Radiologists Need to Take Action in Transition to Value-Based Practice

Radiologists must be willing to take meaningful action to transform and improve the way they practice in order to make a successful transition from volume-based to value-based practice, according to David C. Levin, M.D., the presenter of the RSNA 2014 Annual Oration in Diagnostic Radiology.

By Paul LaTour

We need to become better doctors—real doctors, if you will—who provide real value to our patients, our referring doctors and our hospitals,” said Dr. Levin, professor and chairman emeritus of the Department of Radiology at Jefferson Medical College and Thomas Jefferson University Hospital in Philadelphia. “We’ve let ourselves become the invisible doctors and that is something none of us are happy about.”

Radiologists are their own worst enemies by allowing the perception to grow that radiology is a commodity rather than a true specialty, Dr. Levin said. That perception, he added, has led to threats to the profession from inside and outside healthcare, including declining reimbursements and the idea that much imaging is inappropriate or unnecessary. Other threats include an increased emphasis on utilization management and termination of groups by hospitals that then turn to teleradiology companies.

Fortunately, Dr. Levin continued, radiologists have plenty of opportunities to create a new perception—that they add real value to the patient-care process. Radiologists can act more like true consulting physicians by supervising and monitoring every advanced imaging exam, bolstering their input with guidelines such as American College of Radiology Appropriateness Criteria. Being a true consulting physician also means giving patients access to results, either verbally or via an electronic portal, he said.

By outsourcing nights and weekends to teleradiology companies, which Dr. Levin said devalues the work of radiologists being more available to their patients and referring physicians. The first step, he said, is to stop outsourcing to teleradiology companies, which Dr. Levin said devalues the work of radiologists. “By outsourcing nights and weekends to teleradiology groups, we are shooting ourselves in the foot,” he said.

Haffty Named to RSNA Board

Bruce G. Haffty, M.D., an international expert in breast radiation oncology known for his accomplishments in the clinic and classroom, as well as for his groundbreaking cancer research, is the newest member of the RSNA Board of Directors. Dr. Haffty will assume the position of Board Liaison for Science as Richard L. Ehman, M.D., becomes chairman of the Board of Directors.

Since 2005, Dr. Haffty has served as professor and chairman in the Department of Radiation Oncology at Rutgers Robert Wood Johnson Medical School, Rutgers New Jersey Medical School and Rutgers Cancer Institute of New Jersey. He also serves as associate director of Rutgers Cancer Institute. “RSNA provides the preeminent forum to advance the radiologic sciences through its meeting, journals and education, all supported by its dedicated volunteers,” Dr. Haffty said. “By providing venues to present findings and exchange ideas, as well as offering funding opportunities through its foundation, there is no other organization better positioned to shape the future of radiology than RSNA.”

Dr. Haffty completed his medical school and residency training at Yale University School of Medicine in 1988 and spent the next 18 years specializing in breast and head and neck cancers at Yale’s Department of Therapeutic Radiology. Dr. Haffty served on the faculty at Yale from 1988 through 2005, being promoted to professor of therapeutic radiology in 2000, serving as residency program director from 1992 through 2004, and vice-chairman and clinical director from 2002 to 2005.

Optimal Medical Imaging Achievable for Patients with Ebola

By Evonne Acevedo Johnson

While a hospital’s standards of practice for isolating and caring for patients with Ebola virus infection are not likely to be directed toward radiology staff, an early point of contact might be an outpatient imaging clinic, according to a presenter of a special interest session on Tuesday.

David A. Bluemke, M.D., Ph.D., Bruce S. Rabiner, M.D., Carolyn C. Meltzer, M.D.

The Aging Radiologist

Experts Weigh in on When to Retire and Why

David C. Levin, M.D.

Developing and tracking internal quality metrics—and then publicizing them—also adds value, Dr. Levin said. To prove value, you have to prove quality, he said.
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Integrating Radiology, Pathology Would Improve Diagnostics, Aid Patients

By Paul LaTour

I
ntegration between radiology and pathology would lead to an improved diagnostic system that would benefit both the caregivers and patients, according to speakers at the Monday special interest session, “Radiology and Pathology Diagnostics: Is It Time to Integrate?”

The value proposition includes speedier and more accurate diagnoses, better patient outcomes, and better management of diagnostic and therapeutic resources and lower costs, according to presenter Mitchell D. Schnall, M.D., Ph.D.

“Diagnostically real drive the clinical care path and the precision medicine agenda as we go forward,” said Dr. Schnall, the Eugene P. Pendergrass professor and chair in the radiology department at the University of Pennsylvania.

He added that current diagnostics exist in individual silos (radiology, lab, molecular diagnostics, histology, etc.) with no “grain elevator” working to facilitate cooperation or sharing.

Pathologist Michael D. Feldman, M.D., Ph.D., said the disciplines need to develop a common culture, adding that one immediate opportunity exists in terms of lesion location reference. The first step is establishing a shared workflow and integrated information systems, which means upgrading from the antiquated paper requisition system most hospitals still use.

“It’s a real boonoodle to get all the necessary data together for anatomic pathologists with paper reports,” said Dr. Feldman, an associate professor of pathology and laboratory medicine at the Hospital of the University of Pennsylvania. “So there are opportunities with an integrated workflow for standards in imaging, ordering and reporting spaces that could go a long way.”

To converge workflows, it is critical to decide what capabilities can be supported for developing information technology and informatics.

Structured Reporting Template for Prostate on the Horizon

During the panel discussion later in the session, Curtis P. Langlotz, M.D., Ph.D., said it’s unfortunate most institutions don’t already have a group interface between radiology and pathology, but added that it’s not an informatics issue.

“The result of our study demonstrates that the robot-assisted biopsy is accurate and safe, and the robot-assisted procedure can also reduce procedure duration and radiation dose compared to the conventional approach,” Dr. Porfiri said.

According to Dr. Porfiri, the duration of the robot-assisted procedure ranged between 10-31 minutes—significantly less than the 18-42 minutes for the conventional procedure. Radiation dose was significantly reduced with the robot-assisted procedure, as well.

Dr. Porfiri and his colleagues determined that the diagnostic performance of robot-assisted procedure was similar to the manual procedure, with four patients requiring re-biopsy after the robotic procedure and three patients requiring re-biopsy after the manual procedure. They also found that the complication rates were similar.

Radiologists Need to Take Action in Transition to Value-Based Practice

According to Dr. Schnall, the Eugene P. Pendergrass professor and chair in the radiology department at the University of Pennsylvania, the session’s lead author.

“Radiologists are in a perfect position to take the lead in this transition and develop a shared workflow and integrated reporting spaces that could go a long way,” he said.

Continued from page 1A

Continued from page 1A

Radiologists Need to Take Action in Transition to Value-Based Practice

Michael D. Schnall, M.D., Ph.D.

Mitchell D. Schnall, M.D., Ph.D.

Dr. Levin concluded with a prediction: if radiology groups follow these steps, in five years the specialty will no longer be viewed as a commodity—referring doctors will see radiologists as contributing value and look for guidance on imaging and patients will come to respect radiologists as “real doctors.”

“This could be our future—just think of that,” he said. “But it’s only going to happen if we change the way we do business. It’s not going to happen if we just sit back and opt for the status quo.”

Oration Dedicated to Wagner

This year’s Annual Oration in Diagnostic Radiology was dedicated to the memory of Henry N. Wagner, Jr., M.D., a towering figure in nuclear medicine for over half a century.

Dr. Wagner published more than 800 articles and many books and was a member of the Institute of Medicine. His scientific contributions included the development of lung scanning to diagnose pulmonary emboli and pioneering studies to image neuroreceptors in the living human brain—the first brain imaged was his.

Dr. Wagner was also a hugely influential educator. More than 500 physicians and scientists were educated through his programs in both medicine and radiology at Johns Hopkins University School of Medicine, including David C. Levin, M.D., presenter of this year’s oration.

“He was truly a superb educator and a superb scientist, so it’s a special privilege for me to be able to give this lecture in his memory,” Dr. Levin said.
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MR Neurography: An Emerging Modality in Musculoskeletal Pain

In a few short years, MR neurography—a fairly new imaging technique for the direct imaging of spinal and peripheral nerves—has emerged as an exciting new modality in pain detection and management.

By Mike Basset

The subject of a Tuesday refresher course, MR neurography has “emerged as the poster child for innovation in the area of musculoskeletal pain and is one of the leading developments in our subspecialty in the last four or five years,” said Sandip Biswal, M.D., an associate professor of radiology at the Stanford University Medical Center, who presented a session on “PET and MR Methods to Image Pain.”

Chronic pain is now affecting approximately 116 million American adults and results in hundreds of billions of dollars annually in treatment costs and lost productivity, said Dr. Biswal. For example, according to a report issued by the Institute of Medicine in 2011, the annual cost of chronic pain in the U.S. is estimated to be $560-635 billion, including health care expenses and lost productivity—more than the annual costs associated with heart disease, cancer, and diabetes combined.

But the “ugly truth,” Dr. Biswal said, is that the conventional methods of finding pain generators are “just not adequate,” which is one of the reasons why MR neurography is generating so much interest. According to Amelie Lutz, M.D., a colleague of Dr. Biswal who presented the session, “MR Neurography of the Brachial Plexus and Upper Extremities,” with improved scanner and coil techniques, and advances in pulse sequences, “we are now capable of directly imaging nerves with a very high resolution. This has become a really exciting—and evolving—field in radiology.”

What MR neurography does is “to really lay out the nerve beautifully,” Dr. Biswal said. “We can reconstruct these images in a variety of dimensions and thus place them like we do with the vascular system. You can really lay out a pretty looking nerve and see if anything looks like a mass or inflammation, whether there are neuromas in it, or areas of clumping of nerves from root or intrinsic pathology in the nerve, rather than something compressing it.”

MR Neurography Breaks Ground with Brachial Plexus

In her presentation, Dr. Lutz discussed the anatomy and normal MR imaging appearance of the brachial plexus and upper extremity nerves and how to recognize the most encountered pathologies and their differential diagnoses in these regions.

“With the more central or proximal nerves like the brachial plexus,” said Dr. Lutz, “it is very challenging for physicians to really nail down the specific location and problem with nerve conduction studies or electromyography,” Dr. Lutz said. “The brachial plexus is probably one of the first areas in which people focus on this type of imaging.”

And while the complexity of this anatomic region can appear “daunting,” she said, with the proper tools to systematically analyze and break down anatomy “then suddenly it all makes sense.”

Dr. Biswal discussed a number of new approaches to imaging pain involving PET and MRI. He is currently working on developing a biomarker that targets and helps measure the mechanisms of pain at the molecular level. “This PET tracer looks for markers of inflamed nerves,” he said. “So whether it’s increased ion channels in that nerve or increased pain receptors, or increased cellularity, that’s what we’re trying to mark.” That, combined with MR testing, Dr. Lutz said, will provide both a molecular readout along with an anatomic readout that will identify where pain is originating “with great specificity and sensitivity,” Dr. Biswal said.

“Basically, what we are all doing is responding to that fact that conventional approaches to imaging pain just haven’t been very good,” said Dr. Biswal. One example of that has been the use of MR and CT to image patients with non-specific back pain.

A number of medical organizations have issued recommendations advising against lumbar MRI, mainly because it has not been very predictive or helpful in the acute settings, Dr. Biswal said.

Ultimately, Dr. Biswal said, improving ways to use imaging to find the source of pain will not only help patients by improving outcomes, but will serve to improve their quality of life. “We probably all have friends or relatives who are in chronic pain, and they get labeled as crazy or depressed, and it turns out that patients who have chronic pain are unfortunately difficult to deal with,” he said. “Something like this can dominate their existence and we can help them on the route to recovery.”

Tuesday’s session also covered, “MR Neurography of the Lumbar Plexus and Lower Extremities” by presenter Avneesh Chhabra, M.D., who discussed current state-of-the-art techniques available for LS plexus evaluation and shared normal and abnormal imaging appearances of various common and uncommon pathologic states involving LS plexus and its branch nerves. The talk also addressed new 3D techniques that suppress vessel signal effectively while preserving effective nerve visualization.

The session, “DTI of the Peripheral Nervous System,” presented by Gustav Andresek, M.D., covered the basic principles of diffusion-tensor imaging (DTI), the challenges and limitations for imaging protocols, as well as the evaluation of DTI images quantitatively and qualitatively.

Annual Oration in Radiation Oncology Presented Today

Benefits, Liabilities of Imaging in Radiation Therapy are Focus

While medical imaging has markedly improved radiation therapy, limitations remain and excessive over-reliance on imaging can be detrimental, according to Lawrence B. Marks, M.D., who will present “Error Bars in Medical Imaging: Stealth and Treacherous.” Dr. Marks combines expertise in radiation therapy–induced normal tissue injury and human-factors engineering to detail specific errors that can occur when applying medical images to radiation therapy.

The Dr. Sidney K. Simon Distinguished Professor of Oncology Research in the Department of Radiation Oncology at the University of North Carolina at Chapel Hill School of Medicine, Dr. Marks has conducted several imaging-based prospective clinical trials to better understand radiation-induced lung and heart injury and was the lead physician for the QUANTEC (Quantitative Analyses of Normal Tissue Effects in the Clinic) initiative sponsored by the American Society for Radiation Oncology and the American Association of Physicians in Medicine.

Default Mode Network Connectivity Associated with Schizophrenia Severity

By Elizabeth Gardner

A imaging marker that measures the severity of chronic schizophrenia could have a significant impact on risk prediction, detection and treatment. Such a marker, discovered through using functional MR imaging to study the brain’s resting state, was described Tuesday morning by a team led by Dr. Andreisek, M.D., presented the talk on “Imaging the Default Mode Network to Forecast Schizophrenia.”

The next step in the research is to correlate the MRI findings with the genetic variations that predispose patients to develop schizophrenia.

“This is an important link that we have to make,” Dr. Mueller said. The two departments are currently beginning a follow-up study to compare the MRI studies of 100 schizophrenia patients with those of their unaffected relatives who carry genetic risk factors for schizophrenia, and also with a group of healthy controls. Results should be available within the next two years.
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“Getting an Education”
RSNA Refresher Course Chairs Reflect on Keeping Pace with Their Rapidly Changing Specialty

By Paul LaTour

Carol B. Stelling, M.D., was a junior medical student at Northwestern University when she attended her first RSNA annual meeting in 1970 at Chicago’s Palmer House. Dr. Stelling recently recalled her first impressions of the meeting, which included seeing an exhibit on hilar anatomy shown on plain radiographs that she said opened her eyes to the wonders of diagnostic radiology. “Subsequently, the RSNA annual meeting became an annual pilgrimage for me and my fellow residents and faculty colleagues as we advanced in our chosen specialties,” Dr. Stelling said.

Dr. Stelling didn’t just attend annual meetings, however. She went on to volunteer in the planning process, particularly when it came to the refresher courses—among the longest running and well-attended types of sessions at the annual meeting. Dr. Stelling eventually chaired the refresher course committee from 1994 to 1997. “Being asked to join with the many talented individuals who participate in the RSNA annual meeting was a unique honor for me,” she said. “Service to the RSNA is a duty and a privilege in whatever capacity one is asked.”

Courses Designed to Provide Comprehensive Study

Offered for the first time at the 1938 annual meeting, the refresher courses gave attendees an opportunity to explore topics in more depth than the journals could provide.

“Our journals tended to publish articles related to specific subjects, but often did not have space to collate and review related topics,” said O. Wayne Houser, M.D., refresher course chair from 1979 to 1982 and RSNA president in 1994. “The aim of the refresher courses was to do that, and even create an updated field, and end the discussion at the cutting edge of knowledge.”

RSNA past-president Michael A. Sullivan, M.D., who chaired the refresher course committee from 1984 to 1987, summarized the courses’ importance succinctly: “It’s where people go who really want to get an education.”

Such glowing reviews date back to the courses’ origins. “Since it was started three years ago, the outstanding scientific achievement of the Society has been the series of Refresher Courses,” Zoe A. Johnston, M.D., RSNA Third Vice-President in 1944, wrote in Radiology in 1941.

Refresher course committee chairs spend four years in the position. Their role is to orchestrate the committee as a whole as it decides what courses to offer, and which experts to invite as instructors. As the years have gone on, the committee has grown as new tracks are introduced.

“When I was the chair, radiology was becoming much more specialized, even sub-specialized,” said Donald R. Kirks, M.D., chair from 1991 to 1994. “It tried to align the refresher courses along those areas of specialization. I gave the subcommittee chairs freedom to develop the courses in their discipline because they understood it better than I did.”

Sip & Savor Social Desk, Grand Concourse-Level 2.5

By Paul LaTour

Carol B. Stelling, M.D.
O. Wayne Houser, M.D.
Michael A. Sullivan, M.D.

Cases of the Century Offer Challenges, History Lessons

All week in the Centennial Showcase, attendees are flocking to the Cases of the Century, which challenge visitors to test their skills at diagnosis and anatomy using vintage radiologic images. Participants must submit their answers with only the images to provide information. The Cases also feature trivia questions about journal publications and other related historic facts.

“This is excellent,” said a first-time attendee from India. “This is our first meeting and we didn’t want to miss the chance to see the showcase. The Cases of the Century give us a chance to see cases we would never have seen elsewhere.”

Attendees can try their hands at Cases of the Century during Centennial Showcase hours, 7:30 a.m. to 7:30 p.m. today and Thursday and until 12:30 p.m. on Friday.

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• Exhibitor Registration, Grand Concourse-Level 1
• Sip & Savor Social Desk, Grand Concourse-Level 2.5

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See menu and event details: RSNA.org/Sip-and-Savor
RSNA Centennial Recalls Commemorations of Roentgen’s Discovery

By Richard S. Dargan

The legacy of Wilhelm Roentgen was very much in evidence at the RSNA 1995, the centennial anniversary of his discovery of X-rays—meeting organizers honored the father of radiology by issuing commemorative medals in his name and sealing a time capsule with items from the early days of radiology.

Even the meeting’s one disruption—a brief power outage at McCormick Place—seemed a fitting tribute to the man who made his discovery after turning off the lights and drawing the shades in his laboratory.

Roentgen discovered X-rays on the afternoon of Nov. 8, 1895, while working with Crookes tubes, sealed glass tubes used to look at cathode rays, in his lab at the University of Wurzburg in Wurzburg, Germany. “He was a 50-year-old assistant professor who was paid very little and so, like a lot of his peers, he had to moonlight,” said 1996 RSNA president Ernest J. Ferris, M.D., who visited Roentgen’s lab in 1995. “He bought these Crookes tubes and studied them after work.”

After Roentgen darkened the lab and activated the tube, he noticed something strange: a glimmer coming from a fluorescent activated the tube, he noticed something strange: a glimmer coming from a fluorescent screen at the end of his lab table. Roentgen discovered that the glimmer remained even when he blocked the tube with a 1,000-page book. Sensing he was on the trail of something profound, Roentgen worked feverishly over the next month to refine and expand his findings.

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He submitted his paper, “On A New Kind Of Cathode Luminescence” to the Wurzberg Physical Medical Society. The international press picked up the story within days and it created a sensation. The next month to refine and expand his findings.

He submitted his paper, “On A New Kind Of Cathode Luminescence” to the Wurzberg Physical Medical Society. The international press picked up the story within days and it created a sensation. The meeting organizers honored the father of radiology by issuing commemorative medals in his name and sealing a time capsule with items from the early days of radiology. The proceedings of the Wurzberg Physical Medical Society were published in the Dec. 28, 1895, issue of the Science, which became the specialty of radiology under the pioneering spirit of those physicians who recognized that because of Roentgen’s discovery, other radiology pioneers: “I wish to remind you that a tree needs its roots, history of radiology portends the future,” Dr. Ferris said. The time capsule is scheduled to be opened in the year 2095. There is no telling where the profession—that grew from one professor’s discovery—will be by then. “The history of radiology portends the future,” Dr. Ferris said. “We live in an age when we look back at the mistakes and good things that have occurred, and we learn from these things.”

Discovery Centennial Marked Amid Technological Boom

The next 25 years were a boom time for medical radiology. During World War II, he led radiation safety and protection programs for workers at the metallurgical laboratory of the University of Chicago, where much of the development of the atomic bomb took place.

In his address, “Radiology from Roentgen to the Eve of Atomic Energy,” Dr. Stone credited Roentgen’s work for inspiring key figures from the early days of radiology, like Henri Becquerel, a French physicist who researched uranium salts and discovered radioactivity, and Marie and Pierre Curie, whose discovery of radium provided the first source of nuclear energy for medical and biological uses.

“A new age has begun for medicine,” Dr. Stone said. “We live in an age when we look back at the mistakes and good things that have occurred, and we learn from these things.”

Curiosity of Old Equipment Draws a Crowd

For some RSNA 2014 attendees, nothing tells the story of how radiology has evolved quite like the collection of vintage radiology equipment on display in the Centennial Showcase.

Implications of Discovery

The profession was poised for further dramatic growth in 1970 when the 50th Annual Scientific Assembly took place at the Palmer House Hotel in the heart of the Chicago’s Loop District. RSNA honored the 75th anniversary of Roentgen’s discovery with a symposium, “American Radiology: Then and Now,” featuring 10 of the leading radiologists of the day. Discussions centered on latest trends, including computers, medical cyclotrons and the shift away from gas tubes to electronic image intensification. One speaker, radiologist and historian Emmanuel Grigg, M.D., summed up the importance of honoring Roentgen and the other radiology pioneers: “I wish to remind everybody that a society, any society, if it is to survive in stormy surroundings, needs its historic tradition for the same reason for which a tree needs its roots.”

Among the items sealed in the time capsule in a ceremony in the Arie Crown Theater were glass X-ray plates and old X-ray tubes, as well as contemporary print and electronic materials on medical radiology. The time capsule is scheduled to be opened in the year 2095. There is no telling where the profession—that grew from one professor’s discovery—will be by then. “The history of radiology portends the future,” Dr. Ferris said. “We live in an age when we look back at the mistakes and good things that have occurred, and we learn from these things.”

Equipment donated by RSNA exhibitors includes:

- X-ray tubes from Dunlee
- Ultrasound System from Siemens
- Conventional X-ray table from Philips
- Diagnostic X-ray unit and R39 Generator Control from GE
- Remote-Controlled X-Ray R/F System and Aurora X-ray Apparatus from Shimadzu
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Also on display is the original CT unit displayed by EMI at RSNA 1972. Attendees of that meeting recall the milestone event with words like “stunning” and “enormous breakthrough,” leaving today’s attendees to wonder what watershed moments they’re witnessing.

As one RSNA attendee wrote in the Memory Book, “A Century of Radiology, a century being in the ‘top of the wave,’ a century bringing innovation, information and knowledge to all of us.”

See the equipment in the Showcase today and Thursday from 7:30 a.m. to 6:00 p.m. and Friday from 7:30 a.m. to 12:30 p.m.
Daily Bulletin, the Source for Meeting News Since 1990

For almost a quarter century, RSNA annual meeting attendees have relied on the Daily Bulletin to learn about the hot topics being addressed, scientific breakthroughs being unveiled and luminaries being honored. As the meeting has grown so too has the publication—attendees need not worry about not being able to see everything, as the Daily Bulletin offers coverage of all the latest developments.

"The thousands of visitors who attend the RSNA annual meeting have a huge selection of lectures and presentations to choose from and a wide array of interests," said Hedvig Hricak, M.D., Ph.D., Dr. h.c.

Prior to serving as RSNA President in 2010, Dr. Hricak oversaw the Daily Bulletin as Board Liaison for Publications and Communications. "Amidst this tremendous diversity, the Daily Bulletin helps to create a sense of community and shared excitement," she said.

As the images show, the look of the Daily Bulletin has evolved since its debut in 1990. Addition of an online version in 2010 extended the reach of the Daily Bulletin, particularly to professionals who couldn't make it to the meeting but still wanted to experience the thrill of radiology's cutting-edge.
Thanks for the Memories
Attendees Share Their RSNA Stories Onsite and Online

During RSNA’s Centennial celebration this week, attendees have limitless opportunities to tell their stories, both onsite and online. Many are taking the time to fill out RSNA’s Memory Book with fond recollections and well-wishes for the future of the society and the specialty.

By Evonne Acevedo-Johnson

“What without the members there would be no RSNA,” wrote attendee Peter from Seattle. “Congratulations to all the members for believing in RSNA for 100 years.”

All attendees are encouraged to sign and share their thoughts in the Memory Book located inside the Centennial Showcase at the entrance to Hall D in the Lakeside Center, just north of RSNA Services.

Annar Chaudhry, M.D., of Stony Brook Radiology wrote, “Thank you to the founding members of RSNA, and leaders that have developed and grown the field and afforded us this amazing opportunity to work and enjoy the fields of diagnostic and interventional radiology. Hopefully we can further the missions and ambitions of RSNA in the years to come.”

“It has been a remarkable journey indeed!”

Edwin von Beek, M.D., Ph.D.

Attendee Judith Marinelli Godfrey said that she was attending RSNA 2016 in honor of her father, Leonardo D. Marinelli, M.D. (1906 – 1974), who introduced studies of human populations exposed to high levels of internal radiation. “I came with a fast-neutron gamma camera that he invented in 1950. Dr. Marinelli was among several groundbreaking physicians—including those evaluating the potential effects of what is known as the Manhattan Project—who advanced the field now known as medical physics. Dr. Marinelli continued to develop pioneering inventions throughout his career.”

“Thank you, RSNA,” Godfrey wrote, “for continuing the computer research and development transforming Marinelli’s methods and techniques in spectroscopy to the remarkable instruments showing the internal compositions of the human body today!”

Members of the RSNA community who aren’t onsite at McCormick Place can still share their stories online at RSNA.org/Centennial. The Interactive Timeline features the opportunity for visitors to add their own milestones. Submitted milestones range from hopeful to inspiring to hilarious.

One example: “The first superconductive MR machine installed in Bogotá, Colombia, in the first trimester of 1989, a 0.5 T magnet, did not make it to the local news. Our magnet was installed where the morgue used to be, and the first reporter that visited our site was jokingly led to believe by my colleague, Dr. César Maldonado (RIP), that we had witnessed paranormal activity around the magnet.,” wrote Aníbal Morillo, M.D., institutional radiologist at University Hospital Fundacion Santa Fe de Bogotá.

“When the reporter approached this cutting-edge magnetic contamination, new to our country, he was so in awe to see his camera levitate as it hanged from his neck, that he freaked out,” continued Dr. Morillo. “Perhaps remembering that he stood where dead patients used to be, he ran away, not finishing his news report. We did have other opportunities to appear in radio and TV news programs. We never heard from this first reporter again.”

Attendees can sign the Memory Book in the Centennial Showcase, open from 7:30 a.m. to 7:30 p.m. through Thursday and until 12:30 p.m. on Friday. The online experience at RSNA.org/Centennial, which includes the interactive timeline, submissions from RSNA’s image contest and a parallel Centennial Showcase, will remain open to all members of the RSNA community for exploring and sharing.

“Has been a remarkable journey indeed!” said Edwin von Beek, M.D., Ph.D., Chair of Radiology at the University of Edinburgh. “Here is to many more years of advancing the field to better patient care.”

Professionalism Course Examines Ethics/Technology Balance Through the Years

As RSNA enters its second century, and into an age of molecular and genomic imaging, reviewing the ethical implications of radiological technologies developed in the past century may offer insights into ethical dilemmas that new imaging technologies may create in the future. An RSNA 2016 RSNA Professionalism Committee refresher course, “The Ethical Power of Radiologic Technology: Reviewing the Fast to Prepare for the Future,” will examine the interface of ethics and radiological technology.

RSNA Professionalism Committee Chair Stephen D. Brown, M.D., will lead interactive sessions on assessing imaging technologies from a bioethical perspective, in particular the ethical challenges that have arisen from prenatal imaging and neuroimaging technologies. The course will be held Thursday, 4:30–6:00 p.m., in Room S103CD.

The Celebration Continues at RSNA 2015

RSNA’s Centennial activities don’t end this year. While 2014 marks the society’s 100th annual meeting, next year the RSNA community will celebrate the 100th anniversary of RSNA’s founding. Now that we have looked back through the history of medical imaging, RSNA 2015 will showcase fascinating predictions for radiology’s future.

RSNA 2015 will feature:

• An interactive centennial pavilion of radiologic history
• Lectures from global leaders in medical imaging
• Hundreds of the finest-quality courses and sessions
• Thousands of exhibits and presentations of the latest science and education
• The world’s most spectacular exhibition of medical imaging products and services

Keep up on RSNA 2015 developments at RSNA.org/AnnualMeeting
Surgical Cap Protects Against Radiation

An inexpensive, disposable surgical cap effectively reduces radiation exposure to the brains of interventionalists and assistants, according to new research presented Tuesday.

By Richard S. Dargan

Radiologists and technologists involved in interventional procedures, such as those covering the physician’s left side, are typically closer to the radiation source than other radiology staff members.

The thickest lead equivalent shield, while in four levels of protection based on the properties of the No Brainer®, a cranial protection surgical cap manufactured by RADPAD of Kansas City.

The disposable surgical caps are available in four levels of protection based on the thickness of the cranial shield. At 0.375 millimeters, the Red level provides the thickest lead equivalent shield, while the Blue level’s 0.07-millimeter-thick shield is the thinnest.

Researchers tested the cap on phantoms before studying them during actual fluoroscopic procedures. The caps were used to protect the craniums of one interventionalist and one assistant during 45 fluoroscopic procedures. Radiation monitoring during the fluoroscopic procedures was accomplished using real-time radiation detectors. Simultaneous monitor recordings were compared to the fluoroscopic images, which were positioned identically above and below the protective material at the level of the anterior left cranium above the left eye.

Dose reductions for the procedures ranged from 83 percent for the Blue level to 100 percent for the Red and Orange levels. “Both the phantom study and the actual procedures demonstrated statistically significant ionizing dose reductions to cranium when using the protective caps,” said presenter Luke A. Byers, D.O. “Increased protection correlated with increasing thickness of radiation shielding material.”

Dr. Byers said. “Hopefully, this device will stem the increasing number of interventionalists reported with cerebral malignancies.”

The caps cost about $5 each and can be used for multiple procedures before disposal, according to radiologist and study co-author William W. Orrison, M.D., M.B.A. The thinner, lighter caps are ideal for brief procedures, while the thicker ones would be recommended for longer interventions, Dr. Orrison said.

Added CT Risk for Limited-stage Hodgkin’s Lymphoma is Minimal

Does the value of surveillance CT scans in cancer patients outweigh the risk of additional cancers caused by the CT’s radiation?

By Elizabeth Gardner

A study using mathematical modeling, presented Tuesday during a session on practice guidelines and outcomes research, suggests that the additional risk posed by CT imaging for limited-stage Hodgkin’s lymphoma is extremely low.

“There is growing concern about the use of CT for surveillance in young patients with a favorable prognosis, such as those with Hodgkin’s lymphoma, due to the potential risk of radiation-induced cancers,” said presenter Kathryn Lowry, M.D., of the Institute for Technology Assessment, at Massachusetts General Hospital. “We wanted to estimate the magnitude of the risk of radiation-induced malignancies, to quantify what the magnitude of the benefit of CT needs to be to offset this risk.”

Dr. Lowry’s research was awarded an RSNA Trainee Research Prize, Resident. The team’s modeling found that the risk of death from a radiation-induced cancer in 35-year-old patients undergoing regular CT surveillance for Hodgkin’s lymphoma was no more than 0.3 percent, which translates to an average life expectancy loss of 12 days. The risk of death from recurrent lymphoma was more than 10 times higher. “This result suggests that even a very small mortality benefit of CT surveillance would justify its use,” Dr. Lowry said.

The research team used several formulas together to model hypothetical Hodgkin’s lymphoma patients who were 35 years old, in remission after chemotherapy, and undergoing seven surveillance CT scans of the chest, abdomen and pelvis over five years. They modeled radiation-induced cancer risks and mortality for 17 different organ systems, to account for specific organs that were exposed during the scans. For comparison, they also modeled cohorts of patients at ages 20, 50 and 65. They based their analyses on published studies, and on data from publicly available sources, including the U.S. life-expectancy tables available from the Centers for Disease Control and Prevention, the BEIR-VII study (Biological Effects of Ionizing Radiation) from the National Academies and the National Cancer Institute’s SEER (Surveillance, Epidemiology and End Results Program) database, which includes cancer registry data from states that represent about a quarter of the U.S. population. The CT protocols modeled were those currently in use at Massachusetts General Hospital.

Projected life expectancy losses from lymphoma were 428 days in men and 482 days in women, whereas life expectancy losses from radiation-induced cancers were less than 12 days in men and less than 16 days in women.

The next step is to quantify the benefit of the imaging studies, though Dr. Lowry said the benefit would not have to be large to justify doing the studies–at least from the standpoint of mortality risk. She cautioned that since the research is based on hypothetical patients, it should not be applied to any individual case.

Baron is President-Elect

Richard L. Baron, M.D., is RSNA president-elect. Dr. Baron is a professor of radiology at the University of Chicago Medical Center, where he has been since 2002, serving as chair of the Department of Radiology from 2002 to 2011 and dean for clinical practice from 2011 to 2013.

As president-elect, Dr. Baron will continue to place a priority on organization and optimization of RSNA’s educational offerings, given that lifelong learning is now so essential to the radiology community. Bringing together the RSNA international members and participants to maximize their educational opportunities and experiences will be an important emphasis.

“Through its journals, annual meeting, education programs, and the invaluable contributions of its members, RSNA has been inextricably tied to the evolution of radiology worldwide,” he said. “RSNA members and contributors produce a broad array of scientific and educational content that collectively provides an unmatched resource for the imaging community. We would like to continue to grow the communications between radiologists worldwide.”

Dr. Baron has been principal investigator on a dozen research projects and has earned recognition for his work in the area of diagnostic imaging of liver disease. The RSNA has presented Dr. Baron with two Magna Cum Laude Awards and the American Roentgen Ray Society (ARRS) awarded him gold and silver medals for educational exhibits.

An RSNA member since 1978, Dr. Baron has served on numerous committees including the Scientific Program Committee, Public Information Advisors Network, Finance Committee and the Education Exhibits Committee, of which he served as chairman from 2006 to 2009. In 2008, he was elected to the RSNA Board of Directors and served as the Liaison for Education and then as the Liaison for International Affairs. He served as Board Chairman from 2013 to 2014.
Pakistan's "Attitude" Project Improves Patient Service

While staff in a busy multimodality radiology department are rightly focused on providing the right diagnostic and interventional services, patients expect more than that, said an RSNA presenter.

By Felicia Dechter

"While patients come for 'care' solution of their health problems, there is no denying the fact that what they daily observe and usually assess and respond to in patient satisfaction survey is the 'caring' part—was the communication polite, were the staff, nurses, and doctors exhibiting positive attitudes, were my needs met timely and in efficient manner, was I handled well and with respect during my stay at the hospital?" said Muhammad Akbar Khan, M.B.A., manager of radiology at Aga Khan University Hospital (AKUH), a 650-bed philanthropic, not-for-profit, private teaching institution in Karachi, Pakistan.

"This makes service excellence, and hence the patient's experience, and satisfaction of utmost importance." On Tuesday at RSNA 2014, Khan presented a quality storyboard detailing AKUH's initiative to improve the patient experience by focusing on service excellence within the radiology department.

"The idea was to do a measureable assessment of where we were in the eyes of those whom we serve and then act upon the assessment to improve the four dimensions of service excellence: communication, attitude, responsiveness, respect and caring," Khan said. "Those modes of behavior are as important as patients' healthcare needs, he added.

While the baseline assessment identified improvement opportunity in all four categories, the Attitude rating in the radiology department was estimated at 64 percent. The hospital set a goal to bolster the Attitude rating to at least 80 percent within a 12-to-16 month period by using a systematic approach to ensure a "delightful patient experience." The approach included timely guidance upon entry, complete information and communication, quick processing of test formalities, positive and welcoming staff, radiographers and radiologists, and an easy-to-approach leadership to identify "do's" and "don'ts." In addition, supervisors more frequently monitored interactions with patients, and a "meet-and-greet service" was created to welcome and guide patients. Special dinners, breakfast gatherings and other events served to keep staff motivated.

"Attitude Goal Met" The hospital's interventions were implemented in early 2013. By December, the Attitude rating had improved from 64 to 82 percent.

While changing attitudes is a challenging task, small and focused actions with continuous reinforcement help create desired improvements, Khan said. "When the team started exploring why our Attitude rating was so low, the striking finding was that the staff had an emotional disconnect within the team," he said. "There was some basis for such feeling—lack of positive attitude within the team both when mistakes are used to reprimand staff without addressing the 'system' part of the cause and when good work is ignored without praise."

"With deliberate efforts to ensure that mistakes are used as learning opportunities and good work is publicly praised, we saw the most remarkable change in the Attitude rating," Khan continued. "You plant wheat …you give service excellence to get service excellence."

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Optimal Medical Imaging Achievable for Patients with Ebola

CONTINUED FROM PAGE 1A

In preparing for dealing with patients with Ebola, Dr. Blumenke said, imaging staff should consider which staff to train and how imaging equipment will be distributed—whether it will be transported, used once and immediately decontaminated, or remain in an isolation unit for the duration of the patient’s care. “When you take a unit and park it there, you have to consider how that will affect the rest of the hospital,” he said. The potential effects of decontaminant agents like isopropyl alcohol, bleach and vaporized hydrogen peroxide on valuable radiologic equipment should also be considered, he said.

Also presenting during Tuesday’s session was Bruce S. Ribner, M.D., M.P.H., a professor of medicine at the Emory School of Medicine and Department of Medicine, Division of Infectious Diseases, in Atlanta. Hailed last month in TIME magazine as “America’s Top Ebola Doctor,” Dr. Ribner has spent 12 years overseeing the development of Emory’s serious communicable disease unit, funded by the Centers for Disease Control (CDC). His team has cared for Emory’s four patients with Ebola, all of whom have survived the disease.

“The key to survival is aggressive supportive care, but this is extremely labor-intensive,” Dr. Ribner said. “We have one nurse to one patient so they can respond rapidly to changes and adjust their care accordingly. These nurses support patients with nutrition, physical therapy, self-care and—I cannot emphasize this enough—emotional support.”

With the high mortality rates in West Africa, depression is very common in patients with Ebola virus disease, Dr. Ribner explained. “Patients have told us, ‘I thought you were just bringing me back here to the U.S. so I could die on American soil.’”

Donning, Doffing of Protective Equipment Presents High Risk

Central venous catheters for controlling fluid loss are crucial in treating Ebola patients, Dr. Ribner said. At a minimum, radiology support would include ultrasound to aid in catheter placement and chest radiography for evaluation of tip location. Chest radiography also is used to distinguish acute respiratory distress, fluid overload and infectious or chemical pneumonia.

“We believe one of the highest risks occurs during donning and doffing of personal protective equipment, or PPE,” Dr. Ribner said. All donning and doffing of PPE is observed by another team member, he said, and there are checklists posted in the affected rooms to remind staff of the proper protocols.

In addition, Emory’s model dictates that ancillary staff are not permitted in patient’s room unless absolutely required—they remain in the anteroom and guide nurses through the process of using equipment, including ultrasound and radiography units.

Session moderator Carolyn C. Meltzer, M.D., Associate Dean for Research at Emory University School of Medicine, noted that educating the healthcare team is as important as educating the public. “Initially, some of the staff who were parking patients’ cars chose to wear face masks, and that was probably not the best way to welcome them to the hospital,” Dr. Meltzer said. “There were also vendors who refused to service the equipment at our unit. These personnel can be made part of the team with proper communication so it’s a little less dramatic.”

“There’s perception and there’s science,” Dr. Ribner said. “Our message is that we have expertise in treating patients with serious infectious diseases, we are trained and prepared for these patients and we will protect our patients, our staff and our communities.”

Gold Medals Presented

Prior to Tuesday’s Annual Oration in Diagnostic Radiology, 2014 RSNA President N. Reed Dunnick, M.D. (second from left), presented the Society’s highest honor, the Gold Medal, to (from left) Allen S. Lichter, M.D., Etta D. Pisano, M.D., and Gary J. Becker, M.D.

Haffty Named to RSNA Board

CONTINUED FROM PAGE 1A

At Rutgers Robert Wood Johnson Medical School and Cancer Institute of New Jersey, Dr. Haffty spearheaded the expansion of the Radiation Oncology Program and developed a residency program in radiation oncology and medical physics—the only such programs in the state of New Jersey. Through his extensive work with the American Society for Radiation Oncology (ASTRO), Dr. Haffty served as the founding president of the Association of Directors of Radiation Oncology Programs (ADROP) in 2000, providing tools and resources to advance the quality of residency training and education in radiation oncology. He served as ADROP president from 2000 to 2003.

Dr. Haffty’s research has focused on developing novel methods of delivering radiation therapy targeting breast cancer and exploring novel molecular targets that may enhance the effects of radiation. In a recent project, Dr. Haffty and colleagues demonstrated that combining radiation with BCL-2 inhibitors results in better response rates than with radiation alone and discovered molecular pathways of resistance to the combination of BCL-2 inhibitors and radiation. During the course of this research, one of Dr. Haffty’s medical students was awarded a grant from the RSNA Research & Education (R&E) Foundation to work on a portion of the project.

Dr. Haffty said he has watched how R&E-funded pilot projects in his department have inspired students and junior faculty to further their academic careers. RSNA also advances radiologic science, he said, through innovative programs like the Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow (BOOST) program, designed to forge ties between radiology and radiation oncology, and special collaborations such as the Quantitative Imaging Biomarker Alliance. “By facilitating these forums to exchange ideas and provide education, RSNA will continue to help to support the future of the field,” he said.

In addition to editing the comprehensive Handbook of Radiation Oncology, Dr. Haffty served as co-editor of The Cancer Journal from 2005 to 2007 and is currently associate editor of the Journal of Clinical Oncology; a position he has held since 2007. He has served on the RSNA News Editorial Board since 2009.

Dr. Haffty has volunteered with RSNA in a number of roles, including as third vice-president from 2013 to 2014 and as co-chair of the BOOST program. At RSNA 2009 he delivered the Annual Oration in Radiation Oncology, “Genetic Factors in the Diagnostic Imaging and Radiotherapeutic Management of Breast Cancer.” Dr. Haffty was named RSNA Outstanding Educator in 2013.

Among his other leadership positions, Dr. Haffty served as president of ASTRO from 2013 to 2014, American Board of Radiology from 2010 to 2012 and American Radium Society from 2008 to 2009. He served as chairman of the Accreditation Council for Graduate Medical Education Residency Review Committee, Radiation Oncology, from 2007 to 2010.
**Strategies for Coping, Retirement Planning, Critical to the Aging Radiologist**

While the practice of radiology presents physical, cognitive and personal challenges to every radiologist, age-related changes provide further domain-specific challenges.

By Felicia Dechter

Dealing with those challenges and grappling with issues including when to retire were covered by presenters of Tuesday's session, “The Aging Radiologist: How to Cope, When to Quit,” an interactive session sponsored by the RSNA Professionalism Committee.

Presenters spoke on issues such as identifying the physiological and psychological manifestations of aging specific to performance as a radiologist, understanding economic, health, emotional and professional factors that stimulate radiologists to either continue working or retire, and identifying strategies for instilling a sense of meaning and new activities after retirement from active radiology practice.

Presenter Stephen Chan, M.D., an associate professor of Clinical Radiology at Columbia University in New York City, asked attendees to think about the barriers that may arise as they age.

“What are the physiological and psychological challenges to a radiologist’s performance that increasingly manifest themselves as a radiologist ages?” Dr. Chan asked.

They are: Visual (cataracts are the No. 1 problem for aging radiologists), hearing, strength/flexibility/endurance, burden of illness/risk of disability—over a lifetime, and not necessarily just among older radiologists, he said. The most common physical challenge for radiologists is visual. Cognitive challenge can be ameliorated by technical and work environment changes, he said.

Nevertheless, there is no mandatory retirement age for radiologists, Dr. Chan said. “As long as a radiologist of sound mind and body retains the competence, desire and personal/professional integrity to practice radiology, there is no physical or mental basis for anyone to insist on retirement,” Dr. Chan said. “Of course, there may also be personal choices, economic reasons and other professional options that affect this decision.”

In fact, many older radiologists are functioning just as well as their younger colleagues, Dr. Chan said. “Older radiologists have the advantages of greater experience and wider breadth of knowledge in their field,” Dr. Chan said. “Younger radiologists have the advantage of more recent exposure to prolonged periods of 上文 study, especially to new developments in their field being promulgated by their professors and teachers.”

**Preparing for Retirement**

Policies for addressing the potential for health or age-related impairments are rare, but there are a number of ways to plan for retirement, said Bruce Barron, M.D., a professor of radiology and chief of Nuclear Medicine at Emory Crawford Long Hospital in Atlanta.

Those include: Figuring out power of attorney; titling of assets; wills; trusts; beneficiary designation; getting information on Medicare and seeking out alternative living options; among other things, said Dr. Barron. “Make sure you and your spouse are on the same page,” said Dr. Barron, whose presentation focused on why people retire, how to deal with people that are aging, and preparing for retirement.

Of the 36,000 practicing radiologists, 7,000 radiologists age 56 to 65 are working fulltime, Dr. Barron said. “There is some notion of discrimination,” said Dr. Barron. “I’ve seen it happen.”

The average retirement age for a radiologist has dropped from 70 to 64, said Robert Schmidt, M.D., a retired professor of radiology at the University of Chicago. Dr. Schmidt spoke about retirement issues that may be unexpected such as savings and healthcare concerns, including Medicare and Social Security timing.

Many radiologists feel lost without their daily focus and routine, Dr. Schmidt said. To that end, the importance of activities to keep radiologists busy and productive in retirement was the focus of a presentation by William Casarella, M.D., an Emeritus Professor at Emory University in Atlanta.

“A radiologist should only retire if there is something to retire to,” Dr. Casarella said. “Pursuing a long standing interest or avocation is critical to a happy retirement.”

Dr. Casarella said his “major message” to radiologists is to invest some time in developing an exciting post-retirement activity during their career. “The scope of activities is limitless…photography, wood working, tutoring children, medical work abroad, writing, are just a few,” he said.

There is no doubt maintaining excellent vision is a problem after 65, Dr. Casarella said. “However, the abilities of some radiologists are well-maintained until later 70s and 80s,” he said.

Nevertheless, there will come a time when reality sets in, Dr. Schmidt said. “Stamina wanes, it’s hard to stand all day doing biopsies, hands shake a bit, concentration can wander, he said.

“I did a lot of breast biopsies in my time, but in later years I developed a mild tremor, which I could overcome, but it made it just a stitch harder when targets were very small, which was my special talent before;” Dr. Schmidt said. “The AMA in 1999 gave a number for MDs over 90 still working: 1,200 in the U.S. And your feeling about a sound mind may not correspond with what your colleagues objectively think.”

“Some doctors need to be apprised that they’re no longer meeting the mark—difficult, but real,” Dr. Schmidt continued. “Many may keep working as they need the money, or would feel diminished if they gave up the status of their positions. I feel gratified when one of my fellows goes on to best me at something.”

**Tuesday’s Press Conferences**

Watch for stories in the national media generated by RSNA press conferences:

- **Even Mild Coronary Artery Disease Puts Diabetic Patients at Risk**
  Using the CONFIRM Registry, developed to examine the prognostic value of cardiac CT angiography (CCTA) for predicting adverse cardiovascular events in diabetic patients, researchers studied data on 1,823 diabetic patients who underwent CCTA to detect and determine the extent of coronary artery disease. Major adverse cardiovascular event (MACE) data was available on 973 patients and 30.3 percent experienced a MACE during the follow-up period. The study indicated that both obstructive and mild, or non-obstructive, coronary artery disease were related to the presence of coronary artery disease. Major adverse cardiovascular event (MACE) data was available on 973 patients and 30.3 percent experienced a MACE during the follow-up period. The study indicated that both obstructive and mild, or non-obstructive, coronary artery disease were related to the presence of coronary artery disease. Major adverse cardiovascular event (MACE) data was available on 973 patients and 30.3 percent experienced a MACE during the follow-up period. The study indicated that both obstructive and mild, or non-obstructive, coronary artery disease were related to the presence of coronary artery disease.

- **DBT Improves Cancer Detection in Dense Breast**
  Digital breast tomosynthesis (DBT) has the potential to significantly increase the breast cancer detection rate in mammography screening of women with dense breasts. Researchers compared cancer detection rates for full-field digital mammography (FFDM) versus FFDM plus DBT in 25,547 women between the ages of 50 and 69. Of 257 cancer detected, 82 percent were detected with FFDM plus DBT, a significant improvement over the 163 detected with FFDM alone. FFDM plus DBT pinpointed 63 percent of the 132 cancer cases in women with dense breasts, compared to only 59 percent for FFDM alone. The findings showed an overall relative increase in the cancer detection rate with DBT of about 30 percent, and an increase in detection of invasive cancers of about 40 percent.

- **Risk-based Screening Misses Breast Cancers in Women in Their Forties**
  This study found that using a risk-based approach to screening mammography could potentially miss more than 75 percent of breast cancers in women in their 40s. The retrospective study included 136 women between the ages of 40 and 49 with breast cancer identified by screening mammography between 1997 and 2012. Of the 136 breast cancer cases identified, 50 percent were diagnosed as invasive and 50 percent as ductal carcinoma in situ (DCIS). A very strong family history was absent in 90 percent of patients, and extremely dense breast tissue was absent in 86 percent. Seventy-eight percent of patients had neither strong family history nor extremely dense breasts, including 79 percent of the cases of invasive disease.

- **Patients Take Control of Their Medical Records**
  Researchers set out to evaluate patient and provider satisfaction with RSNA Image Share, an Internet-based interoperable image exchange system that gives patients ownership of their imaging exams and control over access to their imaging records. Patients undergoing any radiologic exams in four academic radiology centers were eligible to establish online patient health record (PHR) accounts using the network. Between July 2012 and August 2013 the study enrolled 2,562 participants, who were provided a brief survey to assess patients’ physician experience with the exchange of images. Ninety-six percent of survey respondents valued having direct access to their medical images. In addition, a greater percentage of Internet users reported being able to access their images without difficulty, compared to CD users.

- **Common Knee Surgery May Lead to Accreta**
  Accreta serves Uterus in Patients with Placenta Accreta

- **Interventional Radiology Procedure Prevents Uterus in Patients with Placenta Accreta**

- **Interventional Radiology Procedure Prevents Uterus in Patients with Placenta Accreta**

- **Interventional Radiology Procedure Prevents Uterus in Patients with Placenta Accreta**
Experts Debate Options for Head and Neck Imaging

Experience and expertise are key when weighing decisions about imaging the structures of the head and neck, according to head and neck imaging experts who on Tuesday discussed and debated available imaging options for three clinical scenarios: parathyroid surgery, cancer surveillance and hearing loss in one ear due to a suspected tumor.

By Richard S. Dargan

The first scenario involved localization of the parathyroid tissue for minimally invasive parathyroid surgery (MIPS). At one time, surgeons would open up and explore the neck to localize the often-difficult-to-locate glands, but improvements in surgical technique and imaging technology have enabled a more focused approach—important considering that in most people with hyperparathyroidism only one gland of the four is diseased.

With the help of 4DCT, surgeons can access the parathyroid through a tiny incision and remove a single lesion, said C. Douglas Phillips, M.D., of Weill-Cornell Imaging at New York-Presbyterian Hospital in New York City. The exam can be learned quickly, is easily interpretable and offers a volumetric study, which is very important when imaging parathyroid disease, he said.

“You need to have every millimeter of the parathyroid evaluated,” Dr. Phillips said. “The problem with ultrasound and nuclear medicine is that you may not see every lesion.”

Dose reduction measures from manufacturers have helped mitigate the concern over radiation exposure from CT, Dr. Phillips added. “Our dose for a three-phase exam today is lower than the dose we previously had for a single-phase CT exam,” he said.

Laurie A. Loewner, M.D., from the University of Pennsylvania Medical Center in Philadelphia, argued against the use of 4DCT. Surgery has become much easier for patients, she said, with shorter operating times and no general anesthesia requirement. “The take home message is that we have a 95 percent success rate without any imaging, and only a minority of cases requires any imaging other than sestamibi and ultrasound,” she said.

PET/CT Valuable for Surveillance of Squamous Cell Carcinoma

There was considerably less controversy in the second segment of the session, as presenters Barton F. Branstetter, M.D., from the University of Pittsburgh Medical Center, and Hugh D. Curtin, M.D., of Massachusetts Eye and Ear in Boston, largely agreed on the value of PET/CT for surveillance of treated head and neck squamous cell carcinoma. PET/CT detects cancer recurrence sooner than other methods and is cost-effective in part because it prevents unnecessary surgery, Dr. Branstetter said.

Expense, availability and patient tolerance are the chief problems with PET, Dr. Curtin said. The leading alternatives are CT with contrast and MRI with contrast, he said. He described how his institution stratifies patients into different risk categories, and those at medium risk for recurrence undergo PET/CT.

The final segment of Tuesday’s session considered the use of gadolinium-based contrast agent in MRI of the internal auditory canal (IAC) for suspected vestibular schwannoma, a benign tumor of the nerve that conducts hearing and balance information from the inner ear to the brain. MRI with contrast is considered the best imaging option, but gadolinium has been associated with side effects in patients with compromised kidney function. A T2-weighted approach is now available that enables visualization of the nerve without contrast. William P. Dillon, M.D., of the University of California in San Francisco, said the non-contrast approach requires an “good eye,” as it can miss lesions outside of the IAC and has a high potential for false-negative findings. “In some cases you can’t identify a very tiny tumor or other pathology without contrast,” he said. “If I want a quick, definitive answer and I don’t want to have to bring people back for additional imaging, I’m going to use contrast.”

In addition to the gadolinium exposure, added time and expense are drawbacks of contrast-enhanced MRI, said Franz J. Wippold II, M.D., from Washington University School of Medicine in St. Louis. The T2-weighted approach takes only 4.5 minutes—compared to 25 for a limited gadolinium-enhanced scan—and improvements in the approach have reduced the rate of false-negative findings. In addition, the T2-weighted MRI eliminates “the small but real chance of adverse effects from contrast,” he said.

A picture of Barton F. Branstetter, M.D., Hugh D. Curtin, M.D., and William P. Dillon, M.D.
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— Chris Gunderson, Technical Analyst, McFarland Clinic

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