An Interview with Barry B. Goldberg, MD

- Mammography
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# Table of Contents

**JULY 2007**

### Industry Sector Reports

- **20** Laser Cameras
- **24** Mammography
- **32** Bone Densitometers

## 12 An Interview with Barry B. Goldberg, MD

## 18 Old into Gold

## 28 AHRA’s 35th Annual Meeting

## 30 CRA Certification

## 35 People & Companies

## 37 Training, Careers & Trade Shows

## 39 Marketplace & Classifieds

## 40 Blue Book Price Guide
Build on the Good Works of the Good Doctor

One story I hope you read in this month’s issue of DMBN is our interview with Dr. Barry B. Goldberg, the “godfather” of ultrasound.

From it you will learn – if you were not aware already – about the 15-plus years of charitable work Dr. Goldberg has done helping promote the use of diagnostic ultrasound in developing areas of the world.

Through his personal efforts, Dr. Goldberg has raised millions of dollars to support the teaching and training of medical people at the Jefferson University Research and Education Institute (JUREI) – which Dr. Goldberg founded. He has also been able to secure significant contributions of equipment that he then gives, on a needs basis, to physicians and sonographers around the world.

So it would seem that the answer to the oft asked question, “Can one person really make a difference?” is “yes.” Therefore, I, as one person, and you, as another person, should ask the question of ourselves, “Are we making a difference, or are we pretty much indifferent?” Since I’m the only one at the moment with a keyboard, I’ll confess I’ve done some good, but there’s a good deal more I could do.

One thing I can do as the Editor of DOTmed Business News, and our weekly online news, is shine a spotlight on people like Dr. Goldberg, and help promote worthy charitable causes. DOTmed online news, for instance, made a major effort to help raise awareness, money and medical equipment for the victims of Hurricane Katrina, and those of the major India/Pakistan/Kashmir earthquake from the fall/winter of 2005/2006.

And so it would follow logically that if one person can make a difference, then many people can make a greater difference. So think about what you care about and get involved. That’s just what the Good Doctor would prescribe.

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Medicare Expands Coverage of Diagnostic Ultrasound

The Centers for Medicare & Medicaid Services (CMS) recently announced a decision to provide coverage for Doppler monitoring of cardiac output in certain settings. “[The] decision reflects CMS’ commitment to using evidence-based approaches to provide Medicare beneficiaries with reasonable and necessary medical technologies as they evolve through innovation in the marketplace,” said CMS Acting Administrator Leslie V. Norwalk, Esq.

CMS will amend the National Coverage Determination (NCD) “Ultrasound Diagnostic Procedures” at section 220.5 of the NCD manual by adding “monitoring of cardiac output (Esophageal Doppler) for ventilated patients in the ICU and operative patients with a need for intra-operative fluid optimization” to the list of covered uses.

For patients undergoing surgery or in intensive care units (ICUs), cardiac output monitoring is used to guide intravenous fluid replacement and pharmacological therapy to maintain adequate flow of blood to the patient’s organs. In contrast to other techniques for measuring cardiac output, the probe of the esophageal Doppler can be inserted within minutes, requires minimal technical skill, and is not associated with major complications.

ACR Argues for Appropriate, Quality Imaging to House Committee

The American College of Radiology recently told a House subcommittee that improving health care efficiencies, in regard to imaging, must be approached from the standpoint of quality based on appropriateness of care and physician collaboration, not simply cost cutting.

The ACR also took the opportunity to comment for the record on the growth of imaging services, the need for federal standards, the use of appropriate criteria when ordering an image, and the necessity of fundamental first steps in wide-scale reform of physician payment. It is the ACR’s belief that Medicare’s ultimate goal should be to improve outcomes, rather than simply to achieve savings.

Subcommittee Chairman Fortney “Pete” Stark (D-CA) said, “As Medicare’s steward, Congress needs to ensure that Medicare resources are being used efficiently and effectively to achieve high-quality outcomes.”

Dynamic Sonography Accurate in Diagnosing Muscle Tears

Dynamic sonography is useful in the diagnosis, management and follow-up of muscle tears and hematomas, according to a recent study conducted by researchers from Khoula Hospital in Muscat, Oman.

The study looked at 50 male soccer players ranging from 20 to 30 years of age with muscular trauma in the thigh and calf. Dynamic sonography of both the affected and contralateral normal part was performed. Of the 50 patients, 46 were found to have muscle tears and/or hematomas in the thigh and calf regions. Thirty-two of those patients had clear-cut complete muscle tears surrounded by hematomas and the remain-
ing 14 patients had partial tears. “If we find muscle tears with hematomas which need to be drained, we perform the drainage under ultrasound image guidance which is more accurate and scientific,” said Ashok Kumar Nath, MD, lead author of the study.

● [DM 3997]

**Adopt HIT Act: Saving Money Saves Lives**

Congressman Phil Gingrey, MD (R-GA), recently introduced the Assisting Doctors to Obtain Proficient and Transmissible Health Information Technology Act (ADOPT HIT), which would allow physicians to write off $250,000 a year on the purchase of healthcare IT systems. The current allowable deduction is $100,000. This is a stand-alone version of the bill H.R. 1952 introduced by Gingrey and Rep. Charles Gonzalez (D-TX) in April.

Meanwhile, Senator Debbie Stabenow (D-MI) has introduced the Health Information Technology Act of 2007, which allows a tax incentive for the purchase of healthcare IT, along with measures to provide grants and privacy protection. The bill is co-sponsored by Sen. Olympia Snowe (R-ME) and reintroduces a similar bill presented last year.

● [DM 3983]

**AHA Praises Iraq Spending Bill for Delaying Planned Medicaid Cuts**

Congress provided welcome relief from a misguided proposal that would have weakened the health care safety net that 57 million children, elderly and disabled depend upon. That’s good news for patients and families.

The bill contains a one-year moratorium that delays reductions to Medicaid funding — $3.8 billion over five years. The bill also puts on hold another problematic CMS plan to eliminate federal payments for training tomorrow’s physicians under the Graduate Medical Education (GME) program.

The AHA applauded the Congressional leadership for recognizing that harsh spending cuts will not solve Medicaid’s problems. Instead, we need a continued dialogue with input from Congress and caregivers on the front lines of patient care to ensure continued access to those in need and to ultimately provide for a better health care system.

● [DM 3995]

**Proposed legislation would increase the tax allowance for health information technology.**

The Iraq spending bill, signed by the President recently, contains a moratorium on Medicaid cuts.

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APC Updates Ensure Adequate Imaging Reimbursement

Not all radiologists see the need to get involved in what a hospital reports to Medicare as the cost of imaging procedures. But since reported technical costs directly impact reimbursement, radiologists would be wise to ensure that hospital billing staff (or “charge masters”) report their data both accurately and properly, suggests ACR member James V. Rawson, MD.

Rawson sits on the Centers for Medicare and Medicaid Services (CMS) advisory panel that meets twice a year to review Ambulatory Patient Classification (APC) groups. APCs are groups of codes representing medical services that are both clinically related and use similar resources. Since every procedure in a group is paid at the same rate, correctly identifying an APC is key to obtaining adequate reimbursement.

FDA Requests Boxed Warning for Contrast Agents Used to Improve MRI Images

The Food and Drug Administration (FDA) has asked manufacturers to include a boxed warning on the product labeling of all gadolinium-based contrast agents, which are used to enhance the quality of magnetic resonance imaging (MRI).

The requested warning would state that patients with severe kidney insufficiency who receive gadolinium-based agents are at risk for developing a debilitating and potentially fatal disease known as nephrogenic systemic fibrosis (NSF). In addition, it would state that patients just before or just after liver transplantation, or those with chronic liver disease, are also at risk for developing NSF if they are experiencing kidney insufficiency of any severity.

Patients with NSF develop thickening of the skin and connective tissues that inhibits their ability to move and may result in broken bones. Other organs are at risk of thickening as well. The cause of NSF is not known and there is no consistently effective treatment of this condition.

PET/CT: The Best Test for Women With Ovarian Cancer

An advanced molecular imaging technique influences the management of women with ovarian cancer, detects more sites of disease, and identifies women whose disease is likely to progress, according to an Australian study released during the 54th Annual Meeting of the Society of Nuclear Medicine (SNM).

“PET/CT influenced treatment decisions in 59 percent of the 90 women and identified those whose disease was more likely to progress within 12 months,” says Michael J Fulham, head of the Department of PET and Nuclear Medicine at Royal Prince Alfred Hospital in Sydney, Australia. “Our findings also suggest that there is an opportunity for technology replacement — replacing routine CT of the abdomen and pelvis — with PET/CT with the radiotracer FDG, thus reducing costs and providing better answers for patients and referring doctors.”
Small Infants Have Greater Survival Rate in High-Level Intensive Care Facilities

Very low birth weight infants are significantly more likely to survive when delivered in hospitals with high-level neonatal intensive care units that care for more than 100 such newborns annually than are those delivered in comparable facilities that provide care to fewer than 100.

The research that led to this finding was supported by the Agency for Healthcare Research and Quality (AHRQ) and the National Institutes of Health (NIH), both agencies within the U.S. Department of Health and Human Services (HHS). Within NIH, the National Institute of Child Health and Human Development (NICHD) provided support for the study.

The researchers found that hospitals with lower-volume, lower-level NICUs had a significantly higher newborn death rate for very low birth weight infants when compared with the newborn death rate among this group in hospitals with high-level and high-volume NICUs.

Skin Cancers Diagnosed by Light

The distributions of hemoglobin, a component of red blood cells, and melanin, a skin pigment, serve as early warning signs for skin cancer. But because skin scatters light, most microscopes cannot be used to locate those molecules. “What we’re trying to do is... target molecules like hemoglobin and melanin and get microscopic resolution images the equivalent of what a doctor would see if he or she were able to slice down to that particular point,” says Warren Warren, Director of Duke’s new Center for Molecular and Biomedical Imaging.

Warren’s group has developed a technology for coaxing both hemoglobin and melanin to emit light by exciting them with highly controlled laser pulses.

The innovation uses a delicate interplay between two laser beams, each emitting a different color of light. To keep the skin from overheating in the process, the lasers must be able to pulse on for only femtoseconds — a thousand trillionths of a second — at a time.

Duke’s new technology uses two lasers pulsing a few femtoseconds at a time.

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Digitec Medical Corporation Expands, Rebrands

Digitec Medical Corporation, a leading after-market, mammography-focused medical equipment company, recently announced a slate of improvements designed to better broadcast the company’s value proposition and status as an industry leader. These include a new logo, marketing materials, and website, as well as a relocation of their Lawrenceville, GA headquarters to a 45,000 square foot space just a few miles from their old location. They have also introduced a new website feature, DigiTecNotes, which are computer-based modules that combine photography, video, narration, on-screen text and graphics into easy-to-follow maintenance and repair guides.

Philips’ HeartStart MRx Is The First Networked Patient Monitor/Defibrillator

Philips has announced the availability of the HeartStart MRx monitor/defibrillator with capability to network with the Philips IntelliVue Clinical Network. This new functionality enables the MRx to serve as a wireless transport monitor/defibrillator or cardiac bedside monitor/defibrillator with built-in pacing, synchronized cardioversion and defibrillation capabilities.

Using the HeartStart MRx, hospitals will be able to transport patients who require cardiac monitoring or therapy between departments or within the same unit without changing equipment. The MRx can also be used at the bedside in departments that would benefit from having both centralized surveillance and cardiac therapy at their fingertips.

REMETRONIX Announces Clean and Pack Services

REMETRONIX recently announced it will provide clean and pack services in its new state-of-the-art facility in Port St. Lucie, Fla. This means REMETRONIX is now a full-service medical imaging and pharmaceutical device company, specializing in a seamless process of transportation, rigging, installation, calibration, de-installation, and relocation.

The new cleaning service is available for Cath Labs, Angio Suites, CT, MR, X-Ray, and nuclear medicine equipment. REMETRONIX offers three levels of cleaning, ranging from a basic disinfection to circuit board removal to a Full Wet Clean Process. The heavy-duty chemicals REMETRONIX employs were perfected by their Disaster Recovery Services.

Hologic and Cytyc in $10 Billion Merger

Hologic, Inc. and Cytyc Corporation recently announced an agreement to combine the two companies in a cash and stock transaction. This strategic combination will create a $10 billion global leader in women’s healthcare. The transaction is expected to be completed in the third calendar quarter of 2007.

The new company will be called Hologic; upon closing, Cytyc will become a wholly owned subsidiary. Hologic, with more than 3,300 employees, will be one of the largest companies in the world focused exclusively on advanced technology in women’s health and will have a product portfolio that encompasses some of the industry’s largest and most trusted brands.

Cardinal Health Buys Viasys Healthcare

Cardinal Health will buy medical technology company Viasys Healthcare. The deal, under which Cardinal Health is expected to pay cash for Viasys’ outstanding shares, is valued at $1.5 billion. Viasys, a leader in respiratory systems for diagnosis and critical care, had $610 million in revenue last year.

“With a strong platform and excellent momentum in our clinical and medical products businesses, we think the timing is ideal to broaden our offering,” says R. Kerry Clark, Cardinal’s chief executive officer. “Our recent acquisitions – particularly Alaris – serve as a model for the rapid integration and realization of synergies with the Viasys acquisition.”
Siemens Demos
World’s First MRI/PET Scanner

Siemens Medical Solutions has unveiled a prototype for the world’s first fully functioning imaging system capable of simultaneously performing Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET). Testing of this new prototype MR-PET will start before the end of 2007. Siemens is the first company to have realized an MR-PET prototype, which brings the soft tissue contrast and high specificity of MR together with PET’s sensitivity in assessing physiological and metabolic states. MR-PET has the potential to become the imaging modality of choice for neurological studies, certain forms of cancer, stroke, and the emerging study of stem cell therapy. Recent hybrid technologies such as PET-CT and SPECT-CT take two scans sequentially, while Siemens’ prototype MR-PET acquires MR and PET scans at the same time, therefore producing a higher degree of registration.

[DM 3991]

Philips Grabs Brazilian X-ray Maker VMI

Between 2003 and 2006, growth in the Brazilian market for medical diagnostic imaging and monitoring equipment has been robust, expanding at close to 20% per year, compared to annual growth rates in the global market of between 4 and 5%. Since the first quarter of 2006, when Philips decided to start placing more emphasis on emerging markets and on solutions specially designed to address local needs, VMI is its first acquisition in a growth economy.

[DM 4081]
GE Healthcare Receives FDA Clearance for CARESCAPE Patient Data Module for Mobile Patient Monitoring

GE Healthcare has announced U.S. Food and Drug Administration (FDA) clearance for its CARESCAPE™ Patient Data Module for mobile patient monitoring. The CARESCAPE Patient Data Module features 24-hour capture of critical patient data and a unique close-to-the-patient, self-powered design that alleviates common portability constraints. The product is a central component of the new GE CARESCAPE portfolio, an integrated suite of patient monitoring devices, communications networks and IT systems designed to help clinicians make critical healthcare decisions faster and more efficiently.

CARESCAPE Patient Data Module ensures that the receiving nurse has a complete monitoring history when a patient arrives. Its innovative, lightweight, miniature design allows it to stay with the patient to capture and store all patient measurements, providing clinicians with the unique ability to maintain critical baseline measurements typically lost during transport. Its close-to-the-patient design reduces the length of cables that typically tether the patient to wall-mounted equipment, and its simple grab-and-go transport capability reduces the potential for connection delays.

NIH Awards Nearly $21 Million to Fund Cutting-Edge Research Equipment

The National Center for Research Resources (NCRR), a part of the National Institutes of Health (NIH), recently announced it will provide $20.65 million for 14 High-End Instrumentation (HEI) grants that will fund cutting-edge equipment required to advance biomedical research. Awarded to research institutions around the country, the one-time grants support the purchase of sophisticated instruments costing more than $750,000.

“These high-performance imaging instruments and other advanced technologies enable both basic discoveries that shed light on the underlying causes of disease and the development of novel therapies to treat them,” said Barbara Alving, MD, NCRR Director. “The value of this investment in advanced equipment is greatly leveraged because...
GE Healthcare Partners With International Aid

Global humanitarian healthcare agency International Aid and GE Healthcare, a leading developer of transformational medical technologies and services, announced a strategic partnership dedicated to bringing vital, potentially life-saving medical equipment to communities in developing countries. Specific recipient countries have not been determined yet, according to International Aid. GE estimates it will donate about 200 devices annually.

Under the terms of the partnership, GE Healthcare will donate previously used anesthesia machines and ventilators. “We are starting with the life support equipment — the anesthesia delivery systems and the ICU ventilators — and expanding to monitoring, to internal infant care solutions such as incubators and warmers, and also ultrasound,” said Deb Schmaling, Director of Perioperative Marketing. She noted that the equipment comes from GE customers in hospitals and surgical centers who are upgrading their technology.

Each of these rare tools is used by a number of investigators, advancing a broad range of research projects.”

[DM 4133]
An Interview with
Barry B. Goldberg, MD – Researcher, Educator, Philanthropist

For over 40 years, Dr. Barry Goldberg has been at the forefront of diagnostic and therapeutic ultrasound research, development, and education. His charitable efforts have helped bring the benefits of ultrasound to literally millions of people around the world. Dr. Goldberg was gracious enough to sit down with DOTmed Business News and give us his assessment of the past, present and future of ultrasound.

DOTmed Business News: Let’s start with the big picture: what do you see as your most important contributions or significant accomplishments in the field of ultrasound?

Barry B. Goldberg: The two areas of medicine I have always been very interested in are research and education. I was very lucky to become aware of the just-emerging technology of diagnostic ultrasound in 1964, and over the years I have been able to lead a number of research projects that have led to improved diagnoses. I have always been a strong believer in education and in teaching others. If you’ve discovered new things and don’t pass on your knowledge – so you’re the only person who can do it – then it’s lost, and that’s a shame. At first, I taught one-on-one; people would come as apprentices and observe. That has grown over the years and has led to all the programs here at the Jefferson Ultrasound Research and Education Institute (JUREI – pronounced ‘jury’) that I founded and direct – and JUREI itself is probably my proudest achievement, because it brings the benefits of ultrasound to so many people. At JUREI we conduct about 40 to 50 courses a year in all aspects of ultrasound and train almost a thousand people a year from many countries around the world. Doing so in the emerging and developing areas of the world is a very satisfying experience. Getting letters from those I’ve helped to teach, describing how they’ve applied their knowledge to save lives as well as teach others, is really very gratifying.

DMBN: What is the current focus of your Research Group at JUREI?

Goldberg: One of the main areas of focus for our group is the evaluation of tumors using unique ultrasound contrast agents. The agents we’re injecting into the body are little micro-bubbles of gas, which are coated to keep them from dissolving rapidly. The sizes are made such that they’re approximately the size of red blood cells. When you inject the agent intravenously, the micro-bubbles circulate through the body many times, eventually being broken down and eliminated – but not until they do their job. It turns out that a single gas bubble is, say, about a thousand times more reflective than a red blood cell. Therefore, you can image much smaller blood vessels when you have injected contrast, and can even go down to the size of tumor vessels, so it’s an excellent way of demonstrating the vascularity in tumors, or areas of decrease – or absence – of vascularity. It’s like an X-ray arteriogram. You can really image the vascularity of many organs and tell whether they are normal or abnormal, in almost all areas of the body.

DMBN: How soon do you expect the use of this type of contrast agent to become widespread?

Goldberg: It has limited use in the United States right now because the FDA still has not given complete approvals. For more than a decade it’s been used throughout Europe and Canada, and more recently it’s been approved for use in Japan and China and in several other countries. We hope to get full approval soon in the U.S.
DMBN: Are there other ultrasound research initiatives involving micro-bubbles that you are undertaking?

Goldberg: Yes, right now I’m involved in research that I believe will significantly affect the outcomes in patients who have cancer. I’m heading a National Cancer Institute grant in looking at a tissue-specific micro-bubble ultrasound contrast agent in which we are able, in a swine animal model with naturally-occurring melanoma tumors, to detect the sentinel lymph nodes. By injecting the contrast agent around the tumor, the bubbles were then picked up by the lymphatic channels that go directly to the draining lymph nodes where tumor cells could collect and, in our preliminary results, we were able to see about 25% more nodes than could been seen in the past. We’re comparing it to the gold standard of nuclear medicine which is being used now, and early results indicate it is about 25% better, allowing us to find more nodes. I think this will become a standard diagnostic procedure for detecting tumors in nodes and having them removed. At the present time many tumor-related nodes are not being removed because you can’t find them. This is probably one of the more exciting things I’ve done.

DMBN: Are you doing any kind of therapy research?

Goldberg: In terms of therapy, our group is doing research in conjunction with some companies and research labs. We’re also working with chemists in developing materials that we can associate or incorporate in our micro-bubbles. In this case – after we identify a tumor – we’re looking to use micro-bubbles to treat the tumor and to evaluate the effectiveness of treatment as well. This technology is still not ready for human use. However, we’ve seen some promising results in some of our animal models – and by the way, all this research is grant-supported by various organizations, including the NIH.

DMBN: You’re well known for your charity work, particularly as it relates to “Teaching the Teacher” programs. Tell us how that got started and what you’re doing now.

Goldberg: When JUREI was started we charged for our courses for those who could afford to pay. We also produced educational materials that we sold to people who could afford them – physicians and sonographers, etc. That money has been used to support our education center. However, there were so many people from the disadvantaged areas of the world that couldn’t afford to come here and learn, and I
wanted to find a way for them to come. Around 1992 or 1993 – when we were first recognized by the World Health Organization as a unique resource of ultrasound training – I went out to raise money. The first grant I got was from the United States Agency for International Development (USAID), and then subsequently from the Open Society Institute, which was funded by George Soros, and then more recently from the RSNA (Radiological Society of North America) Research and Education Fund.

Those grants – which I think total well over $4 million dollars now – have allowed us run a number of “Teach the Teacher” programs. We bring in physicians from developing nations, and we pretty much have had people from every area of the world. For those selected, we help them to set up training centers in their countries, and we seek the support of their medical school or their government. We send them back, once they have completed the intensive three month program here at Jefferson, with examinations that we can grade, so we know how successfully they’re teaching their students. For those areas which cannot afford ultrasound equipment for teaching we have gone out and gotten donations from major ultrasound companies through a non-profit corporation called the Global Ultrasound Equipment Donation Foundation that is working with us. We have shipped hundreds of ultrasound machines around the world to help these poor areas.

It’s sort of a multi-pronged effort: teaching, setting up centers, providing educational material, and providing equipment. As a result of these efforts we have now more than 72 education centers in the developing parts of the world where our affiliated centers are helping others to learn ultrasound. I am currently the education chair of our World Federation of Ultrasound in Medicine and Biology (WFUMB), and

Country: How has ultrasound technology advanced and improved over the last 40-plus years?

Goldberg: There has always been an effort to produce transducers that penetrate the body at the highest frequency possible because we know that in physics, the higher the frequency, the better the resolution. Also from physics we know the deeper in the body you go, the more sound “wears out.”

When I first started working with ultrasound the basic transducers available were only about two megahertz. Currently the standard for scanning the abdomen is anywhere from eight to 10 MHz. There are now frequencies for superficial imaging at 20 MHz, and people are working on 40 MHz and even 100 MHz transducers. Thus, there’s been significant improvement in image resolution. The current generation of machines has the highest frequencies available for depth, and one single transducer can image at several frequencies, so you can use lower frequencies for deeper structures, and then use the higher frequencies for superficial structures.

DMBN: Would you like to comment on the quality and/or capabilities of the ultrasound equipment from the different OEMs?

Goldberg: At JUREI we have 20 scanning rooms and we have essentially all the major, and most of the minor, ultrasound manufacturers. What I have seen over the years is a continual increase in the equipments’ capabilities. Almost all the companies have very good machines. Some now have advantages over others for a time, but quite rapidly the others catch up, and maybe somebody else makes a breakthrough.

I have seen this sort of leapfrogging over the years. I think the exciting thing is that there is competition, and that competition has led to continued improvements. Much of that is made possible by computer software and hardware advances that we are seeing all over the world: miniaturization, new transducer materials, and high-speed computers have all made ultrasound what is today.
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DMBN: What about the hand-carried units? Are they the wave of the future?

Goldberg: Well certainly everything is getting smaller now. We see that from cell phones to computers, and the same thing is happening in ultrasound, but in a slightly different way. Many of these smaller machines are dedicated to specific areas of the body and specific purposes. Eventually we are going to have ultrasound machines as small as the palm of your hand. Some people are predicting that one day there will be the ultrasound equivalent to the stethoscope – maybe it will be called an “ultrascope.” Perhaps every physician will have one, and when they find something, just as they do with a stethoscope or by palpation, they’ll then send the patient for a more complete study, whether it’s ultrasound, CT or MR. I think it will improve diagnosis. I wouldn’t expect the small machines to offer complete capabilities, but they would be focused on scanning specific areas.

DMBN: Today it seems there’s a kind of “turf war” going on between the imaging modalities. And for many areas of interest, you can use CT, or PET/CT, or MRI, or ultrasound. What are the strengths and weaknesses of ultrasound in this regard?

Goldberg: The limitations of ultrasound are going through dense bone, and if there is air around, as in the lungs and so on. There certainly is overlap in many areas. Perhaps the most interesting thing is that we get many referrals to look at something found on CT or MR, just as we often refer to MR and CT, because each has different physics behind it; one is ionizing radiation, that’s CT, the other is, of course, magnetism in MR, and ultrasound is high frequency sound waves, so each has advantages and disadvantages. In the very young patient, in the pregnant patient, in the very thin patient, ultrasound has distinct advantages. I think what people don’t realize is that in most parts of the world, unfortunately, many healthcare facilities can’t afford to buy and keep up a CT, MR or a PET scanner, and ultrasound accounts for a very high percentage of imaging procedures. Ultrasound and basic X-ray are the dominant imaging modalities in most of the world today.

DMBN: Please tell us about the courses and seminars JUREI has to help doctors keep up their CME credit.

Goldberg: In each state there are regulations regarding Continuing Medical Education requirements to maintain your license to practice. If you are licensed, say, in Pennsylvania – where I come from – every three years you need 150 hours of educational credits to keep your license – an average of about 50 hours a year. At JUREI, we have a whole slate of programs that you can take to fulfill your CME credit needs. Sonographers also need credits to maintain their certification to practice in any individual state as well, and we’re a prime source for those programs. We think we have a more comprehensive ultrasound CME program than anyone else.

DMBN: As far as sonographers go, is there any issue as far as an oversupply or undersupply? Is it a good job market or a tight job market?

Goldberg: I can tell you first-hand, because I am also the medical director of our ultrasound sonography school here at Jefferson University, that there is a shortage of sonographers within this country. One reason for that is, with the aging population, more imaging procedures are being ordered, so we’re seeing usage of ultrasound going up. Also, because ultrasound has advantages not only for radiologists, cardiologists, obstetricians and gynecologists, but also in anesthesia, in the emergency department, and in the operating room, many more physicians are ordering ultrasound, are performing ultrasound, and are using sonographers to assist in obtaining the image. This has led to a shortage, so salaries generally have been going up in this area, and schools are full and are expanding to try to meet the shortages of sonographers.
Editor’s note: If you would like to contribute to Dr. Goldberg’s charitable and educational efforts, please call: 215-955-6227, or email barry.goldberg@jefferson.edu, or write to:

Barry B. Goldberg, MD
Jefferson Ultrasound Institute
Thomas Jefferson University
132 South 10th St.
Philadelphia, PA 19107

If you would like to learn more about JUREI, please visit: www.jefferson.edu/jurei/

To learn more about Thomas Jefferson University, please visit: www.jefferson.edu/main/

Barry B. Goldberg, M.D.

Barry B. Goldberg, MD, graduated from the University of Pennsylvania in 1959 and earned his medical degree in 1963 from the same university. He served his internship (1963-1964) and radiology residency (1964-1967) in Philadelphia at the Albert Einstein Medical Center, where he developed his interest in ultrasound.

In 1977 Dr. Goldberg came to Thomas Jefferson University Hospital, where he was named Professor of Radiology. There, he established the ultrasound division that would grow to become one of the largest ultrasound facilities in the world, performing more than 40,000 examinations a year in 20 clinical examination rooms. In 1992 the University created the Jefferson Ultrasound Research and Education Institute (JUREI), with Dr. Goldberg as its Director. The Institute has opened seventy-two affiliated ultrasound education programs and training centers around the world and has trained more than 15,000 physicians, scientists, and educators world-wide.

Dr. Goldberg has written 95 chapters, 25 books, and 304 peer-reviewed papers, and has received more than 145 grants from government, foundations and industry. He is a Past President of the American Institute of Ultrasound in Medicine and the World Federation of Ultrasound in Medicine and Biology, a global organization of ultrasound societies which has more than 50,000 members.

The RSNA recognized Dr. Goldberg’s research accomplishments when they granted him the Outstanding Researcher award in 1998, and his educational achievements when they granted him the Outstanding Educator award in 2001. In 2000 he received an honorary medical degree from the University of Bologna, Italy, in recognition of his contributions to ultrasound research and education, and in 2001 he received an honorary fellowship in the Royal College of Radiologists, London, England.

In 2002 Dr. Goldberg was elected President of the Radiology Outreach Foundation (ROF), a non-profit foundation whose goal is to help improve healthcare in developing countries by providing radiology educational materials and equipment. He currently serves as its President. In 2003 Dr. Goldberg founded the Global Ultrasound Equipment Donation Foundation (GUEDF). Its mission is to provide donated ultrasound equipment to needy clinics, hospitals, and teaching facilities in emerging and developing countries around the world. He currently serves as its President.
Auction Karma – (or how a winning bidder turned into a satisfied seller)

Remember Dylan Hinesley of Lubbock, TX, from our April issue of “Old into Gold”?

Well in case you missed it, in April we wrote about the success of his DOTmed Self-Managed Auction, in which he sold a 1998 GE Profile II Open Air MRI Mobile for $129,000.

Well, Stephen Shebes of Scan Consultants, Parkland, Fla., the winning bidder, was so impressed with the DOTmed Auction format that he decided to use DOTmed to auction off the very unit he had bought Hinesley’s to replace, a GE Contour/Max .5T MRI Mobile.

Shebes had thought that his unit’s warm magnet and less-than-perfect-condition trailer would preclude any serious offers. The private radiology practice he was representing considered scrapping the unit. But Shebes thought running a DOTmed Managed Auction might be worth a try – especially since there’s no up-front cost, since DOTmed only gets paid when the equipment sells. Good thinking, Steve.

After less than a month of bidding, DOTmed’s auction team found an international buyer for Shebes’ equipment. When it turned out that the buyer only wanted the unit for its parts, DOTmed arranged de-installation and shipping. When the magnet and trailer proved too damaged, DOTmed scrapped them. The auction

"Steven Shebes was so impressed by the DOTmed auction system as a winning bidder, he decided to become a seller himself – and made $12,800 on equipment that was going to be scrapped!"

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ended up closing for $16,000, Shebes pocketed $12,800, and all he had to do was call the DOTmed Auction Team to make it happen.

**NYU Doesn’t Let Good Equipment Go To Waste**

Arlene Friedman, from the Purchasing Department at New York University Hospitals Center, has been using DOTmed.com to auction off used equipment for the past year.

So when Rubert Kishon, from the Biomedical Department at NYU’s Medical Center/Tisch Hospital, called Friedman regarding equipment found in a basement storage closet, the first thing Arlene did was call DOTmed. Soon her DOTmed Area Manager was on the scene photographing the equipment and assessing its value.

Arlene’s Area Manager helped her consolidate the 41 items into six auctions: eight BIRD 8400 STI Ventilators with Flow Support Pressure Control; nine BAXTER Flo-Gard 6301 IV Infusion Pumps; two C-100 Airshield Infant Incubators and one C-300 Airshield Infant Incubator; 14 BAXTER Floguard 6201 Infusion Pumps; three Travenol Flo Gard 6200 IV Pumps, which sold at their reserve price; and three 2010 Medfusion Pumps and one 2010 I Pump, which is closed pending contract.

“Arlene went with DOTmed-Managed Auctions, so we took care of the details for her, freeing her to focus on her own work. In fact, Arlene barely had to do anything besides make that first call.”

Arlene went with DOTmed Managed Auctions, so we took care of the details for her. We served as a buffer between Arlene and her bidders, answering their questions, freeing her to focus on her own work. In fact, Arlene barely had to do anything besides make that first call.

After two weeks of bidding, we sold the items for a total of $22,900. And it couldn’t have been easier for Friedman and Kishon.

Our process is efficient. The winning bidder agrees to pay us upfront, and to pay for the packing, crating and transportation that we set up for them. Then we pay you. It’s as simple as that!

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Wet processing of film – the mainstay of X-ray, CT, and other radiological technology for the last thirty years – may be about to go the way of Betamax, buggy whips, and the dinosaurs. Some experts in the field give film another five years, max, while others say film will be around for another 10 or 15 years, or more. When it’s finally gone, however, it will mark the end of a fertile line in the evolution of diagnostic imaging.

“The first Matrix cameras were the size of a refrigerator,” remembers Bill Blackford, Vice President of CTronics, in Stockton, California. Blackford explains the history of film processing cameras with the affection usually accorded a ’57 Chevy. “These cameras used light to expose X-ray film then the X-ray film was developed chemically like regular film—all of it inside the machine. It was like a little Photomat, and about the same size, too.”

By the 1990s, 3M was able to do away with “wet” processing altogether, with its new dry view cameras that developed film without wet chemicals. But it was still film. Even thermal imaging and laser cameras relied on film. It didn’t matter much that film was analog; proprietary networks and incompatible protocols made it impossible to share digital data anyway.

Then came DICOM, and Digital Imaging Communications in Medicine changed everything. In the mid-1990s the medical imaging industry established worldwide protocols for the storage and transfer of medical digital imagery. For the first time images could seamlessly navigate networks. Film was toast.

**The phase-out of film is well underway**

“Nobody buys wet anymore,” says Peter Chen, President, Global Medical Equipment, a Pennsylvania company that buys and sells imaging equipment. “I’d say, right now 80% of the market is dry laser and 20% is still wet film. Nobody’s replacing wet machines. Soon film will be gone.”
Should we be sorry? Will we regret the loss of film in imaging the way audiophiles rue the demise of vinyl? “A lot of doctors say they prefer film, a hard copy they can hang on a view board,” says Blackford, whose company sells and refurbishes imaging equipment. “Most of them just don’t know how to use computers.” DICOM notwithstanding, Blackford isn’t all that optimistic about healthcare’s readiness for an all-digital world. “You have all this high-tech digital technology and none of the networks in the hospitals have what it takes to support it. It might be a good idea to get the IT situation together before we get rid of film entirely.”

Or are reports of film’s demise premature?

While film use in general is in steep decline, one of its last remaining strongholds is in basic X-ray, which is still 50% film. And 80% of mammography is still done on film. Surgeons — presumably computer literate ones — report that they strongly prefer “hard X-rays,” i.e. film, to the “soft X-rays” seen on a monitor. Though it’s uncertain whether physician preference will stem the march of technology, it could slow it down in areas where it’s cumbersome and costly to upgrade existing equipment to DICOM capability. And it’s likely there will continue to be a market for film outside of the industrialized world for many years to come.

“About 10 years ago a lot of people were saying that film would be gone in 5 years; now 10 years later, they’re saying it again.”

“The wet-to-dry ratio outside of the United States is just about reversed,” says Chen, who estimates that overseas 70% of the worldwide market is still wet laser. Traditional film technology is still considered the most cost-effective method in markets outside of the U.S., Europe, and Japan. One study estimates that 60% to 70% of all examinations world-wide are still acquired on film. Opportunities for resellers of wet equipment are expected to continue overseas for some time. But not if the OEMs can help it.

Neal Thompson, President of JD Imaging out of Mundelein, IL, says about the film/digital debate, “About 10 years ago a lot of people were saying that film would be gone in 5 years; now 10 years later, they’re saying it again and 10 year from now, they may need to dust off that prediction one more time. But look, while there may be less emphasis on
film today, everybody still wants to have a printer in the corner of the office. So there may not be multiple printers so that everybody has one, but there’s still one or two to share.”

Thompson says he specializes in buying, refurbishing, and selling AGFA and Kodak equipment.

OEMs including Kodak, Siemens, Fuji, Sony, and AGFA all have their eyes on the overseas market as a counterbalance to the maturing of their primary markets in the U.S., Europe, and Japan. Because in some ways, the OEMs are choking themselves to death at home by their own success.

In certain U.S., European, and Japanese market segments the pace of DICOM technology itself is the factor most responsible for slowing market growth. A report by consultants Frost & Sullivan in 2004 suggested that “the fast pace of innovation is having a negative effect on spending among end users. Within certain market segments, completely new technology iterations are available every year.” The report cites the multi-slice CT market, which jumped from 16 slice
to 32 slice to 40-slice models so quickly that nobody was willing to jump on board a technology that might be mid-tier eighteen months from now. “With average replacement rate for many modalities being six to eight years, most facilities have discovered that they have to be satisfied with their purchase even if the product loses its premium tag within a short period.” The report concludes that “this is a significant market challenge for companies committed to technological excellence.”

Where will primary growth come from? Strategis, a Canadian consulting company, sees the post-film challenge to be information management. According to its website, “The key technologies have been developed to capture, store, retrieve, transmit, and display the images generated. The medical imaging sector is a good example of a technology-defined market place which is shifting from an equipment focus to an information management focus.” Which is a nicer way of putting Bill Blackford’s suggestion – it doesn’t matter how good the image is if you’re sending it via two cans and a string.

**Who’s hedging their bets?**

Despite film’s fuzzy future, many manufacturers are still featuring film-based machines in their product lines. Fuji, for example, offers a complete line of medical imaging film and film handling equipment while also acknowledging the inevitability of film’s demise. “As the diagnostic imaging market continues its transformation from film-based to digitally driven,” Fuji’s web site declares, “Fuji’s full suite of products, including conventional film…will help customers to successfully transition to the digital future.”

How fast that future gets here depends a lot on how well major suppliers are able to adapt to demands for healthcare efficiencies in even the most developed countries. Suppliers such as Fuji and Carestream Health Group already market their dry laser and thermal imagers with an eye toward cost-efficiencies. Kodak radiological equipment invites you to, “virtualize your workflow and optimize resources by moving information, not people.” AGFA sells its dry imaging equipment for its ability to help “imaging centers, hospitals, IDNs and military medical facilities leverage their legacy investments and minimize the effect a shortage of radiologists can have on productivity.” (Try hanging that on your view box.) Whatever the steps it takes to get there, the future of imaging is clearly digital. Film may linger for some time longer – see Fuji’s new line of dry imaging film machines – but the writing is clearly on the wall for film in radiology. In the future, film in radiology will become as quaint as daguerreotypes. But along the way there’s still money to be made in film. It will be interesting to see what develops.

● [DM 4111]
Mammography Sales and Service Companies

Standard analog film remains the widespread standard

By Barbara Kram

According to the FDA, which regulates the equipment under the Mammography Quality Standards Act, the U.S. has 8,832 mammography facilities including hospitals, imaging centers, and other practices with a total of 13,559 machine units in operation. That certainly seems like a robust industry. However, since 2000, the number of facilities offering mammography is down more than 11 percent and the number of machines is down 4.65 percent.

Blame it in part on imaging reimbursement reductions that are part of the Deficit Reduction Act, now in effect, which reduced Medicare reimbursement to imaging centers and private practices in order to put the payments on a par with hospitals. While hospitals might be in a slightly better position not having experienced the DRA imaging cuts, pressures to contain health care spending have restrained capital investment in the new, digital mammography systems even at hospitals, industry insiders report.

And the anticipated transition to fully direct digital mammography has yet to happen, even though some academic and teaching institutions have taken the plunge. An estimated 16 percent of mammography equipment uses direct digital or the more common computed radiography conversion (see below). That leaves 84 percent of mammography in the traditional analog film format.

“Mammography is the last holdout of all the diagnostic imaging equipment in terms of analog film technology,” said David Denholtz of Integrity Medical Systems, Inc., Fort Myers, Fla. The company specializes in refurbished and new diagnostic imaging and bone densitometry equipment and parts. “The reason [clinicians give for preferring film] is mammography is more of an art versus a science ... and the subtleties of the film are very important. But now the digital technology has advanced and the gurus say digital is better, but still a lot of people argue to hang on to analog.”

Most facilities simply can’t afford direct digital mammography since systems run anywhere from $350,000 up to $600,000. Traditional analog units go for $60,000 to $100,000. Used film equipment can be available for as low as $35,000.
As Denholtz suggested, many radiologists prefer film to digital studies. “Film screen—the old stuff—is still better than digital and it probably will be that way for another eight to ten years. You will not hear that from the vendors because they want to sell you a half-million dollar unit rather than another $100,000 unit,” said Richard Cooper, MD, a radiologist in private practice as well as President and CEO of Imaging Centers of America, Inc., based in Valdosta, Georgia. Cooper acknowledged research showing that digital mammography is better for younger patients with denser breasts. However, these women represent a tiny fraction of patients and cancers. “There is a call for digital mammography,” Dr. Cooper noted. “But by far the best thing we have right now is film screen mammography.”

Mammography systems widely entrenched in the field include GE, Hologic/Lorad, Siemens, Instrumentarium, Fischer, Planmed and others. In terms of the new digital systems, the most coveted is Hologic’s Selenia full-field digital mammography system. “Digital is the future and that’s where everybody is going whenever the pricing is better and the availability is there,” predicted Courtney Lane of Innovative X-Ray Services, Friendswood, Texas. “We are going to see a phenomenal spurt in digital but there is still a big need for the analog systems.”

Acknowledging the image quality and functionality of digital mammography, Leon Gugel, President, Metropolis International, Long Island City, N.Y., said it all comes down to simple economics. “If you’re a doctor, look at it this way, if you are not going to go fast around a race track why buy a Ferrari? The station wagon will do the job.”

Many options for sales and service
For most hospitals, which remain in the film realm, internal biomedical personnel typically provide regular maintenance on the equipment. Many institutions also use third-party, independent service organizations (ISOs) to train staff, provide parts, installation of new or used equipment, and up to full service maintenance and repair.

Mammography units, used for both screening and diagnostic breast cancer detection, are fairly reliable machines and generally considered to be workhorses. Nevertheless some service problems can arise apart from the need for regular calibration, photo timing adjustments, and inspection. Service typically entails tube or circuit board replacement, new compression paddles, and replacement or repair of bucky trays, which are the film cassette holders on the front of the machine.

“We focus exclusively on mammography and have done so for about 25 years,” said James McGinty, President, Digittec Medical, Lawrenceville, Georgia. “We offer sales, service, training, parts, and support. We are a smaller company than the OEMs. We are a little more flexible and have better pricing. And focusing exclusively like we do, we’re able to interface with the customer more seamlessly than an OEM. It’s a little bit tighter relationship.”
That hands-on, close customer service approach is what ISOs pride themselves on, as well as unsurpassed knowledge of the inner workings of the equipment.

“Some companies do what they call ‘spray and pray,’ they spray paint it, and pray that it works. We take the opposite approach,” McGinty assured. “We do not remanufacture, meaning take it down to nuts and bolts and rebuild it. But we know which particular part should be replaced. We completely calibrate every aspect of the system. We do a complete survey of the performance of the system before it leaves our office. It’s installation-ready and fine-tuned on site. Every element has been gone through, and tested the way we know a physicist is going to do it.”

That attention to detail typifies the experienced ISO. “We provide parts and refurbished systems and free tech support to customers,” said Darrel Kile of Classic Diagnostic Imaging, Solon, Ohio. “Whoever is doing the work on the machine in the hospital, if they need a part or have a problem, they call us and we do our best to get them the information they need or the part.” His company also provides a 3 percent give-back in training credits to use at RSTI (the Radiological Service Training Institute). “A lot of big hospital systems spend anywhere from $100,000 to $500,000 on parts [for all medical equipment] per year. By spending that with us they get 3 percent back to train their people.”

Courtney Lane of Innovative X-Ray Services said, “We will provide sales and service of any brand. We outsource our parts so that we can provide the facility with better pricing. We offer service at any level, particularly if we do the installation. With each installation we provide a one-year service pack.” The company also offers packages from time and materials to full service to hospitals, clinics and private practitioners who use the company’s preowned and refurbished systems.

Another good reason for a hospital to have an ISO on tap is for those unexpected emergencies where your internal biomedical team needs parts and service support. “I had a machine go down on the 24th of December last year and was able to get a guy out to the hospital to get it up and running on Christmas Day,” Metropolis International’s Gugel said.
CR — The best of both worlds

While direct digital mammography may be unaffordable to many hospitals as of yet, there is an option to keep the older film units and add computed radiography (CR), which converts the film images to digital files. These can then be stored and shared readily as well as interpreted by today’s computer aided detection (CAD) software systems.

“It’s the best of both worlds. You get the benefit of the higher sensitivity of film screen plus some of the things that computers do on the digital side,” Dr. Cooper said. He explained that the CR converted mammograms are read by extremely sophisticated software. “The computer performs about a billion calculations per film and has in its memory many different presentations of cancer. It ‘looks’ for those things on the digitized mammogram image.”

CAD provides a second opinion to radiologists, improving cancer detection by about 25 percent. In an era with a shortage of radiologists, and fewer going into mammography due to low pay and high liability, computers perform a useful service. (The way it works in practice is the radiologist first reads the mammogram to draw his own conclusion, then goes back and checks the computer’s findings as a quality assurance.)

Dr. Cooper’s ICA is a Hologic R2 representative, selling or leasing the company’s CAD systems, which interface with any mammography X-ray unit to digitize images. Hospitals may choose to invest in CR systems, or to outsource the digital conversion or even outsource the full interpretation of the studies. These are all services provided by Dr. Cooper’s Imaging Centers of America.

“We focus our attention on smaller hospitals and more often than not in poorer communities because we believe they deserve the same health care, the same benefits that are available in large cities and teaching institutions,” Dr. Cooper said of providing CAD to all comers.

● [DM 4110]
American Healthcare Radiology Administrators Celebrates 35th Annual Meeting

Challenging days lie ahead for radiology administrators, but the AHRA stands ready to help

The American Healthcare Radiology Administrators (AHRA), the premier association for managers in the imaging sciences, will hold its 35th Annual Meeting and Exposition at the Gaylord Palms Resort & Convention Center in Orlando, FL on July 8 – 12. More than 1,000 imaging leaders will attend this key educational event for radiology administration. This year, DOTmed.com will have a booth in the exhibitor’s area along with hundreds of other medical equipment and medical services companies.

Keynote speakers will include Dr. Frank Lexa, who will kick off the meeting with a discussion about the key challenges to the business of radiology in the opening years of the 21st century. Dr. Lexa will discuss the top five critical issues facing those in the radiology profession. He will also discuss the limitations of forecasting, the power of scenario analysis and why predictions in radiology are often wrong.

Deficit Reduction Act A Challenge

Robert A. Maier will discuss the changes brought about by the Deficit Reduction Act (DRA) of 2005 and the effects on outpatient medical imaging. Maier will give insight on the impact on imaging and strategies to minimize losses.

According to Edward J. Cronin, Jr. CAE, Executive Director of the AHRA, the DRA is a definite challenge. “The DRA makes the role of the radiology administrator more critical,” says Cronin. “The administrator has to make sure that work is being carried out more efficiently and effectively, and the focus should be on workflow efficiencies and increased profitability in order to raise the expectations and demand for competent imaging managers.” Mr. Cronin also said that the AHRA is working with the Access to Medical Imaging Coalition to urge Congress to delay imaging cuts.

AHRA Leadership Institute Going Strong

The AHRA Leadership Institute will once again present the Basic Management Program at the Conference. This five day comprehensive program will focus on basic management skills, including human resources, communications, operations management, asset management, finance and budgeting for new supervisors and managers. According to Jay Mazurowski, 2007 Pres-
ident of AHRA, “the program has surpassed our expectations in building solid long lasting partnerships with leaders in the industry.” Mazurowski says the program is designed for “imaging professionals taking on new positions, opportunities and challenges. We are a conduit between imaging professionals and companies that have products and services to sell.”

Special events include the 8th Annual AHRA Education Foundation Golf Tournament at the Celebration Golf Club on Sunday, July 8. Many sponsors have stepped up to the green this year, offering financial support for medical imaging leaders to increase educational opportunities through scholarships, awards and research and education programs. According to Edward Cronin, “funds are giving to smaller hospitals who can’t afford to send people to our meetings, and to our Partners in Learning Program that provides tuition money for those in the field who are less experienced and ready to further their knowledge.”

There will also be a President’s Reception Sunday evening giving people the chance to greet old friends and meet new ones, and there will be a breakfast on Monday to give new members hints on how to pace themselves during the week to get the most out of the conference. President Mazurowski observed that, “from my perspective, the AHRA Annual meeting is a premiere event for radiology managers and administrators. It represents a multifaceted educational event like no other.”

For more information on the AHRA and the 35th Annual Conference, visit www.ahraonline.org.

[DM 4118]
It isn’t easy being a radiology administrator today, particularly with the DRA cuts that took effect at the beginning of the year. Those with the title are also faced with many other difficult challenges, and should be recognized for their skills and capabilities. That is why, in 2002, the AHRA, with the help of a $1 million grant from the Kodak Health Group (now the Carestream Health Group), established a program to certify radiology administrators and enable people in the business to earn the designation “CRA” — Certified Radiology Administrator.

Creating professional status for the Radiology Administrator

The CRA program is the industry’s first and only certification program for radiology administrators. According to Michael R. Hughes, 2007 Chairman of the Radiology Administrator Certification Committee (RACC), CRA testing and standards are designed to elevate the functions of the radiology administrator to the professional level. “Just as people today look for more than just an accountant, they want a Certified Public Accountant or CPA, our goal is to make the industry look for the CRA designation when hiring. If you own a radiology facility, who would you want to run it, an administrator — or a Certified Radiology Administrator?” Hughes observed.

Demonstrating expertise in the 5 domains

“The CRA established by AHRA is a separate program from the AHRA’s core educational activities,” said Hughes. The test is administered by the Radiology Administrator Certification Committee of the AHRA.

According to Hughes, the test covers five key domains that are essential to the practice of radiology management:

- Human resource management
- Asset resource management
- Fiscal management
- Operations management
- Communication and information management

Hughes said, “I believe that an individual who has chosen to sit for a national certification examination that requires that they demonstrate a high level of knowledge and experience in the areas of Radiology and Imaging Management is one who seeks excellence in both themselves and others.”

CRA certification lets people know that you have achieved the highest standards and credentials in the radiology administration field.

The test is open to all working radiology administrators

Since the inception of the CRA, over 550 administrators have become Certified Radiology Administrators. In order to take the exam, all candidates must meet certain minimum life experience and work experience requirements. The AHRA website, www.ahraonline.org, gives a description of the eligibility requirements that include a 7 point system (7 points are needed to sit for the exam). Points are awarded for an individual’s credentials, as well as management, supervisor and administrative experience in radiology or medical imaging. If you qualify, you may take the exam whether you are an AHRA member or not.

By becoming a CRA, you’re helping yourself and your profession

“As more and more administrators pass the CRA test, the designation will become more and more valuable,” Hughes observed. The test consists of 185 questions – approximately 30% based on knowledge, 40% tested application skills (problem solving) and 30% involved analysis.

A sample question might be:
Which of the following is an intangible asset?

a. Office Supplies
b. Experienced Personnel
c. Stock Shares
d. Radiology Equipment

[The answer to this question is (b)].

Study guides, test schedules, and fees

- The CRA Exam is given three times a year
- Application was due May 21, 2007 for July 8, 2007 Exam
- Application is due Sept. 28, 2007 for the Nov. 9, 2007 Exam
- Application is due April 1, 2008 for the May 2, 2008 Exam

The cost for the CRA exam is $300 plus a $50 application fee to verify eligibility. The CRA Study Guide can be ordered on the AHRA web site. The charge for the Study Guide is $15 plus shipping and handling. There is also a study session for CRA at the AHRA 35th Annual Conference on July 8 from 8:00 am to 5:00 pm that will cover Operations Management, Communication and Information Management, Human Resource Management, Fiscal Management and Asset Resource Management. The session will wrap up with Test Taking Tips and a mock test. For those who pre-qualified, a CRA exam will be given at the annual meeting on July 8th from 12:30 to 4:00 pm.

Michael R. Hughes, 2007 Chairman of the Radiology Administrator Certification Committee (RACC).
about DOTmed.com

DOTmed.com – the publisher of DOTmed Business News – is the world’s leading, public, medical equipment marketplace. Our role is to help hospitals, doctors and businesses buy and sell new and used medical equipment and parts online.

DOTmed.com was founded in 1999. Today you will find more than 27,000 listings for medical equipment and parts in over 600 categories. Our constantly growing registered user base now tops 80,000 worldwide, and we’re adding over 1,000 new users every month.

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Nobody’s better equipped to help you auction, buy and sell new and used medical equipment and parts than DOTmed. Here’s a quick explanation of the main features on our homepage and how they can help you.
Meet the inventor of the machine

“There are now over 50,000 bone densitometers in the world. I doubt if more than 50 radiologists in the world know who invented the instrument.” These are the words of the late John R. Cameron from 2002, professor emeritus at the University of Wisconsin, Madison, and the inventor of the bone densitometer.

In 1959 Cameron discovered that there was no way to detect early osteoporosis, even though many older women were breaking their hips and, in some cases, dying. He invented the densitometer in 1960, but it was not often utilized because there was no known treatment for the problem. Yet, on its 25th anniversary, Investigative Radiology listed one of Cameron’s early bone densitometry publications (Invest. Radio. 3:141; 1968) as its single most cited article.

Today, the densitometer is a widely used diagnostic tool capable of measuring the amount of matter in a given bone, or bone mineral density (BMD). Cameron died in 2005 believing that he received little recognition for this important invention. He did, however, believe that it led to many useful clinical applications in accurately measuring bone densitometry. Lunar Radiation (now GE-Lunar) arose directly from early work done in Cameron’s laboratory.

The need for bone densitometers grows

As life expectancy increases, so does the occasion of certain chronic disabilities, including osteoporosis, among the elderly. Osteoporosis is also a risk factor in postmenopausal women because of estrogen deficiency and other factors. Osteoporosis and osteopenia (BMD that is lower than normal peak BMD but not low enough to be classified as osteoporosis) affect as many as 44 million people age 50 and older in the United States alone.

Bone mass usually peaks between the third and fourth decades of life. After this time, there is a natural decline that is more prominent in elderly and postmenopausal women. In these groups, it has been observed that the higher the peak bone mass achieved, the less likely bone fractures will occur. Factors such as lifestyle and genetic makeup also affect bone density.

It is therefore essential to have an understanding of bone acquisition and bone loss so that physicians can plan more effective preventive and treatment protocols.

There are several different methods of determining BMD, including some that utilize CT and ultrasound technologies, though the most prevalent is Dual energy X-ray absorptiometry (DEXA). DEXA determines BMD by using two X-rays at different energy levels and measuring their rate of absorption. With processes like these, researchers are finding new ways to treat the effects of aging, injury and disease.

A densitometer measures bone mineral density, assessing the strength of the bones and the probability of a fracture. It is a noninvasive procedure and, unlike a bone scan, a densitometer does not inject radioactive contrast material into the bloodstream. Some bone densitometry machines are made for scanning extremities, and can be found in small practices; others are made for full-body scans and are usually based in a hospital, medical office, or clinic.
Companies that provide sales and service

For this report, we interviewed several of the leading sales and service companies who sell bone densitometers manufactured by companies like GE Lunar, Hologi, Norland, Schick Technologies, DMS, and Osteometer Meditech. The equipment ranges from smaller, less expensive peripheral diagnosis units to larger DEXA tables that provide the gold standard in BMD.

In one of the largest medical equipment inventories in the country, including 70 to 80 bone densitometers in stock at any given time. CEO David Denholtz believes that when someone buys equipment from Integrity Medical Systems, they aren’t just buying the equipment—they’re buying into the company. Says Denholtz, “we sell from stock and have our own parts inventory and a dedicated factory-trained, bonded service team that specializes in refurbished and new bone densitometry equipment and parts. We have over 150 systems installed worldwide, 70-plus systems in stock and over 10,000 parts ready to ship. We treat our business like a science—offering the highest level of service and commitment to our customers.” This CEO knows that servicing healthcare professionals, dealers, hospitals, OEMs and a host of international clients is a huge responsibility, but his company does it and does it well.

One of Denholtz’s main concerns is the DRA (Deficit Reduction Act) and how it will affect Medicare reimbursement rates. He is worried that Medicare will pay less than the estimated cost of performing the procedure in physician offices, and that independent reimbursement for the bone densitometry tests necessary for the diagnosis of women at risk for osteoporosis (a recently enacted Medicare screening benefit) will be reduced by over 40%. “It will force many doctors and centers that offer bone density tests to discontinue the service, and that will definitely affect companies who sell densitometers and medical equipment,” said Denholtz.

TRITECH SERVICES out of Louis ville, Kentucky specializes in Hologic and Lunar densitometers. Vice President John Cline revealed that the company’s main engineer was a field engineer for Hologic and has been working on these systems for over 10 years. “He was also cross-trained on the Lunar products, and he can service Norlands,” says Cline. Like some other companies we spoke with, TRITECH sells and services all of its refurbished equipment. Cline said that the company also stocks Hologic parts. Cline finds opportunity in the fact that those who are in the market to purchase a densitometer do not have to spend up to $100,000 on a new system when they can purchase a system with the exact same technology for 35 to 40 percent less.

Metropolis International of Long Island, New York buys, sells and rents quality pre-owned medical equipment. President Leon Gugel believes that when it comes to densitometers, “any system that a hospital or clinic purchases should be purchased from a trusted and reputable company. The end user has to find a comfort level with a particular company or person and then move on to pricing and manufacturer preference.” Gugel adds, “if a hospital is dealing with a reputable company like Metropolis International, they will always get a great price and great service.” When asked what he felt the
biggest challenges were facing bone densitometer ISOs (independent service organizations), he said, “having the right experienced people to perform the work that may be required. Some people fix things without really knowing what they are doing.” He said that the most common problems with bone densitometers are the drive belts or a missing positioner, but over the past 10 to 12 years, the bone density systems are “good robust” systems that are pretty much “break free.”

“When the technicians at Metropolis International refurbish a bone densitometer, they test the unit first to see what needs to be done. They replace all belts, boards, and peripherals and test the system. The panels are stripped, primed and repainted. The units are rebuilt and tested to make sure they are up to OEM specifications,” explained Gugel.

Michael D. Lies, owner of Medical Advantages Inc., began in the medical field fourteen years ago. His business and clinical background and knowledge as a licensed radiologic technologist gives him an understanding of his clients’ need to succeed in the highly competitive medical services field. Lies sells all diagnostic imaging systems, including densitometers, and uses dedicated contractors in every modality. “We provide turnkey deals, i.e. our trained engineers will install, calibrate and provide applications training, logistical and operational support for any late model bone densitometry system(s) that a customer purchases,” explains Lies. He feels that all OEMs are friendly to third parties — when the ISOs come looking for parts, that is — and he is also concerned about the DRA proposed cutbacks. When asked what he felt were the most common problems that need repair in a bone densitometer, Lies said, “When we refurbish a densitometer, we look at the detectors that frequently need to be replaced, as well as replace all wiring, tubes and any worn parts.”

Absolute Medical Equipment specializes in new and used equipment from top manufacturers that includes bone densitometers and other equipment.

Abe Sokol, marketing director, said that sales and service of the machines are accomplished by using a network of affiliated bone densitometer technicians nationwide. He believes that problems can arise when a piece of equipment is installed or removed. “Installations and deinstallations must be done professionally to avoid damaging valuable equipment. We have come across equipment that was not deinstalled properly and have seen problems ranging from missing parts to damaged tubes,” explained Sokol.

The Bottom Line

When purchasing bone densitometry equipment it is imperative to choose an informed provider. A steady demand in the market for refurbished equipment has brought about an increase in the number of companies that sell pre-owned equipment at prices 40 to 60 percent less than the cost of a new one.

All of us realize that healthcare budgets are tight, but as baby boomers get older, the demand for BMD scans will only increase. Sales people that are out in the field looking for densitometer buyers should try new healthcare sites, including primary care facilities, pharmacies and other wellness centers and specialty clinics. And education efforts should create awareness about the importance of bone density testing and how the DRA will drastically cut Medicare reimbursements for bone density exams. The payment reductions will affect a broad range of medical imaging, including a 40% cut in bone densitometry studies for osteoporosis.

Thanks to groups like Access to Medical Imaging Coalition, a coalition of industry groups and companies affected by the legislation, bills are now in the House and Senate calling for a two-year delay on cuts. This will allow for a re-evaluation of this legislation, and a realization of the value that bone densitometers have to many Medicare patients. ● [DM 4149]
Carestream Health Names Graeme Allan Head of Europe/Africa/Middle East Region

Carestream Health, Inc., recently announced the appointment of Graeme Allan to Regional General Manager of the Europe, Africa and Middle East region for the company’s Healthcare Information Solutions business. Reporting to Michael W. Jackman, Allan will have responsibility for the deployment of business strategy in the region and will manage the regional field sales teams.

Allan brings more than 20 years of sales, marketing and general management experience in IT and imaging to Carestream Health. He has extensive business leadership experience ranging from small start-ups to large corporations including Datapoint, Novell and Nortel.

Toshiba Names Jeff Howorth Vice President of Strategic Business Group

Further strengthening an already robust strategic and operational team, Toshiba America Medical Systems, Inc. recently made Jeff Howorth vice president of its Strategic Business Group.

Howorth, with more than 19 years of sales experience in the medical imaging industry, will be responsible for developing Toshiba’s Strategic Business Group, a new division within the company focused on developing partnerships with Integrated Delivery Networks (IDNs). He will oversee strategic business account managers across the country who will be equipped with a portfolio consisting of Toshiba medical equipment, products from Toshiba sister companies, customized marketing services, financing programs and consulting services.

AIUM Welcomes President Joshua Copel, MD

The American Institute of Ultrasound in Medicine (AIUM), a multidisciplinary association dedicated to advancing the safe and effective use of ultrasound, welcomes Joshua Copel, MD, as its 2007-2009 president. Dr. Copel currently serves as Professor, Department of Pediatrics, and Vice Chairman, Obstetrics, Gynecology, and Reproductive Sciences at Yale University School of Medicine in New Haven, Connecticut.

Dr. Copel has been an AIUM member since 1984 and has been extensively involved in the association over the past 23 years. He has served the AIUM on more than 12 committees, completed two terms on the Board of Governors, and served more than eight years on the Executive Committee in varying roles. Most recently, he has been a key participant on the AIUM Ultrasound Contrast Team and assisted in facilitating the last three AIUM Ultrasound Practitioners Forums.

SNM Installs New Officers

The Society of Nuclear Medicine (SNM), an international scientific and professional organization of more than 16,000 members dedicated to promoting the practical applications, technology and science of molecular imaging and nuclear medicine, announced a new slate of officers during its 54th Annual Meeting in Washington, D.C.

They include: Alexander J. McEwan, new SNM president; Robert W. Atcher, SNM president-elect; Michael M. Graham, SNM vice president-elect; David Gilmore, SNMTS president; and Mark Wallenmeyer, SNMTS president-elect.

ACR Names New Officers

The American College of Radiology (ACR) Council recently elected Barry D. Pressman, MD, FACR, of Los Angeles, president of the ACR during the organization’s 84th Annual Meeting and Chapter Leadership Conference (AMCLC) in Washington, D.C.

Pressman is a member of the ACR Board of Chancellors, chair of the ACR Web Site Advisory Committee, and former chair of the ACR Communications Commission. He is also chair of the S. Mark Taper Foundation Imaging Department and chief of head and neck radiology at Cedars-Sinai Medical Center in Los Angeles. Pressman is a past president of the California Radiological Society and the Western Neuroradiological Society.

Other new officers include: Jeffrey C. Weinreb, MD, FACR, vice president; David C. Kushner, MD, FACR, speaker; and Alan D. Kaye, MD, FACR, vice speaker.
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At DOTmed.com, we strongly believe in ethical business practices. To support this commitment, we’ve established the DOTmed Certified Program, which enables companies to have their integrity documented by taking these three steps:
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Because of the value of DOTmed Certification, an unprecedented number of companies have become Certified in the last year, and the seven companies on the right have become Certified in the last month. Should you ever need their services, we recommend you contact them.

By entering the [DM 1234] code number in any search box on www.dotmed.com, you can learn much more about these reputable companies.

✔ Hayward Medical, Inc., Hoover, AL
A physical therapy, occupational therapy, athletic trainer and chiropractic equipment and supplies dealer. – (205) 979-9986
● [DM 3972]

✔ Southwest Nuclear Electronics, Canton, GA
Provides fast, reliable and cost effective installation/deinstallation, repair, service and parts for Siemens, GE, and Philips gamma cameras. A proven provider of quality service 30 miles north of Atlanta, GA. – (678) 762-0192
● [DM 3978]

✔ LABpro Biomedical Inc., Dorchester, Ontario
Specializes in the servicing, sale, and resale of laboratory and medical instrumentation. Based in Ontario, Canada; also acts as authorized service agents for manufacturers. – (519) 670-0806
● [DM 4020]

✔ Med Exchange International, Inc., Agawam, MA
A dealer in pre-owned imaging equipment such as MRI, CT, Ultrasound, Nuclear/PET, R&F, Angio, Cathlabs, C-Arms and Portable X-ray. – (800) 338-1287
● [DM 4038]

✔ World Medical Equipment, Marysville, WA
Specializes in refurbishing operating room equipment such as OR tables, lights, autoclaves and monitors. – (800) 827-3747
● [DM 4041]

✔ Frontier Medical, Inc., Wheat Ridge, CO
Eleven years providing hospitals, doctors and clinics with medical, surgical and cardiopulmonary high quality, pre-owned medical equipment. Buy and sell. – (303) 431-1405
● [DM 4095]

✔ All Time Medical, Monsey, NY
A full-service online medical equipment supply company. Shop conveniently for wheelchairs, mobility scooters, walking aids, lift chairs, bathroom safety, mobility aids, bariatric equipment, TENS units and other medical equipment. – (866) 406-3099
● [DM 4106]
AMT Scholarships

The American Medical Technologists (AMT) is a nonprofit certification agency and professional membership association representing over 38,000 individuals. The AMT awards five $500 student scholarships annually. Student must be a graduate of, or a senior in, an accredited high school (GED is also acceptable), and must provide evidence of financial need. Applicant's course of study must lead to a career in one of the disciplines certified by the American Medical Technologists.

Also, one $2,500 and three $1,000 scholarships for AMT members are awarded. Applicant must be a member in good standing with AMT, and must be enrolled in a college or university accredited by a regional accrediting commission. The program of study should be concerned with disciplines certified by AMT. All applications must be typed and filed prior to April 1, 2008.

International Conference on Wilderness Medicine

Outdoor and wilderness recreation have grown tremendously popular over the past two decades. Physicians and other health care providers should have an increased awareness of medical problems that are unique to the wilderness environment.

Held from August 8-12, 2007 in Whistler, Canada, the costs of this conference are as follows: Physician – $595.00; Nurse & PA – $395.00; Paramedic, EMT, Resident – $395.00. The conference counts for 23 hours of CME credit. Courses include: Wilderness Wound Management; Backcountry Water Purification; Hazards in the Surf Zone; Fracture & Dislocation Management; Improvised Splinting & Litter Evacuation; Eyewear & Care: Wilderness Ophthalmology; Taking Children Safely Into the Wilderness; and Whitewater Medicine & Rescue.

Baylor University Medical Center Diagnostic Radiology Residency

Clinical training in the department of radiology at Baylor University Medical Center (BUMC) provides progressive, supervised responsibility for patient care and ensures that residents perform procedures commonly accepted in all aspects of clinical diagnostic radiology.

Residents rotate through all the subspecialties in radiology and are evaluated each month at the end of a rotation. The radiology residency program is a combination of five 5-year categorical positions that span postgraduate years 1-5, and two advanced positions that span postgraduate years 2-5.

The latter two spots require the matched applicant to also match for an internship or transitional year for postgraduate year one. Residents are selected entirely through the National Residency Match Program, using the Internet-based electronic resident application system (ERAS).

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ASRT Siemens Clinical Advancement Scholarship Program

Siemens Medical Solutions USA and the American Society of Radiologic Technologists (ASRT) Education and Research Foundation are committed to advancing the radiologic sciences and to promoting the professionalism of technologists.

The Siemens Clinical Advancement Scholarship Program assists medical imaging and radiation therapy professionals seeking to enhance their clinical practice skills and ability to provide excellent patient care. Approved programs include but are not limited to the following: masters or baccalaureate degrees in radiologic sciences, specialty disciplines such as CT/MRI or sonography, and certificate programs in radiation therapy or dosimetry.

Scholarships of $3,000 each are awarded annually, and are open to ASRT members who have not applied for GE Management or Elekta/Monster Educator scholarships. Applications are due February 1, 2008.

[DM 4063]
These are some of the more than 27,000 listings on www.DOTmed.com on any given day.

### EQUIPMENT FOR SALE

- **Marquette Max 1 Stress Test System**
  - Asking Price: $3,995
  - Excellent working condition
  - Comes with treadmill
  - Bob Gaw, PRN
  - Phone: 508-679-6185

- **Siemens ECAT Exact 47 PET Camera/Scanner**
  - Excellent condition
  - Professionally disassembled
  - Inquire for price
  - Nader Alfaqeeh, Orbit Medical Technologies
  - Phone: 630-605-0295

- **Philips HD 11 Cardiac-Vascular**
  - Item must be sold right away
  - Excellent C/V system with SonoCT and X-RES
  - Contact Jack Meyer, Ambassador Medical
  - Phone: 317-814-8436

### EQUIPMENT WANTED

- **GE Logic 5 Pro/Expert OB / GYN, Vascular**
  - Looking for a Logic 5 Pro or Expert Ultrasonic with Linear, Convex, and Vaginal probes and a Printer
  - Rami Marom, Elsmed Ltd & Relaxation Inc.
  - Phone: +972-524-322742

- **GE Senographe 2000D-Dig Mammo Unit**
  - Will pay $50,000 and up depending on Condition and DOM (Date of Manufacture)
  - Jim Monro, RSTI Training Center
  - Phone: 800-229-7784

- **Varian Preferent 2100 Linear Accel.**
  - Good condition, de-installed or about to be de-installed
  - Frank Bleischmidt, Artec Group Services, LLC
  - Phone: 305-884-4533

### EMPLOYMENT OPPORTUNITIES

- **Salesperson Position**
  - Location: Colorado
  - Salary: Experience based, Salary + attractive commission
  - Looking for min. of 3 years experience in X-ray plus imaging field
  - Matt Carns, Trinity Medical Solutions, Inc.
  - Phone: 800-503-4330

- **MRI Service Engineer Positions**
  - Location: USA
  - Salary: Negotiable
  - Looking to hire MRI Engineers. Min. of 2 years experience, able to relocate in US
  - Please call for further information
  - Anwar Mithavayani, Reliant Medical
  - Phone: 954-632-1133

- **Laboratory Service Engineer Position**
  - Location: Michigan
  - Salary: Based on Education & experience
  - Generating customer orders and maintain service contracts on clinical laboratory, medical, and physical therapy equipment
  - Rob Rankin, Rankin Biomedical Corp.
  - Phone: 877-882-3679
ULTRASOUND EQUIPMENT

2 ACUSON 128 ULTRASOUND UNITS. FAIR CONDITION. ONE UNIT COMES WITH A STORZ MEDICAL CONTROL BOX & LITHOTRITRER PROBE ONE UNIT COMES WITH A C-3 PROBE (FAIR CONDITION) $700.00

RADIOLOGY EQUIPMENT

1993 GE MVP COMPAX Rad Room. Includes an Integrated Table/Tubstand, Wall Stand, A.E.C. and All Manuals. Tube replaced in November 2002. The last P.M. was performed in November 2006. The room was deinstalled in November 2006 and is currently crated and in storage. The room was installed by GE and was continuously serviced and maintained under service contract by GE. $3,100.00

TOSHIBA Portable X-Ray KCD-12MC Manufactured in 1989 Model KCD-12MC Input 1-Phase 50/60 Hz 300 VA 100/117/127V 220/240 $1,500.00

PICKER Explorer II Portable X-Ray. DOM:1990 Needs new battery. $1,250.00

SIEMENS Radifluoro Room Polydoris 805 2 separate Siemens Rooms deinstalled and crated together. Room 1: Radifluoro Room (1st three images) Model: Polydoris 805 2 Siemens Monitors Tube Info: .6-1.2 is approx 8 years old Room 2: Trauma X-Ray Room Model: Polydoris 805 DOM: 01/10/1991 Long time current 1.7A Tube Info: Opti 150/40/02C MN 8754715V2142 DOM 12/15/95 $5000.00

TWO (2) Bennett Contour Plus Mammo Units working condition Manufactured August 1997 Model DM-1500/Bennett Contour Plus Tube: Varian Insert Model M-146SP MAX KVP 35 In Film/OPMM AL AT 35 KVP Ins. Ser. 46372-U7 Focus 0.1x0.3 Housing Mod B-115/Housing Serial H43732/33 Micro 39 RPM 9800 RPM Aluminum Equip 0.0 $5,000.00

LORAD Mammo Unit Stereoguide Aug 1992 • DSM Upgrade 2001 Inventory Stereoguide Table Table Top with Cushion Generator Interconnect Cables DSM Workstation • DSM Cart with Power Supply • DSM Computer – Windows NT • 21” Monitor • Keyboard & Trac Ball • CCD Camera Footswitch Phillips BV 25 C-Arm with XTVS Camera, manufactured 1986 OEC 9000 mobile C-Arm not working 100%—may be a glitch in the motherboard. $250.00

Hologic QDR Fan Beam X-Ray Bone Densitmeter • Housing Mod B-115/Housing Serial H43732/33 Micro 39 RPM 9800 RPM Aluminum Equip 0.0 $5,000.00

MEDICAL/SURGICAL EQUIPMENT

EIGHT (8) Bird8400 STI Respirators with Flow Support Pressure Control. Model Number 15464 They are all attached to original carts. $8,500.00

RS Medical RS-4I Stimulator Manual and instructional video included. Molded carrying case included. Original owner used only 12 times. Cost $5,500 new in March 2005. Perfect working order. Re-chargeable battery included. Multi-phased system with gentle massage and deep tissue. Four leads extending from device and each lead hold two stimulus pads all included. $425.00

AIR SHIELDS Infant Incubator 2 C-100s & 1 C-300. Sold as parts. $1,100.00

PHILIPS 3 PCR AC500 - (aka Fuji CR-IR342) 5 PCR USIT - barcode reader, patient entry 2 EasyVision RAD ver 4.3 - post processing workstation $1,500.00

PICKER Computer System Voxel & workstation from PQ5000 $2500.00

Ohmeda Modulus II Plus Anesthesia Machine with 7810 Ventilator, Hewlett Packard 1046A Anesthesia Monitor, Tec 5 & Tec 4 Halothane & Isoflurane Vaporizers. Includes Pulse 3710 Oximeter & 2120 NIBP Modules, E-Vac bag $1500.00

NUCLEAR MEDICINE

Adac Cardio Epic Nuclear Camera, manufactured 1998. Generator/Model Number -2152-30011 Pegasys Work Station Dual Monitors Processing Terminal Adac Power Supply Collimator cart Standard table 4 Collimators: VXGP DET 2 DET 7 DET 3 & DET 1 LEHR 1 & LEHR 2 $800.00

MRI EQUIPMENT

GE Sigma 1.5T Horizon MRI, manufactured 1996 MRI IS WARM, SOLD AS PARTS Includes • Signa Table Model 46-26530001. Gaity Mtray 2118423-2 GE Power Control Panel Leybold Power Module CAT# 893 SHI-APD Cryogenics Chiller/2005 HC-10 Phantoms Gradiants are 8645 RF is an Ertec tube amplifier The system cabinet is early 5.x with separate receivers, exciters and coils $18000.00

1996 GE Contour Max .5T MRI mobile. Warm and not currently in use. Scanner housed in E&W coach. Coils included: Head T/L Quad Extremity Posterior Neck-Shoulder. $1500.00

MRI PARTS

APD MRI HC-84 Cryo Compressor Compatible with most Philips NT and Interra magnets not using an integrated coldhead. Used with a APD cold head APD part# 258531A2 we are including the cold head. Both replaced by Philips service in Oct. 2003, approximately 10,000 hrs before compressor service $2,500.

CARDIOLOGY EQUIPMENT

THREE (3) 2010 Medfusion Pumps and ONE (1) 2010 I Pump. No cords; pumps $800.

NINE (9) Baxter Flo-Gard 6301 Infusion Pumps $5,000.00

Physio-Control LifePak 6 defibrillator and leads. Unit works fine, although power swith is intermittent $175.

THREE (3) Hewlett Packard Codemaster Defibrillators. One complete; others no paddles or patient cables. $500.00

Datascope 98 Intra Aortic Balloon Pump. Cardio Sync 2 software featuring r-trac. Includes Datascope doppler and Datascope ecg cables. Manuals on disk in pdf format. Under service contract from Datascope. $4,500.00

Datascope 98 Intra Aortic Balloon Pump. 3 units. Cardio Sync 2 software featuring r-trac. Includes Datascope doppler and Datascope ecg cables. Manuals on disk in pdf format. Under service contract from Datascope. $4,000.00.

ONCOLOGY

Varian Clinac 2100/CD Linear Accelerator, manufactured in 1994. This accelerator is dual energy, 6 & 18 MV, 5-electron energies, 6, 9, 12, 15 & 18 MeV; Type III accessories (IMRT ready) Software version 6.2 Dual independent jaws Set of electron cones Set of wedges Portal Vision system Multileaf Collimator, 52 leaves. ExACT couch Multiple upgrades. Technical and operators manuals $3250.00

Vlix Star S2 Excimer Laser Manufactured January 1998 System Includes: Leica MSS Lenses Dexta Chair Model Number MK300098DXYZ Spectra Gas Purifier Model Number 3300 Micro Keratom System Sony Monitor $10,000.00

CT EQUIPMENT


GE High Speed Advantage CT Scanner Manufactured 1998 TUBE / MANUFACTURED 2006 Model 46-30930002 GE Patient Table, Model 2113755, Gaity Mtray 2119732-2, GE Console Model OCT 1, Power Unit Model 213533 $14,100.00

CT PARTS

MEDRAD Injector CT Envision EHJ 700 manufactured 1997 $1400.00
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