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OUR MISSION: The *ACR Bulletin* supports the American College of Radiology's Core Purpose by covering topics relevant to the practice of radiology and by connecting the College with members, the wider specialty, and others. By empowering members to advance the practice, science, and professions of radiological care, the *Bulletin* aims to support high-quality patient-centered healthcare.

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QUESTIONS? COMMENTS? Contact us at bulletin@acr.org. Digital edition and archives of past issues are available at ACR.ORG/BULLETIN.



International Radiology

The ACR embraces the important role of the international community of radiology.

n Nov. 8, 1895, Wilhelm C. Röentgen produced the first pictures using X-rays, giving birth to radiography. In 1901, he was awarded the first Nobel Prize in Physics for his discovery. Since 2012, Nov. 8 has been commemorated as the International Day of Radiology — a joint initiative of the European Society of Radiology, the RSNA, and the ACR, supported by the International Society of Radiology (ISR), and with contributions by organizations across the globe such as the Asian Oceanian Society of Radiology, the Colegio Interamericano de Radiología, the Royal Australian and New Zealand College of Radiologists, and the Radiological Society of South Africa.

While the focus and resources of the ACR will always be dedicated to representing radiology and members in the U.S., we acknowledge that the impact and influence of our profession does not end at our borders. For example, the ISR plays a key function in representing our specialty to world organizations such as the WHO and the International Atomic Energy Agency. We are ably represented in the ISR leadership by Geraldine B. McGinty, MD, MBA, FACR, Donald P. Frush, MD, FACR, and Bibb Allen Jr., MD, FACR.

We are all committed to advancing the health and well-being of our patients through medical imaging and imaging-based care and interventions. Manufacturers from around the world continue to provide technology and services on an international scale. There have been landmark endeavors in which we have come together to advance the profession globally. For example, the Lancet Oncology Commission on Medical Imaging and Nuclear Medicine presented results from the first-ever comprehensive effort to quantify imaging and nuclear medicine resources worldwide. During the COVID-19 pandemic, studies from around the world contributed to our collective research and experiences as we worked to protect our colleagues — while providing critical medical imaging for our patients. Especially in the U.S., we are seeing an increasing number of articles and research contributions from international centers. In addition, the larger radiology conferences are drawing more diverse international attendees, even in virtual and hybrid formats. For instance, RSNA 2019 drew more than 51,000

attendees from 116 countries. We can only guess at how the meetings landscape will change post-pandemic, but interest in meeting together as international colleagues clearly remains high.

This message of the shared international experience is being conveyed by radiology communities around the world. Now, with AI, we are sharing experiences with module development and implementation on an international scale as we learn together how new technology can help us deliver safe and effective care. We stand together to espouse the ethics of AI in radiology through international, multisociety statements produced by the ACR, the European Society of Radiology, the RSNA, the Society for Imaging Informatics in Medicine, the European Society of Medical Imaging Informatics, the Canadian Association of Radiologists, and the American Association of Physicists in Medicine. In a recent European survey, 100% of the respondents agreed that it is imperative that radiologists be involved in AI system development and validation.²

Raising the international awareness and profile of radiology benefits our profession and our patients. For instance, this year, during World Patient Safety Day on Sept. 17, the WHO teamed up with the ISR to feature a webinar on "Safer Maternal and Newborn Care: the Role of Ultrasound." Also, the ACR's Radiology Leadership Institute® is working with the ISR on a course to help radiologists in Sub-Saharan Africa build their leadership skills.

Many partner organizations around the world, including the European Society of Radiology, are launching CDS programs to protect patients and limit unnecessary imaging. International radiology societies are working together to provide imaging capabilities in middle- and lower-income countries.³ National and regional quality and safety campaigns are raising standards throughout the world. Contributing societies to these campaigns include AfroSafe, ArabSafe, Canada Safe Imaging, EuroSafe Imaging, Image Gently*, Image Wisely*, Japan Safe Radiology, and LatinSafe.

On Nov. 8, radiology providers around the world will pause to recognize the historic achievement of Wilhelm C. Röentgen. Let's take the opportunity to raise awareness of this day and its significance for our patients and other stakeholders. Röentgen's discovery facilitated the development of an international community dedicated to advancing the science of medical imaging and radiation-based therapies and interventions.

3

ENDNOTES available in the digital edition at acr.org/bulletin

DISPATCHES

NEWS FROM THE ACR AND BEYOND

Honoring Military Radiologists



November marks the annual observation of Veterans Day, a time to honor our military veterans who have served in the U.S. Armed Forces. U.S. Army Colonel Mohammad Naeem, MD, FACR, co-chair of the ACR's General, Small, Emergency, and/or Rural Practice Network Military Subcommittee and the director of the Armed Forces Radiobiology Research Institute, is an active-duty military radiologist in the National Capital Region and the first radiologist ever to lead the Institute. Naeem shared four things his civilian radiologist colleagues might not know about their military counterparts:

- Military radiologists are medical warfighters who train, drill, perform select warrior tasks, and maintain physical fitness like their warrior counterparts in the military, and a radiologist may be in harm's way several times during a combat deployment.
- Deployed military radiologists use ingenuity, innovation, and improvised methods to perform complex imaging-guided procedures, often with limited resources.
- Military radiologists work hand-in-hand with other U.S. government agencies in the mitigation, prevention, preparation, response, consequence management, and recovery from man-made and natural disasters.
- Military radiologists deploy to austere locations worldwide in support of humanitarian missions, bringing cutting-edge technology and expertise with them to disaster-stricken regions.

To learn more about military, VA, and USPHS membership and education discounts, visit acr.org/military-benefits.

The opinions and assertions expressed herein are those of the author and do not necessarily reflect the official policy or position of the Uniformed Services University or the Department of Defense.

IMAGING 3.0: Al-Powered Best Practice Recommendation Program

Radiology Partners has implemented a best practice recommendation (BPR) program that is powered by AI. The technology has helped the group achieve 100% adherence to some BPRs, which are founded on evidence-based guidelines, such as the ACR Appropriateness Criteria®.

"We wanted the radiologists to have a digital assistant to help them use and apply the BPRs as we scaled the program," says Nina E. Kottler, MD, MS, associate chief medical officer for clinical AI and vice president of clinical operations at Radiology Partners. "That meant creating an AI program that uses natural language processing to understand what the radiologists are saying as they dictate their reports and automatically identify the appropriate follow-up recommendations for each pathology. We looked around, and that kind of AI system didn't exist, so we decided to create it."

Read the full case study at acr.org/AI-Powered.



The Radiology Health Equity Coalition Needs Your Help

The Radiology Health Equity Coalition is seeking examples of radiologists, radiology practices, and radiology departments that have developed successful community partnerships to improve access to care for rural, minoritized, and underserved populations. Many *Bulletin* readers have been working with their communities at the state and local level for years to increase the number of patients who receive life-saving screening. More than one community outreach model may be needed to make transformational change in statistics like the following.

- Potentially preventable deaths from cancer, lower respiratory disease and other illnesses in rural areas are often nearly double that of urban areas.¹
- Black men are 52% more likely to die from colorectal cancer (CRC) than White men. The 19% CRC disparity may be due to fewer screenings.²
- 39% of U.S. women without health insurance had a mammogram in the past two years versus 75% of those with health insurance.³

Please help others learn from your experiences by sharing your examples with the Coalition at cbrathwaite@acr.org.

ENDNOTES available in the digital edition at acr.org/bulletin

Your Membership, Your Community

Your ACR leaders are committed to excellence in patient care and recognize inclusiveness as a core component to serving that mission. Sharing your practice and demographic data helps the College measure, understand, and improve inclusivity in service to our patients and populations. Plus, it helps us develop a leadership body that reflects and celebrates the diversity and vitality of our membership. To protect your privacy, demographics are de-identified, anonymized, and used only for statistical analysis.

Tell us about yourself today by visiting acr.org/MyACR.

Applications Open for 2022 Medical Student Travel Scholarship

The ACR has opened applications for the 2022 Medical Student Travel Scholarship program. The scholarship is offered to medical students to support attendance at the ACR Annual Meeting, which will be held April 24-28, 2022.



The goals of the scholarship program are to:

- Encourage medical student involvement with the ACR.
- Improve diversity and inclusion within the ACR and radiology.
- Enhance the recognition and value of ACR membership among medical students and trainees.
- Increase understanding of the impact of ACR research.
- Highlight the importance of radiology as a critical component of patient care.

For more information on recipient requirements and how to apply, visit acr.org/MedStudentTravel.

2021 ACR Chapter Recognition Awards

Recognize your chapter's 2021 accomplishments with a Chapter Recognition Award. Launched in 2003, the program was created to recognize chapter successes, facilitate the sharing of ideas among chapters, and encourage and support activities of the chapters.

Apply for recognition in the following categories:

- Government Relations
- Meetings and Education
- Membership
- Quality & Safety

Here's what you need to know:

- Apply in all four categories and be automatically considered for the Overall Excellence Award.
- Earn additional points by submitting up to five "Share a Successful Practice" forms to highlight 2021 achievements.
- All chapter activity from Jan. 1, 2021, through Dec. 31, 2021, will be accepted.

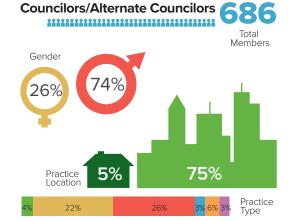
If your chapter has hosted member meetings, engaged in state advocacy, participated in Hill Days, supported quality and safety initiatives, or launched member campaigns, be sure to include it in your submissions.

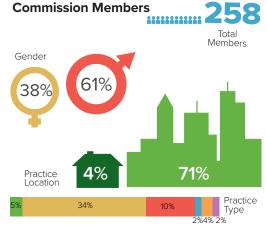
To apply, visit acr.org/Member-Resources/Fellowship-Honors/Chapters.

Demographics for ACR 2021

In 1998, the ACR Council passed a resolution, which was subsequently renewed in 2008 and 2018, to provide self-reported demographic information about the BOC, CSC, Commission Members, and ACR Councilors and Alternate Councilors. The following information is provided in accordance with that policy.

Data based on rosters as of May 31, 2021.





Practice Location

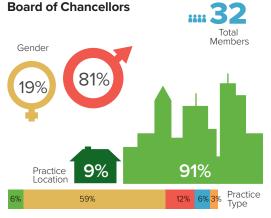




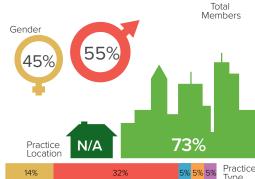




VA/Military/PHS



Council Steering Committee



What's Next for Indirect Expense Reimbursement?

Here's what you need to know about CMS' plan to adjust how it calculates a challenging but integral part of radiology reimbursement.

ractice expense makes up approximately 70% of total radiology reimbursement under the Medicare Physician Fee Schedule (MPFS). This is compared to 45% across all specialties in the non-facility setting.1 Typically, changes in practice expense reimbursement occur slowly on a code-by-code basis. As individual procedures get nominated for revaluation, practice expense may be changed due to adjustments in clinical staff time, supplies, or equipment. Since only several radiology codes get revalued ever year, the overall impact to radiology reimbursement tends to be gradual. That may soon change, as CMS is looking at ways to broadly update practice expense reimbursement, akin to the redistributions that occurred after the 2007-2008 Physician Practice Information Survey. In particular, CMS is interested in changing how indirect expense is calculated.

Practice expense reimbursement is divided into two categories: direct and indirect expenses. Direct expenses are things that can be easily quantified for each procedure. This includes cost such as clinical staff labor time, one-time supplies, and amortization for equipment. Indirect expenses are more challenging to estimate. This includes costs such as administration, rent, and other forms of overhead. While direct expense is grounded in individual units, indirect expense is estimated by using both direct practice expense and physician/staff costs as inputs. While direct expense can only be updated on an individual code-by-code basis, changes to the indirect expense methodology would broadly impact the entire code set. How important is indirect practice expense? Consider that of total practice expense reimbursement, indirect costs account for 57% of CT Head Without Contrast (code 70450) and 56% of Chest X-ray (code 71046). Recalling that practice expense is a full 70% of total fees, it becomes clear that indirect practice expense is a significant source of radiology reimbursement.

Updates to indirect practice expense calculations

are important both when considering the broad impact across the entire code set and the total dollar amount of reimbursement at stake. So, how did radiology fair in 2007, the last time indirect practice expenses were surveyed? Not well. Overall practice expense reimbursed dropped significantly — and radiology was not alone. The shift in reimbursement was so great that CMS decided to phase in the update over several years to mitigate the impact.

How does radiology prevent this from happening again? While CMS dismissed stakeholder concerns during the last update, the agency seems ready to value medical society input. The ACR is actively engaged with CMS and associated stakeholders to ensure our concerns are heard. While it is unclear how the update will occur, it is likely that practice expense surveys will again be used to estimate costs. That means it will be important for the ACR, its members, and associated radiology organizations to be active survey participants. As more information becomes available, the ACR will proactively communicate with members about upcoming surveys. Until then, please stay engaged and respond to future updates on how to help with this effort.

Takeaways

- An average of approximately 45% of MPFS reimbursement is spent on practice expense. This number is closer to 70% for radiology.
- Of this, indirect expense accounts for 50–60% of practice expense reimbursement.
- The methodology for updating indirect practice expense relies on values not updated since 2007.
 CMS is interested in updating both the indirect practice expense methodology and the data on which it relies. This means that every procedure code and a large percentage of practice expense reimbursement could be impacted.
- An additional significant shift in practice expense reimbursement, addressed by CMS in the 2022 MPFS Proposed Rule, is the updating of Clinical Labor Pricing, another important policy with large potential impact on radiologists. This will be covered in an upcoming *Bulletin* article.

ENDNOTE available in the digital edition at acr.org/bulletin



Michael T. Booker, MD, MBA RSNA RUC Advisor and AMA RUC Practice Expense Subcommittee Member

Guest Columnist



he pandemic saw many things go virtual — and the ACR's efforts to ensure quality and safety within its accredited sites was no exception. "When COVID-19 hit, we knew we would have to pivot our accreditation process to ensure the best patient care," says Warren S. Inouye, MD, a radiation oncologist in Long Beach, Calif., and recently named chair of the College's Radiation Oncology Practice Accreditation (ROPA) Committee.

To ensure business as usual for ACR-accredited facilities and those applying for the first time, the College has been conducting virtual site surveys via a teleconferencing format to support facilities applying for ROPA and for recognition as an ACR Diagnostic Center of Excellence[™] (DICOE).

"Unlike the diagnostic side, radiation oncology has always done in-person site surveys," Inouye points out. "It was a big deal for us to switch to virtual, but it really has been successful — for us as surveyors and for the facilities seeking accreditation or

"Accreditation is required by CMS for reimbursement of advanced imaging modalities," says Jacqueline A. Bello, MD, FACR, professor of radiology at Albert Einstein College of Medicine, director of neuroradiology at Montefiore Medical Center, and vice chair of the ACR BOC. "Going the extra step to achieve DICOE status is not required by legislation, but it demonstrates a practice's commitment to quality and patient safety." Some in-person facility site visits will resume post-COVID-19 travel restrictions, Bello says. In the meantime, the ROPA and DICOE committees will continue to provide the value-added service of a virtual option.

DICOE DRAW

To achieve DICOE status, radiology practices must demonstrate achievement of the highest levels of efficiency, safety, and quality of patient care. Shortly after the pandemic hit in March of 2020, the ACR began reaching out to prospective DICOE renewal sites to explore interest in conducting virtual site surveys. Converting site surveys from an in-person to a virtual format can be a more convenient and practical way to evaluate and recognize the outstanding diagnostic imaging and patient care that radiology teams provide.

Surveys for both accreditation and excellence start with introductions (on videoconference), followed by a department tour — including a combination of sharing screens, video clips, and presentations. After the tour, surveyors and site members video conference again for review of data and Q&A. The survey team then meets separately, after which the visit concludes with an exit interview to recap findings. The surveyors look at equipment, signage, physical accessibility, and a host of measures related to radiation and MRI safety, quality monitoring and performance and process improvement initiatives.

"We have completed approximately 60 virtual DICOE surveys since July of 2020," says Manjusha Pandit, MS, RTR, (M), CIIP, ACR senior accreditation specialist. "Post-COVID-19 travel restrictions, we plan to conduct on-site surveys for all new DICOE sites. We are exploring the possibility of continuing the virtual surveys for renewal cycles in the future."











ROPA RETENTION

Because COVID-19 affected the ACR's ability to conduct in-person accreditation site surveys, the College embarked on a process to conduct virtual site surveys via teleconferencing for the ROPA program — fully beta testing its first ROPA virtual survey in May of 2020. From July of 2020 through September of 2021, 164 practices have used the virtual process for ROPA — with 14 practices receiving initial accreditation and 150 applying for renewals.

To carry out the survey, the host institution initiates a third-party videoconferencing platform such as Zoom or MS Teams, Inouye says. "Our surveyors use the links provided by the facility to view pertinent data. They do not log into facility systems directly," he says. Instead, a staff member logs in and shares and navigates their screens while the survey team observes. "There may be instances where our surveyors request keyboard and mouse control to navigate through files. However, we prefer that the assigned navigators drive the process," Inouye says.

For the virtual site surveys, the facility should be able to replicate everything the department does. "It has been a great feeling for the accreditation-seeking sites," Inouye says. "They take on more active participation with the surveys because they are driving the show. The control is on their side."

VIRTUAL VISITS

"Through a virtual site visit, we were better able to connect the right people with the right modality and topic, not just whoever was available the day of the site visit," says Vikki M. Casey, BS, CPHQ, who coordinates the Imaging Safety and Quality Program for Providence Health System in Oregon.

"We ran multiple virtual surveys for hospitals and imaging facilities in our region, and all went very smoothly," Casey says. "I appreciated the focused participation the virtual surveys yielded. The virtual format allowed our caregivers and medical directors to participate and respond to surveyors, as schedules permitted, without impeding patient care during peak clinical hours. That's something that might not have happened as effectively in person."

There have been other benefits, too, she adds. In person, some of the people involved in the accreditation survey process may be silent. "Inherent in the virtual format is accountability. Our teams were well-prepared and eager for their agenda time. More importantly, the virtual format allowed team members to leave and return to the survey without feeling intrusive or interrupting the meeting. This alone was a valuable instrument to share survey learnings across our teams."

Advantages aside, a successful outcome still depends on legwork, Casey says. "A key contribution to the success of the virtual survey began with preparing for the survey. The ACR has been fantastic in its support and guidance from step one and throughout the continuum of the accreditation process — especially for our first virtual survey."

Are virtual site surveys the way of the future for accreditation? The process is less time-consuming in a virtual format, there is no travel involved, and sites have generally been more prepared for their surveyors' questions. "This could continue well beyond COVID-19. Accreditation should not be an onerous process," Bello says. "This should be a process that everyone is invested in, because of its true purpose — the safety of patients and the quality of what we do."

Virtual surveys encourage facilities to elevate the exercise to a number-one level of importance, Bello says, because it's voluntary — the commitment to DICOE accreditation is willingly given by the facilities, their leaders, and staff. "You clearly see their flexibility and resilience," she says. "I think the ACR has done itself proud in terms of being able to continue these site visits virtually. It has helped these sites and their patients get through the challenges that the pandemic presents."

By Chad Hudnall, senior writer, ACR Press

VIRTUAL SITE SURVEYS FOR DICOE AND ROPA

The ACR is working hard to keep business as usual and provide support to our accredited facilities. Two ACR programs are now conducting virtual site surveys: DICOE and ROPA

ROPA provides radiation oncologists with third-party, impartial peer review and evaluation of patient care. A unique aspect of ROPA is that practices must complete the toolkit (bit.ly/ROPA_Toolkit) before scheduling a virtual visit.

DICOE is a one-of-a-kind program in diagnostic medical imaging, made for facilities that aim to go beyond the gold standard of ACR accreditation. Learn more about DICOE participation at acr.org/DxImCOE.

A Decade of Leadership Training

The RLI celebrates 10 years of teaching radiologists the business and management skills to successfully navigate a shifting healthcare environment.

he challenges facing today's radiologists are greater than ever. Navigating an increasingly complex practice environment requires an additional skillset that goes beyond traditional clinical training. The ACR recognized this need more than a decade ago, and in 2012 launched the Radiology Leadership Institute® (RLI) — the specialty's first program dedicated to professional development and leadership training for radiologists. Since then, more than 9,000 radiologists from across the U.S. and around the world have participated in one or more of the numerous RLI programs — gaining the non-interpretive

skills that are necessary to survive and thrive in today's healthcare landscape.

In 2022, the RLI celebrates a decade of educating strong leaders. In the first of a four-part series commemorating its 10-year anniversary, the Bulletin looks back at the history of the RLI and examines how the challenges of the 21st century healthcare landscape led the ACR to offer formal leadership training to its members.

Addressing Decades of Challenges

The American healthcare system is notoriously challenging. Federal policies — and politics — have created a quagmire that affects patients and physicians alike.

A confluence of factors that began in the 1990s highlighted the need for strong physician leaders. Government and private insurance payers began shifting from a fee-for-service model to a value-based care model 25 years ago with the Balanced Budget Act (BBA) of 1997. The BBA was designed to significantly reduce Medicare spending in anticipation of the projected financial drain by retiring baby boomers, but also negatively affected physician reimbursement. Congress passed additional legislation to reduce Medicare spending with the Deficit Reduction Act of 2005, which included further reimbursement cuts for imaging services. Meanwhile, healthcare delivery systems were grappling with how to address patient safety and prevent errors in light of the Institute of Medicine's 1999 report on patient safety, "To Err is Human: Building a Safer Health System."



The original RLI board, pictured left to right, are: Geoffrey D. Rubin, MD, MBA, FACR, Alexander M. Norbash, MD, MS, FACR, Cynthia S. Sherry, MD, FACR, Lawrence R. Muroff, MD, FACR, Arl Van Moore, MD, FACR, and Cheri L. Canon, MD, FACR.

In the midst of these industry-wide changes, radiology groups began losing longstanding hospital contracts, as many hospitals consolidated into regional healthcare delivery systems. This transition presented significant business challenges for radiologists, including a lack of opportunity to participate in and shape decision-making. "For most people in complex organizations with complicated skillsets, it's hard for outsiders to lead us well," says Frank J. Lexa, MD, MBA, FACR, chief medical officer for the RLI.

The business of medicine was swiftly becoming more complex and demanding, and radiologists who wanted to advance their careers, or simply improve the quality of patient care, increasingly realized they needed more than just clinical expertise to make a difference. At the same time, radiologists had limited avenues to gain the business and leadership skills that would give them a seat at the executive table. Many top clinicians rose through the leadership ranks by gaining business and management experience on the job. Few options existed for medicine-focused business training.

Radiologists who wanted to play a meaningful part in healthcare reform and advancing patient care quickly recognized they needed more formal training to obtain critical leadership skills. The traditional medical school curriculum, internship programs, and residencies weren't providing the business and management skills necessary to successfully navigate the new healthcare environment. With these forces aligning, the ACR recognized an opportunity to provide important skills to its members and created the first formal program tailored to meet the needs of today's radiologists. "And so, the seeds of the RLI were sown," Lexa notes.



Starting a Leadership Evolution

Even before the idea of the RLI was formulated, leadership training was a point of interest for the chairs of the ACR BOC, beginning with the 2006–2008 tenure of Arl Van Moore Jr., MD, FACR. A stint as a nuclear engineer with the U.S. Navy Nuclear Submarine Service gave Moore insight into the importance of leadership development, which begins in the earliest stages of naval officer training. According to James H. Thrall, MD, FACR, his successor as chair of the BOC, as Moore progressed along his radiology career, "He saw that the lack of leadership training had left a void in the ability of radiology groups to function efficiently and effectively."

"I believed that radiologists in particular should play a key role because we reach so many patients, influence the direction of so many patients' care, and command a particularly broad knowledge across medical specialties."

CYNTHIA S. SHERRY, MD, FACR

As chair of the BOC, Moore implemented a series of annual meetings for group practice leaders, with the goal of providing leadership and management education to practicing radiologists. His insights made leadership training a priority within the ACR, and efforts by Moore and Thrall raised the visibility of the issue. Thrall created a Commission on Leadership and Practice Development and tapped Cynthia S. Sherry, MD, FACR, to lead as medical director.

"I had been interested in the field of physician leadership development since my early years in clinical practice and had furthered my own leadership education and promoted leadership development on a national level," Sherry recalls. "I pitched my idea of the RLI to Dr. Thrall at an ACR meeting, and I was very surprised to find how interested he was in my proposition."

Sherry was passionate in her belief that physicians are best equipped to lead change within healthcare. "I believed that radiologists in particular should play a key role because we reach so many patients, influence the direction of so many patients' care, and command a particularly broad knowledge across medical specialties," Sherry says. "With the proper education and training, radiologists would be far better than hospital administrators and politicians at guiding the changes needed to improve healthcare for patients."

Launching the RLI

Sherry worked closely with the ACR's then-CEO, the late Harvey L. Neiman, MD, FACR, and John A. Patti, MD, FACR, past chair of the ACR BOC, to lay the groundwork for what would become the RLI. After creating a planning committee, Sherry and Neiman

identified radiologists from across the country to serve on the first RLI board. Six radiologists comprised the original board, including Sherry, who served as chief medical officer of the RLI. The other board members were Cheri L. Canon, MD, FACR, Arl Van Moore Jr., MD, FACR, Lawrence R. Muroff, MD, FACR, Alexander M. Norbash, MD, MS, FACR, and Geoffrey D. Rubin, MD, MBA, FACR. The board members were selected to represent private practice and academic radiologists to develop a balanced and robust program relevant for all radiologists.

The development of the RLI was supported financially by the ACR's "Leading Radiology into the Future" fundraising campaign. The RLI received significant support from generous corporate, individual, and chapter donors that funded scholarships, program development, and educational technology (see the box on page 12 for a list of sponsors and donors).

Creating programming that would provide participants with the applicable tools and skills to become successful leaders was paramount, and the board researched the fundamental disciplinary areas that the leading business schools had to offer. Sherry and the board created a common body of knowledge centered around seven core competencies that are critical for leadership skill development: finance and economics; ethics and professionalism; legal and regulatory issues; strategic planning; practice management; professional development and service, quality, and safety.

When it launched in 2012, the RLI's original curriculum featured four levels of leadership proficiency to appeal to radiologists at any stage of their career, with certificates awarded at the completion of each level. The official launch took place at a leadership summit hosted by the Kellogg School of Management at Northwestern University. "The tradition of partnering with a business school for our annual leadership summit continues to this day," explains Anne Marie Pascoe, senior director of the RLI. "Combining a business



Radiologists Taking the Lead

In the RLI's "Taking the Lead" podcast series, Geoffrey D. Rubin, MD, MBA, FACR, hosts intimate conversations with radiology's influential leaders, providing insight into major career moments, as well as wisdom and inspiration for radiologists leading at all levels. The podcast offers tips on gaining the skills required to work within the rapidly shifting healthcare environment and guests share personal stories and experiences. Listeners can learn from these leaders' choices and advice and apply that to their own leadership path. The series is available everywhere you listen to podcasts. For more information, visit acr.org/RLIPodcast. To write your own leadership story, explore all of RLI's leadership training opportunities at acr.org/RLI.

school approach with content that is specifically designed by radiologists and for radiologists is something that many of our participants find extraordinarily valuable as they lead their organizations and effect change in their practices."

According to attendees, the annual leadership summit is an accessible and efficient introduction to fundamental leadership education. "As healthcare delivery models and payment structures are changing, the RLI Summit is even more important," notes attendee Chrystal N. Obi, MD, a radiologist in Victorville, Calif. "All radiologists are leaders within the medical profession. We control a lot of the patient decisions that are made, and it's important for all radiologists to be exposed to leadership content and opportunities in learning how to be advocates for patients, hospitals, and communities."

Looking to the Future

Since its inception, the RLI has provided the most up-to-date and essential leadership programming to participants and continues to promote the message that leadership is for everyone. The strength and expertise of its world-class faculty sets the RLI apart from other leadership programs, and participants receive

practical training and tools that can be immediately applied within their own practice.

Several years after the initial launch, the RLI transitioned from the original level-based ladder to a career milestone orientation. Now, participants can choose programs that are designed for where they are in their radiology career. Residents and fellows can receive training in professional development, leadership, and career management. The RLI also offers mid-level radiologists the skills to tackle higher-level leadership responsibility, while senior radiologists can become equipped with the knowledge and tools to address new service requirements and reimbursement models. Regardless of where radiologists are in their careers, they need to develop leadership skills to gain buy-in from others, negotiate, and navigate the evolving health system landscape.

"We provide leadership education for everyone — as residents go out and get first jobs, as radiologists get promoted, as they lead change in their organizations, and as they become practice leaders," says Lexa. "There are all kinds of things that can happen in the future, but the RLI will be there to help you." B

By Meredith Lidard Kleeman, freelance writer, ACR Press

"We provide leadership education for everyone — as residents go out and get first jobs, as radiologists get promoted, as they lead change in their organizations, and as they become practice leaders."

FRANK J. LEXA, MD, MBA, FACR

Now more than ever, strong radiology leaders are needed to provide crucial guidance to fellow physicians and patients. Learn more about how the RLI can help you become a strong leader at acr.org/RLI.





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We are grateful for the support of our corporate donors and the ACR® chapters that provide RLI leadership training scholarships to their members. We couldn't have done it without you!

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Boots on the Ground

Radiologists are working with other staff to transform the VA patient experience journey.

here was once a time back in 2015 when a veteran would walk into a large Veterans Affairs (VA) medical center, feeling anxious, not knowing how to get to their appointment, and not being able to obtain the information they needed. This prompted then-U.S. Secretary of the Department of Veterans Affairs Robert McDonald to launch the MyVA Transformation to rebuild trust with veterans, their families, and the American people by establishing the Veterans Experience Office (VEO). The VEO produces tools to highlight important moments that veterans experience during their healthcare journeys and identifies measurement opportunities to assess how veterans experience VA healthcare service delivery.

Building and Deploying Tools

According to Jennifer Purdy, LCSW, executive director of patient experience at the VEO, "In 2017, the VEO deployed patient foundational toolkits across 147 healthcare systems." Among these toolkits was the Red Coat Ambassador Program, which involved employees or volunteers in red coats welcoming veterans and their families at VA medical center entrances and directing them to their appointments. Another was the WECARE Rounding Program, which involved medical center leaders speaking directly with staff and visitors about the care and services they received. A third toolkit, "Own the Moment," involved a mandatory customer experience workshop to encourage VA staff to connect with, understand, and help guide veterans through the moments that matter on their VA journey.

"We wanted to meet veterans where they're at," says Purdy, who is co-chair of the Veterans Health Administration (VHA) Governance Board's Patient Experience Committee. "When you're face to face with a veteran, how do you create a connection to show that you care for that person, understand what their issues are, and will respond to their needs? When we built 'Own the Moment,' we wanted to make things easy and effective for patients and their families so that they get what they need, as well as make an emotional connection."

Getting Buy-In

"Anytime you do a system change, you are going to have early adopters," says Purdy. "What helped this movement was that in 2018, then-U.S. Secretary of the VA Robert Wilkie challenged the VHA to improve the patient experience. At the VA, we had frontline support, which helped to make the initiative more easily adoptable."

According to Martina Malek, who was the associate director at the Minneapolis VA in 2020, her facility was able to use the tools created by Purdy and her committee to determine what worked and what didn't. One key to success at the Minneapolis VA, Malek notes, is that the radiology department was already focused



Ronnell A. Hansen, MD, FACR, (far right), a staff radiologist with the Minneapolis Veterans Affairs Health Care System, is pictured with the CT staff.

on transforming the patient experience.

"The radiology department understood that veterans get nervous when they come in for testing," says Malek, who now serves as deputy director for patient experience at the VEO. "Sometimes they have to have an IV of contrast, or they have to be in a strange machine. The department had employees come up with different tools and resources to make sure they were meeting the veterans where they were at. They stood up their own committee, did a lot of process improvement, and even rearranged the layout of the furniture in the waiting room to make the space more welcoming. I took Jennifer's recommendations to the facility level, but the radiology department took it to the boots-on-the-ground level."

Malek adds, "Minneapolis is just one example, but countless other VAs across the country have addressed what the patient experience truly means and how it can impact someone's journey — not just in their health, but in their life. Healthcare diagnosis and treatment can be life-altering and a lot of the VHA staff really recognize that and are supportive in making it an exceptional experience."

Ian A. Weissman, DO, FACR, chair of the ACR Patient- and Family-Centered Care Outreach Committee and chair of the ACR Commission on General, Small, Emergency, and/or Rural Practice Network Veterans Affairs Subcommittee, agrees. "At the Milwaukee VA Medical Center, where I am a staff radiologist, we instituted a program called Hello Rounds," says Weissman. "When we see patients in the hallway or in the waiting area, we always make it a point to acknowledge them and say hello." Once Weissman started making the rounds, he immediately saw how even this small interaction could have a big impact on the patient experience.

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Seeing in 3D

The ACR is collecting anonymized 3D printing case information to advance radiologists' value in specialty procedures.

ur primary purpose is the same as it is for all the registries that the ACR supports — to ensure the highest quality care for patients," says Kenneth C. Wang, MD, PhD, staff radiologist at the Baltimore VA Medical Center and adjunct assistant professor at the University of Maryland. "The 3D Printing (3DP) Registry will allow users to compare local practices in 3DP with those of the broader community."

The joint ACR and RSNA 3DP Registry was established for the coordinated tracking of clinical 3DP performed at the point of care. The registry collects anonymized 3DP case information with the goals of improving patient care and characterizing how resources are being used. The *Bulletin* recently spoke with Wang, who serves as co-chair of the registry, about how the 3DP Registry can track clinical outcomes, facilitate quality improvement, and give radiologists a seat at the table for 3DP reimbursement.

What can participants expect from the 3DP Registry?

The 3DP Registry is a relatively new part of the ACR's National Radiology Data Registry* (NRDR) platform. We started accepting cases a little over a year ago. The registry houses data on 3DP performed at the point of care (that is, 3DP performed in hospitals, clinics, and practices, as opposed to 3DP performed by vendors and sold as a service to medical providers). This data will allow us to develop benchmarks for clinical indications, 3DP technologies, resource usage, and clinical outcomes. I would also note that a variety of resources are available to assist users with data collection and reporting.

How are cases collected for the 3DP Registry?

We had a goal about a year ago to collect 1,000 cases during an initial phase-in of the registry. We have already exceeded that mark and are looking to grow well beyond it. The more data we collect, the more meaningful it will be. We define a case as a specific clinical situation in which a 3DP object is created. Examples include models of the heart for surgical planning, models of the aorta for endovascular device selection and sizing, and surgical guides for craniomaxillofacial reconstruction. The data fields collected by the registry are defined in the data dictionary (available at bit.ly/data-dictionary). Data is then submitted to the registry using a case report form on the NRDR portal.

What do you hope to accomplish with the 3DP Registry?

The 3DP Registry will allow users to compare their own practices and workflows in clinical 3DP with the rest of the 3DP community. One fundamental aspect of the practice of 3DP relates to the clinical indications for using this technology. By comparing a local

profile of clinical indications with those of the broader community, participants will gain insight into the range of indications used by their peers. This will allow institutions to consider ways to expand their own local practice of 3DP, and to do so in a quantitative way. That is, if registry data shows that urinary tract applications constitute an important class of clinical indications for 3DP, this will signal an opportunity for sites not currently engaged in making such models. Another important aspect of 3DP is the printing technologies and material types used, and the physical properties of the printed objects. Registry data will help to elucidate how facilities are choosing to create specific types of models in a range of clinical situations.

How does 3DP fit within radiology?

The creation of patient-specific 3DP models typically begins with imaging. Furthermore, the use of imaging to discern patients' anatomy and disease is the fundamental expertise of radiologists. Consequently, radiology is a natural home for this type of work.

What does the future hold for 3DP, radiology, and reimbursement?

There are two things radiology practices need to know about the 3DP Registry: It will help them with quality improvement around 3DP and will support their argument for reimbursement. There are currently four Category III reimbursement codes for 3DP. Category III codes are temporary codes typically assigned for emerging technologies or procedures and are used for collecting data. Our goal is to collect enough data and literature to eventually support the creation of Category I codes that receive reimbursement from third-party payers, including CMS. The registry is a key component in collecting the necessary data for this effort. Our community is making progress — from having no CPT[®] codes, to establishing Category III codes, and working towards receiving formal reimbursement for 3DP services. The ACR is now working with the 3DP Registry Committee to do just that. We are also working with members of the ACR Commission on Economics and others who are familiar with the pathway to reimbursement.

What types of radiology groups may benefit from the 3DP Registry?

We wanted to make sure this registry is inclusive across the spectrum of all types of practice. Some of the institutions that are participating so far are academic institutions, but we are just as open and interested in private and rural practices — really anyone who is engaged in 3DP. Similarly, the benefits of registry participation, namely in the areas of quality improvement and reimbursement, will be equally relevant for practices of all types. The more I work on this project, the more I appreciate how much effort goes into the ACR's registries and how valuable they are to our members. A step-by-step start-up guide for anyone interested in joining the 3DP Registry is now available at bit.ly/3_D_Printing. It is written to help potential users get underway with submitting data to the registry and learn how to get the most value out of registry participation.

3

Interview by Chad Hudnall, senior writer, ACR Press

Shoring Up Missed Care Opportunities



By employing population health surveillance and reducing missed care opportunities, radiologists can help anticipate suboptimal patient outcomes before they happen.

ccording to the authors of a 2012 paper, the term "population health surveillance" describes "the health surveillance of a given population as measured by health or disease indicators while 'individual health surveillance' refers to the description of the health or disease status of a person." Tracking health patterns of discrete patient populations is one aspect of population health management (PHM). Radiology has an opportunity to utilize this PHM strategy in shoring up missed care opportunities among imaging patients to ensure optimal health outcomes.

For the most part, up until now radiology's approach to patient care has tracked alongside the rest of the U.S. health system, where care delivery is built around providing reactive care to patients who present with health issues. But as radiologists, we should challenge ourselves to think about care delivery in a more forward-looking way. If we adopt a PHM mindset, we can work toward proactively detecting and treating health problems before they seriously degrade a patient's health. In a similar vein, we can expand the concept of missed care opportunities from patients not receiving a scheduled intervention to populations not obtaining the best possible health promotion efforts.

This kind of innovative mentality to patient care puts a premium on identifying and eliminating missed care opportunities, while at the same time endeavoring to prevent serious illnesses from developing. For example, fat quantification algorithms could be deployed to ensure that patients within certain at-risk sub-populations see their primary care physicians before their health deteriorates. Similarly, for those patients at risk for heart disease, information related to coronary artery plaque burden can be used to proactively generate a consultation for preventative health management. Bone mineral density information reported on routine CT exams can also be used in a like manner. This additional information may flag a patient as osteopenic or osteoporotic so that therapy can be administered to mitigate chances of a fracture.

Evaluating data in the manner presented above can be characterized as predictive analytics. This approach to mining data can act as another arrow in the quiver of proactive imaging care delivery. According to certain AI experts, "Predictive analytics aims to alert clinicians and caregivers of the likelihood of events and outcomes before they occur, helping them to prevent as much as cure health issues." Radiologists can combine imaging diagnoses with historical and real-time data to produce helpful predictions through the use of AI algorithms. On a population level, such predictions can facilitate medical interventions that lead to an enhanced quality of life for patients.

Using data to survey and triage distinct patient populations can connect patients with needed care, but making use of data for this purpose won't happen all on its own. To incentivize this approach, radiologists can work as part of coordinated care teams that are rewarded for taking better, more comprehensive care of patients. Quality metrics more specifically tailored to radiologists is in line with CMS' upcoming Merit-Based Incentive Payment System Value Pathways. This approach would be a powerful alignment strategy to convince both radiologists and their referring providers to work as a cohesive unit.

To this end, CMS and the U.S. Department of Health and Human Services have promulgated electronic clinical quality measures for capturing population-level health indicators and quality reporting discretely from EHRs. In many ways, radiologists are at the center of a robust population health strategy, given the fundamental patient information they are able to provide.

As such, radiology should be at the forefront of exploring advanced alternative payment models given its important role in proactive health management for patient risk stratification and surveillance. We call on all radiologists to actively pursue PHM strategies with their local health systems and help improve the health of their communities while providing affordable, high-quality care to all who seek it. \odot

By Syed F. Zaidi, MD, MBA, chair of the PHM Committee of the ACR Commission on Patient- and Family-Centered Care and associate chief medical officer of operations and integration with Radiology Partners, and Ryan K. Lee, MD, MBA, co-chair of the ACR's PHM Committee and chair of the department of radiology at Einstein Healthcare in Philadelphia

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For more information about how imaging surveillance and predictive analytics can contribute to the health of distinct patient populations, watch a webinar produced by the PHM Committee of ACR's Patient- and Family-Centered Care Commission at acr. org/PHM.

The ACR National Radiology Data Registry (available at bit.ly/ NRDRRegistry) captures population-level data as well, in particular the three cancer screening databases for lung, breast, and colorectal cancer.

Case History

After a decade of developing one of the ACR's most beloved resources, the editorin-chief for Case in Point® describes what's next for the daily cases.



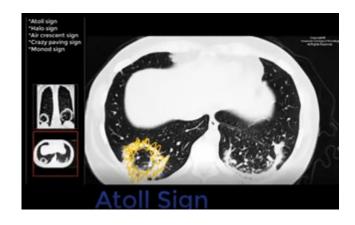
or more than 10 years, ACR's popular case-based educational tool Case in Point* (CiP) has been led by Editor-in-Chief Kitt Shaffer, MD, PhD, FACR, professor of radiology and anatomy/neurobiology at Boston University Medical Center. After overseeing the publication of more than 4,000 cases, Shaffer stepped down as editor-in-chief in October, as her successor, David R. Pettersson, MD, associate professor of neuroradiology at Oregon Health and Science University, took the helm. The *Bulletin* recently spoke to Shaffer, who will continue working with CiP as associate editor, to learn more about what makes the program so successful.

Why do you think CiP has flourished in its 15 years at ACR?

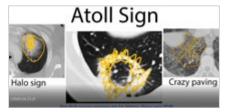
CiP has been a flagship educational product for ACR. You can spend 10 minutes and get a little chunk of learning that fits into even a busy day in clinic. That was the way it was set up from the beginning, but one of the things I have tried to emphasize during my time as editor-in-chief is to keep it that way — not to let the cases get too long and dragged out. They need to be short and to the point.

What are some of the more memorable CiP cases?

My favorite CiP cases are those that combine something rare with something common, so a very rare final diagnosis, with a long differential of other more common entities. I also like cases that unfold like a real case does: first some history (possibly misleading or incomplete) followed by a detection question, then a discussion of what that finding might represent (including common and rare choices), then perhaps a bit more information that allows you to narrow the differential, and finally a surprise twist that leads to the unusual diagnosis but allows a discussion that includes more common possibilities.



Images and annotation from a COVID-19 case used for a microlearning video, using CiP format



What are your plans after you are no longer editor-in-chief?

I will continue as an associate editor. I do enjoy the editing part. I'm winding down my clinical work, so I probably won't be a practicing radiologist very much longer. I love teaching, so I would like to continue to teach. I'd also like to get involved in the ACR Senior and/or Retired Section, which sounds fulfilling and interesting.

You have been involved with medical students and residents via both the ACR PIER internship and the Amazing Case Race. What advice would you give to medical students and radiology residents who are just starting out?

Clearly, there are a lot of decision points — there's diagnostic or interventional, academic or private practice, and full-time or part-time. The best thing they can really do is to get exposed to as much radiology as they possibly can and take every opportunity to be in the reading room. If they can visualize themselves in that environment and decide if that's something they would enjoy — that's going to be the most important decision-maker for them.

Regarding CiP, if medical students or residents have any inclination whatsoever toward academics, then putting a case together is a great way to learn a little bit about it — without too much pain and with a very good chance of success. It's a small writing project compared to an actual scientific article, but it has a lot of the same features: You have to think about how to structure it, you have to choose figures, you have to write figure legends, you have to select appropriate references, and you have to have teaching points.



Rocky Beach, oil on canvasboard, 2021, Kitt Shaffer (scene at the southern tip of Horseneck Beach State Reservation, Westport, Mass.)

How has the pandemic changed how students learn and digest information?

It's been pretty dramatic, I have to say — and it all happened so quickly. Videoconferencing has been my go-to resource. I love in-person teaching, but I think there are situations and topic areas in which virtual is still better. Some of the lessons COVID-19 has taught us about distance learning are too valuable to discard. For example, I love using the chat feature to allow all participants to answer questions. I also use the annotate function a lot, allowing participants to draw on the images just like I do. The view for each participant is better with Zoom than in an auditorium — everyone has a front-row seat. I do all of my teaching as interactive case-based discussions, usually with a flipped classroom model. I post preview images of the cases on my website, with questions for students to ponder, so they can come to class with questions, ready to discuss and participate.

I understand you're an avid artist. How do you approach teaching from an artist's perspective?

I have always approached teaching from an artist's perspective and have used drawing as a method of illustrating findings on the fly, since my early days as an educator. In the past, I used actual films and dry-erase markers to allow me to draw anatomic structures and illustrate findings when discussing cases. When radiology converted to digital images, I reproduced this same teaching methodology using Photoshop versions of images and a digital drawing tablet. Most recently, an amazing student who saw me teach offered to develop a website that would allow me to do this same thing in a simpler way. So now, I use my own website that lets me upload teaching images that I can draw on with my iPad and an Apple pencil. This is more portable than a laptop and drawing tablet and simpler to use. My teaching has translated into



Monterosso House, oil on canvas, 2020, Kitt Shaffer (painting of a house in Monterosso Calabro in Southern Italy)

the Zoom world very easily and I find that this is actually better in many ways than the old traditional teaching.

Is there anything else that you'd like to share with us?

It's been an amazing ride. There have been challenges and fabulous rewards. And the team on the publication end is the absolute best. I can't thank them enough for making my job so pleasurable. It's hard to think about not doing this because it has been a big part of my life for over a decade, but I think a little fresh blood will be helpful. I'm looking forward to seeing what Dr. Pettersson is going to do with CiP. B

Interview by Melanie Padgett Powers, freelance writer, ACR Press



Case in Point (CiP) is an online program that delivers world-class cases straight to your inbox every weekday. Earn up to 65 CME and SA-CME annually. CiP is free to ACR members. Access CiP at cortex.acr.org.

Combining Forces for Breast Health

In a new study, researchers from the National Mammography Database Committee and the NHPI identified the radiologist characteristics that are associated with varying mammography interpretive performance.

reast cancer is the leading cause of premature death in U.S. women. Mammography screening has been proven effective in reducing breast cancer deaths in women ages 40 years and older, with a mortality reduction of 40% possible with regular screening.1 However, research has shown wide variation in radiologist performance interpreting these examinations.^{2,3} Despite this variation, there remains a dearth of understanding regarding the factors that affect radiologists' performance in screening mammography, a topic explored in a new study by the Harvey L. Neiman Health Policy Institute® (NHPI) and the National Mammography Database (NMD) Committee.

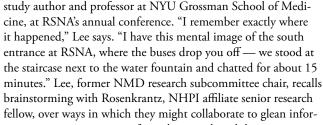
In essence, study authors wanted to know: What do the breast imagers with highest performance have in common? The retrospective study, published in the journal Radiology, sought to identify radiologist characteristics that affect screening mammography interpretation performance through analysis of 11 years of screening mammography performance data from the NMD. Study authors hope the results expand the knowledgebase surrounding breast imaging and demonstrate the need for more research, as well as emphasize the importance of assessing performance across measures holistically — because, ultimately, the better radiologists understand opportunities to improve breast cancer screening, the more patients' lives they can save.

A Fortuitous Partnership

Cindy S. Lee, MD, first study author and associate professor of radiology at NYU Langone Medical Center, remembers the night she bumped into colleague Andrew B. Rosenkrantz, MD, lead

Grant Opportunity in Health Policy Research

The NHPI is accepting applications for its new grant to fund novel research to inform health policy and radiology practice. Grant topics include payment models, Al/emerging technology, and practice advancements to improve efficiency, outcomes, or equity. The deadline to apply is Dec 20. For details, visit neimanhpi.org.



mation from their combined data.

"This is a very hot topic," Lee says. "Everyone wants to know: What can we do to make breast cancer screening better?"

"The NMD provides performance outcomes for radiologists nationally who read screening mammography," says Rosenkrantz. "Medicare databases provide physician practice characteristics." By aggregating the data from the two datasets, they hoped to gain insight into the characteristics that affect screening mammography interpretation performance.



According to the study, across radiologists nationally, the most influential radiologist characteristics impacting mammography interpretive performance are geography, breast

subspecialization, performance of diagnostic mammography, and performance of breast US. Radiologists in the West or Midwest, breast subspecialists, and those who perform diagnostic mammography are associated with better screening mammography performance in the NMD, while performance of breast US is associated with lower performance.

"With this study, which was blinded and aggregated, we were able to link over 1,000 radiologists nationally. Between the two databases, we were able to see how practice characteristics are associated with radiologists' performance nationally in a way that, to our knowledge, has not been done previously," says Rosenkrantz. "I call it a marriage of two national databases," adds Lee.

Some of these results were perhaps unsurprising, according to Rosenkrantz and Lee. "One of the primary findings — that dedicated breast imagers had better performance than general radiologists who may also do screening mammography — may not be surprising," says Rosenkrantz, "but I don't know if previously there was actual objective data supporting that."

Other results were less straightforward. "What we found was that there are a lot of factors that affect how well a screening mammogram is read by a radiologist," says Lee. "It was interesting that in many cases, certain characteristics predicted higher performance in some areas and, at the same time, lower performance on others." For example, she says, some breast imagers are willing to risk a slightly higher recall rate so that they can find more cancer — because that is the goal of breast cancer screening, after all. "The goal is to find more breast cancers at an earlier stage. If you're

continued on page 22

Speaking Up

A new joint statement advises against the use of cumulative dose to guide ordering imaging exams.

uality patient care involves ordering "the right exam at the right time with the right radiation dose." It's a mantra radiologists know well. Recently, a growing number of publications have added nuance to that phrase — raising concerns that patients who have a high cumulative exposure to radiation be directed to modalities that don't use it, such as US.1-3 In response, the ACR, the American Association of Physicists in Medicine (AAPM), and the Health Physics Society released a joint statement and accompanying FAQ document (available at acr.org/ EHR-Statement) that urges providers to make imaging decisions using evidence-based tools and other clinical grounds — such as prior imaging results — rather than a cumulative dose. The joint statement is also endorsed by the RSNA, the American Society for Radiation Oncology, the Association for Medical Imaging Management, the Society of Cardiovascular Computed Tomography, and the Society of Nuclear Medicine and Molecular Imaging.

"Dose information tracked in EHRs is not standardized — or even universally accepted."

MAHADEVAPPA MAHESH, MS, PHD, FACR

"Dose information tracked in EHRs is not standardized — or even universally accepted," says Mahadevappa Mahesh, MS, PhD, FACR, chair of the ACR Commission on Medical Physics and professor of radiology at Johns Hopkins University School of Medicine. "Imaging history is useful to doctors as they work with patients to determine the best care, but still-evolving dose estimates should not be used to deny patients' imaging exams prescribed by their doctors." The *Bulletin* caught up with Mahesh to learn about how using cumulative dose as a decision tool could affect patients.

What does the new joint statement mean for patient safety?

We are starting to see more and more publications discuss adding together a patient's past radiation doses to create a cumulative dose that would influence patient treatment and affect decision-making on future studies for the patient. These publications have caused some alarm, because we believe previous dose history should not affect whether a patient undergoes an imaging exam. Guiding decisions in this way can have a lot of unintended consequences, particularly if regulators or health insurance companies set arbitrary limits on those doses and deny care based on a patient's dose history. We released the joint statement because we thought a message coming from the ACR, the AAPM, and the Health Physics Society would amplify our concerns.

That said, the statement applies to tracking a patient's stochastic, or probabilistic, risk only. It doesn't apply to organ-specific doses for evaluating the onset of deterministic effects, such as skin injury tissue reactions.

How might physicians who use cumulative effective dose metrics to guide their decision-making hinder patients from undergoing clinically necessary exams?

Radiologists and other physicians should base their decisions on evidence-based guidance and indicators, such as Appropriate Use Criteria and the results of prior tests rather than a historical radiation dose estimate. Effective dose is not a measure of risk to an individual, but a radiation protection quantity that estimates detriment to an entire population — you can't use it to assess a patient's individual risk. If a patient receives a head CT, and later receives an abdominal CT, examining cumulative effective dose doesn't make sense — because each study was done on different parts of the body.

Many practices are also using radiation dose management software in their EHRs, which sometimes adds whatever numbers are available to it to create a cumulative effective dose; however, we know this number is not standardized or universally accepted. Also, because no standards currently exist with which to compare cumulative effective dose values, having a random number with little context can mislead and hinder clinicians from ordering the most necessary studies — which could mean greater costs to patients. If a patient has passed the number deemed appropriate for cumulative dose, a physician might substitute a test with something else that does not use radiation. But modalities vary widely, and that test could vary in effectiveness for a particular need, time, and supplies available to undergo the exam, as well as cost to the patient.

Are there other useful applications for dose monitoring software?

Radiation dose index monitoring software is extremely useful for quality assurance. Practices can measure their numbers against regional and national values like those in the ACR Dose Index Registry* to fine-tune protocols to ensure they are performing at reasonable dose values. Analyzing the dose data collected by these tools can also help us identify exam protocols that might benefit from a second look, and outliers can help identify where clinical processes can be improved.

Should radiologists still monitor radiation dose?

Radiologists should be working with medical physicists to ensure that every modality is operating optimally and that every machine is using appropriate radiation doses for each patient and exam type. It is important that the amount of radiation used is dictated by the image quality needs of the radiologist and clinical task. The point of the joint statement is not to diminish the role of medical physicists and RTs in optimizing radiation dose, but that dose history should not be used to guide decision-making in imaging. **B**

Interview by Meghan Edwards, freelance writer, ACR Press ENDNOTES available in the digital edition at acr.org/bulletin

Scrutinizing Non-Competes

What are "restrictive covenant" provisions and how can ACR members address their impact?

xclusive radiology contracts with hospitals, and contracts in many private practices, typically contain "restrictive covenant" provisions, known as non-competes. Individually, these provisions restrict ACR members — whether partners or employees — from competing for patient referrals against their current employer, either by joining another group (hospital-based or private) or by opening their own practice. In addition, many hospital contracts with radiology groups include non-compete provisions limiting or prohibiting the group from competing with the hospital or new hospital radiology group, for some period after the contract expires.

Most states have allowed hospitals and medical practices to enforce non-competes against their employees or contractors — if the non-compete is for a reasonable time and geographic scope. However, some jurisdictions have begun to prohibit non-competes or severely limit a group from enforcing them. These states have curtailed non-competes because they inhibit a patient's right to choose (or keep) their physician. Additionally, a recent Biden Administration Executive Order calls for federal agencies to enforce antitrust law more aggressively and identifies non-compete provisions as potentially anti-competitive. In this first of a twopart RADLAW series, we'll explain key points about radiology non-compete provisions and then evaluate how members can address their impact.

Understanding Non-Competes

The term "restrictive covenant" or "non-compete" reflects its intended outcome. It is an agreement to forego practicing in a specific location for a specific duration after employment ends. For instance, a member who practices general radiology with a group agrees in their contract to avoid practicing with another entity in that specialty during the term of their employment, and for one or two years thereafter — within 25 miles from their current group's location.1 The nature of the hospital department or private group's services may influence the geographic scope and timeframe of the non-compete. A teleradiology practice that provides imaging care may well attempt to enforce a non-compete that extends across state lines, even regionally.

Why does a hospital or private group enforce a non-compete against ACR members? It does so for clinical and financial reasons. Hospitals and private practices invest in radiologists and their department or group by recruiting and relying on radiologists to render quality patient care. Yet, a radiologist who leaves to join another practice — and perhaps compete against a hospital - might leave the department with a key position to fill, and the prospect of losing patients to their former employee. Consequently, hospitals assert that they have a legal interest as the member's

employer to enforce the restrictive covenant against the member. Some ACR members maintain that non-competes fundamentally exist so that a hospital may prevent another entity from cherry-picking the member away to a separate practice.² These members note that non-compete provisions may also benefit radiologists by constraining hospitals from selecting their own radiology groups or threatening that step.3

Reining in Non-Competes

Several states and the District of Columbia have reined in non-competes by enacting laws that either limit or ban them altogether. California, Oklahoma, and North Dakota generally ban non-competes on public policy grounds. Florida enacted a law in 2019 that prohibited any non-compete agreements between physician specialists and any organization that contracts with or employs any physicians in that specialty in a certain county.4 In that state, a practice may not enforce its non-compete provision for three years after the date on which another entity begins to provide the same specialty services in that county.⁵ In response, 21st Century Oncology, a national radiation oncology company, sued Florida — claiming that the law violated its constitutional rights of contracting, due process, and equal protection. However, a federal judge rejected that challenge. The court ruled that the state legislature could have reasonably determined that invalidating specific non-compete provisions could improve competition, and thereby enhance patient access and control cost of care.6

The District has gone a step further, by approving legislation banning essentially all non-competes, both during and after employment. Notably, though, District law exempts "medical specialists" — defined as "licensed physicians who have completed their medical residencies and make at least \$250,000 annually." This exception could apply to certain ACR members who work in the District. Any employer from the District that attempts to enforce a non-compete provision against the member must provide the proposed non-compete language to them at least two weeks before the parties sign the underlying contract. Additionally, District law excludes otherwise enforceable non-compete agreements related to selling a business in which the seller promises not to compete with the buyer's business.8 The Louisiana Senate is considering a bill to ban non-competes against physician specialists who have served as employees or are under contract with an employing or contracting entity for at least three years.9

Finally, President Biden issued an Executive Order in July of 2021 that encourages federal agencies — such as the Federal Trade Commission — to enforce antitrust laws within their current authority. Whether the Executive Order may legally apply to ACR members beyond those who are federal employees or contractors remains uncertain. In the second part of this series, we'll outline the practical aspects for members who are on either side of a non-compete provision. B

By Bill Shields, JD, LLM, CAE, general counsel, and Tom Hoffman, JD, CAE, associate general counsel, ACR Legal

ENDNOTES available in the digital edition at acr.org/bulletin

How can radiologists and their teams help patients return to screening?

"Large, randomized control clinical trials, like the National Lung Screening Trial and NELSON Trial, have shown us that lung screening with low-dose CT can reduce lung cancer mortality by at least 20% (compared to chest X-ray), and as much as 33% (in women, compared to no screening). Adherence to screening regimens was high, 90–95%, in each of these trials.² Achieving similarly high rates of adherence across our screening programs is crucial to realizing these same mortality benefits in clinical practice. Having found ways to safely resume screening in the era of COVID-19, it's now time to focus on assisting patients back to their screening schedules. Through a combination of direct patient outreach and partnership with our primary care colleagues, I'm confident that we can meet this challenge."



Ashley Prosper, MD, section chief of cardiothoracic imaging and co-director of the UCLA Lung Screening Program

"Radiologists can help encourage cancer screening by providing education and engaging in community outreach programs. Eliminating healthcare disparities and ensuring equitable imaging access are important initiatives for radiology teams."

> Swati D. Deshmukh, MD, assistant professor in the department of radiology at Northwestern University



ENDNOTES

- 1. The National Lung Screening Trial Research Team. Reduced lung-cancer mortality with low-dose computed tomographic screening. N Engl J Med. 2011; 365(5):395-409.
- 2. Koning HJ, Aalst CM, Jong PA. Reduced lung-Cancer mortality with volume CT screening in a randomized trial. N Engl J Med. 2020; 382(6):503-513.

BOOTS ON THE GROUND

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"Acknowledging these patients brings them back into the moment and makes them feel better," he says. "This is something anyone can do to show patients that they care about them."

Seeing Results

During the 2019-2020 fiscal year, Purdy and her team developed facility patient self-assessments so that medical centers could use the qualitative and quantitative data, feedback sessions, and staff meetings to understand what could be improved. "Once we got the energy, focus, and leadership commitment for improving experience and developed tools on what matters to our patients, we did start to see the numbers move," says Purdy.

In 2018, the Hospital Consumer Assessment of Healthcare Providers and Systems survey (HCAHPS) — a patient satisfaction survey required by CMS — found that the VHA underperformed in patient experience quality metrics. In 2020, the

VHA was improving patient experience at a faster rate than the national average for HCAHPS for Inpatient Care. The average improvement yearto-year for the private sector was 0.5%, while the average improvement for the VHA was 1%.

"The VEO is leading the way in developing initiatives to help improve the patient experience," says Weissman. "It is developing strategies that we can all bring into our radiology practices whether we work for the VA, academia, the military, or the private sector. The ACR Commission on Patient and Family-Centered Care is tasked with developing strategies to improve patient care, and we can all learn from how the VEO is innovating and developing initiatives to improve patient care."

Purdy agrees. "The VHA is continuing to deepen the culture of what the patient experience should look like by identifying what makes the VA unique," she says. "What makes us unique from another medical center is that we have the honor of serving those who served." B

By Nicole B. Racadag, MSJ, managing editor, ACR Bulletin

RESEARCH ROUNDS

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recalling 11% or a little higher than the national average, but you're finding the extra, super subtle cancers in women, and that helps them stay alive, then that may be worth it — so there's a constant balance of risk and benefit," says Lee.

The Takeaways

Study authors assert the study conclusion is really more of a beginning, or a call for more research on screening mammography interpretation performance, than it is a definitive answer to a question. There's not much nation-wide, validated data out there about screening mammography interpretation performance, Lee says, and they hope to show the potential that further research holds.

Rosenkrantz cautions against drawing conclusions about the study results in absence of more

research. "For example, radiologists in certain parts of the country did better as a whole than others, and we don't know the reason," Rosenkrantz says. "We've received many questions as to how we might explain the observation, and we don't know the answer at this point. But as this is new information, unique from what has been described previously in this space, I think it's important for us to share the findings."

Lee agrees. She also encourages radiologists to view measure performance scores with a grain of salt, to some degree. "The recall rate example highlights the importance of assessing performance across measures holistically versus individual metrics in isolation, supporting guidance in the ACR BI-RADS® atlas," she says. "The more data we have, the more complete the picture becomes — and, ultimately, the more patients' lives we can save." B

By Cary Coryell, publications specialist, ACR Press ENDNOTES available in the digital edition at acr.org/bulletin

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