JUNE 2007

VisualTherapy backlit transparencies turn imaging suites into sweeter experiences

ALSO IN THIS ISSUE:

NUCLEAR MEDICINE
PORTABLE X-RAY

PET is Alive and Well
by Dr. Henry Wagner, Jr.

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On the Cover:
An installation in the ceiling of a PET/CT suite by the Art Research Institute. Facility is the Thompson Memorial Cancer Center, Knoxville, Tennessee.
Say “Cheese” — If you’ve gotten this far into this issue of DMBN, then no doubt you’ve seen the cover. I hope the headline “Smile” got your attention and made you smile.

Lord knows it’s pretty easy to find dark clouds hanging over the healthcare industry these days. What with reports of alleged kickbacks from Big Pharma to countless doctors to push their drugs; bill padding by all kinds of vendors and medical people alike, insurance fraud of every stripe; millions of Americans without any health insurance; Medicare reimbursement cuts for vital imaging services; seemingly endless reports of serious side affects from FDA-approved drugs; and on and on…:

But of course there is good news too. In this issue, in fact, our Industry Sector Report on Nuclear Medicine/Molecular Imaging talks about the great potential for discovering and defeating the fundamental mechanisms of cancer with advanced technologies like PET/CT and MR Spectroscopy.

So we thought this month we’d take a little walk on the sunny side of the street and try the “let’s lighten up” approach. That’s why the “feel good” story about visual therapy is on the cover — we think it's OK to feel good now and then.

We cover the upbeat with the downbeat news here in DOTmed Business News, so dig in and enjoy this month’s smorgasbord – and say “mozzarella.”

Robert Garment  
Editor-in-Chief  
DOTmed Business News
MEQL

Equipment We Are Looking To Buy

SPECIALS OF THE MONTH

Largest Inventory Carried on Infusion Pumps

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<td>$995.00</td>
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<tr>
<td>Kendall AV Impulse</td>
<td>$850.00</td>
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<tr>
<td>Abbott Plum XLD</td>
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Radiation From Imaging on the Rise

Medical imaging has transformed the practice of medicine as imaging studies increasingly replace more invasive, and often more costly, techniques for any number of indications. However, the amount of radiation the U.S. population receives from medical imaging has risen 750 percent in the last 25 years, according to the preliminary results of a report of the medical subgroup of the National Council on Radiation Protection and Measurement (NCRP).

Medical imaging may now be the largest source of radiation exposure in the United States, topping natural sources, said Fred A. Mettler Jr. M.D., of the New Mexico Federal Regional Medical Center. The collective annual dose of radiation from radiology and nuclear medicine is 930,000 person-Sv, he estimated, while the dose from natural background sources may be less than 900,000 person-Sv.

Also, the American College of Radiology (ACR) just released the ACR White Paper on Radiation Dose in Medicine, a far-reaching and extensive set of recommendations designed to counteract medical and societal trends that have contributed to any increased radiation dosage that Americans may experience as this beneficial technology advances.

The paper advocates 33 separate measures, including a plan to educate patients, doctors, and others in the principles of radiation safety and appropriate use of imaging, as well as a dose index registry, which is now in progress. The size of the increase in the collective annual dose was a surprise to many who attended the conference. The increase stems from the growth in the number of scans being done, and from larger doses delivered by new kinds of scans.

A large part of the problem may be the lack of knowledge on the part of patients and doctors, especially nonradiologists, about the potential dangers of radiation. Mettler noted that many emergency room physicians routinely order multiple scans on trauma patients without stopping to consider the amount of radiation that a patient may be exposed to. In order to alleviate this lack of knowledge regarding radiation safety, the ACR white paper advocates that nonradiologist providers receive more radiation physics training as part of their medical education.

$5 Billion Medical Center Envisioned for Amman, Jordan

According to a report in ArabianBusiness.com, Kuwaiti investors are looking to build a ‘medical city’ in Amman, Jordan, at a cost of between $3 billion and $5 billion. Their source was Jordan’s Petra news agency.

The investors proposed an application to the Jordanian government last week, offering a partnership deal with one of the kingdom’s largest financial institutions, Social Security Co-operation.

The project is set to include hospitals with the latest medical technology, as well as hotels and entertainment facilities.

According to Jordanian medical officials quoted in Jordan Times, the project will offer “a new type of service to the region including organ transplant, stem cell research and new methods in treating complicated diseases.”

The plan is being considered by Jordan’s government and is expected to be operational by 2012 if approved.

CDC Launches New Home Page and Other Web Site Improvements

The Centers for Disease Control and Prevention (CDC) unveiled a new look for the home page and major topic pages of its Web site. The changes are designed to make it easier for people to find health information and resources quickly. The CDC Web site address is www.cdc.gov.

The redesigned site has an improved layout, a more powerful search engine, and other features to help people locate needed health and science information more efficiently. The CDC Web site averages nine million visits a month, with an average of 37 million pages viewed monthly.

Not every page on the CDC Web site has been changed yet. Additional upgrades will be made in coming months.

The Jordanian flag — Amman is the capital of the kingdom.
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Decrease in Breast Cancer Rates Related to Reduction in Use of Hormone Replacement Therapy

The sharp decline in the rate of new breast cancer cases in 2003 may be related to a national decline in the use of hormone replacement therapy (HRT), according to a new report in the April 19, 2007, issue of the New England Journal of Medicine. The report used data from the Surveillance, Epidemiology and End Results (SEER) program of the National Cancer Institute (NCI), part of the National Institutes of Health.

Age-adjusted breast cancer incidence rates in women in the United States fell 6.7 percent in 2003. During this same period, prescriptions for HRT declined rapidly, following highly-publicized reports from the Women’s Health Initiative (WHI) study that showed an increased risk of breast cancer, heart disease, stroke, blood clots, and urinary incontinence among postmenopausal women who were using hormone replacement therapy that included both estrogen and progestin.

Understanding the effect of cessation of HRT may be complex. Effects may vary depending on the type of HRT used and other factors specific to how the hormones affect the body. From the data in this report, it seems that the decline in breast cancer incidence that is related to a nationwide decline in use of HRT may have run its course, and breast cancer incidence rates may stabilize or even begin to rise again. Researchers do not yet know if this reduction in HRT use will have a long-term effect on rates, or whether reduction in hormone levels simply slowed the growth of clinically detectable tumors, in which case as HRT use stabilizes, breast cancer incidence will begin to rise again.

CT Studies Provide Cost-Effective Colon Cancer Screenings

Should patients be put through invasive colonoscopies? CT imaging of the colon is more cost effective, according to a study in the journal Cancer. Colonoscopy requires the use of an endoscope, while CT imaging is non-invasive. The journal researchers did a cost analysis that associated each type of colon cancer screening test with the amount of life-years gained. CT was the least expensive, following by sigmoidoscopy, and colonoscopy. The authors also questioned the clinical value of removing polyps smaller than 6 mm. Removal can be accomplished with an endoscope, but obviously not with CT scanning.

HIMSS and Modern Healthcare Announce 2007 CEO IT Achievement Award Recipients

Healthcare Information and Management Systems Society and Modern Healthcare have announced the recipients of this year’s CEO IT Achievement Award.

This year’s honorees are:

- Alan Aviles, President & CEO, New York City Health & Hospitals Corporation
- John Ferguson, President & CEO, Hackensack University Medical Center
- Michael Murphy, President & CEO, Sharp HealthCare

“The three recipients of this year’s CEO IT Achievement Award have demonstrated the vital and integral role of health information technology in the strategy of improving healthcare delivery at their respective organizations,” said H. Stephen Lieber, HIMSS president/CEO. “HIMSS and our members congratulate these honorees for their leadership in moving ahead the nationwide adoption of health IT.”

The 2007 recipients will be honored at a breakfast presentation on Tuesday, June 26 at the HIMSS Summit07 in San Diego. Following the presentation, the recipients will serve as keynote panelists at the opening session and present their perspectives on health IT.

A panel of four healthcare execu-
tives selected this year’s recipients from a pool of 68 entrants. The panel included Sherry Browne, Sr. Vice President & Chief Information Officer, Ascension Health; Glenn D. Steele, Jr., M.D., Ph.D., President & Chief Executive Officer, Geisinger Health System; Ronald J. Strachan Vice President & CIO, HealthEast Care System; and Eric B. Yablonka, Vice President & CIO, University of Chicago Hospitals.

Imaging Techniques Reveal that HIV Infects Host Cells Using a Molecular Entry Claw

An advanced imaging technique known as electron tomography has allowed researchers at the National Cancer Institute (NCI), part of the National Institutes of Health (NIH), to visualize an "entry claw," a unique structure formed between the human immunodeficiency virus (HIV) that causes AIDS and the cell it infects. The findings are in the May 4, 2007, issue of PLoS Pathogens.

"Visualizing the molecular mechanisms by which HIV and related viruses enter their host cells can potentially lead to the identification of novel drugs," said NIH Director Elias A. Zerhouni, M.D.

Retroviruses such as HIV establish contact and enter their target cells via an interaction between proteins on the surface of the virus (called spikes) and specific host cell membrane receptors. Previous studies have suggested that several spikes and several cell receptors are involved in every virus infection event. The findings of the NCI research team, led by Sriram Subramaniam, Ph.D., Laboratory of Cell Biology at NCI's Center for Cancer Research, demonstrate that this is true, but in a surprising way. “This elegant research not only gives us insights into how HIV and related viruses interact with proteins on the surface of cells and then enter the host cells to integrate their DNA, it also gives us important clues as to how to design improved anti-HIV therapy,” said NCI Director John E. Niederhuber, M.D.

"Electron tomography and other new tools for imaging at the single-cell or subcellular level also have the potential to help us actually see the subcellular effects of many different diseases — including cancer — that we could only guess at previously."

“The discovery of the entry claw raises many fundamental questions about viral entry into host cells,” said Subramaniam. “What are its precise molecular components? How does the viral genetic core actually transfer to the host cell? What are the other intermediate steps of the entry claw formation and can they be visualized? As we continue to improve the technology, we believe we will answer these and other related questions.”

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Carestream Health Begins Worldwide Operations

Onex’s acquisition of Kodak’s Health Group closed on schedule, and the new entity, Carestream Health, Inc., recently began operating as an independent company with more than 8,100 employees serving tens of thousands of customers in 150 countries around the world.

With nearly $2.5 billion in annual sales, Carestream Health is one of the world’s leading health imaging and IT solutions companies, offering a comprehensive suite of traditional and digital solutions to medical, dental, molecular imaging systems and non-destructive testing customers.

“We couldn’t be more excited,” said Kevin Hobert, Chief Executive Officer of Carestream Health. “We now have an incredible opportunity to build on our history of innovation and to invest in our future and grow our business.”

Carestream Health will continue to use the Kodak brand with its products. It now owns all former Health Group sub-brands such as Carestream, DirectView, Softdent, Industrax, X-Sight and PracticeWorks to name a few.

MRI-Safe Motor for Robotic Biopsies

Engineers at the Johns Hopkins Urology Robotics Lab have invented a motor without metal or electricity that can safely power remote-controlled robotic medical devices used for cancer biopsies and therapies guided by magnetic resonance imaging. The motor that drives the devices can be so precisely controlled by computer that movements are steadier and more precise than a human hand.

“Lots of biopsies on organs such as the prostate are currently performed blind because the tumors are typically invisible to the imaging tools commonly used,” says Dan Stoianovici, PhD, associate professor of urology at Johns Hopkins and director of the robotics lab. “Our new MRI-safe motor and robot can target the tumors. This should increase accuracy in locating and collecting tissue samples, reduce diagnostic errors and also improve therapy.”

The new motor, dubbed PneuStep, is made entirely out of plastics, ceramics and rubber, and driven by light and air. It consists of three pistons connected to a series of gears. The gears are turned by air flow, which is in turn controlled by a computer located in a room adjacent to the MRI machine.

Free Online Hospital Mapping Service

American Hospital Directory has enhanced its free online healthcare information service to provide mapping of hospital locations in the United States. Its site, www.ahd.com, now maps all of the hospitals in a geographic area, a unique feature designed to assist consumers, hospital analysts and others in the healthcare industry. The service pinpoints all hospital locations according to user-selected criteria such as ZIP code, city or state. Links from maps also provide access to comprehensive profiles of each hospital.

Each hospital link can be clicked to display information such as key operating statistics, financial data and utilization statistics. American Hospital Directory maintains an up-to-date database with the operating details of more than 6,000 U.S. hospitals. The company uses public and private sources, including Medicare claims data and hospital cost reports, to provide information on a hospital’s clinical services, financial data, average costs and general characteristics.

RFID at Emory Healthcare, Lahey Clinic

Emory Healthcare, Georgia’s largest and most comprehensive healthcare system, has selected IntelliMotion, GE’s active Radio Frequency Identification (RFID) solution. According to Emory Healthcare, GE was selected because of its adherence to U.S. and international standards. Emory will initially install tracking tags in all infusion pumps throughout the hospital to increase utilization and reduce staff time spent locating the equipment.

Emory currently rents additional pumps to meet any fluctuating demand. “Our goal is to have a system that more efficiently tracks infusion pumps and identify the quantity and location of each unit to determine utilization,” said Arnold Barros, director, anesthesia services. “We also seek to reduce pump rentals to zero while decreasing pump delivery times from a current high of 30 minutes or longer down to ten.”

The Lahey Clinic in Massachusetts is also using IntelliMotion to track more than 3,500 pieces of movable equipment between its two main campuses.

Medicare Updates Regs for Ventricular Assist Devices

The Centers for Medicare & Medicaid Services (CMS) has announced that additional hospitals may become Medicare approved for ventricular assist device (VAD) implantations.
The Agency is updating the requirements for VAD Destination Therapy facilities to include facilities that:

1. have a surgeon on their team with the experience of implanting at least 10 VADs or artificial hearts during the preceding 36 months;

2. submit data to the federally supported Interagency Registry for Mechanically Assisted Circulatory Support (INTERMACS); and

3. are certified by the Joint Commission on Accreditation of Healthcare Organizations through its newly established Disease-Specific Certification Program for VADs.

“This decision will improve access to this life-sustaining technology,” said acting CMS administrator Leslie V. Norwalk, Esq., “and with Joint Commission certification we will ensure that patients receive care in experienced facilities.”

FDA Clears GE’s Volume PET/CT for Oncology

GE Healthcare has received clearance from the Food and Drug Administration (FDA) for the company’s next-generation volume PET/CT application to help clinicians diagnose, stage, treat and monitor tumors and other lesions in the body. The new software application is PET VCAR (Volume Computer-Assisted Reading).

“PET VCAR offers a new dimension in quantitation for tumor response management,” said Dr. Seza Gulec, nuclear oncologist, Goshen Cancer Center in Goshen, Indiana.

The FDA clearance includes a GE-patented Interactive Data Analysis (IDA) tool, which allows physicians to systematically track treatment over time and quantitatively interpret a patient’s response to therapy. The new IDA capability facilitates informed, objective treatment decision-making by automating several previously manual processes and presenting data in an organized, user-configurable format.

Premier Picks Siemens for Urinalysis Solutions

Siemens Medical Solutions Diagnostics has been selected by Premier Inc., the nation’s largest Group Purchasing Organization (GPO), to provide a complete line of immunoassay, chemistry, automation and urinalysis solutions. The agreement is part of Premier’s recently issued “Core Lab” segment, which sought solution providers in six separate bid categories. Siemens has been selected to provide the Integrated and Urinalysis solutions.

Hospitals in Premier's alliance will utilize the full line of ADVIA® Chemistry Systems.

“Siemens' ability to provide innovative and effective solutions to meet the needs of our members was key in the selection process,” said Barbara Maillet, senior director of laboratory services, Premier Inc. “These technologies will enable our hospitals to satisfy the growing demands in their laboratories.”

CT Imaging May Predict Heart Attack

A new imaging technology may hold the key to not only stopping heart attacks in their tracks but also preventing them. For the first time, researchers at Mount Sinai School of Medicine have shown how the use of multi-detector computed tomography (CT) imaging, along with a novel contrast agent known as N1177, can detect dangerous, high-risk plaque which cause heart attack and stroke. The findings may help physicians diagnose a heart attack before the attack occurs.

High-risk plaque is characterized by their cellular and biologic structure. High-risk plaque rich in macrophages or cells can rupture, eventually causing a heart attack or stroke. Early identification of high-risk plaque in coronary arteries may be useful to prevent cardiac events. But one major hurdle in detecting high-risk plaque is the lack of an imaging modality that allows physicians to see the composition of dangerous plaque, explains study author Zahi A. Fayad, PhD, FAHA, FACC, professor of radiology and medicine (cardiology) and director of the Translational and Molecular Imaging Institute at Mount Sinai School of Medicine. “Coronary CT imaging has advanced the diagnosis and prognosis of heart disease,” says Dr. Fayad. “But, what if we had the opportunity to prevent a heart attack from happening? This modality may allow us to do just that.”
Inexpensive Access to 3-D Ultrasound

3-D images of the inside of the body are in great demand for diagnostic purposes. But the equipment required to produce them is extremely expensive.

Thanks to a new development, conventional 2-D ultrasound scanners can now be inexpensively upgraded to provide 3-D images.

Almost every doctor’s surgery has an ultrasound scanner. Medical ultrasonography allows us to see an unborn child in its mother’s womb and helps to detect gall stones or identify tumor-like lumps. It plays a particularly important role in the early detection of breast cancer.

Three-dimensional sonography can provide especially informative images, for instance allowing the structure of tumors, their growth pattern and their blood supply to be clearly distinguished from healthy tissue. Although 3-D technology has been available since the 1990s, it remains prohibitively expensive. Physicians and clinics wishing to upgrade from 2-D to 3-D technology usually have to invest around 50,000 euros in new equipment.

In collaboration with the software company MedCom, researchers from the Fraunhofer Technology Development Group TEG and the Fraunhofer Institute for Biomedical Engineering IBMT have succeeded in producing a considerably less expensive solution for physicians: The scientists have developed a system that enables conventional 2-D ultrasound scanners to be upgraded to provide 3-D images for as little as 400 euros. The question is, how? “We fit the ultrasound transducers with inertial sensors that can determine the exact position and orientation of the probe,” explains Dr. Urs Schneider, project manager at the TEG. “Specially developed algorithms then allow us to reconstruct a three-dimensional image from the data thus obtained.”

The inertial sensors are small, inexpensive semiconductor components that are sensitive to movement in any direction. Such sensors are normally very imprecise, especially when determining equatorial coordinates. However, the special algorithms developed by the TEG engineers enable the exact calculation of spatial coordinates. The margin of error of the sensors could therefore be reduced from around 10 degrees to less than one degree. For the first time, a highly accurate, low-cost navigation system is available that can easily be integrated into existing ultrasound scanners.

Disposable Insulin Nanopump from Debiotech and STMicroelectronics Marks Major Breakthrough in Diabetes Treatment

Lausanne and Geneva — Debiotech and STMicroelectronics have announced a strategic cooperation agreement aimed at manufacturing and delivering to the market a unique miniaturized insulin-delivery pump. The Nanopump, which relies on microfluidic MEMS (Micro-Electro-Mechanical System) technology, is a breakthrough concept that allows a tiny pump to be mounted on a disposable skin patch to provide continuous insulin infusion. The Nanopump will enable substantial advancements in the availability, treatment efficiency and the quality of life of diabetes patients. The original technology was awarded the Swiss Technology Award in 2006, and this agreement brings it closer to the market.

Insulin pump therapy, or Continuous Subcutaneous Insulin Infusion (CSII), is an increasingly attractive alternative to individual insulin injections that must be administered several times a day. With CSII, the patient is connected to a programmable pump attached to a storage reservoir, from which insulin is infused into the tissue under the skin. Continuous delivery throughout the day, more closely mimics the natural secretion of insulin from the pancreas.

The highly miniaturized disposable insulin pump combines Debiotech’s expertise in insulin delivery with ST’s strengths in manufacturing high-volume silicon-based microfluidic devices. Microfluidic technology allows the flow of very small amounts of fluids to be electronically controlled. This pump represents a significant step in the development and adoption of CSII therapy and the leading-edge technology will also find applications in many other biomedical applications.

Today, existing insulin pumps are about the size of a pager. The new ST-enabled Debiotech miniaturized MEMS device is about one quarter the size of these existing pumps and can be worn as a nearly invisible patch on the skin. The small size frees the patient from concerns with holding the pump in place and concealing it under clothing.
Needle-free device measures blood sugar

Hong Kong scientists have invented a device to help diabetics measure their blood sugar painlessly for the first time — without pricking their fingers.

The size of a mobile phone, the instrument emits a weaker form of infrared, or near-infrared, which penetrates the skin on the finger and homes in on the bloodstream.

Out of the many components in the blood, the beam is able to identify bits of glucose through the frequency, or wavelengths, they transmit and the amount of blood sugar present would be displayed on the instrument in 10 seconds.

A team of 28 experts — nurses, doctors, engineers, computer experts as well as a mathematician from Australia — toiled for four years and came up with a device which is at least 85 percent accurate after five clinical trials.

It won a gold medal at the Geneva Invention Expo in April and will be commercially available in about a year.

[DM 3871]
Children’s Hospital of Omaha discovers DOTmed is where the buyers are

Robert Foster, PACS Coordinator for Children’s Hospital of Omaha, Nebraska, was referred to DOTmed.com by his boss, Bill Lammers, Administrative Radiology Manager.

The hospital recently went digital, so Robert had a Philips PCR AC500 lot that included three PCR AC500s – (aka Fuji CR-IR342), 5 PCR USIT barcode readers, 2 EasyVision RAD ver 4.3 post processing workstations. An offer for the entire lot was made at $10,000, but the buyer backed out at the last minute and the deal fell through.

Mr. Foster turned to DOTmed for help selling the equipment. We did what we do best: we ran a DOTmed-Managed Auction for Children’s Hospital and turned their Old into Gold.

We helped Mr. Foster set up the auction, and we recommended a “Purchase It Now” price of $15,000, because from our experience, we felt that was a fair market value price. Within a week of posting the equipment online, a radiologist from Puerto Rico jumped at the chance to buy this CR lot.

We contacted the radiologist to make sure he was a serious buyer. We had him wire $15,000 to DOTmed, and after deducting our standard commission, we sent Children’s Hospital a check for $12,000. Mr. Foster was highly satisfied with the way DOTmed handled this transaction, and that extra $2,000 on the books was a very pleasant bonus.

Mr. Foster was so happy that he decided to auction off three Kodak 8700 Dry View Laser Printers as well. This auction closed in with a last-minute bidding war, and the final price was $6,300 – another great DOTmed online auction transaction for Children’s Hospital.

London Regional Cancer Center Gets Almost 4 Times More Than They Expected for Their Picker PQ5000 – And Not A Scratch On Their Italian Marble Floors!

London Regional Cancer Center, in London, Ontario, was upgrading their CT equipment and had a Picker PQ5000 Scanner coming out of service.

The best offer they received from local buyers was $4,000. A DOTmed Regional Manager got wind of the Picker system and convinced London Regional it was worth quite a bit more. The only way to prove this was to auction it online on DOTmed.

We helped them set up a DOTmed-Managed Auction and, as always, we acted as a buffer between the seller and the bidders. We ran the auction for two weeks, it sold to a DOTmed.com user in Brazil who runs a 100-bed Oncology Center – one of the leading treatment centers in Brazil’s more remote interior. The winning bid was for $15,000, which resulted in an additional $8,000 more for London Regional.

But that’s not the end of the story. The deinstallation was a little tricky, as well. The lobby of the center was Italian marble, and DOTmed had to make sure the deinstaller protected the floor, which they did.

The CT also had to be deinstalled on a weekend. And it had to be removed and the site totally cleaned up by 9 a.m. on a Saturday morning, when the London Regional normally opens up to accept patients. DOTmed made sure that happened, too, so it was a happy ending all around.
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In a recent article on DOTmed.com entitled “Is There Life After PET?” Wayne Webster, founder of ProActics Consulting, wrote that “PET is nearing the end of its life cycle and will be replaced for most if not all of its clinical uses within the next few years.” PET was a research device until 1999, because there was no reimbursement by Medicare or any other payer worldwide. The short half-lives of $^{11}$C, $^{18}$F, and other PET nuclides did not fit the well-established nuclear medicine business model. The chief obstacle then and now is obtaining approval of PET radiopharmaceuticals from the Food and Drug Administration (FDA) and Medicare. To get PET procedures reimbursed by Medicare, it is necessary to get FDA approval.

The approval of $^{18}$F-FDG by the FDA was a major breakthrough to the rapid incorporation of PET into nuclear medicine practice, particularly in oncology. In the 1991 Journal of Nuclear Medicine, I wrote “Clinical PET: Its Time Has Come.” The high rate of reimbursement led to profitable operations. Nuclear pharmacies were able to transport $^{18}$F-FDG by automobile to nearby hospitals.

Webster points out that “taking the path of FDA approval for 18FDG set a precedent for the future approval of all PET radiopharmaceuticals. From this point forward new PET radiopharmaceuticals would have to go through the FDA process.”

I believe that we should continue to develop the local production and approval of PET radiopharmaceuticals within hospitals when the radiopharmaceuticals will be given to patients in millimolar doses to provide diagnostic information, not to achieve a therapeutic effect. Over the decades before the 1970s, radiopharmaceuticals were exempted from FDA approval. I know of no untoward side effects ever reported from their administration over this long period. Local regulation within hospitals is feasible, operating under guidelines approved by the FDA.

In his clear presentation of the problems of PET, Webster does not refer to the regulation by the more than 100 Radioactive Drug Research Committees at institutions, chiefly universities or pharmaceutical company research laboratories. In 2003, there were 284 research studies in the United States involving 2,797 human subjects and more than 120 different radioactive molecules. What we need to do now is simplify toxicity studies, as is possible because the PET tracers can label natural body constituents and are administered to patients in micromolar or millimolar quantities, far less than one hundredth of the toxic dose. PET and SPECT tracer studies are particularly helpful in providing surrogate markers for assessing the value of new, stable drugs in the treatment of specific disease states. Surrogate markers can greatly reduce the cost of drug design and development. At present, approval of nonradioactive drugs by the FDA requires clinical trials that show a statistically significant effect on mortality. This requirement requires long-term studies and results in enormous costs.

To date, the greatest contribution of molecular imaging is in the faster and cheaper design and discovery of new, effective, stable drugs. Diagnostic radiotracer studies are used initially to characterize the patient (“make the diagnosis”) in order to provide homogeneous groups of patients for clinical trials. Treatment will at times be the subsequent administration of larger doses of the same radioactive drug. Pre-targeting with nonradioactive molecules given before the diagnostic tracer dose can provide an important way to increase the accumulation of the subsequently administered therapeutic drug. In such cases, the FDA regulations require approval of the pretargeting dose and of the subsequent radioactive tracer drug. Assessing the effects of drugs on the brain will continue to increase the numbers of PET studies in drug design and development. One third of all prescription drugs in the United States are given to affect mental activity. People have taken drugs that affect mental activity since prehistoric times, most often alcohol and opiates.

With Webster, I have long advocated the continual advancement of
SPECT/CT, and I believe it will continue to grow alongside PET/CT. But $^{11}$C and $^{18}$F tracers are better suited than SPECT tracers for revealing regional biochemistry. For example, despite great efforts, no one has yet been able to develop a $^{99m}$Tc tracer that will reveal glucose utilization. One leading candidate, $^{99m}$Tc-glucosamine, was found to behave in a manner similar to labeled thymidine tracers rather than glucose. I do not believe that PET/CT will be replaced with another modality. It will continue to grow, as will SPECT/CT and other partners in molecular imaging.

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About the Author
Dr. Henry Wagner, Jr. is an international authority on nuclear medicine.

Dr. Wagner is currently Professor of Environmental Health Sciences at the Johns Hopkins Bloomberg School of Public Health. He is also Professor Emeritus of Radiology and Medicine at Johns Hopkins. His pioneering work in imaging brain neuroreceptors paved the way for groundbreaking research in addiction and drug design, and increased understanding of the physiology and pathophysiology of the brain. During his 6 decade association with Johns Hopkins, he has trained more than 500 radiologists. In 1993, Dr. Wagner was awarded the First Annual Society of Nuclear Medicine President's Award for Outstanding Contributions to Nuclear Medicine. A member of the Institute of Medicine of the National Academy of Sciences, he is an honorary member of both the British Institute of Radiology and the Radiological Society of North America.
Not quite the “HIT” it was hoped to be – yet

By Michael Borden

It was touted as the solution to everything. Healthcare quality would soar. Medical errors would be a thing of the past. Administrative inefficiencies? Forget about them – Health Information Technology was on the case. A new day was dawning in medicine. Everything was going to be perfect. Sound familiar?
Too bad it hasn’t worked out that way. The U.S. Department of Health & Human Service’s rosy prediction that interoperable health IT would facilitate the early detection of infectious diseases, improve the tracking of chronic disease management, prevent clinical mistakes and expand access to affordable healthcare has yet to be borne out in any meaningful way.

So, what happened? Why does the US lag behind most industrialized countries in the use of health IT? What accounts for the Robert Wood Johnson Foundation’s estimate that fewer than one in ten U.S. doctors make full use of EHR (Electronic Health Records) and The Department of Health and Human Service’s findings that only 13 percent of U.S. hospitals take advantage of electronic record keeping?

“There’s a lack of leadership in the [United States EHR] field,” explains Dr. Jason Lee, Vice President of the New England Healthcare Initiative. “Stakeholders are just not convinced of the benefits.” One New York-based hospital administrator puts it more succinctly: “physicians don’t want to type.”

There are plenty of other barriers to Computerized Physician Order Entry (CPOE), a procedure estimated to cut the incidence of serious medication errors by as much as 55%. EHR start-up costs can run as high as $10 million and require on-going administrative costs of hundreds of thousands of dollars a year. Most physicians, according to The Commonwealth Fund, a private foundation oriented towards improved performance in the U.S. healthcare system, still believe that CPOE creates more work and that traditional paper-based ordering is faster. Many hospitals, fearful of “physician rebellion” have simply scrapped their IT implementation plans entirely.

Then, of course, there’s the issue of the vendors.

Why Can’t They All Just Get Along?
The most common criticism, by far, comes from hospitals frustrated at the lack of interoperability between different IT platforms and products. “Our CPOE systems need to interface with the rest of our already existing IT systems,” noted Charles Bogle, COO, Downing Hospital.

“That means we’re forced to purchase CPOE from our primary vendors, even if their products don’t meet our needs. The other option, rebuilding our entire IT infrastructure to accommodate new CPOE vendors is cost-prohibitive. It would be nice if everybody could just get along.” He, and others, look forward to the adoption of uniform CPOE standards enabling hospitals to build their systems over time without having to worry that the products and systems they were investing heavily in might soon become obsolete. Many hope the government will come to the rescue by establishing cross-platform standards for the health industry. Most aren’t holding their breaths. George W. Bush has called on U.S. healthcare institutions to voluntarily form a national health information network by 2014 – a goal that most experts consider wildly unrealistic without significant government intervention.

Is such intervention in the cards? Perhaps. In 2005, a federal advisory board was chartered to offer advice and recommendations to the Department of Health and Human Services on how to accelerate the development and adoption of health information technology. The AHIC (American Health Information Community) has already identified four areas – Consumer Empowerment, Chronic Care,
Biosurveillance, and EHR as “potential breakthroughs...where using health IT produces a tangible and specific value...that can be realized within a 2-3 year period.” It’s hard to expect any real degree of clarity, however, from an agency whose own website, www.hhs.gov – in a classic piece of bureau-babble – calls for the “evaluation of healthcare based on value enabled by the collection of de-identified price and quality information that can be compared.”

Moreover, government action, or the fear of it, already rates as one of the main reasons many physicians and hospitals are reluctant to adopt HIT. The Health Insurance Portability and Accountability Act (HIPPA) of 1996, the Stark Physician Self-Referral Regulation and the Anti-Kickback Safe Harbors for E-Prescribing and EHRs, are just a few of the government initiatives that conjure fear among physicians that EHR is a sure road to government infringement upon patient privacy. As a result, says Jeff Fusile, who heads Price Waterhouse Cooper’s HIPPA practice, “many doctors have erred on the side of sharing nothing.”

What’s A Smart Hospital Supposed To Do?
The first step, according to Margaret Amatayakul of the Margret-A Consulting Group, is to decide how health IT fits into the hospital’s strategic mission before researching the EHR market. “[Hospitals] need to decide if they just want to be able to download documents, access data remotely or wish to retrieve discrete data.” Translation: a little forethought before jumping in can save a lot of headaches and an awful lot of money.

Amatayakul strongly recommends getting physicians involved in the IT implementation process as early as possible. Common sense also dictates that identifying physicians who will champion CPOE and involving younger, more computer-savvy physicians will go a long way toward overcoming “physician resistance” to HIT implementation.

By far, though, the most practical advice is ‘manage your vendor.’ “Small hospitals can really benefit from a partnership with a single, full-service vendor,” says Jim Pesce, Senior Vice President and General Manager, McKesson Corp. “If they enter into a true partnership the hospital can get a tremendous amount of expertise...to help with...strategic planning.” Smaller practices, he recommends, should consider an Application Service Provider (ASP) or an on-demand serv-
ICE which allows IT spending to take place incrementally as opposed to all at once. Physicians can contract with an ASP on a monthly basis for as little as $400 per month. The trick, however, is to remember that your “Vendor Partner” has his own agenda. Don’t end up creating a system that requires dozens of full-time vendor consultants to keep it up and running. It’s your responsibility to negotiate intelligently with vendors to protect yourself against open-ended projects and cost overruns.

Mark Anderson, CEO of The AC group also suggests you make sure to thoroughly research how your vendor plans to support his product in the event of big things like natural disasters and small things such as daylight savings time. “If your vendor doesn’t provide local support – 100 miles of the central office – find out exactly how they propose to look after you.”

Another crucial piece of advice: never, ever, outsource your CIO. Outsourcing has become quite the fad recently. Your CIO is a crucial link in providing quality service and efficient operation. He or she belongs on your staff. Period.

HIT Trends We’re Expecting To See Through ’07 and Beyond

The move toward “best of breed applications,” (individual apps by different vendors considered to offer the best functional depth for a single area) has slowed considerably. Hospital CIOs are gravitating again toward ‘best of cluster’ or ‘single vendor solutions,’ explains Vince Ciotti, President of HIS Professionals, LLC. “The move has been prompted, in part, by the realization that it takes talent and money to keep different applications connected and communicating every time one piece of the portfolio is updated.” Best of breed, in short, isn’t necessarily best for maximum operability.

Another trend: fewer complete vendor swap-outs as IT providers get more aggressive in their pricing to maintain existing market share. Look for more application selection projects instead of total system replacement projects in 2007.

Client server systems are also exploding in number. “It’s common to see between 100 and 200 client server applications side by side with a hospital’s core IT system,” says Ciotti. “Some sites centralize them in the main computer room so they can be carefully managed. Other sites have them scattered throughout the enterprise usually in the department they serve. It takes about 150% of the IT human resources to support a client server system versus the traditional mid-size system. Client server systems will continue to have an impact on older legacy systems because users want the look of MAC or Windows for the workstation desktop.”

For ’07 and beyond the hottest apps will probably be PACS applications, Emergency Department apps and clinical, administrative and financial data repositories. “Senior management is very aware that comprehensive decision support is driven by solid, available clinical, administrative and financial data,” explains Bill Bogutski, also of HIS Professionals, LLC. “Apps that perform well in these areas will continue to grow in fits and starts. The fantasy of a nationwide, integrated, smooth-running HIT system is just that, a fantasy. Hospitals and vendors alike will simply need to learn how to dance together better as HIT continues to evolve.

For the time being, however, one thing remains clear. Health IT isn’t going away. It’s here to stay, and it will continue to grow in fits and starts. The fantasy of a nationwide, integrated, smooth-running HIT system is just that, a fantasy. Hospitals and vendors alike will simply need to learn how to dance together better as HIT continues to evolve.

To be sure, privacy is also on the docket this year as a hot-button topic for health IT. The United States Government Accountability Office says that the Department of Health and Human Services lacks a clear plan to protect patient privacy in the face of increasing HIT expansion. Basic privacy principles have yet to be established. This is a topic that’s not going away. Privacy advocates – including physicians themselves – will play a larger and larger role in the eventual acceptance of CPOE and other areas of health IT.

Issues such as standards, compatibility, security, and privacy will continue to be addressed this year as health IT moves out of its infancy and begins to mature.

“We’ve come a long way since 2000,” says Ciotti. “The pace of change is accelerating quickly. IT departments that once worked overtime getting ready for Y2K and HIPPA are now dealing with the explosion of client server based systems and the replacement of aging legacy applications.”

How well they do – and what’s next – remains to be seen. For the time being, however, one thing remains clear. Health IT isn’t going away. It’s here to stay, and it will continue to grow in fits and starts. The fantasy of a nationwide, integrated, smooth-running HIT system is just that, a fantasy. Hospitals and vendors alike will simply need to learn how to dance together better as HIT continues to evolve.

[DM 3895]
Nuclear Medicine
(the workhorse of Molecular Imaging)
And companies that provide sales and service
By Robert Garment

Nuclear Medicine – now in its second century
Some people say you can trace the beginnings of nuclear medicine – the very first “head waters,” if you will – back to 1896, when Frenchman Henri Becquerel discovered mysterious “rays” coming from uranium. In the following year, Madame Curie coined the term “radioactivity” to describe those rays, and ever since then, radioactive elements and isotopes have been a subject of intense study by both the scientific and medical communities.

Diagnostic and therapeutic applications
A broad variety of experiments were conducted throughout the first half of the 20th century as newly discovered radioactive isotopes were developed. One of the earliest breakthroughs in therapeutic nuclear medicine occurred in the mid-1940s, when radioactive iodine was first used to treat thyroid cancer. The thyroid gland absorbed the radioactive iodine and the radiation killed the cancer cells.

But it wasn’t until the development of the “scintillation” camera, or gamma camera, by Hal Anger in 1958, that the use of nuclear medicine as a diagnostic tool became widespread. The crystal material that is in the camera is excited, or scintillates, when struck by gamma photons emitted from within the body by a radioactive isotope. These photons create a diagnostic map of the area of interest.

Examining function over form
Depending on the test and the radiopharmaceutical being used, diagnostic nuclear medicine produces images of anatomy and biological function, as opposed to most imaging modalities, such as X-ray, MRI and CT, which are primarily used to image structure.

In a nuclear medicine test, small amounts of a radiotracer are tagged to a substance that has an affinity for the organ being studied. The combination of the tag and the pharmaceutical is called a radiopharmaceutical. These are administered either by injection or inhalation.

Nuclear medicine is particularly useful in studying metabolically active abnormalities, because these abnormalities will absorb greater amounts of a radiopharmaceutical than the surrounding normal tissue, and when imaged, will appear as “hot spots.” Agents developed for use with radiotracers can be tagged with different radioactive compounds depending upon the chemistry. For example, Tc-99m is used for imaging bone, heart, brain and other organs when combined with the relevant agent.

In the 1980 with the introduction of Positron Emission Tomograph, or PET imaging (another type of nuclear medicine), deoxyglucose tagged with radioactive Fluorine-18 was developed. This radiopharmaceutical, commonly called FDG, when used with a PET can identify the location of cancer cells often before they are visible using traditional anatomical imaging modalities like MRI or CT.

The three main modalities – Planar, SPECT and PET
The first gamma cameras produced planar, or 2 dimensional images. This type of camera was the state-of-the-art for many years, and thousands are still in use today. In 1976, when computing processing power had developed sufficiently, it became possible to combine gamma camera images from different angles into a 3D image – very much in the same way that a CT scanner combines multiple X-ray slices. This new technology was called SPECT – for Single Photon Emission Computed Tomography.

In 1983, Dr. Henry Wagner Jr., a pioneer in the field of nuclear medicine, generated the first successful PET–Positron Emission Tomography – image of a neuropeptide. The radiotracer used for PET imaging emits positrons (which are anti-electrons).
Almost instantly after being generated, the positrons collide with nearby electrons, annihilating both particles. From this event two high-energy photons fly out at 180° in opposite directions. Because PET emits two photons, as opposed to SPECT’s single photon, more data is collected. With the higher energy of Positron emitters (511 keV vs., ~100 keV for SPECT) combined with shorter half life, more radioactivity can be administered to the patient resulting in much better counting statistics. Despite advances in other imaging methods such as CT and MRI, the ability to image the metabolic abnormalities associated with disease has made PET one of the most significant diagnostic tools ever developed.

**The merging of form and function**

SPECT and PET cameras have been combined with CT machines to create SPECT/CT and PET/CT systems – for obvious reasons. These imaging systems can overlay a nuclear image (function) with a CT X-ray image (structure), to give radiologists and oncologists the most diagnostically useful image possible.

The radiotracers used in SPECT and SPECT/CT examinations decay more slowly, which means less radioactivity can be administered to the patient. With less radioactivity it can take more time to acquire a SPECT image than PET. SPECT systems, however, have the advantage of a lower capital cost. While the “buzz” in nuclear medicine is all about the potential for PET/CT, SPECT/CT systems will always have applications for which they are best suited diagnostically and economically.

**Medicare reimbursement approval lights a fire under PET**

Recognition for the potential for PET as a diagnostic tool was high from its inception, however, its use as a mainstream diagnostic tool was severely limited due to the lack of government reimbursement for the procedure. Then in 1999, Medicare began approving PET for diagnostic applications and the acceptance of PET grew dramatically. By the early 2000s, sales of PET systems to hospitals and imaging centers soared. Then things changed rapidly – some say for the better, some say...
they’re not so sure, some say the jury is still deliberating.

What changed was the introduction of the hybrid PET/CT, followed by the “enactment” of the Deficit Reduction Act (DRA) of 2005.

**PET/CTs – quality images, at a price**

Before the hybrid PET/CT was introduced, fusing the dedicated PET and CT images was done with a separate fusion workstation. Then the OEMs began to introduce hybrid PET/CT with fusion software, although the PET and CT scans were still accomplished separately, each resided in a separate gantry.

Siemens and GE had PET/CTs on the market in 2001, and Philips followed soon after. By 2004, the majority of the existing PET installations were dedicated PET. However, the majority of the new purchases were PET/CTs. Stand-alone PETs became “yesterday’s” technology in the minds of many – even though in 2004 a new PET/CT cost over $2 million.

Wayne Webster of Proactics Consulting, Melrose, MA, a consultant to the nuclear medicine industry, and other experts we talked to believe the OEMs were the driving force behind the rush to make PET/CT. With both technologies, PET and CT, residing separately in one gantry, the end users believed the OEM’s marketing strategy based on claims of accuracy and throughput. The benefit appears to be more than clinical. By combining the two imaging technologies and eliminating the sale of dedicated PET scanners the OEM’s could sell more CTs by taking advantage of the growing interest in clinical PET.

Until recently, the CT scanner was a commodity and there was significant competitive pressure which lowered price. Placing the CT into a PET/CT hybrid expanded the market base and eliminated the market pressures on common CTs.

Among the big three in PET, GE and Siemens have moved away from pure PET systems in a big way and have phased out the production of dedicated PET scanners. Philips still markets a stand-alone PET. A smaller player, Hitachi, also offers a dedicated PET scanner today.

But the “image envy” that PET/CT engenders makes pure PET systems a hard sell.

**The PET plus CT vs. PET/CT controversy**

While the diagnostic value of the composite image a hybrid PET/CT machine creates cannot be denied, some wonder if the medical community should walk away so quickly from the more cost-effective ‘fused’ images that can be made by using the imaging devices separately: a CT-only and PET-only machine. The DRA as implemented in 2007, has decreased PET & PET/CT reimbursement for the freestanding center by 50-70% over the 2006 rates. These cuts have added their own facet to this debate.

The high capital cost of PET/CT machines means a high volume of patient thru-put on a regular basis is needed to operate at a profit. In areas of low-density population, breaking even becomes problematic. In populated areas with a concentration of PET/CT machines, competition for patients becomes an issue.

Hybrid PET/CTs do have unique advantages. It takes less time to acquire the image in one pass; and one pass is also more convenient for the patient. Having a PET/CT is also a good marketing tool for a hospital’s image. Being able to claim “we have the latest in advanced diagnostic imaging,” can bring more business to your door.

Then there are people who believe the image quality from a single hybrid machine cannot be matched by combining two stand-alone scans – and on the other side there are those who believe very little is lost with the latter method.

With estimates that over half of America’s hospitals are operating at a deficit – not to mention the financial challenges at healthcare facilities around the world – the ability to add a used, low-cost, dedicated PET machine with an existing CT, or visa versa, makes good economic sense to many people.
The “nuclear” aspect of nuclear medicine

Because nuclear medicine studies require radioactive substances, the short half-life of those radiotracers is a major issue – particularly with PET. The half-life of a substance is the time it takes for it to lose one-half of its radioactivity. The radiotracers used in PET procedures have half-lives from just minutes to a just under 2 hours. (SPECT radiotracers have half-lives ranging from 6-73 hours and are much less of a problem.)

The SPECT radiotracers are produced in large volumes and distributed from just a few centralized pharmaceutical manufacturers. With the short half life of the PET radiotracers, they must be produced locally by regional nuclear pharmacies. The physics of nuclear medicine, or better said, the half-life of the radioisotopes, adds to the complexity of the overall situation.

Nuclear Medicine ISOs are always ‘at your service’

Regardless of impact of the newest technology, with an estimated 10,000 to 12,000 nuclear medicine cameras currently in operation throughout the U.S. – and over a 1,000 PET & PET/CT systems – there’s plenty of need for qualified third-party service providers. Many of these companies also buy, refurbish, and sell nuclear equipment, and are a source for parts.

Ronen Bechor is the owner of two sister companies, ElsMed Ltd. out of Holon, Israel, and Relaxation, Inc. out of Tampa, FL. For Bechor, the world is his marketplace, and he’s making the most of it. “Right now,” Bechor commented, “we have 85 installed systems under service worldwide.” In nuclear, they specialize in Elscint equipment – in fact, the “Els” in ElsMed come from Elscint, with which they have had a close relationship. Elscint is now part of GE Health Care.

They feature the SP-4 SP-6, Helix Varicam, and GV Millennium with the Hawkeye option. As with most ISO’s, Bechor claims end-users can save over 50%, and sometimes as much as 70%, with a refurbished gamma or SPECT camera.

Don Bogutski, President of Diagnostix Plus, Rockville Centre, NY, has a great deal of experience with nuclear medicine equipment, and he is very much up on the state of business, both in new and used equipment. He says his company is the “go-to company for all molecular imaging equipment sales, service and part.” When Diagnostix Plus refurbishes systems they do a total system assessment, disassembly, component testing, cleaning, parts replacement/repair, and add any needed accessories and options. “We frequently replace and upgrade the computer, and every system is Quality Assurance tested,” Bogutski added. He also works with an alliance of strategic ISOs to provide comprehensive service nationwide. Diagnostix Plus specializes in stocking parts for both current and out-of-production systems. Bogutski noted that “the OEMs often come to us for parts for a customer who has an older system, because the OEM no longer has the part themselves.” A big part of their refurbished business is nuclear cardiology systems, most of which are sold to doctors in private practice.

Diagnostix Plus is also the premier provider of used PET systems. According to Bogutski, “Just like our SPECT model, we package the PET with all of the equipment and services required to ensure quick start-up and profitable operation.”

Lee Kelly of American Allied Nuclear, Canyon Lake, TX, has been involved with nuclear medicine equipment for over 30 years. He worked for several of the major OEMs over the years, and has seen the industry evolve. One of his company’s specialties is quality preventive maintenance, or PM service. “When done correctly, a regular PM schedule can keep a machine operating trouble-free for years,” he observed. Kelly says the combination of rapid technology changes and the
DRA reimbursement cuts have had a significant impact on the current nuclear equipment market. He sees “a lot of stand-alone, used PET equipment on the market,” and very little used PET/CT as yet, since that’s “the new, must-have equipment,” though he wonders if, “reduced reimbursements from Medicare will result in more PET/CTs entering the used equipment stream sooner than expected.”

Bay Shore Medical out of Ronkonkoma, NY, buys equipment and sells virtually all makes and models of nuclear medicine equipment. Gary Midgen, Nuclear Medicine Product Specialist for Bay Shore says, “One of the advantages of working with Bay Shore, if you’re looking to buy, Bay Shore, through our national network of contacts, can get you the exact make and model of equipment you need. If you’re looking to sell existing equipment, Bay Shore will offer a competitive price, and will arrange for professional deinstallation that works with your schedule.”

Art Miriana of Nuclear Medica, Southampton, NJ, has been selling and serving nuclear equipment for 15 years. One thing he stresses to all his customers is the need for regular PMs. “With gamma cameras and SPECT cameras, I strongly recommend a PM every 6 months. This both keeps the equipment in top operating condition, and can let us find small problems and keep them from becoming a major breakdown.” Miriana can also offer help with staffing and technologists – something not many ISOs offer.

With the Medicare 5-year review changes enacted in 2006, and DRA cuts enacted at the beginning of 2007, he believes many end users should be looking at quality refurbished equipment today, because they can save 50% and more as compared to cost of new equipment. Above all, he advises, “get references and buy from someone who offers full service support should you ever need your equipment fixed,” Miriana advised.

William Carroll, President of Eclipse Systems Inc., Branford, CT, specializes in servicing and selling Philips nuclear equipment – and the equipment from the companies Philips has acquired over the years. Carroll noted that the DRA cuts have actually helped his sales of refurbished equipment. “It seems like more facilities are taking a harder look down at the bottom line, and see that the savings they can realize with a quality, used system make sound economic sense today,” he observed. Most of what he sells and services are SPECT systems. “We believe, as do many people, that SPECT will always have a place in diagnostic imaging. In fact, there’s a new field opening up called Nuclear Psychiatry, the study of mental disorders, and SPECT is the ideal tool for diagnosis in this area,” Carroll added.

Nuclear medicine has become the workhorse of a bigger concept: Molecular Imaging

Visit the Society of Nuclear Medicine’s (SNM) website and the very first thing you see on their homepage, right below their logo, is this phrase: “Advancing Molecular Imaging & Therapy.”

The term nuclear medicine is fast being absorbed by, and becoming part of, the bigger concept of Molecular Imaging. In addition to state-of-the-art technologies such as PET, PECT/CT, SPECT, SPECT/CT, molecular imaging employs...
MR spectroscopy, optical imaging (a nascent technology at this point) and other modalities to examine biological targets and functions within the body.

“Molecular imaging is at the forefront of personalized medicine,” noted Dr. Sandy McEwan, president-elect of the Society of Nuclear Medicine (SNM), and a professor of the Department of Oncology at Cross Cancer Institute, Edmonton, Alberta. And personalized medicine holds the promise of revolutionary breakthroughs in the treatment of disease.

Please show the doctor your personal passport

McEwan observed that the concept that has taken hold within the medical community is to develop a patient’s “personal profile,” or “personal passport.” Nuclear medicine can provide patient-specific information about a disease that allows tailored treatment. It can show a precise (molecular) level of detail that provides new information for diagnosis, for determining which kinds of therapy will work for which patient, and for tracking the results of a specific therapy to see exactly how well it is working. It is also key to the development of pharmaceuticals and genetic therapy.

“As an example, the goal has gone beyond discovering and identifying the presence of cancer,” according to Dr. McEwan, “we’re now focused on how to characterize it in terms of how it behaves, how it will develop, and most importantly, how to best treat it.”

The new terms coming into vogue in this regard is what McEwan called a ‘personal profile’ or ‘personal passport.’ This personalized approach to therapy holds the promise of treating more diseases correctly the first time. A simple analogy would be giving a specific antibiotic to a person with a disease that is resistant to that drug, simply because the complete characteristics of the disease in that person were not identified – when with proper diagnosis, a different antibody would be prescribed in the first place.

Back to the present

In the years to come, as more is learned about the fundamental processes of diseases, and as new radiopharmaceuticals and analysis tools are developed, PET and PET/CT scanning will prove to be an invaluable tool in the diagnosis and treatment of some of the most critical diseases challenging modern medicine.

But for now, if you need service or parts for your nuclear medicine equipment, or are interested in high-quality pre-owned systems, may we suggest you consider the services of the companies mentioned in this Report, and listed on page 24. There are also many more companies in the DOTmed Services Directory listed under “Nuclear Medicine.” Please visit www.dotmed.com and enter the code number DM 3883 in any search box.

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[DM 3883]
Deep in the basements and nether recesses of many hospitals are situated such remote units as interventional radiology and other medical imaging departments. Protected by radiofrequency shielding, the workers and patients in these units often pay a price in terms of the attractiveness of their windowless surroundings. But things are changing thanks to an innovative organization that brings the outdoors in, and provides uplifting artwork in some of the least expected places in health care settings.

The Art Research Institute designs appealing backlit panels that integrate into drop ceilings and walls of medical imaging suites and throughout the hospital. The healing images are designed to bring warmth, ambience, and positive energy into any environment where they are installed.

It all began 30 years ago...

Art Research Institute, headquartered in Atlanta, Ga., was founded in 1977 by artist Joey Fischer, who watched his dad struggle to heal after a heart attack, surrounded by a depressing institutional setting. “Lying in the ICU, he would tell me how many holes there were in a specific quadrant of the ceiling. He must have counted the holes several times a day, ultimately to occupy his time and to keep his mind agile,” said Fischer.

In visiting his dad in the hospital, Fischer noticed that when you pass through the lobby and into the inner core of a facility, the physical environment rapidly deteriorates. “End-
less corridors leading to cold, clinical treatment and imaging departments with their high-tech, sterile, stainless steel environments, could terrify the bravest souls,” he noted. “Patient-friendly design rarely reached into the actual rooms where treatment was delivered, or down to the dark, windowless basements where the radiation therapy department dwells. It’s really scary down there.”

Fischer and his wife Janet began a crusade to create patient-friendly healing environments using visual therapy techniques. “VisualTherapy installations are a sign of caring that is instantly perceived and deeply appreciated by the patient as well as the caregivers themselves,” he said.

The power of positive images
Wrapping ceilings and walls surrounding intimidating medical equipment with photographic transparencies and photomural prints creates a positive, patient-friendly environment that is an instant sign of caring. “Best of all,” Fischer says, “it’s always a beautiful day, every day in my imagery.”

It’s not just the patient experience that is enhanced by attractive surroundings. It also helps the technologists because patients are more cooperative. Fischer reports that hospital personnel have observed that patients are less nervous so they twitch and fidget less, which helps speed the performance of exams or administration of treatment. Also, working in a beautiful suite is much more pleasant than in a clinical-looking locale. Fischer’s designs, marketed under CeilingMural™ and INDOMural™ WallMural Transparencies, and the generic name “VisualTherapy” are good investments for hospitals. Architects and healthcare interior designers routinely specify Fischer’s images for their projects.

“VisualTherapy is a well defined competitive edge for facilities,” he said. “Especially in this age of hospitals scrambling for ways to attract and satisfy patients. It’s a sure and cost-effective way to market a facility’s philosophical commitment to quality patient care.”

Creating good vibrations...worldwide
Fischer’s imagery has been incorporated into over 3,300 hospitals worldwide, including all VA Medical Centers, a number of Department of Defense hospitals and clinics, major cancer centers, drug/alcohol rehab units, and geriatric facilities. Working closely with National Health Service (NHS), visual therapy products have also been installed in 75 facilities in the U.K. in recent years. The Institute has been on a U.S. government contract for 25 years and Fischer’s imagery can be found throughout the Federal bureaucracy, perhaps where it’s needed most. Installations include the White House, FBI, CIA, Treasury, Internal Revenue, and several U.S. embassies and consulates.

Art Research Institute has also formed strategic alliances with most of the major medical equipment manufacturers. Many are providing VisualTherapy backdrops at little or no cost to purchasers of their equipment. Fischer’s images can also be found in several of the manufacturers’ showrooms, both in the U.S. and abroad.

Fischer’s pioneering work was honored with a Smithsonian Award in 1997, recognizing his ground-breaking efforts in the creation of stress-reducing environments. His imagery was inducted into the permanent archives of the Smithsonian Institution.

Nevertheless, because his work is mostly showcased in radiotherapy units, Fischer said, “I often tell people I hope they never get to see my work.” Visit visualtherapy.com for more information.

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Many clichés spring to mind to describe the role of portable X-ray devices in a hospital: You’re only as strong as your weakest link. Or, how about: For the want of a nail the kingdom was lost.

These unheralded machines play an indispensable role in many critical care settings such as the ER, so it’s important to keep them in service at all times. The hospital’s biomedical engineering department certainly has a lot of other high-tech priorities, including state-of-the-art technologies. It’s easy to overlook the humble portable X-ray machine.

“What we found is that the biomedical engineer typically has to take care of all the imaging equipment in the hospital. Although the portable is the tiniest piece of the puzzle that the biomedical engineer works on, it’s also the biggest headache if it doesn’t work because it’s used in the critical situations,” said Maggie O’Mahoney, Marketing and Sales Manager, Mobile X-Ray Solutions, Inc., Augusta, Ga. “When the tech goes to take it to the cardiac cath lab or the neonatal intensive care room or the operating room, it has to work.”

The company rebuilds, upgrades, sells and rents GE AMX portables and parts and offers technical training and support. (The company is a spin-off of Benco, known for rebuilding the portables for GE.) The GE AMX line is the “Cadillac” portable X-ray units, although Toshiba and Siemens also manufacture the equipment.

“Our aim is to eliminate the down time with those units, eliminate maintenance issues. We have a commitment that we can in almost every case get a portable back up and running in 24 hours,” O’Mahoney said.
Servicing the units entails replacing any worn or defective parts, most notably the tube plus calibration, but also batteries, wires and cables, latches, arm, etc. It can require reassembly of electrical, mechanical and electromechanical components to restore for proper operation.

O’Mahoney noted the important distinction between rebuilding and refurbishing since rebuilding is essentially stripping the unit down to the bare frame. “Our business deals solely with the AMX portables by rebuilding and extending the life of these workhorses that are unparalleled in the industry. We don’t just refurbish a unit, we rebuild a unit and that is what sets us apart from our competitors.”

**A Complex Service Market**

Here is one technology where the service story is more complex than the manufacturing story. In addition to GE, other OEMs, most notably Philips, also service the GE portables. It is not uncommon for an OEM to have multivendor contracts with hospitals so that they are servicing other makers’ units. But, where do they get the other guy’s parts? That’s where an independent service organization (ISO) comes in. The ISOs not only sell parts that they inventory for old and new machines, many also refurbish, rebuild, and upgrade equipment for the hospitals, the OEMs themselves, or for other companies. Many ISOs offer warranties and even satisfaction guarantees.

Some ISOs specialize in different areas so that the biomedical engineering department can outsource specific service needs, or tap third parties as needed to get the parts required to do many repairs themselves.

Tim Davis, president, STAT Medical X-Ray Tubes, Inc., Summerville, S.C. is proud to say, “We don’t buy portable X-rays. We don’t refurbish portable X-rays. We don’t sell portable X-rays but we do one thing that is absolutely essential – we have in stock at all times X-ray tubes for all the most common portables.” Davis says STAT Medical’s motto, “We Tube You,” helps make his company memorable.

Remesta Medical Corp., serving a radius of approximately 300 miles around Knoxville, Tenn, prides themselves on their refurbished systems. “We do a complete tear down, inspect every part, replace cabling, H.V. cables, and batteries. We repair or replace any defective parts, re-assemble, test and calibrate,” said Michael Baumgartner, President. “We provide personalized, individual service with any special needs addressed such as special equipment functions and also special sales/lease/rental agreements.”

Mudi Ramesh, Director of Business Development, Huestis Medical, Taunton, MA, notes that about 50% of the X-rays taken at a hospital are on portable units, so these units play a crucial role in a hospital’s operations.

“We are seeing an increasing trend in hospitals adopting the digital technology on their portable units. In fact, portable units are catching up quickly with their big brothers – fixed radiographic systems – in getting more dollars from the hospital budget for digital upgrades,” Ramesh observed.

“Digital upgrades are a significant market opportunity for remanufacturers and refurbishers of diagnostic X-ray units as they do not need the blessings of the OEMs to carry out the upgrades.”
There are literally thousands of units in the field that are waiting to jump on the digital bandwagon," he added.

Canon leads the rest of the pack in digital upgrades with their portable amorphous silicon flat panel DR detector. This is ideally suited for the workflow with the portable units. Exposure repeats are a big issue with conventional units and this detector eliminates repeats. Images are sent to the hospital PACS system once the portable units are connected to a PACS port.

Ramesh also noted that “Siemens and some other manufacturers have announced portable CR X-ray units. These units have integrated CR readers that eliminate the need for the technologist to run to a stationary CR reader after every exposure.”

**Portables 101**

The three configurations for portable X-ray machines are traditional film, CR and DR.

Film is the old standby approach that converts the x-ray beam to light that’s captured on the film, requiring processing. CR, or computed radiography uses a plate inside a cassette. When the plate is irradiated, it changes the valance or charge. The technician takes the plate to a CR reader, which is a laser beam that scans it to release the image. Some units are self-powered with batteries like the gold standard GE AMX IV(4). Others must be plugged in for use.

DR, for direct radiography, uses a rare earth element spread across an image receptor. Like a giant digital camera it captures the image directly and converts it to a digital image right there at the detector. Canon is known for its DR portables but GE is coming out with one presently, the AMX V (5). DR units are heavier than CR and a bit harder for technicians to lug around.
Older equipment remains very popular and ISOs are known to stock parts while the OEMs may not for older units. “There seems to be a high demand for the older portables like the AMX 110 and the AMX III. I get requests for those all the time and they’re after-life, according to GE…and the older units are cheaper,” said Marc Todd, owner of Longevity LLC, Brooklyn, N.Y. The company provides used medical imaging equipment and parts to hospitals and other providers.

Hospitals often find buyers for their old equipment on DOTmed.com when they upgrade, or they buy used equipment to augment their portable fleet. Some charities buy the units since they take the place of a rad room in the medical mission hospitals.

Knowledgeable service providers stress that preventive maintenance should be performed every six months.

Tips for Choosing an ISO

• Do your homework when selecting an independent service organization to support your biomedical technicians with parts or equipment.
• Know who you’re dealing with
• Ask for references or a recommendation
• Insist on a warranty
• See if they’re DOTmed Certified or highly rated on www.dotmed.com

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We Tube You.™
Carestream Health, Inc., Unveils Executive Team; Formally Appoints Kevin Hobert as CEO

Carestream Health, Inc., announced its senior executive team and corporate operating structure. The leadership team, led by Chief Executive Officer Kevin J. Hobert and other former Kodak Health Group executives, will advance a global culture of innovation and customer focus, and ultimately position the company for continued future success.

Onex Corporation, Toronto, Canada, last week acquired the Health Group of Eastman Kodak Company in a multi-billion-dollar transaction. Upon closing, the business began operating as Carestream Health, an independent subsidiary of Onex.

Hobert and the Carestream Health executive team are driving a $2.5 billion company, which owns more than 1,000 patents in digital imaging, film and healthcare IT; employs approximately 8,100 employees serving tens of thousands of customers; and operates in 150 countries around the world.

Carestream Health’s major businesses and their respective executive leaders include:

- **Dental Systems – Headed by Richard Hirschland, President.** Carestream Health’s Dental Systems business provides industry-leading digital radiography systems, practice management solutions as well as all categories of traditional film-based dental products.

- **Digital Capture Solutions – Headed by Michael Marsh, President.** Digital Capture Solutions provides digital radiography and computed radiography systems that meet the diverse needs of healthcare providers. Carestream Health’s Non-Destructive Testing (NDT) business also is part of Digital Capture Solutions.

- **Healthcare Information Solutions – Headed by Michael Jackman, President.** HCIS offers solutions for electronic review, storage, distribution and management of medical images to maximize the efficiency of operations and accessibility of images.

- **Medical Films and Printing Solutions – Headed by Marco Bucci, President.** The Medical Films and Printing Solutions business offers medical printing systems and films that allow customers to deliver superb image quality in hardcopy form.

- **Molecular Imaging Systems – Headed by Shahram Hejazi, President.** This business has emerged as a leader in the nascent market for optical molecular imaging and develops high-performance films, imaging agents and digital imaging systems for the life-science research and drug discovery and development markets.

Rounding out the senior leadership team are Michael Pomeroy, Chief Financial Officer and Vice President; Michael Ducey, Chief Supply Chain and Logistics Officer; Janine Kilty, Chief Personnel Officer; Holly Hilberg, Chief Technology Officer; Claudio Villarino, General Manager of Medical Solutions World Wide Sales and Services; Richard S. Morabito, Chief Purchasing Officer; James M. Quinn, General Counsel & Secretary; and Eileen Wirley, Chief Information Officer.

Each leadership-team executive continues in the role he or she previously held with Kodak’s Health Group.

Express Systems & Parts Network, Inc. Opens New Warehouse

Express Systems & Parts Network is setting up a new facility not far from its current headquarters in Aurora, Ohio. “We’re going to bring customers here in a showroom atmosphere to see some of the complete systems we have on the floor,” said Bob Patsy, new VP of operations.

The company specializes in systems and parts for all diagnostic imaging modalities and manufacturers including MR, CT, nuclear medicine, ultrasound, and cath lab for GE, CGR, Philips, Picker, Siemens, Acuson, Toshiba, Hitachi, and many others. “We take trade-in equipment if the OEM is putting in new systems and they put the old systems out to bid,” Patsy said. “We bring in functioning equipment and sell it as a functioning unit or if someone needs a part, we may sell parts.”

Peter Bonin Heads Up All-in-One Shop

Tenacore derives its name from tenaciousness at the core of its operation. Both an OEM of compatible SP02 products, compatible fetal transducers and a repair shop for Philips, HP, Datascoper, Marquette modules, O2 blenders, wall suction regulators and rigid endoscopes, Tenacore’s business model truly reflects tenacity.

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DOTmed Certified Rick Aguilar Profiles

Barrington Medical Technology

Barrington Medical Technology (BMT) is a subsidiary of Barrington Medical Imaging, LLC (BMI) Cary, Ill. BMI does complete systems sales of CT and MR for all OEMs as well as refurbishing equipment. BMT is a three-year-old unit that handles the warranties, service and parts, selling CT and MR parts for all OEMs from old to new equipment.

“Our customers are other brokers as well as hospital organizations, and OEMs such as GE and Philips – they call us quite a bit for parts,” said Rick Aguilar, parts and logistics manager for Barrington Medical Technology. “Most OEMs have multi-vendor divisions where they work on everybody else’s equipment and purchase the parts through companies like ours.” Hospital biomedical units are a customer base that looks to BMT for parts, service and technical support.

Aguilar, an OEM veteran himself, is noticing some interesting trends in the medical equipment parts market lately. “I am seeing more independent people out there in need of parts and searching down to the component level,” he said. “People are getting smarter and digging deeper to search for parts as opposed to buying from OEMs. So there are more chances for independent organizations like ours to grow.”

BMT takes advantage of DOTmed’s revolutionary Parts Hunter to sell parts. “It has been helpful...I have posted and had requests.”

BMT’s inventory is quite substantial. “It is big and growing,” Aguilar said. “We are looking to move into a bigger spot because we are busting at the seams.”
training, careers & educational opportunities

MeritCare Health System
Radiology Program

MeritCare Health System is an integrated clinic and hospital system headquartered in Fargo, ND. MeritCare is the largest group practice and the largest hospital in North Dakota.

Mission Statement
It is the mission of MeritCare Radiology Program to provide a quality education designed to prepare a knowledgeable and caring professional radiographer who is cognizant of and sensitive to the health needs of individuals and communities.

Goals
To uphold our mission, MeritCare Radiology Program holds the following goals:
1. Offer an educational opportunity to qualified students who have the potential to become competent, compassionate and contributing professional radiographers.
2. Provide an educational environment that fosters personal and professional freedom.
3. Offer a curriculum that has a strong foundation for lifelong learning.
4. Assist in the development of radiology as a science by utilizing research findings in radiology practice and teaching.

San Joaquin General Hospital Surgical Residency Program

The San Joaquin General Hospital, a public institution serving a patient population that receives little or no other medical care besides that provided by its emergency drop-in services, its formal clinics, and its inpatient facilities, offers a graded, five-year surgical residency program.

Surgical Residency Program
During each of the five years, the resident is given increasing responsibility. First, second, and third-year surgical residents rotate on night call throughout their three junior years. During night call, they are responsible for all services of the Surgery Department. The senior residents similarly are on call for immediate consultation on all problems and operative cases. The attending surgeons maintain an on-call roster immediately available to the Chief Surgical Resident. The Chief Surgical Resident is on call every other night and every other weekend.

Although the Surgical Residency Program is based at the San Joaquin General Hospital, it is affiliated with the University of California, Davis. In addition to San Joaquin General Hospital, the residency program includes rotations through the University of California Davis Medical Center (Sacramento), and St. Joseph’s Medical Center (Stockton).

Dartmouth-Hitchcock Medical Center Leadership Preventive Medicine Residency

Dartmouth-Hitchcock Medical Center (DHMC), New Hampshire’s only academic medical center, offers a Preventive Medicine program that focuses on developing knowledge and skills in the measurement of outcomes and the leadership of change and improvement in health care systems.

Program Overview
The combined training, with the “Core competencies” listed below, adds 18-24 months to the length of the “home” residency or fellowship program.

Core competencies of DHLPMR:
• Leadership—including design and redesign of small systems in health care.
• Measurement of illness burden in individuals and populations.
• Measurement of the outcomes of health service interventions.
• Leadership of change for improvement of quality, value and safety of health care of individuals and of populations.
• Reflection on personal professional practice & linkage of that reflection to ongoing personal and professional development.

The academic component includes a Masters in Public Health from the Center for the Evaluative Clinical Sciences (CECS) at Dartmouth Medical School.

Radiographers ensure accuracy in radiographic positioning.
The Residents are given a large number of patients.

DHLPMR focuses on systems that connect patients’ needs and health care.

Radiographers ensure accuracy in radiographic positioning.
The Residents are given a large number of patients.

DHLPMR focuses on systems that connect patients’ needs and health care.
USC Cardiothoracic Surgery Training Program

University of Southern California Cardiothoracic Surgery Program, under the directorship of Vaughn A. Starnes, M.D., Cardiothoracic Surgery Training Program, has been a leader in the treatment of cardiothoracic diseases for more than 10 years. USC surgeons accomplishments include: more than 15,000 open heart surgeries for valve repair and replacements, and coronary artery bypasses, and more than 10,000 surgeries for diseases of the lungs, esophagus, and chest wall.

About the Program

The Cardiothoracic Surgery Training Program is designed to give residents the expertise to qualify for the American Board of Thoracic Surgery certification. The program offers the residents comprehensive training by exposing them to the full range of cardiothoracic conditions. High patient volume ensures that residents perform a large number of cases and are exposed to the full spectrum of clinical environments in which they may practice one day. Training sites include: a private university hospital, a Children’s Hospital, a large county medical center, and a large community based hospital with a long tradition of affiliation with the University of Southern California.

Albert Einstein Medical Center’s Pediatrics Residency Program

Albert Einstein Medical Center is a teaching hospital that provides a full range of advanced health services to the Philadelphia community. With more than 600 primary care doctors and specialists on staff and an additional 1,200 affiliated physicians, Albert Einstein’s Categorical Pediatric Program, is first-rate.

Pediatrics Residency Program

The Department of Pediatrics trains 24 categorical pediatric residents and an additional 16 residents in a combined Medicine-Pediatrics Program. While caring for children, from ages 0 to 21 years, residents receive balanced and comprehensive training in primary, sub-specialty and critical care pediatrics. The full-time faculty of pediatric generalists and sub-specialists guide residents through a broad educational experience as the residents play a vital role in the care of more than 2,000 inpatients and 20,000 outpatients each year.

In all clinical rotations, teams composed of attending physicians, supervising senior residents, junior residents and medical students work together to create a collegial and congenial educational environment.

[DM 3726]
SNM Molecular Imaging Center of Excellence Creates Advocacy and Educational Opportunities

The Society of Nuclear Medicine, the largest society for molecular imaging and nuclear medicine professionals, recently announced several initiatives to advance the field of molecular imaging through support from its “Bench to Bedside” campaign.

The “Bench to Bedside” fundraising effort, launched last summer, has received nearly $3.3 million in corporate pledges from GE Healthcare, Bristol-Myers Squibb Medical Imaging, Siemens Medical Solutions USA, IBA Molecular, Philips, MDS Nordion, Cardinal Health and FluoroPharma to bring molecular imaging advances from preliminary research into clinical implementation. Through collaboration with the members of SNM’s Molecular Imaging Center of Excellence, the society will facilitate clinical research and clinical trials; support outreach activities; increase advocacy efforts; and train the current imaging workforce and educate future generations of practitioners.

“We are at an important phase, moving from the initial planning stage into an advocacy, educational and research phase of our five-year action plan to bring molecular imaging research from bench to bedside,” said SNM President Martin P. Sandler. “We always keep the focus on how our initiatives relate to the all-important goal of transforming patient care,” he added.

The Molecular Imaging Center of Excellence will launch a new Web site, independent of SNM’s Web site, this summer. SNM members will meet with legislators and decision makers in Washington D.C., during the society’s annual meeting this June, and issues relating to molecular imaging will be on the agenda.

“We feel that it is important to share as much information as possible in order to help the science grow faster,” said Molecular Imaging Center of Excellence President Martin G. Pomper. “We feel that giving molecular imaging researchers a home on the Internet is a good place to start the exchange of ideas,” he added.

For more information about the Molecular Imaging Center of Excellence, go to www.snm.org (click on About SNM).

AMA Elevates Benjamin Mindell

The American Medical Association (AMA) has promoted Benjamin Mindell, editor-in-chief of the AMA’s weekly news publication American Medical News (AM-News), to vice president. Mindell has served as editor-in-chief of AM-News since 2005, a post he will retain. Mindell joined the AMA in 1987, and has served the newsroom in a number of capacities, including business editor, opinion editor and the publication’s deputy editor.

New Talent Strengthens ASTRO’s Health Policy Efforts

The American Society for Therapeutic Radiology and Oncology has announced the addition of two new staff to its growing Health Policy Department.

Marsha Kaufman comes to ASTRO as the new Assistant Director of Health Policy. Ms. Kaufman most recently worked for WellPoint as an Account Executive for their consumer directed health plans. Prior to that, she worked for the National Committee for Quality Assurance dealing with accreditation and evaluation in the healthcare arena.

Jesleen Papneja joins ASTRO as its Health Policy Analyst. Ms. Papneja recently earned her Master’s degree in Health Systems Management, with a concentration in Health Information Systems, from George Mason University in Fairfax, Va. Ms. Papneja recently completed an internship at VitalSpring Technologies, where she was responsible for in-depth cost and use analyses of benefits and financial payment data. She also holds a Doctoral degree in Dental Surgery from a university in India.

HIMSS Contributes Donations to Common Ground Health Clinic

With support from individual and corporate members, the Healthcare Information and Management Systems Society (HIMSS) presented a check for $38,153 to the Common Ground Health Clinic in New Orleans. HIMSS members, totaling more than 20,000 individuals and 300 corporations, came together to provide donations of funds, supplies and health IT software and consulting for the clinic.
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These are some of the more than 27,000 listings on www.DOTmed.com on any given day.
Recent equipment and parts auctions on DOTmed with actual for-sale prices.

ULTRASOUND EQUIPMENT
DIASONICS Shared Service Gateway FX — 1998 manufacture. Software Level Gateway FX Pro 3.5 MHz M1 curved transducer 5.0 MHz M1 linear transducer 10.0 MHz M1 linear transducer — almost new. GE Service since new 240 V / 50 Hz. PAL. Australia. $2,000.00
TOSHIBA SSA-370A PowerVision 6000 Color Doppler Ultrasound, LOADED!!, HOLE BODY ULTRASOUND, w/ stress echo, high Software Revision 4.00ER001 $13,700.00

ULTRASOUND PARTS
Philips Omnidrome II Transducer Tee Ultrasound Probe — Model number 21369A. Manufactured 2004. Used with Sonos 7500 Features: 4MHZ to 7MHZ Extented Frequency Range, High Resolution Imaging, Omniprobe Technology. $8,685.00
ACUSON Ultrasound Transducer EV-8CA — TWO Acuson EV-8C4 Vaginal Probes Model Number 08241246 For Acuson Sequoia Ultrasound, never used, wrapped in original case. $10,000.00

RADIOLOGY EQUIPMENT
SIEMENS Rad Room Polyphos 30 — Manufactured 1992. Multex C 4 Way Float Top Table, Integrated Table and Tube Stand Polyphos 30 Generator, Walk Buckey Room; good working order/condition. $3,500.00
PHILIPS Rad/Fluoro Room 90/15 Diagnosis 78 plus — 1993 Includes CS-6 Overhead Tube Stand Medio 65 cp-H Generator CS-2 Upright Holder Photo-timing and Autocollimation Monitor Cart; All Documentation $2,100.00
SIEMENS Rad/Fluoro Room Polydoros 80S — 2 separate rooms. Deinstalled/educated together. Room # 1 Includes: 2 Siemens Monitors: Pantskop 5 M/N: 8448504G2115 S/N: 01156507; Generator: 3 phase 50/60 Hz Moment kVA: 130; Tube: 6-1.3 approx 8 years old. Room # 2: Trauma X-Ray Room: 01/10/1991 Chest Stand: Vertix 2 M/N 46440462036G S/N 011355101 DOM 10/91 $500.00
TOSHIBA Portable X-Ray KCD-12MC Manufactured in 1989 Model KCD-12MC/Serial C9522879 Input 1-Phase 50/60 Hz 300 VA. 100/117/127V 220/240v Battery 12Vx6 2AH/2HR Output 125 KV 1.0 MF $1,500.00
BENNERT Mammo Unit Bennett DM-1500/Contour Plus (2 units!) Both in working condition; Manufactured August 1997 Tube: Varian Invert Model M-146SP MAX KV: 35. $5,000.00
LORAD Mammo Unit Infinity — Feb 2002. Infinity Radiation Shield, Rapid LD. Auto Flash, 24 x 30 HTX Bucky, 18 x 24 HTX Bucky, 18 x 24 Cassette Holder, Magnification Platform, 3 Compression paddles, 2 Footswitches, 2 Apertures, Faceguard, Manuals $10,500.00
PHILIPS C-Arm BV-25 With XTV5 Camera, manufactured in 1986, 6” Image Intensifier, 2 Monitors, Matrix HOLICOS QDR Fan Beam X-Ray Bone Densitometer QDR 4500W Manufacturing 1996 Pentium Computer w/Printer 9.03 Software Modules 1/2/3 17” Viewscop E75F Monitor Model Number VCDTS231103-1 $6,500.00

RADIOLOGY PARTS
KODAK Film Processor X-Omat 5000RA, $400.00.
FUJI HLC 14X17 DRY Camera film 22 cases with an expiration date of 08/07 and 11/07. $6,600.00.

MEDICAL/SURGICAL EQUIPMENT
NDO MEDICAL TECHNOLOGIES Spirirometer Easy One — Purchased new 6/2006. Used twice, excellent working condition. Includes printer, 3-Liter calibration syringe and case of 100 mouthpieces. $1,150.00
TREMETRICS Audimeter RA520 Refurbished — Used less than 3 times by seller. Excellent working condition. Comes with the Little Oscar testor-headset is new. Calibrated in 6/06. $1,150.00
OHMEDA Anesthesia Machine Modulus II Plus With 7810 Ventilator, Hewlett Packard 104GA Anesthesia Monitor, Tec 5 & Tec 4 Halothane & Isoflurane Vaporizers. Includes Pulse 3710 Oximeter & 2120 NIBP $3,000.00

NUCLEAR MEDICINE
ADAC Nuclear Gamma Camera VERTEX CLASSIC — High Resolution Low Energy-All Purpose Collimator, Leap Medium Energy Collimator Pegasys SPARC 10 Workstation; Complete with All Manuals $9,500.00

MRI EQUIPMENT
GE MRI Scanner Signa Horizon 1.5T — Manufactured 1996 WARM, SOLD AS PARTS Seller will be keeping the magnet and surrounding magneshield and will be responsible for its disposal. $18,000.00
CALUMET MRI Mobile MMT-530M MRI Mobile — Actively shielded;80% Helium Filled. Manufactured March 1996 Model Number MMT-530M. $42,000.00.
GE MRI Mobile Profile II Open Air Condition: Good 1998 OEM installed Ellis and Watts Medicoach. Kodak 8800 Dryview laser printer. Flex II style coils. Patient comfort module. Patient sound system utilizing the high quality MRI approved air driven sound system. $129,000.00

MRI PARTS
PHILIPS MRI Coil Philips MRI Coils — Six Philips MRI coils used on our Philips T5 Magnet. All Coils are in good physical and working condition. $2,000.00
GE MRI Coil GE Torso Array GE MRI Accessories Door/Window Shielded Door and Window for a MRI Room. $2,000.00

ONCOLOGY EQUIPMENT
VARIAN Linear Accelerator Clinac 2100/CD Manufactured in 1994. Dual energy; 6 & 18 MV, 5-electron energies, 6, 9, 12, 15 & 18 MeV, this unit also comes with Type III accessories (MRI/Treaty) Software version 6.2, upgrades, Dual independent jaws, electroncones, wedges, more. $3250.00

CARDIOLOGY EQUIPMENT
HEWLETT PACKARD Defibrillators 78661A w/ ECG. Has built in Adult and Pediatric Pads. Patient cables and powercord included. $200.00.
DATASCOPE Intra Aortic Balloon Pump 98 — Cardio Sync 2/h-trac. Datascpe doppler and Datascpe ekg cables. Manuals disk/pdf format. Has been under service contract from Datascpe. 150 lbs. 43 x 17 x 22.5. $4,500.00.
PHYSIO CONTROL/Medtronic 12 Biphasic Defibrillator/Monitor. — Comes with Ecg cable / leads, Hands off cable. Excellent condition. Outputs verified; CBET has performed a complete functional check. $3,000.00.
GE Cardiac - Vascular Vingmed CFM 725 Has two probes, they are the TT10010A-7.5 mhz and the E9618. Cables, ECG and sector for probe. $800.00.
MENNEN MEDICAL Bedside Monitor: 8-BED COLOR SYSTEM Consists of 8 Mennen Horizon 2000 Color Monitors and 1 Central Monitor System. Units are complete with ECG cables. $1,250.00

DATASCOPE Balloon Pump 98X — Three pumps. Manufactured 2004. Software is cardio Sync 2 featuring r-trac. Datascpe doppler and Datascpe ekg cable. Manuals on disk in pdf format. $14,000.00

CT EQUIPMENT
SIEMENS CT Scanner AR Star — Siemens AR Star CT Scanner Manufactured 1999 with a almost new tube! Rontalx 1.5 PICKER CT Scanner POS500, Manufactured 1998. Acqsim Therapy Planning software on a Voxel Q workstation. Varian Therapy Planning Tabletop and LAP1 lasers. The tube was Replaced 2003 Tube/Rhino 5.0 Generator/CRX400 KW Software/ Acqsim release 5.0 2 Five (5) Voxel Q Therapy Workstations/Onology. Tyco CT8000 Injector $8,500.00
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