Newton-Wellesley Hospital, the Selenia technology would not be as impressive if it did not improve the delivery of care to the patients. "We want to be hi-tech and on the cutting edge of technology, the Selenia has enabled us to do that," Cain said. "But it's all for patient care. Doing the best for the patient is the bottom line." With digital mammography, the technologists have the ability to see right away if the image taken is satisfactory or not.

"You have the ability to review the image almost immediately and assess it for positioning, motion and overall exposure," Cain said. She also points out that because the technologist never needs to leave the patient alone in order to process films, she has found that the patients feel more at ease. Reducing their anxiety makes the entire experience of having a mammogram better for the patient and the technologist. Digital detectors have a much wider dynamic range and are more tolerant of exposure variations reducing the number of retakes compared to screen-film. "The patient can be more confident that the images will be satisfactory, and not need to be repeated because of exposure factors," Dr. Semine noted.

### **The Hologic Detector Was a Crucial Part of the Decision**

A key factor affecting the decision to go with Hologic was its ability to accommodate different breast sizes easily. Selenia offered not only a large detector, but also a shifting compression paddle that enables accurate positioning and imaging of small breasts. "One of the reasons for deciding to go with Selenia was the larger imaging detector plate," said Deborah Lockhart. "The size of the imaging plate detector was important in our decision."

The larger image plate means that women with larger breasts can be imaged in one exposure, more easily. "We really like the ability to care for all patients regardless of size," said Cain, "and without having to change image receptors. The compression paddle is all you need to switch."

### **DMIST Results Reinforced the Hospital Decision to Go Digital**

"As DMIST [Digital Mammographic Imaging Screening Trial] pointed out, digital technology makes imaging women with denser breast tissue easier and more effective," said Cain. "For patients with very dense breasts, digital enables us to give sharp, high contrast images to the radiologist. The better the image, the better the likelihood of catching a cancer early. If you can find it before you can feel it, your chances are much better."

The findings of the DMIST studies were important for Dr. Semine for other reasons as well. "The DMIST study," said Dr. Semine, "gave us confirmation that we were right in moving forward with our plans for creating a totally digital environment."

—Continued on page 18

# Breast Center of Greensboro Imaging, North Carolina

## The First to Go Digital in the Triad Area

In December of 2006, the Breast Center of Greensboro Imaging, located in Greensboro, North Carolina, completed its transition to a completely digital workflow, with the installation of their third Selenia digital mammography unit.

"The Breast Center of Greensboro Imaging," says Preston Allen, MBA, the Executive Director of the Breast Center, "has long been the leader in providing service and technology to the women of the Triad, greater Greensboro, Winston-Salem, and High Point areas, and our new Selenia systems allow us to continue that leadership role."

According to Dr. Elizabeth Brown, Medical Director at the Breast Center, one of the most important factors in considering the move to digital was the publication of the results of the Digital Mammographic Imaging Screening Trial (DMIST).

"DMIST showed that digital mammograms were much better for younger women, and others who tend to have denser breast tissue," she says, "Because of the large number of younger women in our area, the DMIST merely confirmed our decision to move forward with digital."

"Once we understood the needs of the market in our area," Allen continues, "we knew that it was time to pursue digital mammography."

### **Patient Centered Care**

For the Breast Center of Greensboro, the change over to a digital workflow was one of the final steps in a transition begun over two years earlier, when the Center had set out to redesign the entire patient experience of the Center. "We wanted to completely remake our Breast Center to be totally patient focused," Dr. Brown says, "which gave us the opportunity to completely take it apart and put it back together again, exactly the way we thought it should be."

### **Immediate Impact**

As each of the three Selenia units were installed, the number of patients grew. In January, the first full month of operating all three systems, the Breast Center saw 38% more patients, compared to the same period one year earlier.

There were several reasons for this impressive spike in patient volume. First the Center conducted an aggressive media campaign to announce the arrival of digital. "Our marketing blitz announcing the new technology really generated a lot of buzz," Allen says.

The second was that the Center had begun offering extended hours on the exact same day as the first Selenia was being installed. Allen says, "We were doing the install at the same time we were growing the business, and there was no impact on our ability to serve our

new patients."

The third reason for the exceptional growth in the practice: the patients themselves. The women of the Triad area are educated, and have researched the technologies available to them.

"I have a lot of patients that have done their homework," says Dr. Brown. "I am impressed with the number of patients that come in knowing about digital and coming here specifically because we have digital."

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***The impact of the installation of the Breast Center's first Selenia was felt almost immediately, with a significant increase in the number of women coming to the Center for mammograms.***

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"They like the idea of digital mammograms," Allen says, "they know that it is going to give them a better exam, and that the quality is better."

According to Lead Technologist Diane Ball (RT)(R)(M), patients have found the new Selenia systems quite comfortable compared to the previous analog units. "The Selenia FAST paddles are great," Ball says. "Several patients have actually commented that they feel much more comfortable with the new units, and that the compression especially is much better, and not as intimidating for them."

"We have seen more new patients than we had before, because of the digital technology," Allen states, "There was a large number of underserved women in our community that we are now beginning to help."

### **Financial Rewards of Digital**

By combining the increased capacity resulting from the installation of the Selenia technology, with the extended hours of operation at the Center, and the higher insurance reimbursement rates for digital mammography, the Breast Center has seen substantial financial growth. "We have gone from an 'okay' financial position, to a really impressive, almost unbelievable financial position," Allen says, "Thanks in large part to the digital technology."

### **Medical Impact of Digital**

The Breast Center has seen as many as 139 women in one day. Of those numbers, one third of the women were there for diagnostic exams. "That number, when you think about it, represents a significant number of diagnostic procedures," Allen says.

"More patients," says Dr. Brown,



***Greensboro technologists say patients feel more comfortable with Selenia***

“means more screenings, which will inevitably lead to a higher percentage of diagnostic procedures, ultimately discovering more cancers.”

Cindy Strable, Administrative Director for the Breast Center, says that the patient centered environment is more than just a catch phrase. “It is one of our greatest strengths,” Strable says. “We are very aware of the patient’s experience here, and we work to ease any anxiety the women are feeling.” This is especially important for women who come to the Center for diagnostic procedures. “The radiologist meets with the women immediately after the procedure,” Strable says, “and if a biopsy is needed, we can usually do it the same day. The pathology report is routinely available the day after the biopsy, and if a surgical appointment is needed, we can schedule that within forty-eight hours.”

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**“Hologic was head and shoulders above the other vendors. Product, responsiveness, delivery of equipment—they did everything to meet our desired timeline.”**

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According to Dr. Brown, the combination of the image quality provided by Hologic’s Selenia and MultiCare Platinum stereotactic biopsy table, diagnostic procedures are much easier to perform. “Needle localizations performed on the Selenia are very quick, and very efficient,” she says, “The Selenia’s full resolution image provides the clarity needed for most procedures.”

### **The Hologic Solution**

When the Center was initially looking to make the transition to a digital environment, they considered several different vendors in the field, and made site visits to view each system at work in the clinical setting. When the research was concluded, the decision was made to go with Hologic.

One of the reasons for this being that Hologic was able to offer a complete package of solutions for the Center’s transition. “The clear differentiation between Hologic and other vendors,” Allen says, “is that Hologic came onto the scene with a complete turn-key solution to our needs. Hologic offers the Selenia, the workstations, both for the radiologists and the technologists, R2 CAD technology, and an archiving system.” Hologic’s Mammography Image Management Solution (MIMS) allows The Breast Center of Greensboro proprietary control of their digital mammography images.

The Breast Center of Greensboro Imaging is partnered with the Moses Cone Medical Center, which already had an archiving system in place. “There was a question,” says Allen, “of whether to go with them and store on their PACS system.” However, there was an issue of system compatibility, as well as compression conflicts. “We had made such an aggressive pursuit of digital technology, that to have tried to integrate into the Moses Cone PACS, would have presented a significant impediment as to have made any further pursuit not worthwhile.”

The Hologic dedicated MIMS system was the perfect system for image storage. Allen says, “With the MIMS, we can access a broad range of images, at a 4-to-1 compression ratio, compared to the PACS, which only gives us a 2.5-to-1 ratio.” Cost benefit of the MIMS was also significant. Because of the compression

algorithms used in the PACS, the MIMS archiving system represented almost half the cost of making the PACS at Moses Cone work for the Center.

### **Working with Hologic**

According to Allen, a transition of the sort undertaken by the Breast Center of Greensboro Imaging, could not have happened as smoothly as it did without the help and support of a vendor who was dedicated to making everything work.

“Hologic was always right there, and always willing to listen,” Allen says. “They answered every question, and they were able to offer us different solution ideas based on each of the different scenarios we were considering at the time.”

“Their responsiveness was impressive,” Strable says. ●●●

## **Dartmouth-Hitchcock Medical Center, New Hampshire**

### **Digital Mammograms and Breast Cushions Improve Imaging and Mammography Experience**

In any medical setting, you hope to make your patients as happy as possible. But their satisfaction can’t come at the expense of clinical benefits. Fortunately, Dartmouth-Hitchcock Medical Center (DHMC) in Lebanon, N.H., has found a way to please its breast imaging patients and improve the clinical value of its mammograms at the same time—combining digital mammograms and the MammoPad breast cushion.

DHMC serves the northern New England region, including three hospitals and Dartmouth Medical School. Over a multi year period, the hospital replaced its analog mammography equipment with Hologic Selenia digital mammography systems. The conversion is now complete, with four Selenia units in place.

The switch was made to improve Dartmouth’s mammography services, says Lin Polen, DHMC’s administrative director of radiology. “Digital mammography produces a better image than analog” she says. “Plus, you can manipulate a digital image. You can’t do that with film.

“By adjusting the contrast on the Selenia machine, which is easy to do, our radiologists and technologists can do a

better job with certain patients—especially women with dense breast tissue or implants. In the analog days, it was harder to see what we needed to see with these patients. The Selenia equipment has really improved that situation.”

With digital mammography units, DHMC can offer a safer mammogram, as well. Digital equipment exposes patients’ breasts to a lower level of radiation than analog does, while still delivering a high-quality image.

It wasn’t just the clinical staff that valued the difference with digital mammograms, though. Patients found they were having a whole new experience with mammography, too—one which they heartily applauded.

For one thing, patients don’t have to wait for results like they did with film because the images are ready in seconds, and available right in the examination room. “Patients who come in for mammograms are nervous,” Polen notes. “They’re worried they might get bad news. A long wait for results just makes it worse. Our digital systems have saved our patients a lot of anxious wait time, and they really appreciate it.

“Plus, the technologists can stay right by patients’ side the whole time. They don’t have to leave to deal with film processing. That makes patients more comfortable, too.”

Digital mammograms have another advantage over film. Errors sometimes occur with film that causes patients to be called back for retakes. Digital isn’t plagued with those errors, so patients are rarely brought back for repeat imaging.

“Retakes obviously inconvenience patients,” says Polen. “But more than that, they prolong the time for patients to get results. Our Selenia system has enabled us to really reduce that anxiety factor.”

All these elements are important in a system where Dartmouth-Hitchcock operates several facilities.

### **MammoPad Improves Imaging**

While digital mammograms made things better for patients, that was just the beginning. In 2006, DHMC upgraded its mammography services once again by adding the MammoPad breast cushion. For that, it owes a big thank-you to its asset and facilities manager, Paul Roy. A former X-ray technologist, Roy has been in the medical field for 35 years. He learned about MammoPad in 2005 at the annual conference of the Radiological Society of North America (RSNA).

MammoPad is a soft, foam cushion that adheres to the imaging detector. The cushion covers the cold, hard surfaces of the equipment, providing a softer, warmer, more comfortable experience. MammoPad has been proven to reduce mammography-related discomfort by 50 percent for three out of four women.

Research also shows the cushion can improve breast tissue acquisition and mammogram compression. The cushion is invisible to x-rays, does not harm image quality, and can be used on all commercially available mammography machines, whether analog or digital.

Any man can understand how a woman would appreciate MammoPad. But Roy had more empathy than most, because he was a breast cancer survivor who’d had his own experience with mammograms.

Roy was diagnosed in 2001 after his wife noticed an abnormality on his nipple. He then discovered a lump, and went for an exam later that day at his workplace. The exam confirmed that he was one of those rare men who had breast cancer. After surgery and chemotherapy, he has been cancer-free since. But along the way, he’s undergone his share of mammograms and learned first-hand what the



### **Excited about the difference that MammoPad could make, Paul Roy suggested that Dartmouth-Hitchcock give MammoPad a try**

mammography experience is like.

“We men don’t have a lot of breast tissue for the machine to compress and that adds even more discomfort,” Roy says. “My mammograms before MammoPad were very uncomfortable. I also understood from personal experience what women said about the cold, hard parts of the machine.”

Excited about the difference that MammoPad could make for DHMC’s patients, Roy suggested that the facility give MammoPad a try. The technologists were initially concerned the cushion might take too much time to apply, though it actually takes just seconds. At first, Roy’s proposal just languished.

### **Studies also show that MammoPad plus training can increase tissue acquisition—that is, more breast tissue is included in the mammogram, which is essential in producing the highest quality images.**

MammoPad got a second hearing when DHMC hired Lin Polen as the new administrative director of radiology.

“I knew MammoPad’s reputation for making mammograms softer and warmer,” recalls Polen. “I also had seen the additional research.”

Polen is referring to studies that show that MammoPad, when combined with technologist training on breast positioning, improves positioning. The cushion creates a grip-like surface that holds the breast in place.

The most recent study, at Mercy Medical Center in Baltimore, found that when women had mammograms with MammoPad, they were also able to tolerate more breast compression.

Polen agreed with Roy that MammoPad should be tried with patients. Patient response was overwhelmingly positive—about 10 to one reporting greater comfort, Roy recalls.

Shortly thereafter, DHMC became a

certified Softer Mammogram Provider, providing every woman—and man—with a softer, warmer, more comfortable mammogram. Roy, who still gets annual mammograms, couldn’t be more pleased.

“Our patients always come first,” he says. “That’s been my watchword since I entered this field. But I can’t deny that I’m one of the big beneficiaries of this policy.”

The technologists have seen patients’ enthusiasm for MammoPad, and found the cushion simple to use. They’ve been especially gratified to see how it makes their overall job easier.

“It turns out that when women are more relaxed and comfortable, they are more cooperative when technologists try to position and compress them,” says Polen. “No surprise there. Everybody is a winner with this: patients, radiologists, technologists, and Dartmouth-Hitchcock.”

### **The MammoPad and Selenia Match**

The combination of Selenia and MammoPad has helped further DHMC’s mission in multiple ways. First knowing they have the latest in imaging technology combined with the only comfort technology may increase the chances of DHMC’s patients returning for their annual screening mammograms. Second, the exams are more convenient, less anxiety-provoking, and more comfortable. Finally, these return visits—plus the good word-of-mouth that draws new patients—can help DHMC overcome the financial hurdle created by the low reimbursement rate for mammography.

DHMC wasn’t the only one to notice that Selenia and MammoPad made an excellent match. In September 2007, Hologic acquired the MammoPad business from BioLucent, Inc., the maker of the cushion. “It’s wonderful to see mammography progressing in a technological sense,” says Polen. “Selenia and MammoPad certainly represent that progress, both separately and together. It’s just as gratifying to see that the improved technology is also improving the mammography experience for our patients and staff. We are so pleased.”

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# DEXA Diagnostics, Colorado

## Paving the Way with Cutting-Edge Mobile BMD Screening

As a former health club owner and developer, Kip Russo, the owner of DEXA Diagnostics (www.DexaDiagnostics.com) in Colorado has watched fitness trends come and go. He had been successfully servicing the area's athletic clubs with a suite of mobile hydrostatic body fat testing laboratories, when he realized that dual x-ray absorptiometry (DXA) could provide a more accurate measure of body composition than hydrostatic weighing.

The more Kip studied, the more he realized that the need for mobile bone mineral density (BMD) testing was far greater than the demand for body mass measurement, and, in his opinion, a better use of the technology. Once he came to that conclusion he moved quickly to develop a mobile DXA screening service. "When I realized that my body fat testing service was limited here in Denver, which is where I chose to live, it was in January. I had the first bus operational nine months later," he said.

Russo spent three to four months of that time researching DXA technology, visiting sites that used bone densitometry systems by different manufacturers—even getting scanned himself. "I wanted to get the latest and the greatest and the best," he said. The best-in-class imaging technology he sought had to be ideally suited for a mobile application. "There are a lot of mobile BMD units out there," he noted, "but most of them are larger than mine. I wanted one that would facilitate

patient comfort and still fit into a conventional parking place because I'm going to doctor's offices and parking is always an issue."

### **The system of choice for DEXA Diagnostics**

In addition to image quality, reporting, and footprint, service and warranty were also critical considerations in choosing the best system for what was to become a high traffic practice. Hologic's Discovery W (whole body) bone densitometry system was Kip's choice for the first DEXA Diagnostics custom-built 22-foot mobile BMD unit. The W model accurately scans the spine including instant vertebral and aortic calcification assessment, bilateral hips and the whole body for bone density and body composition.

Kip discovered that Hologic's forward-thinking approach to mobility extended to service when DEXA Diagnostics encountered some surprising technical issues. "We've had some unique issues that turned out to be altitude related—we're at 6,000 feet," he said. He describes Hologic's service organization to be "absolutely the best of the best. I can't imagine anybody being any better."

After eight months in operation, demand for the mobile screening was so great that DEXA Diagnostics purchased a Discovery SL (Supine Lateral) for a second van. In addition to whole body capabilities and scanning features, the Discovery SL has the Hologic exclusive rotating C-arm.

This feature allows the patient to remain supine for a more precise and comfortable lateral instant vertebral deformity assessment (IVA) of the thoracic and lumbar spine while the machine rotates into position. Ordinarily the patient is rotated into a decubitus position which may cause discomfort or lack a true 90 degree position, which affects scan quality and reproducibility.

"Right now we're operating two units in Denver and both of them are operating at their maximum level," Kip said. The quickness of the SL has added to patient throughput.

DEXA Diagnostics currently serves 237 different providers within a 45-minute radius from metro Denver with his mobile units. "Our target markets are the practices that are too small and cannot justify purchasing their own machine. So we fit into that niche of people that send out patients to remote locations for screening yet don't have enough volume to justify purchasing a machine of their own. At the average practice we test 10 to 13 patients in a half a day, which is a lot."

An investment in training helps DEXA Diagnostics insure consistently reproducible test results. "Technologists come and go," Kip pointed out. "A new technologist comes in and positions the patients slightly differently, and you're going to get a slightly different bone mineral density result. We make sure that all of our technologists position the patients exactly the same way, same placement on the table, start the scan at exactly the same position."

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**Hologic's service organization is "absolutely the best of the best. I can't imagine anybody being any better."**

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DEXA Diagnostics' technologists also drive the mobile BMD unit, which may seem daunting to some. For radiologic technologist Jennifer Pratt, RT, who operates the mobile unit serving Colorado Springs, however, driving the van and performing exams is what it's all about. "I love it. I enjoy working with patients. I like operating the Discovery system. And I like being on the road."

Kip believes that patients often neglect preventative health measures like bone density tests because they are perceived as non-life threatening, and that inconvenience can keep patients from getting the tests that are doctors' ordered. It's a sad fact that more women die of bone density problems each year than die from breast, uterine and ovarian cancer combined.

"We hear many reasons why patients skip getting DXA exams. They're going to



**Kip Russo, owner of DEXA Diagnostics, says the Hologic Discovery system gives the company cutting edge BMD screening service in a mobile van**

an unfamiliar place, it's slightly intimidating, and the average wait time for most DXA exams is an hour or more," he noted. DEXA Diagnostics schedules exams in 15 minute intervals, eliminating lengthy wait times that may occur between tests at busy fixed sites. And, having the unit in close proximity to doctors' offices also helps to increase turnout. "If we have ten patients scheduled, we will typically test nine because there's always someone who cancels. So 40% more patients are getting tested when we bring the van to them than would be tested if the patient had to travel to remote labs and hospitals. That's one of the primary reasons the doctors are choosing to go with us instead of sending the patients out."

**DEXA Diagnostics believes mobile screening makes great financial and operational sense**

Kip has found that mobile screening makes great financial and operational sense for his clients as well. "It's a valuable new income stream. We're providing the technical component of the test, and the doctor is reading the test and billing the insurance company for the read—which he was unable to do before." Additionally, the physician receives hard copy reports before the van leaves the parking lot, instead of waiting up to ten days for test results.

The demand for screening in the metro Denver area keeps the DEXA Diagnostics vans on the road five days a week, and often on Saturdays as well.

"We have a half dozen locations that are extremely busy and do not want us to impact their parking lot during the week and put extra patients in their waiting room, although they see the necessity of it," Kip remarked. "So they will book the patients in 15 minute increments on a Saturday when they're closed and the facility will fax us the sign in sheet and patient information on a Friday afternoon. We show up in the parking lot Saturday morning and the patients just walk to the mobile unit at the designated time."

There's no question in Kip Russo's mind that taking a new entrepreneurial avenue was a great idea. "If bone densitometry had been around 30 years ago, that's how long I would have been doing it. I'm enjoying this more than anything I've ever done," he declared.

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## Hospital de Especialidades del Centro Medico Nacional de Occidente del IMSS, Mexico

### Selenia Digital Mammography Offers Great Improvements for Early Detection in Mexico

Dr. Beatriz Gonzalez Ulloa, President of the Mexican Board of Radiology and Director of the Department of Radiology at the Hospital de Especialidades del Centro Medico Nacional de Occidente del IMSS in Guadalajara, Jalisco, Mexico, has dedicated her professional career to improving breast cancer survival rates, through earlier detection and better intervention.

Her drive and dedication is more than professional, it also has deep personal roots.

"When I obtained the degree in my specialty...and I began to read mammograms and prepare reports... members of both my paternal and maternal sides of the family got breast cancer. That's when I developed this passion," Gonzalez explains. "I had to become better at detecting breast cancer, to detect it earlier;

to improve the quality of life of my patients; to save their lives."

#### Early Detection Is the Key

Over time, Dr. Gonzalez has become concerned that breast cancer is affecting more women and at a younger age in Mexico. "In Mexico, the health problem is real," she says. More young women in Mexico are contracting and dying of breast cancer." Recently, a number of like minded health organizations have requested that more studies are done on the correlation of breast cancer and this population.

One of the most important steps in reducing the mortality rates for breast cancer Dr. Gonzalez believes is to increase public awareness of the need for regular mammograms.

"We must direct our efforts to have



*Dr. Gonzalez notes that since the installation of the Selenia unit, the hospital has seen the percentage of last stage breast cancer decrease dramatically*

women enter into detection programs and undergo regular mammograms," says Gonzalez. She recommends that women begin regular screenings at an earlier age, and that these screenings be performed more frequently. "Unlike other countries, where screenings begin at a later age, we want all our patients to have their first baseline mammogram at 35. For patients at high risk or patients with particular characteristics, we want to perform screenings every year, instead of once every two years, which is common in other countries."

### **Improving Technology, Improving Detection**

As Dr. Gonzalez sees it, improving detection rates means giving her patients access to the best technology available. For the Hospital de Especialidades, the first and most important step to improving early detection was the decision to install a Selenia digital mammography system from Hologic. "We are also able to detect even the smallest lesions. This allows our patients to obtain a more effective treatment earlier."

At the Hospital de Especialidades, Dr. Gonzalez notes that they had been seeing a high percentage of breast cancers that were being caught in the late stages. However, since the installation of the Selenia unit in the hospital, she has found that this percentage has decreased dramatically. "We are now able to better see the calcifications and nodules, and to detect multicentric or multifocal lesions in dense breasts more easily than with the analog unit," she says.

### **Greater Image Control**

Selenia features controls not available with analog systems. These controls give the radiologist the ability to manipulate images in order to better bring out abnormalities. In the past, Dr. Gonzalez says, such abnormalities would have remained hidden until it was too late to intervene effectively. "We're able to invert images or manipulate window and level controls to find lesions that we couldn't see using analog mammography."

### **Increased Patient Volumes**

Selenia has also proven to be easier to use than standard analog systems, with faster positioning and better image acquisition times. And since Selenia is fully digital, there is no time needed for film processing. This saving in time has allowed the radiology department at the hospital to see more women than ever before.

"Since we obtained the Selenia

mammography unit," Dr. Gonzalez says, "the number of patients we see has more than doubled. We are able to take mammograms much faster than with the analog unit... it saves us more than twenty minutes per patient."

Additionally, Dr. Gonzalez reports that, since the installation of the Selenia, she is seeing more women referred to her department from outside institutions. "Although many hospitals in Guadalajara have mammography units," Dr. Gonzalez says, "they refer patients to our hospital. We are the only radiology department that performs interventional exams, and we also receive patients for examination prior to surgery, and difficult cases that we must solve using the digital unit."

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***"Thanks to new technology, such as the Hologic Selenia system, we are now able to detect even the smallest cancer—something we couldn't detect before."***

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### **Digital Superior to CR Imagery**

Many of the patients who are referred to Dr. Gonzalez's unit from area hospitals and laboratories often bring with them computerized radiography (CR) images taken at the referring institution. According to Dr. Gonzalez, these images do not stand up well to the quality of information from the fully digital Selenia. "CR images are inferior to digital images. We have proven that calcifications go undetected, and that lesion margins are different between CR and digital images...digital images allow for better diagnosis than CR images."

### **Working with Hologic**

In addition to the quality of the equipment, Dr. Gonzalez has been very impressed with Hologic's commitment to women's health, and to the Hospital de Especialidades. "There is a real commitment to breast cancer detection, to helping us improve diagnosis. Hologic and their representatives in this country have given a lot of support to the hospital. If there is a technical problem, they solve it quickly. If there is any way they can improve the service to patients, they do it. When we needed a grid for biopsies, I told them how many patients we have, that I need support, that the hospital doesn't have money... Hologic provided the needed support for this type of study."

Hologic also sponsors regular conferences specifically for physicians from Latin America. These conferences allow doctors from across the region a chance to meet, talk, and hopefully learn from

each other. "We all have the opportunity to know how we are working in each country and what we are doing to improve early detection of breast cancer. We have the same equipment, we speak the same language, and we probably share the same problems. And we can discuss solutions to these problems."

This kind of open dialog also gives Hologic the chance to discover firsthand ways to improve their equipment in the future. "All of this will be a benefit for the company in the long run, to have better equipment for early detection. This is the company's goal...and ours."

### **Looking to the Future**

When looking to the future of digital mammography and the opportunities it offers for improving early detection and treatment for the women of Guadalajara, Dr. Gonzalez sees reason to be excited. "I think digital breast imaging is just the beginning; we're looking at the tip of the iceberg. When the investigation of tomosynthesis began, I thought it was extraordinary. Tomosynthesis could be quite advantageous for the purpose of early detection, especially with regard to dense breast tissue. Other innovations, such as contrast-enhanced digital mammography images, will be very useful for diagnosis. It will enable earlier diagnosis and, thus, improve survival for women with breast cancer. With timely treatment, these patients will have the opportunity to lead almost normal lives with their families." ●●●

## *Fact:*

***Norwegian researchers find R2 digital mammography CAD sensitivity was 95% compared to 64% for double reading in a study of women followed for 2 years***

Skaane P, et al. Effect of Computer-Aided Detection on Independent Double Reading of Paired Screen-Film and Full-Field Digital Screening Mammograms. *AJR* 2007; 188:377-384.

# Mercy, St. Lukes & RCI Imaging, Iowa

## Group Buy Equips Entire City with Hologic Selenia

In today's competitive health care environment, what happened in Cedar Rapids, Iowa, a Midwestern American city of 250,000 people, seems almost unthinkable. Four organizations vying for the same patients worked together to focus on the real bottom line—providing the best possible care for their community. For the first time, an entire city adopted Hologic digital mammography for breast cancer screening.

Last September, the area's four major health care organizations—Mercy Medical Center, St. Luke's Hospital, RCI Imaging Center and OB-GYN Associates culminated a joint effort to acquire and install Selenia digital mammography equipment from Hologic.

"If one hospital were to acquire technology just to get a leg up on another, in very short order, other facilities would obtain the same systems. So, you're clearly not finding a market share value for a very long period of time by providing that technology," says Arnold Honick, MD, radiologist at RCI. "By doing it together instead of making it a [competitive] process, we provided a fiscal benefit. We also can put our heads together as far as the technological hurdles that we have to overcome."

***"Digital mammography provides process improvements and allows us to send information more quickly from one point to another—out of town or in town. We can also use a lower dose of radiation while improving the overall quality of the image."***

A patient undergoing a digital mammogram should notice little difference in the way the examination is conducted, though exam times may be shorter. With no film to process, technologists can view images immediately and reposition the patient to obtain alternate images as needed. Images are typically saved as digital files that can be transmitted electronically to a radiologist or hospital instead of being sent through the mail or hand-carried. According to Dr. Honick, "Digital mammography provides process improvements and allows us to send information more quickly from one point to another—out of town or in town. We

can also use a lower dose of radiation while improving the overall quality of the image."

Initially, there was some resistance—both to the necessity of digital mammography as well as to the collaboration with competing hospitals and imaging centers. Much of the resistance could be attributed to the lack of proof that digital imaging provided improved cancer detection capabilities as compared to screen-film.

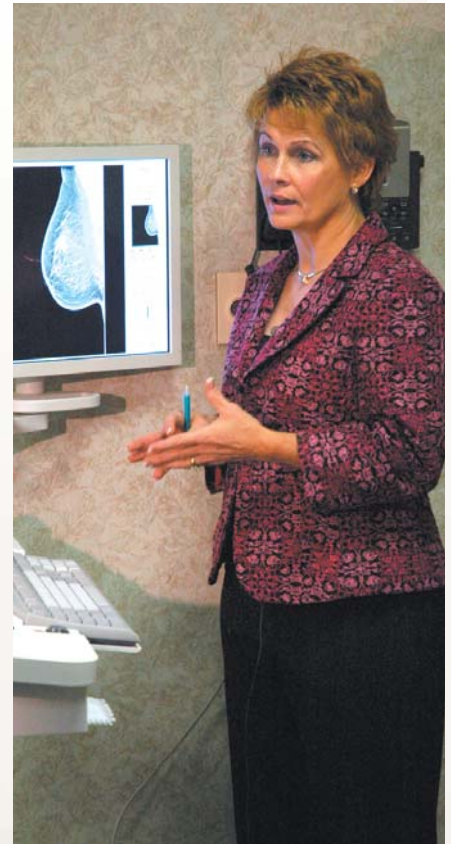
That all changed when the results of the U.S. Digital Mammographic Imaging Screening Trial (DMIST) sponsored by the National Cancer Institute were published in the *New England Journal of Medicine* in September 2005.

The four-year study enrolled 49,528 women, who had no signs of breast cancer, at 33 sites in the United States. On the appointment day, women had both digital and film mammograms taken, each with a minimum of two views of each breast. Two different certified radiologists interpreted the conventional and digital mammogram exams for each individual patient. All radiologists who participated read both types of mammograms, and each radiologist read approximately an equal number of mammograms of each type.

Participants were asked to return in one year for their annual mammogram. At that time, a mammogram was performed as part of routine health care. Women who were not able to return to the same site as in year one were asked to submit films from another institution for review by study radiologists.

The DMIST trial showed that digital mammography was significantly better than film mammography in screening women who were under age 50, or women of any age who had very dense breasts.

"Working together allowed us to put all of our heads together, putting the best of the best to work and enabling us to come up with answers that always kept the customer foremost in our minds," says Kristi Thomson, supervisor of the Women's Breast & Bone Health Services at St. Luke's Hospital. "I believe that more and more organizations will collaborate in the future, because the benefits far outweigh any negatives." ●●●



***Two hospitals and a large imaging center came together in a group buy for Hologic's Selenia digital mammography system. This allowed Cedar Rapids, with a population of a quarter of a million people, to be the first city in the U.S. to go all digital.***

## Fact:

***Study finds R2 digital mammography CAD system correctly marks 96.1% of the asymptomatic breast cancers detected with digital mammographic screening, with acceptable false-positive marks (1.8 per patient)***

Yang SK, et al. Screening Mammography-Detected Cancers: Sensitivity of a Computer-aided Detection System Applied to Full-Field Digital Mammograms. *Radiology*. 2007; 244:104-111.

# Mobile Digital Mammography in Al Qassim Province, Saudi Arabia

## Delivering the Latest in Breast Screening to Underserved Populations in the Gulf Region

Early in 2007, the Al Qassim Province Breast Cancer Screening Program brought a new level of care to women in the Gulf Region. The heart of the program is a dedicated mobile mammography coach. The program is under the high patronage and supervision of Her Royal Highness (HRH) Princess Noura Mohammad Ibn Abdul Aziz, the wife, of His Royal Highness (HRH) Prince Faisal Ibn Bandar Ibn Abdul Aziz, the Governor of Al Qassim Province. His Excellency Sheikh Hamad Al Manee the Minister of Health of the Kingdom of Saudi Arabia, was a guest at the inauguration ceremony.

The mammography coach uses the latest in digital technology, the Hologic Selenia system. Selenia uses a direct conversion detector, which eliminates x-ray film and the need to convert x-rays to light found in other digital mammography systems.

The breast screening coach is on the road two or three days a week visiting Buraidah, Albadaeh, Alboukeiriah, Alkhabra, Almaznab, Alras, Ouneiza and other major cities throughout the Central Kingdom. The images are sent to the

King Fahd Specialties Hospital in Buraidah, for reading, interpretation and archiving. Over 3,000 patients have been screened to date.

***“The result is an exceptionally sharp digital image and better contrast with greater consistency”.***

Dr. Mohammad Al Habdan, Manager of the Al Qassim Screening Program, says patients and the radiographers operating the equipment are delighted with the very high quality and ease of use of the Selenia system. Patients on wheelchairs highly appreciate the elevating unit of the truck and the rapid exam in a comfortable coach. Radiologists reading the mammograms report that the mammograms are “exceptional” and the process of moving the images to King Fahd Specialties Hospital is working well. Dr. Al Habdan believes the Al Qassim process is a good model to use in neighboring provinces and throughout the Gulf Region. ●●●

# NKI-AVL, Netherlands

## Evaluating Breast Tomosynthesis for the Netherlands

Combining a scientific research laboratory with a specialized clinic, the Netherlands Cancer Institute, in the Antoni van Leeuwenhoek Hospital (NKI-AVL), in Amsterdam, aims for a unique interaction of scientific research and clinical application. Along with this, the organization disseminates knowledge and education for physicians to collaborate with academic teaching hospitals, universities and scientific research institutes in the Netherlands and abroad.

Patients are referred to the Institute either after breast screening through a local screening site or by the recommendation of their general practitioners (GP).

Others come for a second opinion, because NKI-AVL is a dedicated cancer hospital. Radiologist H J Teertstra and a team at the NKI-AVL are presently studying the clinical use of a new 3D method of imaging that can reduce or eliminate the tissue overlap effect called breast tomosynthesis. The system being tested was developed by Hologic, a leading developer of premium diagnostic and medical imaging systems for women.

Daniela Zimmermann, Managing Director of *European Hospital*, interviewed Dr. Teertstra from NKI-AVL. The following is an excerpt from the July 3, 2007 issue.

“We’ve been working on breast tomosynthesis for a year. We asked 1,200 patients who came to our outpatient breast clinic to participate in the study, about 500 agreed.

“Analyzing the results from 500 cases is a lot of research. At present, breast cancer detection is done from mammography, ultrasound, MRI, and CT” Dr. Teertstra said.

Breast cancer screening programs use conventional analogue or digital mammography, a two-dimensional imaging modality. In conventional mammography, pathologies of interest are sometimes difficult to visualize because of the clutter of signals from objects above and below. This is because the signal detected at a location on the film cassette or digital detector is dependent upon the total attenuation of all the tissues above the location. ‘Our research involved looking at the 3D or



**The Saudi Arabia Breast Cancer Express brings Selenia technology to the deserts of the Middle East**

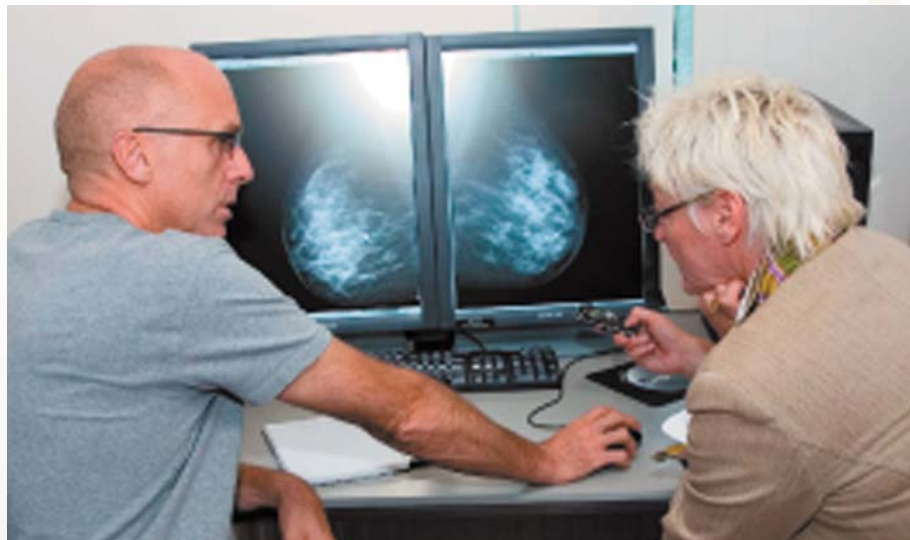
tomosynthesis patient's image in addition to her conventional 2D mammogram. To date we've read about 300 of the 500 cases that we have gathered. In the first 300 cases we found two cancers that were not seen on conventional mammography. In a lot of the other cases tomosynthesis didn't really help by giving us new or better information. Sometimes you can see a cancer easily, so you don't need it. You already know it's there. It's there on mammography, and on ultrasound; it's there when you put a needle in it, so the diagnosis is clear.' Hologic has five sites in America that are looking at the use of breast tomosynthesis with patients from a screening population. In the first phase of the AVL research, Dr Teertstra and his colleagues are investigating another population—patients already known to have cancer.

We wanted to examine a lot of cancers. We want to see whether tomosynthesis can cut down on unnecessary patient recalls and breast biopsies. The problem with mammography is that you sometimes see things that are not there. Is it the composition and superposition of the tissue? Is it really a lesion? So patients must return for analysis of that with compression mammography or ultrasound. We think that tomosynthesis will help to reduce the recall rate. We hope that we can see more during screening.

We've completed 300 cases to date using breast tomosynthesis. In two of the 300 cases, tomosynthesis was clearly better. In one case the patient had mammography, ultrasound and a biopsy in another hospital, but came here for a second opinion. We did not see the cancer on her conventional mammogram.

But, with tomosynthesis it's very easy to see the spiculated and ill-defined lesion.

In the second case, we found a tumor with breast tomosynthesis that wasn't seen in her conventional mammogram. We had sent the patient back to her GP, but after reading the study we called her back for a biopsy. So we saved her with tomosynthesis. We don't yet know if we'll recommend doing tomosynthesis on all screening patients. We do know that it's definitely beneficial in certain cases. ●●●



*Dr. Teertstra of AVL, hopes that tomosynthesis will help to reduce the recall rate*

## Providence Imaging Center, Anchorage

### Going Mobile in Alaska

In Alaska, where the leading cause of death is cancer, access to the latest medical care and technology can mean the difference between life and death. "The key to saving lives is early detection," said Denise Farleigh, M.D., medical director of Providence Imaging Center, an independent diagnostic imaging facility in Anchorage, AK. "The greatest challenge in Alaska is access." The area's need for better access led the Imaging Center to institute their first mobile mammography screenings back in 1989, using a cargo van equipped with a Hologic Lorad Transpo unit. The old

unit, unfortunately, had begun to show its years. "It had simply run out its design life," said Dr. Farleigh. "Our mobile unit has always been very important to us, but there were some clients and sites that we had to stop visiting simply because we could not get the unit on the road."

#### A Generous Gift

Providence Imaging Center knew that if they were going to continue providing screening to the women in Anchorage and the outlying areas, they needed to replace the mobile unit. Funds



*The Providence Imaging Center mobile program makes digital screening a reality in the vast areas of Alaska*

had been earmarked for the purchase of a new vehicle; it would be equipped with an older screen-film Lorad system (the Center had recently upgraded their mammography equipment with the installation of three Hologic Selenia digital mammography systems). Thanks to the Providence Alaska Foundation (PAF), a local nonprofit group, and the generous support of the CARR's/Safeway supermarket chain, the entire cost for a new mobile unit was donated to the Imaging Center. The donation allowed the Center to use their funds, originally intended for a new van, to purchase a new Selenia system for the mobile unit, thus ensuring that patients visiting the mobile van will receive the same quality mammograms as the women who visit the Imaging Center in Anchorage.

Equipped with the new Selenia and R2 Computer-Aided Detection (CAD) system, the new mobile van is a 33-foot self contained mammography suite, which can be driven to a site and parked. The women simply walk right in to get their exams.

### **Scheduled Runs, Trips to Remote Areas**

For most of the year, the majority of the screenings performed by the mobile unit are located right around the Anchorage area. On average, the unit is out on the road about one day a week. When the van is out, it makes scheduled stops at several local medical centers that are not equipped for mammography and area businesses. The mobile unit also makes scheduled visits to area schools so that teachers can be screened.

"About every other month we send the van on an overnight trip," said Susan Kessler, RT (R)(CV)(M)(QM)(CRT), the lead technologist for the mobile unit. The mobile unit is a one person operation; the technologist is responsible for imaging the patients as well as driving the van over the road. "We schedule the van for the really big trips in the spring and fall. We go as far as Talkeetna, up near Denali National Park—Anchorage to Talkeetna is about a two and a half hour drive.

We go out to Eagle River, about an hour's drive away. The longest trips are to Valdez and Cordova. These areas require a six-hour ferry ride to access," Kessler said. During a recent trip out to Valdez/Cordova, over 200 women received screening mammograms.

### **Overcoming Alaska's Greatest Challenge—Access**

"Some women have never had screenings before," Kessler said, "or if they did, they did not have them regularly, because getting to Anchorage is a huge deal for many of them. It's a long trip, and if the system was not brought out to them, they would skip their exams. "Some of these women live way out, in small cabins; some of them don't have running water. It's a huge effort to get to Anchorage to get an exam and yet, because of this unit, these women can get the latest in breast imaging technology," Kessler said.

In addition, through a combination of state and private programs that provide breast and cervical cancer screenings to the working poor, the mobile unit of Providence Imaging Center can see women who are uninsured and in danger of falling through the cracks. "We visit sites where we see almost exclusively this kind of population," explained Kessler. "One day, a woman who had been living in a homeless shelter came in for her screening mammogram. She would not have been able to get one if it had not been for this unit. All day, every day, patients always tell me, 'Thank you so much for bringing this here... I might not have been able to get [a mammogram] if I had to make the trip alone."

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***"In an underserved population, you will always see a significant number of cancers in the unscreened that you would not have found if the unit had not been able to make its way out there."***

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### **Unusual Challenges**

Naturally, operating a traveling mammography unit in the northern most state in the union has its challenges. Because of the extreme weather conditions often found in Alaska, the unit must be protected from the elements at all times; if the Selenia were to get too cold, the layer of selenium coating the detector plate could possibly separate and peel off. The van is equipped with two on-board diesel generators to protect the Selenia digital detector. Thanks to the new mobile mammography van, the Imaging Center can once again return to the sites and locations that the old unit had forced them to discontinue serving. "Now that we have the new system...our goal is to have the unit out and running five days a week, year round," said Kessler. For the women of the Anchorage area, that's very good news. ●●●

## **The Breast Center at Sequoia Imaging, California**

### **Technology Plus Compassion Equals More Patients**

The cliché says, "Two heads are better than one." Taking a similar approach, The Breast Center at Sequoia Imaging, in Visalia, Calif., has discovered that combining two of the latest advancements in women's health has made things better for everyone.

The first of those advancements is digital mammography systems—the latest, most technologically sophisticated way of taking mammograms. The other device is a mammography aid called the MammoPad breast cushion.

The cushion is a soft, foam pad that adheres to the mammography detector of all commercially available mammography devices, including digital ones. It makes the exam more comfortable for most patients and also helps technologists acquire more tissue to image.

MammoPad covers the hard, cold

surfaces where the breast is placed. By making mammograms softer and warmer, it addresses women's number one complaint about the procedure: its discomfort. When patients are more comfortable, they are more likely to allow the technologist to properly position their breasts, to get more breast tissue in the image, and to get better breast compression, as studies have shown.

The Breast Center, a state-of-the-art facility that folded into one operation the Kaweah Delta Health Care District's previous imaging services, opened in May 2005. It implemented digital mammography at the same time, replacing the system's previous analog machines with Hologic Selenia digital mammography systems and thereby becoming the first breast imaging facility in Visalia to offer digital mammograms.

***"We always want to have the best technology on hand. That was especially important for our new imaging center."***

Digital mammograms provide several clinical benefits. The images are more detailed than analog film and can be manipulated in ways that film cannot, making interpretation easier for radiologists. This is especially useful for certain patient populations such as women with dense breast tissue. The images can also be sent out over the Web, to referring physicians or to other radiologists for consultation purposes.

The center was equally excited about digital mammography's business advantages. "You can see a lot more patients in a day for digital mammograms," says Renee Lauck, manager of Sequoia Imaging. "The exams are quicker and there are far fewer retakes than with analog. We used to see one patient every half hour with our analog machines, and only one every hour for diagnostic exams. With the Selenia systems, we can see three patients every 20 minutes, while still having time to give caring attention to our patients. That's a 75 percent increase in capacity that also improves our service. Our patients really appreciate the faster exams and fewer retakes, too.

"Of course, digital mammograms are reimbursed at higher rates than analog ones, and that's important for our business, especially with the reimbursement environment tightening up these days. Plus, there are savings because there's no film. You save on labor costs for processing and you don't have material costs for film or processing. Digital machines are easier to use, too, and that helps productivity," says Lauck. As one measure of digital's impact, images are available in seconds, compared to 20 minutes of processing per every four images with the center's analog machines.

The capacity increase from the conversion to digital astounded center management. Hologic had assured the center's decision makers that the two Selenia systems they purchased would expand capacity way beyond what they had with their five analog machines. The proof came quickly. When the center opened, there was a two-month backlog of patients. The center was able to schedule all those patients, plus its regular patient flow, in the following 60 days.



***For the first time in the center's history, Gordon Ah Tye and Renee Lauck say they are seeing a return on investment for the purchase of equipment***

#### ***The Breast Cushion Side of the Equation***

The increased capacity was a potential revenue boom, but only if the center could take advantage of it by drawing more patients. That's where MammoPad entered the picture.

The center implemented MammoPad in July 2005, just two months after going digital. This, too, was driven by a combination of clinical and business considerations.

"We always want to provide the best possible service for our patients," says Lauck. "We were also interested in the fact that MammoPad would help set us apart from our competitors."

***Lots of imaging centers are installing digital machines now, so digital by itself isn't enough. We were the first center in our area to offer MammoPad. That made a big difference."***

When the center became a *Certified Softer Mammogram Provider*, it received marketing and communication materials that could be mailed or handed out to patients, prospective patients, and referring doctors. Certification brought other tools, as well, including media development materials, posters, and a mammography education video that

could be shown in the waiting room or used in booths at special events.

"We modified the materials to include our center's information and then really put them to use," says Lauck. A referring doctor's letter from the packet was sent to about 400 physicians. The center's use of the press materials enticed local TV news programs to feature them on their shows. Center staff handed out other materials at special events. In addition, the facility advertised on local radio and in the newspaper, and created a table display touting the center as the place "where technology and compassion come together." It was not an idle claim.

The marketing efforts, along with the general appeal of digital mammograms, soon paid off. Lots of new patients came through their doors, and others returned who had been avoiding their next mammogram because of the pain. By the end of 2006, the center's volume had grown from 45-50 patients per day to nearly 80 patients per day, an increase of about 60 percent. (The figures also reflect the center's commitment to eliminating its patient backlog in mid-2005.)

Volume has dropped a little in 2007, but only because the center deliberately reduced its scheduling during a three-month period when it was running with only half its normal staff.

#### ***What Made the Difference?***

Lauck and her colleagues have looked at the volume increases from several angles to try to understand the impact of Selenia and MammoPad. Clearly, both have played a major role in the center's continued success.

"We know that a lot of the increase that we saw right away was because of our growth in capacity," says Lauck. "We were simply able to schedule a lot more exams. And we still have plenty of room to grow. With these digital systems, we could comfortably fit in 20 more patients per day without adding another machine."

But the presence of Selenia also created positive word-of-mouth that drew patients to the center. "We know from comments we hear at our special events that women are coming in because of digital," Lauck says. "They want to go where the best technology is. We've heard similar things from our friends."

The proof of MammoPad's impact comes in part from patient satisfaction surveys that the center regularly conducts. "The surveys don't directly mention MammoPad, but patients often write in comments, and MammoPad is mentioned a lot," Lauck says. For instance,

one patient wrote: "I was very impressed. You have done a great job making the whole procedure as comfortable as possible."

Lauck has also heard personally from patients who say that MammoPad was the reason they came to the center for their mammogram. "Lots of women responded to our TV and print advertising," says Lauck.

There's no other major factor—such as the closing of a competitive imaging center—that could explain the volume increase. "We had more competition, not less, when we added Selenia and MammoPad," says Lauck. "Soon after our new center opened, another center opened close by. Even so, our numbers shot up."

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***"MammoPad has created good word-of-mouth that has brought patients in, too, just like with Selenia."***

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### **Going Forward**

The Breast Center continues to find effective ways of promoting its Selenia/MammoPad combo. Every October, it puts on an all-female motorcycle run as a fundraiser. About 150 riders turn out, and the center's promotional materials are displayed at the event. It also staffs booths that display marketing materials at a number of local events, including a farm show in 2006 that drew about 100,000 during its three-day span and another fair that draws 5,000-7,000 people each year. Conferences for the local school districts' support staff, where the center always maintains a presence, are another source of potential patients.

Inevitably, the role of digital mammography and MammoPad is changing for the center. Digital is well on its way to taking over the mammography field, so a facility these days needs to have digital technology just to keep pace with its rivals.

MammoPad may be on its way to similar status. Recently, a competitor began offering the cushion. No longer can the center advertise that it has the only softer mammogram in town. But it can continue to advertise that no one has a softer one, and as time goes on, that will be just as important a message.

Obviously, Hologic believes in the long-term future of the cushion. It recently acquired the MammoPad business from BioLucent, Inc., as a perfect fit with Selenia. ●●●

## **Unidade Radiológica Paulista, Brazil**

### **On the Vanguard of Technological Advancement**

It should come as no surprise that the largest city in the Southern Hemisphere is also home to one of the area's most forward-thinking imaging clinics. Unidade Radiológica Paulista (URP) Diagnósticos Médicos and its medical director, Dr. Aron Belfer of São Paulo, Brazil have been leading the charge for technological advancement in the region, using Hologic mammography and osteoporosis assessment equipment as part of their pioneering efforts.

Early in Dr. Belfer's association with URP he brought the first bone densitometry system to Brazil. URP was already using several of the day's most effective imaging modalities, including CT, xeromammography and nuclear medicine. After seeing Hologic's Discovery bone densitometry system in use at Barnes-Jewish Hospital in Saint Louis, MO, Dr. Belfer and URP added DXA technology to their capabilities with the purchase of a Discovery.

Discovery offers the highest precision, accuracy rate, system speed and imaging resolution. And, with two powerful screening tools, high definition instant vertebral assessment and bone mineral density measurements his patients have the best bone assessment tools available.

The 52-year old imaging clinic has a long history of investing in cutting-edge technologies whose impact extends far

beyond medicine. In January of 1980, Dr. Belfer and his team developed the first Local Area Network (LAN) in Brazil, partnering with a local computer firm to bypass import restrictions that limited the introduction of cost-effective computer components and equipment into the country. At the same time, they created a Radiology Information System (RIS). Today, URP's RIS houses 26 years' worth of clinical information, 14 of which are online.

### **Digital Mammography and Improved Image Quality**

The first automatic film processor in Latin America was installed at URP, as was Brazil's first whole-body CT system installed at a local hospital where URP was responsible for running it. With the advent of the revolutionary Lorad HTC-grid technology from Hologic, URP began using both Affinity and M-IV screen-film mammography equipment. Most recently, URP is one of the first sites in the region to offer Hologic's Selenia full-field digital mammography. Having seen the Hologic direct capture detector technology before the first machines were actually built, Dr. Belfer, along with mammography specialists from the breast imaging department, watched its development closely.

"When we saw the physics behind it



***After seeing Hologic's Discovery bone densitometry system in use at Barnes-Jewish Hospital in St. Louis, Missouri, Dr. Belfer added DXA technology to the capabilities of URP***

and the idea of direct imaging we thought that this would be much better than any other detector," he explained. Rather than investing immediately in the technology, he waited until he felt it had matured enough to surpass others on the market.

"There is a huge difference between what I refer to as first generation digital and second generation digital," Dr. Belfer added. "Other digital breast images are not as impressive as what you get with the Hologic system."

***"Other digital breast images are not as impressive as what you get with the Hologic system."***

After the first Selenia was installed, the URP team temporarily kept one of the screen-film machines as backup, but, as Dr. Belfer pointed out, the technological savvy of patients in the area created an immediate demand for the full-field digital equipment. "It took about six days," he said. "Everyone, including the technologists and the patients wanted to use the Selenia. They wanted to be sure they were getting the latest technology." The site soon found that just one Selenia digital mammography system wasn't enough for the patient load. They now have two systems installed and an order for a third system is underway.

Dr. Belfer and his colleagues at URP use the term 'second generation digital' to communicate the growth potential advantages of the Selenia system to referring physicians. "We want to differentiate the kind of images we do from the kind that others are doing. So, instead of trying to explain direct versus indirect imaging to gynecologists, it's much easier to understand first versus second generation."

The difference in image quality and increased speed of a screening exam is readily apparent to URP's patients, as well. Unlike in the U.S. medical system, the Brazilian medical system requires patients to keep their radiology films. Many patients compare films from exam to exam, and the approach is proving to be helpful in explaining the difference in image quality.

According to Dr. Belfer, "Not only are we getting comments about the difference between conventional film and digital, but also between first and second generation digital. So patients are looking at other digital mammograms. They say the other one was blurred—that's a word used very often." Patients have also mentioned that the Selenia mammogram seems more comfortable in terms of compression. "I

need to tell them, there's no less compression, I swear, it's the exact same compression, the right amount of compression, but the shorter compression time may give the impression that they feel less discomfort," he noted. The Selenia FAST paddle may also be a contributing factor. The FAST paddle tilts to the natural contour of the breast, applying the compression uniformly. This not only brings the patient more comfort, but also improves the quality of the image.

***Digital Mammography and Reduced Callback***

The protocols for image reading in Brazil differ from those in the U.S. and some other countries because there is no official screening program. At URP, immediately after images are taken, a physician reads them, consults the patient's history and will often talk to the patient or perform any additional physical exam that's needed all in the same visit. In a city the size of São Paulo, which covers 588 square miles and is home to over 11 million paulistas (as the city's residents are known), callbacks for second readings can be extremely inconvenient. Fortunately, Selenia has helped URP lower their mammogram callback rate to less than two percent.

With a combined workload of over 20,000 annual mammograms at two clinical imaging sites, the presence of a dedicated, highly-skilled team is a must. URP's 36-person clinical team is one of the best. "When a patient calls to make an appointment, very often she asks not for a doctor, but for a specific technologist," Dr. Belfer said. "This is the most fantastic thing because that's the ideal. Our technologists need to feel that they're as important as anybody else on the team."

***Exceptional Patient Care***

"Our physicians do what we call clinical radiology," Dr. Belfer says, "That means every patient that comes for an exam is put in contact with a physician. The physician sees why he's doing each exam and customizes the exam if necessary and orients the technologist on how to do it." The patient-physician relationship is augmented by 14 years of onsite previous exam reports and a brief clinical history. This way, physicians have an overall imaging portrait of their patients, which helps to keep patients connected to the practice. "Sometimes you'll get to talk to a patient who is there for her annual breast exam and be able to ask about other issues. This may lead to a bone density examination or other radiol-

ogy services. You build a relationship with the patient; it's very close."

Dr. Belfer continues to leverage the PACS system he developed in 1994 as a practice builder. In addition to scanning previous screen-film images, digital records will also be kept in the PACS. While the patients still must keep their own films, URP will offer an added convenience. "We tell our patients that they don't have to worry about bringing their films," Dr. Belfer said. "We have everything here. So that means the patient will come back to the same clinic."

***The DMIST Strategy***

Faced with less-than-impressive reimbursement rates for breast cancer screening, the team's pioneering attitude is extending to the development of new strategies there, too. Dr. Belfer wanted to use established, widely-accepted criteria on which to base this approach, so he chose the results of the Digital Mammography Imaging Screening Trial (DMIST) recommendations. While DMIST screening criteria could be used to justify reimbursement for digital exams for a certain portion of URP's patients—most notably women under 50, women with dense breasts and premenopausal or perimenopausal women—accurately categorizing the needs of URP's entire 40,000 patient population was extremely complicated and untenable on a day-to-day basis. "We checked our database to see how many of those patients would benefit from a digital exam according to DMIST criteria. I proposed to have one price for the insurance payers: a combination of the price between digital and analog multiplied by the incidence of the patients who will benefit." This creative solution will lower the cost for the payers and raise the reimbursement rate for URP. Even before applying this idea, some of the payers called asking how much we would charge to perform digital on all of their patients. That means that some of the payers are capable of foreseeing the digital advantage in a mammography center. ●●●

# Valley Radiologists, Phoenix, Arizona

## Making a Difference in Women's Imaging

For a radiology practice that performs nearly 250 bone mineral density studies a week, consistent performance is essential. Just ask Tammy Sanchez, RT(R) M QM CDT quality assurance manager and mammography/ bone densitometry coordinator at Valley Radiologists in Phoenix, Arizona. Overseeing ten offices in metro and suburban Phoenix, Tammy saw the benefit of a single-vendor approach to DXA imaging technology early on.

In 2004, Valley's merger with Scottsdale Medical Imaging to form Southwest Diagnostic Imaging necessitated an evaluation of the practice's DXA equipment. "We chose to go with one vendor," Tammy explained, "because our goal is for our results and information to be as accurate as possible. When you're trending a patient you want to stay with one manufacturer."

"We do about 13,000 BMD studies a year," Tammy said. "With such a vigorous workload, trending patient information is a critical aspect of the work being done at Valley Radiologists. And we do more than just osteoporosis studies. We're very fortunate to have some really attentive referring physician groups, like pediatric groups." In fact, approximately 8-10% of the DXA patients at Valley's Glendale office are children between the ages of 10 and 16. Young patients are most often screened for osteogenesis imperfecta, a group of genetic syndromes more commonly known as brittle bone disease. "For most of these cases, we do a pediatric whole body study and give a bone mineral content score every two years."

Valley also participates in clinical trials. A recent blinded study measured the effect of particular treatments on young children with pituitary cancer, using whole body studies and body mass index testing.

Valley is currently involved in lipoprotein studies of HIV patients, pediatric patients, and adults receiving chemotherapy. "Until this year the company had asked me to be the only technologist that handles the DXA clinical trials because they wanted consistency," Tammy points out, "but I got to a point where I needed to teach others how to do them. I think it benefits the technologists because they become more attentive to precision and accuracy."

Tammy believes the Hologic Discovery W (whole body) system gives Valley Radiologists the precision they require for participation in clinical trials as well as in their daily workload. "The Discovery system is very user-friendly," she noted. "There are a lot of automated processes and you want to rely on those as much as possible, so that it's consistent every time the patient comes in. If you have your positioning correct, your automatic analysis should work very well."

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***"Being able to do supine lateral imaging without moving the patient is a real feather in our cap."***

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### **Discovery Streamlines Reporting**

In a practice of Valley's size, optimized workflow is a must. "Now that we have gone through the connectivity process, we don't have to enter patient data by hand anymore. We just click on the Worklist, click on the patient's name, and Discovery populates all of the demographics and the biography of the patient," Tammy said.

She is particularly impressed with the system's automatic data import feature, which compares prior scans to current ones. "Before we had to do the entire conversion math by hand. We used to have to figure out the area and the bone mineral content to come up with the bone mineral density and then convert it (there's a conversion factor for each manufacturer) and then we'd use that conversion formula and do our comparison. It was a lengthy math process that of course has room for human error, and now it's all done electronically for us. That's awesome."

Recently, Valley Radiologists began to add Hologic Discovery A bone densitometers to their practice. The Discovery A has the same patient spine, hip, and whole body scanning capabilities as the Discovery W model, but Discovery A also includes a rotating C-arm that allows a true 90-degree lateral scan of the thoracic and lumbar spine for vertebral fracture assessment. With non-rotating systems, the patient has to roll on their side, which may not always be easy or comfortable for a geriatric patient. With the Discovery A's exclusive rotating capability, the tube head rotates instead of the patient.

Valley's Goodyear and Northwest Glendale offices, which are in the west part of metropolitan Phoenix, serve a largely geriatric population—approximately 70 percent of the patients in these areas are over 55. It is more relaxing for geriatric



***Tammy Sanchez says the Hologic Discovery bone densitometry systems give Valley Radiologists the precision they require***

patients knowing they can remain on their back with no discomfort and yet get better vertebral fracture information.

An added plus of the vertebral fracture assessment on the Hologic Discovery A is the ability to visualize abdominal aortic calcifications (AAC), which are strongly associated with cardiovascular disease. AAC is a particularly valuable measurement since it correlates with traditional clinical risk factors such as cholesterol, blood pressure, diabetes, and age to the prediction of heart attack risk.

Tammy has seen the Discovery A system increase patient throughput without sacrificing precision.

**Hologic Service is Another Plus**

With a steady stream of patients putting Valley Radiologists DXA equipment to the test, the availability of vendor on-demand equipment service is particularly important. "It would take us four or five days to get our previous vendor to our sites to check out equipment. That was difficult for us because we weren't servicing our customers and our revenue was reduced. Hologic has an 800 service line and all of our technologists know that if they get in trouble they just call Hologic. Often times the 800 service line resolves the problem while on the phone with the technologist and if they cannot, a service engineer contacts us the same day. The engineer determines the parts needed for repair, places the order and meets the parts on site for the service call within 48 hours. They've always been available when we've needed them."

**Valley Radiologists has Chosen Hologic for Both DXA and Mammography**

As Digital Mammography Coordinator for the practice, Tammy's single-vendor approach also extends to the mammography side of the practice. In December of 2006 Valley Radiologists began converting their analog equipment to Hologic Selenia digital mammography systems. "We've actually purchased six Selenia systems," she explained.

**"The cohesiveness of installation and training for both DXA and mammography is great. We recently scheduled applications for both DXA and mammography in the same week. Everything just came together and it went perfectly."**

Valley likes to offer their patients the convenience of having their mammograms

and DXA studies during the same office visit. It's not possible in every case because of scheduling conflicts, but it's offered when appointments are available. "I do mammography and DXA whenever I work at a site," Tammy pointed out. "When a patient comes in for her DXA and says that she's scheduled for a mammogram but couldn't get in for another two months, I'll offer to do her mammogram right then so she won't have to make a trip back." That's exactly the kind of flexibility and customer service that have made Valley Radiologists a success. ●●●



**Barbara Ranta, RT at Valley Radiologists, positions a patient on the Selenia digital mammography system**

**Fully Digital Now**

The Women's Imaging Center continues its journey of providing quality care to its patients by recently completing its four-year transition process to a fully digital work environment. They now boast a total of seven Selenia digital mammography systems, three dedicated radiologist diagnostic workstations, and eight technologist workstations. "Having the right tools," Dr. Semine said, "is critical in running a busy department."

Since beginning the transition to digital, the Center has seen an increase in annual patient volumes averaging twenty percent per year, for each year, since the first Selenia system was installed. The new digital workflow is allowing the Women's Imaging Center to improve the patient experience for a growing number of women. "The Center has grown so much in four years," Dr. Semine said. "Digital has allowed us to continue growing in the same space footprint."

In fact, since beginning the transition to digital, the Center has seen an increase in annual patient volumes averaging twenty percent per year, for each year, since the first Selenia system was installed. "We want to be able to continue growing, but we don't want our growth to have a negative effect on the quality of care that women have come to expect at the Center. What attracts patients here is our way of taking care of them."

"Hologic, because of its leadership," said Dr. Semine, "has been very capable in terms of recognizing the technologies that do need to be pursued. One of the most exciting advances in mammography—one that is only possible with digital technology—is the development of breast tomosynthesis. "I'm eager to use tomosynthesis," Dr. Semine said, "to see what it can do in a busy clinical environment. Tomosynthesis could prove to be a remarkable tool." ●●●

*Fact:*

*Vertebral fracture assessment offers an opportunity to visualize aortic calcifications which are risk factors for cardiovascular disease in postmenopausal women undergoing bone densitometry, at very little additional cost*

*Schousboe J, McCloskey E, Wilson K, et al. Abdominal Aortic Calcification Detected on Lateral Spine Images from a Bone Densitometer Predicts Incident Myocardial Infarction or Stroke in Older Women. JBM. 2007.*

# Vestfold Hospital in Norway

## Evaluating the Difference Between Selenia and Screen-film

It was a bold decision for Vestfold Hospital in Norway to establish an all-digital breast care unit in 2002. Digital breast imaging was in its infancy, and few breast centers in Scandinavia, indeed few in the world, were completely digital.

The center had originally planned to purchase one digital mammography system and a computed radiography system. However, a financial analysis found the site could more than break even with two digital mammography systems and a prone breast biopsy system. One digital mammography unit would be dedicated to breast screening; the second would be reserved for diagnostic cases. The addition of a prone biopsy table would ensure that optimal patient care could be achieved.

Criteria and motivations were diverse. Hospital radiologists wanted to acquire the best image quality and give optimal patient comfort. The hospital administrators wanted a system that would evolve as the Center's patient population grew while putting up with very heavy usage for the Norwegian Breast Cancer Screening Program.

After a thorough review of the available technologies, Vestfold chose the Hologic Selenia digital mammography system. The decision to go with Hologic technology was based on the quality of their selenium detector images and the size of their detector (the system's field of view is one of the largest available).

"We believe strongly in the [Hologic Selenia] detector," said Dr. Einar Vigeland, the leading consultant radiologist at the breast care unit in Vestfold. "We have a strong belief that we've chosen the right system and that this is the solution for the future."

Also important was the integration of mammography into the radiology department's existing PACS. At Vestfold, mammograms are both archived and presented on soft copy workstations using the PACS. They are made available electronically throughout the radiology department.

Dr. Vigeland is particularly impressed with the Selenia system's ability to visualize microcalcifications. "For microcalcifications, digital is clearly superior to analog." The center receives analog images from many

referrers, enabling an easy comparison with digitally captured pictures. "We cannot see anything on film better than we can with digital," he said.

In August 2007, Dr. Vigeland and his colleagues published the results of their analysis of cancer detection and recall rates for 18,239 women screened with their Selenia systems to the results of 324,763 women screened with film elsewhere in Norway in European Radiology.

While prior studies have compared the performance of digital mammography to screen-film in high volume screening, until this study, no researchers had looked at the performance of this specific digital mammography technology exclusively. The detector characteristics and way the various digital mammography systems operate is considerably different. The pixel size of the system studied, the Hologic Selenia system, is smaller, the system uses direct capture (selenium) technology, and the image-processing algorithms are unique, resulting in a sharp, high contrast image.

**The researchers found that the detection rate for ductal carcinoma in situ (DCIS) and the positive predictive value for cancer (PPV) were statistically significantly higher and the technical recall rate was statistically lower for Selenia over film.**

Image quality and dose aside, image archival and presentation are less labor intensive with the digital systems. The one or two medical professionals who used to hang images on light boxes can now concentrate their efforts on other crucial duties. In fact, the entire system runs more smoothly when the light box shortage inherent to analog systems in busy departments is circumvented.

"Overall," Dr. Vigeland said, "the digital systems enable radiologists to make a more flexible use of their time."

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*Dr. Vigeland says the site gets better images than analog with the Selenia direct capture system while keeping radiation dosage within Norway's recommended conservative values for analog systems*

### Fact:

*The detection rate for ductal carcinoma in situ (DCIS) and the positive predictive value for cancer (PPV) were statistically significantly higher and the technical recall rate was statistically lower for Selenia over film in Norwegian screening study*

*SVigeland E, et al. Full-field digital mammography compared to screen film mammography in the prevalent round of a population-based screening programme: the Vestfold County Study. Eur Radiol. 2007.*

# Victory Breast Diagnostics, Houston, Texas

## Compassion Plus Technology Equals Victory

Frustrated by the time it took for hospitals in the Bay Area of Houston to acquire technology she felt provided the best possible breast care, Dr. Susan Gaskill mustered her courage, tenacity, and vision to open her own breast imaging center in October 2006.

Leaving what she describes as “a nice, comfortable practice” near Houston, Dr. Gaskill commuted to Dallas for close to a year to gain experience with the latest in breast health technologies, including digital mammography. She then brought that knowledge and technology back to her community with the opening of Victory Breast Diagnostics and Women’s Imaging.

From the onset, Dr. Gaskill was clear about the type of technology needed to make Victory a success. As the first fellow in breast imaging at the Susan G. Komen Breast Center at Baylor University Medical Center in Dallas, Dr. Gaskill was accustomed to working with leading-edge cancer detection technology. She felt that her community in the Bay Area deserved the same. After comparing digital to film-screen, Dr. Gaskill found direct capture digital mammography technology produced superior images.

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***“I felt very strongly from the onset that I wanted direct capture technology. The images were just clearer. I could tell that from a distance, looking at a monitor of the two technologies. That was actually the easy part.”***

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Creating a comfortable, patient-centric space that optimized workflow and was a pleasant place to work, was a primary objective in designing Victory. In more ways than one, Hologic was part of the Victory team. As a physician with no formal business experience, the prospect of creating an imaging center from scratch was daunting. While Dr. Gaskill’s passion for women’s health kept her motivated, she needed a vendor that could partner with her from financing to service. That’s where Hologic came in. “When you’re starting from the ground up, you have to make a lot of financial decisions and digital is very expensive,” Dr. Gaskill said. “One of the really important factors in my decision was financing the equipment.

Hologic was helpful and supportive in helping me find third-party financial assistance.” Choosing a supplier with a shared focus was also of critical importance. “Hologic is dedicated to breast imaging. When dealing with other vendors, I’ve felt that breast imaging is just not as important as the MRI business, the CT business, or the nuclear medicine business. With Hologic I never felt like a redheaded stepchild,” she asserted.

Victory relies on Hologic technology for several major systems in their breast-imaging suite. In addition to a Selenia digital mammography system and a SecurViewDX diagnostic workstation with R2 CAD, the site has a MultiCare Platinum stereotactic breast biopsy table, Discovery C bone density system, the Suros ATEC breast biopsy device and Sapphire system for MRI-guided breast biopsy. Dr. Gaskill insists that patients get the very best care when they have access to the most diagnostic tools in one place. “It’s very important that all the

modalities are in the breast center with the breast imager. One of my concerns is if the breast MRI is read by a general radiologist in another facility without a state-of-the-art mammogram to correlate with. It’s really important that it’s all integrated and done right there together in the breast center.” It’s critical that the breast imager understand the limitations of all three modalities.

In addition to streamlining workflow, digital mammography has been particularly effective when screening patients with dense breast tissue. “I don’t take as many images as I used to because I can see through the dense tissue more clearly. I can see calcifications that are buried in dense tissue much better, and I don’t have to take as many magnification views,” she noted.

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***“The patients are getting less x-ray exposure and they’re getting out faster. So, patients are happier. I don’t call patients back for additional views as often, so I know for sure my recall rate is lower with digital imaging.”***

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Therefore, I’m doing fewer benign biopsies, so I’m really happy about that.”



***Dr. Gaskill of Victory Breast Diagnostics and Women’s Imaging relies on Hologic’s digital mammography, breast biopsy and osteoporosis assessment systems***



**Dr. Gaskill and the Victory technologists love the digital work environment and say they will never go back to film**

The instant access to images that digital archiving provides is especially convenient. "I love the fact that if a patient wants to check out their films, we can print them hard copies and they can take them with them. I don't want them to bring them back because we are filmless, and if films are lost or destroyed, it's okay because we have them stored, locally and off-site" she said.

Dr. Gaskill's commitment to care and quality of life is equaled by her boundless enthusiasm. "I really am excited about the fact that I have a breast center where the team really works together and we're all focused on the patient," she said. "And if we take care of the patients, then we take care of the community. In our waiting room we have a 'gallery of courage' with portraits of our cancer patients, not just to honor them, but also to inspire women with hope. I'm really excited about that."

Victory's motto is "Comprehensive Care with Compassion," and Dr. Gaskill and Victory's chief operating officer, Cheryl Parish, RT (R) (M) share that common vision. "The main mission of our breast center is to bring personalized, comprehensive care to our patients," Dr. Gaskill said. "We want to treat everybody as a person first, and a patient second. I want everyone who comes through our door to be treated as I would want to be treated. And our mission is to work as a team, with the patient at the center."

Victory Breast Diagnostics and Women's Imaging is now successfully bringing big-city excellence and state-of-the-art technology to the women of the Bay Area. "I like the name Victory because it implies winning," Dr. Gaskill said. "That's the only option in the fight against breast cancer." ●●●

## Washington Radiology Associates, Fairfax, Virginia

**With a Long Tradition in Women's Imaging, Washington Radiology Looks to Hologic, and the Future**

Headquartered in Fairfax, VA, Washington Radiology Associates, PC, has grown into one of the largest women's imaging providers in the Washington Metro area. With six clinical sites located throughout the greater Washington DC area, including Virginia, Maryland and the nation's capital, Washington Radiology boasts 24 board certified and trained physicians on staff, and over 250 employees, providing services to more than 14,000 patients every month.

"Each of our offices," says Practice Administrator Patrick Waring, "performs more patient exams than many hospital radiology departments."

### **A Tradition in Women's Imaging**

Though the practice has expanded to include all imaging modalities, it has a long and established tradition of specializing in women's health services. Washington Radiology was originally established in 1948 to serve as the radiology department

for Columbia Hospital for Women.

"Our roots in women's health and mammography originated from our strong association with Columbia Hospital," explains Waring. And with an average volume of more than 70,000 mammograms a year, those roots have remained strong. Washington Radiology is today considered one of the premier women's imaging practices in the area.

### **Part of the DMIST Study**

Because of their tradition of providing women's health services and the prominence of the practice, Washington Radiology was asked to participate in the original Digital Mammographic Imaging Screening Trial (DMIST).

Conducted by the American College of Radiology Imaging Network (ACRIN) and funded by the National Cancer Institute (NCI), DMIST included researchers at 33 sites across the United States and Canada.

Washington Radiology Associates



**Julianne S. Greenberg, MD is the Director of Mammography for Washington Radiology Associates, and the DMIST site's principal investigator for the ACRIN study**

was the only non-hospital or university affiliated radiology practice asked to participate in the landmark study," says Waring.

### **The Potential of Digital**

For Washington Radiology, one of the most important aspects of being asked to participate in DMIST, was discovering first hand the true potential for digital mammography.

"DMIST proved that digital mammography offered specific clinical advantages over film mammography," says Dr. Julianne S. Greenberg, Washington Radiology's Director of Mammography and the DMIST site's principal investigator for the study.

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***"It (DMIST) showed that digital mammography is better for women with dense breasts, women who are pre or peri-menopausal, and women who are under age 50."***

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According to Greenberg, more than half of the mammography patients at Washington Radiology fall into one of these categories.

### **Going With Hologic**

During the search for the right digital system, the practice went on numerous site visits to see different manufacturers' machines. "We pulled everyone together," says Waring, "and brought them all along. The doctors, the IT people and the technologists came so they could actually work the equipment and see what it was like."

After all the input and investigating, the decision was made to go with the Selenia Full Field Digital Mammography system, from Hologic, Inc.

"Selenia is the leading edge of breast imaging technology," Greenberg says, "it's the total package. The Selenia detector plate is the most advanced on the market, and the images are of the highest quality. Selenia was the logical choice for our practice. The other vendors," she adds, "were clearly not up to Hologic."

### **Total Digital Conversion**

Once the decision was made to make the change to digital mammography, the practice recognized that the changeover needed to be absolute, involving every location in the practice. They decided to completely replace all of their analog systems in each of their five mammography sites.

"We made the conversion to digital practice wide because all of our patients

would then benefit from the clinical advantages," says Greenberg, "How could we justify a partial transition in only a few of our sites, and offer digital mammography to some of our patients, and not to others?"

In April of 2006, Washington Radiology received the first of ten Selenia systems, installed serially, one site after another, until the transition was complete on August 1, 2006. "As each site was introduced to digital, that site went totally digital," Waring says. "We replaced 22 analog units with those first ten Selenia systems. We have fifteen digital units now."

### **Digital Advantages**

For Dr. Greenberg and the physicians of Washington Radiology, the transition to the Selenia FFDM systems has been an extremely important change for the practice. "Everyday," Greenberg says, "I can literally see the difference Selenia is making. Breast cancer detection is about seeing small, subtle changes in tissue, and it is crucial to have the technology that can demonstrate these small changes. The Selenia allows us to see not only more cancers, but smaller cancers that we couldn't see before with our film-based mammograms. Even our surgeons, and other referring physicians are seeing the difference...they are all requesting that their patients have digital mammograms. Selenia," she adds, "is the cornerstone of our breast imaging services."

"Our throughput has improved significantly as well," Waring says, noting that the new systems are substantially more efficient for the technologist to operate. "Because the image is available to view right away, fewer patients are recalled for technical problems."

Also," he adds, "because of the larger detector plate on the Selenia, fewer images may be required, which reduces unnecessary radiation exposure for the patients."

### **Comparing Apples to Apples**

For Washington Radiology, one of the most important parts of the transition process was to have all of their prior analog images converted to digital as quickly as possible.

"We've been using DigitalNow, from Hologic R2," Waring says, "to digitize and convert our analog images to digital format. This way, we can store all the images on our PACS system, and the doctors can compare past analog studies with the new digital ones right there on the workstation, without having to have a view box next to the workstation." They have

been digitally storing old film images for the past 19 months, and now have almost 5 years worth of past studies digitized for review.

In addition, the R2 Computer Aided Detection (CAD) system is integrated into the Selenia acquisition unit. "CAD helps us direct our eyes to certain areas of the image that we should examine more closely," Greenberg says, "and this enhances our ability to detect early breast cancer." She adds, "The R2 CAD system is great because it integrates seamlessly into the digital workflow at the radiologist's workstation."

### **Partnering for the Future**

Looking to the future, the physicians at Washington Radiology are excited by what they see on the horizon. Says Greenberg, "We are very excited about tomosynthesis. It's an evolving technology that is bound to offer great diagnostic advantages."

Waring says, "We are very excited about the prospects of what this can do for women's health, and we are very much interested in partnering with Hologic to introduce tomosynthesis to our patients. It's going to be the next wave in breast imaging."

"It's the leading edge in imaging technology," adds Greenberg, "and it will integrate fully with our current breast technology. If we didn't have digital mammography now, we couldn't even think about moving into tomosynthesis in the near future."

For the physicians and staff of Washington Radiology, having access to the best technology is a critical component in their long-standing commitment to quality women's imaging. "Our patients are very important to us," concludes Greenberg. "Every chance we have to make an earlier rather than a later diagnosis of breast cancer means we help to save a life. That's the most rewarding benefit of all." ●●●

# West Coast Radiology, Orange County, California

## Dedicated to Doing Better with Best-fit Technology

When it comes to breast imaging, the professionals at West Coast Radiology Centers in Orange County, CA, believe that best-fit technology equals better care. Established in 1988, the multi-modality outpatient imaging practice adopted digital technology across most modalities. In keeping with that philosophy, the West Coast Breast Centers (WCBC) was the final division to make that transition, thus concluding the practice's vision of becoming a fully digital operation. In establishing a dedicated breast imaging practice, Executive Director Tim Chavez noted that it was critically important "to provide the best technology that would allow our radiologists to provide the best quality interpretation." For mammography, that choice was the Hologic direct-capture technology.

***"After extensive research, we felt that the Selenia digital mammography system was the best on the market, because of the superior plate technology and workflow management."***

Workflow was a key consideration for the busy practice, which serves 150

patients each day at two sites and takes 40,000 mammograms in a year. "Compared to analog which required performing the exam, going to the darkroom, scanning the film for CAD and then hand carrying the images to the radiologist, we are now much more efficient," Chavez noted. "The digital package moves seamlessly and the communication between technologists and radiologists is much faster."

Samantha Kubaska, MD, WCBC's medical director, concurred. "With digital equipment, images are available to the technologist immediately, reducing exam time up to 50 percent." Because images are taken and viewed instantly, there's no need to take the patient in and out of the room for additional views or keep patients waiting while films are processed.

### Benefits to Patients

That efficiency pleases her patients, too. "If for some reason the patient moved or positioning wasn't optimal, the technologist can see that right then and there, and respond appropriately. When the patients are done, they are free to go. You hear patients in the hallway saying 'Is that it? I can go?' and they love it from a screening point of view."

***"We're pleased that we're able to utilize the Suros ATEC system for MRI-guided, stereotactic, and ultrasound-guided breast biopsies—therefore eliminating the need for multiple devices—and that to me is very important for this practice."***

The benefits of increased efficiency and optimized workflow were only a small part of WCBC's decision to go digital. "Our premise is, and always has been, that we're here to take care of our patients. It's all about providing the highest level of care, and constantly retooling and looking for ways we can improve", Chavez said.

"The Selenia image quality is better, the resolution is higher, and my ability to see through dense tissue is notably improved. As a radiologist, these are the mammographic tools I need to find breast cancer in its earliest stage," Dr. Kubaska asserted. "From my personal point of view, I am very pleased with the system and I feel as if I'm doing a better job for my patients."

When establishing WCBC it was key to choose not just technology but also a vendor who could help the group achieve its vision. In addition to Hologic's Selenia full-field digital mammography systems, the practice uses complementary Hologic equipment, including the SecurView diagnostic workstation, the MultiCare Platinum prone stereotactic breast biopsy table, and the Suros ATEC Sapphire vacuum-assisted breast biopsy system.

### The Advantages of the ATEC System

As a board-certified, fellowship-trained dedicated breast radiologist, Dr. Kubaska is impressed by the convenience of the ATEC system. "I found ATEC the most user-friendly," she said. "I don't want to spend valuable time with the mechanics of the vacuum-assisted portion. I just want to walk in and perform the breast biopsy. I don't want to set up the vacuum or deal with the buttons on the console itself. The technologists found there was a huge difference in how easy it was to use the ATEC versus other systems." The learning curve for technologists doing breast MRI is easier as well. "Not everybody has technologists who do mammography and who also do breast MRI," she noted. "Sometimes it's completely separate. I have mammography technologists and then I have an MRI technologist. My MRI technologist knows nothing about how to biopsy the breast, so this is all new to that person. Because the ATEC is so easy to use, teaching that person has



**Dr. Samantha Kubaska and her colleagues at West Coast Breast Centers are enthusiastic about the improvements digital technology brings to mammography**



**West Coast radiology chose Selenia because of superior plate technology and workflow management**

been very easy.”

The simplicity of the Suros products has come in handy for the radiologists who cover for Dr. Kubaska. “I found the ATEC device and Sapphire console to be an easier system to teach someone who doesn’t perform breast biopsy on a frequent basis,” she said.

Improved accuracy, convenience, and image quality have proven to be the best fit for WCBC. The centers and their dedication to digital technology support Dr. Kubaska’s personal philosophy as well. “I tell my friends to have a digital mammogram because I believe the sensitivity is higher than an analog mammogram. Come to our center—should you need anything done—we have top of the line equipment in all areas and a dedicated group of breast radiologists who are very experienced in performing all of these procedures,” she stated. ●●●

## Windsong Radiology Group, Upstate New York

### First in Patient Care, First in Technology

**W**indsong Radiology Group in upstate New York has grown from humble beginnings into one of the busiest imaging centers in the United States.

Founded in 1987 by Dr. Janet Sung, Windsong has built its practice and reputation on a philosophy based on two simple rules: provide exceptional patient care and base that care on giving their patients access to the best technology available.

#### **Rule One: Exceptional Patient Care**

Coming from a large, hospital-based radiology department, Dr. Sung saw the need for a practice that was more intensely focused on the patients and their needs, especially in the area of women’s imaging.

This patient centered philosophy is evident in every aspect of Windsong Radiology; from workflow to décor, everything is devoted to making the patient’s visit easier, shorter and more comfortable.

According to Toni Kiebzak RT (R)(T) and co-technical manager at Windsong, “We do everything in our power to make our patients comfortable...to put them at ease and provide them piece of mind.”

Dr. Sung herself believes that one of the best ways to put a patient at ease is with timely communication. “Patients should not be left to wonder after an imaging study if an abnormality had been found,” she says. “That’s why I insist we tell the patient right away if we’ve noticed any problems or if everything looked OK.”

“Knowing right away,” says Dr. Anna Chen, breast radiologist and a partner in the practice, “decreases the patient’s anxiety.” She notes that this kind of communication means that Windsong does not work with a standard practice workflow. “We don’t really have a regular screening procedure like many practices.” Dr. Chen continues, “At most practices, patients come in and have their images taken and then long after the patient has left the images are batch read later. We don’t do that. Every patient is seen when they come in. We interpret the exam, while the patient is still with us. The patients are able to get their results right away. If there is something we are concerned with, we can perform a biopsy right away.”

#### **Rule Two: Offer Patients the Best Technology Available**

The cornerstone of patient care at Windsong is ensuring that patients have access to the best technology and equipment on the market. Windsong has, over the years, earned the reputation of always being the first imaging center in the region to offer the latest and most advance technology available.

“We are known for being the first to market with new technology,” says Kiebzak. “We were the first to offer stereotactic biopsies, the first to offer MRI biopsies—we were the first to offer digital mammography.”

“We can keep up with the technology,” says Karen Blatto RT (R) (T) and Windsong’s other co-Technical Manager, “because we lease all of our equipment. Leasing allows us the opportunity to turn over our equipment every five years.” Leasing gives the practice flexibility, allowing them to respond more quickly when a new technology becomes available.

As part of the dedication to new technology, Windsong introduced digital mammography to the Buffalo region in 2001. But as the original equipment leases came due, the physicians began their quest for a better digital mammography system. Their search settled on the Selenia digital mammography system from Hologic.

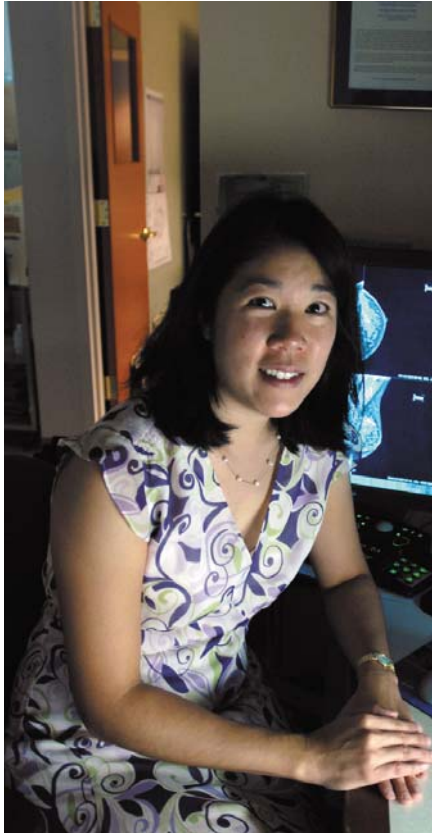
#### **Selenia Makes the Grade**

“We initially installed only one Selenia, to see how we liked it,” says Blatto.

Kiebzak continues, “We have three Selenia units running and we’re taking delivery on five more units beginning in August of 2007. The main reason we’ve gone with Selenia,” she says, “is because of the quality of the image.”

“The image quality is excellent,” says Dr. Chen. “Even our patients can see the difference. They are impressed with the quality of the images they see.”

The physicians at Windsong have noticed that the enhanced image quality of Selenia is providing them much more information that in previous studies.



**Dr. Anna Chen, breast radiologist and a partner in Windsong Radiology Group, says that digital mammography helps decrease patient anxiety. Images are read and patients are told the results within minutes of their exam being completed.**

***“We are picking up a lot more microcalcifications. We are really getting a new baseline in terms of the calcifications we are seeing now... calcifications that were not well seen before.”***

Because digital mammography requires no films and no processing, a lot of the time previously required for analog mammography has been eliminated. This gives the technologists more time to see additional patients.

“With analog,” Kiebzak says, “the workflow was very time consuming. We were only doing 150 mammograms a day.” The new Selenia systems have allowed the practice to expand to an average of 220 mammograms a day. “Digital definitely allows us to keep up with demand.”

As Dr. Chen is quick to point out, with that number of mammograms to read every day, “Time is definitely of the essence.”

### **Suros Biopsy Systems**

Windsong was the first practice in the area to offer their patients MRI breast biopsies, something, the managers admit, was only made possible by the introduction of the Suros ATEC biopsy system from Hologic.

Kiebzak says, “We were waiting for someone to bring to market a breast biopsy technology that was right for MRI biopsies. We were waiting for Suros to come along.”

Blatto agrees with her co-manager’s assessment of the system. “Honestly, they were the only ones out there with this kind of technology,” she says. “While there are other competitors on the market now, to me, Suros ATEC—and Hologic—will always be the top.”

The technology managers have found that the ATEC system fires easily and handles well, resulting in more complete samples and less patient discomfort. “The samples are really good,” Blatto says, “They’re gotten very quickly and easily. The pathologists are always happy with the samples we provide them...and there are minimal complaints from patients about the discomfort.”

“We compared systems for both MRI and stereotactic biopsies,” says Dr. Chen, “and the ATEC systems were much faster. ATEC equipment requiring smaller incisions and providing more local anesthetic to the site,” two features that significantly reduce a patient’s discomfort during the procedure.

### **Working with Hologic**

“Hologic has shown a lot of interest in us,” Kiebzak says, “and they have shown that they really care about everything, from start to finish—from sales and service, to installation, applications and support.”

“They give me a real warm and fuzzy feeling,” Blatto says, acknowledging that her description may seem a bit unusual when talking about a medical device manufacturer. “They really care. They always want to know what they can do to make our lives easier, to make the technology work faster, how they can improve the user-experience.”

“We had the first Selenia unit installed two years ago,” Kiebzak adds, “and Hologic is constantly following up about it, asking how things are going, if everything ok. They are always looking for input into how they can improve the user experience.”

### **Improvements Through Input**

This consistent follow-up with end-user allows Hologic to make frequent improvements and upgrades to their technologies, based on professional input.

In fact, the technology managers at Windsong were asked to provide critical assessments for the latest breast biopsy technology, before the device was even brought to market.

“We met with the engineers from Hologic,” says Kiebzak, “about their new Celero device. They wanted our opinions and input on it before it came out.”

“They actually incorporated all of our suggestions,” Blatto says, “before they brought the final product out on the market.” Celero is now the first device to receive FDA approval for use with ultrasound biopsies, something that might not have been possible without the input from the doctors and the technologists at Windsong Radiology.

### **The Philosophy of Success**

This philosophy of exceptional patient care through best-in-field technology has served Windsong well over the years. From that first imaging center in 1987, Windsong has expanded into a new 50,000-square-foot facility, with 14 radiologists and over 200 employees. Between the main imaging center and two satellite offices, they are providing over 300,000 procedures every year across all imaging modalities—digital mammography, MRI, CT, PET/CT, ultrasound, X-ray, DXA, and nuclear medicine.

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## *Fact:*

***Single reading with R2 CAD led to a cancer detection rate that was significantly (P = .02) higher than that achieved with double reading: 6.5% more cancers were detected by means of single reading with CAD than by means of double reading***

Gilbert F. et al. Single Reading with Computer-Aided Detection and Double Reading of Screening Mammograms in the United Kingdom National Breast Screening Program. *Radiology* 2006; 241:47-53.

# Woman's Hospital of Baton Rouge, Louisiana

## Digital on the Move

Last year, the mobile digital mammography van operated by Woman's Hospital in Baton Rouge, LA performed 5,000 mammograms. Without that service, three quarters of the women currently being screened by the service would go without mammograms. That's the estimate given by Woman's Hospital's Director of Imaging Services, Cynthia Rabalais, RT, who coordinates the mobile program.

While Woman's mobile mammography program has been serving Baton Rouge and the surrounding parishes since 1996, the digital incarnation of the program began making the rounds a decade later. In 2005 the hospital committed to changing their three campus and satellite screening sites to digital, but converting the mobile program required a little extra ingenuity and a lot of foresight.

***"We just took the bull by the horns and decided that we weren't willing to stop serving the 5,000 women that depended on us."***

"It took us about a year to plan, to work with the coach manufacturer and with Hologic and no one had a whole lot of experience about all of that."

### Location, Location, Location

The switch to digital presented a few challenges to the mobile van crew's established routine. In years past, the crew would drive a small van to a remote site, take the analog equipment out of the van, and set it up in the building that would host the screening. With digital, there was no such portability. "We did our due diligence about that and visited some coach manufacturers. The only place at that time that was doing mobile digital was in Seattle at Swedish Hospital. I did a site visit there," Cynthia said.

After the coach design was established, Cynthia tackled the logistics of delivering a much larger unit to the screening sites. "We were in some very small places, like a community health clinic that had a total of 8 parking slots. Well, you bring this big thing in and you need 10 parking spots to set up. So we had to re-analyze where the coach would go.

"We also had to establish where we could have a mobile connection because

we are registering the patients onboard and wanted to take advantage of the advantages of being, that we could not do in an analog world." After about two weeks of working out routines and transmission issues, the link between the mobile unit and the hospital's PACS worked effortlessly. The van's technologist and driver work in tandem to register patients and order tests. Once the image is acquired on the Selenia, R2 Image Checker is overlaid on the image and saved on a laptop containing the hospital's PACS software. "When we get back home, we put the laptop into the hospital's network and all those images are dumped into the PACS and we're ready to read," she concluded.

Sometimes the smallest issues pose the biggest concerns. "For me, the greatest challenge has been learning how to operate the coach. Driving it—it's like having a teenager; every time they leave I tell them 'don't speed, don't go over too many bumps, don't scratch it, don't dent it...'" Cynthia said with a laugh.

## Reaching Out Over Land

Because most of the small hospitals and community clinics in the rural areas surrounding Baton Rouge do not offer mammography services, the Woman's Hospital mobile van program reaches populations in desperate need of screening. "We typically try to stay within a 60 mile radius simply because we've learned that it is hard for patients beyond that point to come back should they need further evaluation," she noted. "If you get out of those 60 miles it's taking the patient out of her home."

In the aftermath of Hurricane Katrina, Cynthia stretched that 60-mile limit to assist the staff at the Louisiana State University Healthcare system. "They didn't have any mammography ability at all, so we worked with them for almost a year until they got reestablished with their own equipment," she said. "We served about 1,400 patients for them."

In addition to working with clinics and small hospitals, the van visits health units in federally-qualified community centers and the Louisiana Correctional Institute for Women, as well as churches and schools.

## Working With Wellness Programs

Employers in and around Louisiana's state capital depend on the Woman's



***Cynthia Rabalais says that it came as no surprise that once a company implements a digital mobile screening program, the crew is always invited back***

mobile program to augment their wellness programs. Dow Chemical, Blue Cross Blue Shield of Louisiana, Novartis and E-Tel are just a few of the heavy hitters calling on the service. "Actually my job is a little easier these days as there are many already well-developed wellness programs in major employers, so this is just a way to bring mammography to the mix," said Cynthia. "Everybody loves it. When I go there, and once we're there a year, we always get invited because women say 'I didn't have to take off work a half day to get a 15 minute test done. It was here at work and I did it on my noon hour.'"

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***"We typically do about 10 or more schools when we are in the area. Teachers in these facilities know that we'll come once a year so they don't have to take off a day's work."***

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It should come as no surprise that once a company approves a mobile screening day, the Woman's mobile mammography van and crew are always invited back.

### **Getting the Word Out**

Ten years of operating a mobile analog program provided Cynthia and her staff with an established base of service sites to grow from. Woman's Hospital also partners with a local cancer treatment facility to augment their clinical offerings. "They do a lot of advertising, and they also have a coach that provides clinical things: breast exams, skin screens, prostate screens. When they're on the breast end of things usually both our coaches are there," Cynthia explained.

Newspaper advertising helps fund screening for the underinsured population, as does a grant from the Louisiana Breast and Cervical Health Program.

The mobile program is so well known in the area that there are often more calls than Cynthia and her crew of a driver, two technologists and one receptionist can handle. Typically, the van is running five days a week and two Saturdays each month. "My schedule is 90% booked until the end of the year. When we do have some openings they are far and few between." ♦♦♦

## **Women's Diagnostic Center, Munster, Indiana**

### **Fellowship-Trained Breast Radiologist Reports On Her Experiences with the New Suros Celero Device**

With more than 550,000 core needle biopsy procedures performed annually in the United States, there is a real need to match the right biopsy device—one that is both effective and efficient—to a given procedure. For the radiologist and surgeon, the right device is easy to use, can be used with a broad range of cases, and gathers plenty of tissue without complications. And for the patient, the right device makes the procedure faster, less painful and less traumatic. This is particularly important since 80 percent of all biopsies are benign and can help women avoid an invasive open surgical procedure if correctly diagnosed with percutaneous biopsy.

A new 12 gauge handheld, the Celero vacuum-assisted spring-loaded core device, was recently introduced by Hologic, for use in the U.S. ultrasound breast biopsy market. The device has the ability to fire the inner cannula both inside and outside the breast, a feature women's

health doctors have been looking for and other companies have tried unsuccessfully to develop. The larger core samples from the Celero handpiece allow these biopsy procedures to be faster and less traumatic for the patient due to fewer needle insertions. Larger and more contiguous samples also increase the opportunity for the pathologist to make an accurate diagnosis.

### **Biopsying Hard-to-Reach Breast Lesions**

Dr. Mary Nicholson, a fellowship-trained breast radiologist at the Women's Diagnostic Center in Munster, Indiana, was one of the first radiologists to evaluate the Celero device. "One of my first cases was an abnormally enlarged, low-lying axillary lymph node deep within the tissue," said Dr. Nicholson. "In four passes, I had gathered plenty of tissue and was done, without complications."

Dr. Nicholson says the Celero device is particularly good for use with challenging lesions, such as those in the axilla, close to the chest wall, near implants, or behind the nipple. Lesions located in these areas can make even the most confident physician hesitant to perform a biopsy.

In the post-fired position, the Celero needle is easily advanced through dense breast tissue. If physicians choose to enter the breast before firing the device, they can place the trocar tip directly adjacent to the lesion and then fire the device. The trocar tip allows the Celero needle to fire in a direct, straight line, without diving away in the tissue acquisition process like some other spring-loaded core devices.

The Celero device is designed to be an easy one-step set-up and because it is fully disposable, clean-up is just as easy. The highly echogenic needle composition makes it easy to see under ultrasound and clearly verifies accuracy of biopsy site targeting. The Celero device was designed to meet the needs of physicians who currently use spring-loaded devices under ultrasound guidance. Held in place by a 20inHg vacuum, the captured tissue



***Dr. Nicholson says using the Celero device means faster procedures and more compassionate patient care***

—Continued on back cover

# Images for *Life*<sup>TM</sup>

## **—Women's Diagnostic from page 27**

in the Celero aperture (sample notch) is consistently two to three times the sample amount of traditional spring-loaded core devices.

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***The captured tissue in the Celero aperture (sample notch) is consistently two to three times the sample amount of traditional spring-loaded care devices.***

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### **A Clinically Better Solution**

According to Dr. Nicholson, "The lightweight Celero device is easy to maneuver and the ergonomically designed handpiece has the collection and firing buttons positioned in such a way that they can be easily pressed, all while maintaining position within the tissue. I can count on the samples coming back from pathology with a definitive diagnosis with the Celero device. The larger core also means I can enter the breast with the device fewer times, resulting in a faster procedure and more compassionate patient care."

Because the inner cannula can be

fired before entering the breast, physicians can gently move to the lesion and precisely place the sample notch where desired. Once in or near the lesion, the physician can confirm placement of the aperture with ultrasound imaging prior to firing the outer cannula. The sample is then acquired safely, without harming the chest wall, nipple or any other sensitive area. "I believe the device's option of firing outside the breast works remarkably well for lesions in these challenging areas, as well as for typical ultrasound breast biopsy procedures," says Dr. Nicholson.

For physicians who prefer to use an introducer sheath, the Celero system comes with its own introducer, which snaps onto the needle and is inserted into the breast with the device. The introducer can then be unsnapped, leaving it in the needle track and making it convenient for easy insertion and deployment of the CeleroMark, a new end-deploy titanium marker for use with the Celero handpiece.

In using it on a patient whose breast tissue was mammographically dense and who was suspected of having a fibroadenoma in her breast, Dr. Nicholson inserted the Celero needle into the breast tissue, easily navigated and traversed through

the dense breast tissue, and acquired a sample with little to no resistance. "In total, four samples were obtained easily from tissue that typically presents difficulties with traditional spring-loaded core biopsy devices," Dr. Nicholson noted.

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***Dr. Nicholson says the Celero device is the ideal solution for dense breast tissue, which can offer resistance to needle penetration.***

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"This device's highly echogenic aperture can be precisely placed for target verification prior to tissue acquisition. Its sharp tip is capable of penetrating all mammographic compositions of breast tissue. The Celero needle offers less resistance in all types of breast tissue and performs better than other spring-loaded biopsy devices. And the lightweight design of the handpiece and its trocar needle tip provides smooth penetration into lesions, reducing chances of deflection."

For the breast ultrasound market, the Celero disposable biopsy device offers a superior clinical solution. ●●●

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