

Bulletin



CONSIDERING ALL ANGLES



Supporting Your Well-Being During the Pandemic

Self-care is critical, especially during these challenging times. Take the first step toward well-being with the ACR® Radiology Well-Being Program, which includes access to the following tools and resources:

- The Well-Being Index (WBI) survey tool to self-evaluate your level of well-being and access radiologist-specific resources on important well-being topics.
- Support guides designed to walk you through activities related to self-care, resilience and more.
- A well-being curriculum for residency program leaders designed to meet ACGME well-being requirements.
- Activities and articles to support well-being during the COVID-19 pandemic, including stories of ways fellow radiologists have found — or created — bright spots in the midst of upheaval.



Bulletin

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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.



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



Chaos and Opportunities

The College's GR team moved quickly through 2020 to get ACR members' issues heard and addressed.

Washington can be an enigma. There may be long periods of relative inactivity, mixed with days or weeks of frenzied chaos. It seemed fitting for the unpredictable trajectory of 2020 that it was the holiday season that brought a frenetic pace to everyone on Capitol Hill.

As you know, our ACR-led coalition was able to mitigate a number of items in the end-of-year COVID-19 legislation. In the short-term, what seemed like an inevitable 10% decrease from Medicare, across radiology, was reduced to about 4%. Physician adverse terms in surprise medical billing were modified so that many of radiology's goals in the legislation were realized — most importantly, taking patients out of the middle. There were other provisions in the legislation that will benefit us and the patients we serve, including a one-year delay in the implementation of the controversial CMS Radiation Oncology Payment Model, an extension of no-cost screening mammography for women 40 and older, and adjustments to tax consequences for those seeking pandemic-related relief from the Paycheck Protection Program.

There are lessons to be learned from these efforts. Our GR staff astutely realized early in the evaluation and management (E/M) struggle that, as a relatively smaller specialty organization, we could not have sufficient influence acting alone. Through hard work and negotiation, we were able to gather a coalition of more than 80 organizations to stand with us. Remarkably, despite the political ebbs and flows, we were able to hold this coalition together and remain united on our positions. We strengthened many relationships, which will no doubt serve us well in the future. Without the power and influence of our partner organizations, we may have faced a very different outcome.

We also established a new standard for the flow of information between our GR team, economics experts,

and consultants. As you can imagine, every iteration of possible legislation had to be translated into impact on our practices. With the multiple parameters in play at times, this was not a straightforward task. The effort helped reinforce relationships and established important lines of communication amongst many stakeholders.

Several opportunities were also identified. There were several calls to action that were sent to the membership, mostly via our Radiology Advocacy Network. Despite the urgency and significant impact of E/M on all our practices, we only achieved a 10% response rate. Our efforts were supported by calls from ACR leadership to state chapter presidents urging additional responses. Several Engage and social media posts implored members to respond. Fortunately, we received lots of support from others in the radiology community and our coalition partners. Clearly, we still have work to do to motivate our members and communicate the importance of responding to calls to action.

2020 posed a number of challenges for our advocacy, mostly due to the suspension of activities due to COVID-19. ACRA member support is a vital component to our three-pronged approach to advocacy, which includes RADPAC®, lobbying, and grassroots engagement. Now is the time to emphasize the importance of participating and investing in our future.

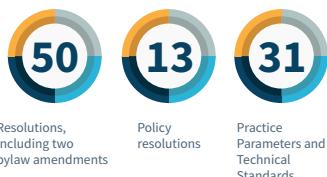
Although measured, it was remarkable that we were able to move the legislative momentum in Washington at a formidable time. Everyone's attention was on other matters, including the polarized politics of the day, COVID-19 legislation, and the Georgia Senate runoffs. Yet, our GR team was able to thread a fine needle to get our issues heard and addressed. Despite the odds, our GR staff once again demonstrated that they are some of the best in a very convoluted and complicated business.

We all need to take this opportunity to realize that sentinel events like these and so many others are the reason we have built a strong College. The E/M struggle will continue. Other issues will come before us. This is why we need everyone to participate and be engaged in the ACR's activities. This is the value that our College delivers. This is why everyone should be a member of the College. **B**

ACR's 2020 Top Accomplishments

The ACR achieved significant accomplishments in 2020 across all core areas of the College, despite unprecedented challenges. [View the complete report on acr.org.](#)

Converted the ACR 2020 Annual Meeting to a virtual meeting. The ACR Council considered:



121

Fellows

of the ACR were inducted during the ACR 2020 Virtual ACR Convocation.



13% increase

JACR Impact Factor increased 13% in 2019.



99%

new user visits to acr.org

Created acr.org/COVID-19 resources hub – 99% increase in new user visits to acr.org.



ACR Bulletin receives National Silver and Regional Gold Awards

for its March 2019 issue by the American Society of Business Publication Editors.



LCS Resumption of Screening Toolkit to help radiologists restart their LCS programs in the chronic COVID-19 environment.



22,751
job seekers and
10,724
employers

The ACR Career Center served 22,751 job seekers and 10,724 employers. The Center also hosted its first virtual Career Fair, connecting 221 registered job seekers and 26 employers.

148,000

Category 1 CME credits earned through Case in Point®.

51,900

Category 1 CME credits earned through CPI Modules.

2027

The ACR was renewed as an Accrediting Body for mammography by the FDA through 2027.



98 COVID-19

articles were published by the *ACR Bulletin* and the *JACR*, and Case in Point published nine COVID-19 cases.

Successful transition of site surveys to virtual surveys for DCOE and Radiation Oncology Accreditation.



2,312 clicks

Free medical student virtual two-week radiology curriculum garnered 2,312 clicks.



ACR CEO Awarded RSNA Gold Medal

ACR CEO William T. Thorwarth Jr., MD, FACR, was awarded the RSNA Gold Medal at the Society's annual meeting in December. The Gold Medal, RSNA's highest honor, is awarded annually by the

Society's Board of Directors to those individuals who, in the judgment of the Board, have rendered unusual service to the science of radiology.

"Bill epitomizes the word 'statesman' and is an excellent ambassador for our specialty and all of medicine," said RSNA President James P. Borgstede, MD, FACR. "I am honored to have Bill as my longstanding friend and colleague."

Leading ACR as CEO since 2014, Thorwarth has helped shape radiology's transition to value-based care. His expertise in economics and health policy has helped to bring patient-centered care to the forefront of the specialty.

To learn more about Thorwarth's story, listen to the inaugural episode of the Radiology Leadership Institute® Taking the Lead podcast at [acr.org/RLIPodcast](#). To learn more about the 2020 RSNA Gold Medalists, visit [bit.ly/RSNAGoldMedal2020](#).



Update Your MyACR Profile

Developing a leadership that reflects and celebrates the diversity of our membership is the best way we can represent your needs and the needs of the patients and populations you serve. To accomplish that, we need to get to know you better. Take a moment to update your profile, practice, and demographic data at [acr.org/MyACR](#) today. For your privacy, the demographic data is de-identified and anonymized before it is analyzed.

"Our College is committed to excellence through diversity and recognizes inclusiveness as a core component of serving that mission," says Johnson B. Lightfoote, MD, FACR, chair of the ACR Commission for Women and Diversity. "Members sharing their diversity and demographic data when they renew their membership (or log on to [acr.org/MyACR](#) to update their profiles) helps us measure, understand, and improve inclusivity and health equity in service to our patients and populations."

To update your profile, visit [acr.org/MyACR](#).

It's a remarkable testament to science that a novel disease-causing virus has been discovered, the genetic material completely decoded, new therapies created to fight it and multiple safe and effective vaccines developed all within the span of a year — an accomplishment that the journal *Science* has pegged the breakthrough of 2020.

— DAVID T. PRIDE, MD, PhD,
INFECTIOUS DISEASE SPECIALIST AT
THE UNIVERSITY OF CALIFORNIA
SAN DIEGO

Leading by Example

The Radiology Leadership Institute® (RLI) Taking the Lead podcast explores the challenges that transform everyday radiologists into today's leaders. In a recent episode, Ezequiel "Zeke" Silva III, MD, FACR, recounts how his passion for science led him to pursue a career in medicine and how his desire to contribute to the specialty has shaped his focus on payment policy and quality initiatives in radiology. Silva, past chair of the ACR's Commission on Economics and an IR at South Texas Radiology Group in San Antonio, was recently named chair of the AMA/Specialty Society RVS Update Committee.

To listen to the RLI podcast, visit acr.org/RLIPodcast.



IN MEMORIAM

Otha W. Linton, MS



Otha W. Linton, MS, who served as associate executive director when the ACR built its current office in Reston, Va., passed away on Dec. 7, 2020, in Tucson, Ariz., at the age of 88. Linton began his career in the healthcare field as press representative for the

American Osteopathic Association. He was then hired by the ACR in 1961 as the director of public relations at the former ACR headquarters in Chicago. From 1969–1984, Linton served as the ACR director of the Washington, D.C., office — helping establish the College's close working relationship with Congress and the executive agencies regulating the practice of radiology.

Over his tenure, Linton became fascinated with the history of radiology, which ultimately led to two major projects that culminated his long tenure at the ACR. The first was to write a definitive anthology of the ACR's first 75 years, "The American College of Radiology: The First 75 Years," published in 1997. In addition, to help celebrate the discovery of the X-ray by Wilhelm Conrad Roentgen in 1895, Linton was selected to head up the efforts of Radiology Centennial Inc. — a large cooperative organization of nearly 50 radiology societies and industry representatives that helped establish the goal of informing the public of the extraordinary development of the field of radiology from Roentgen's discovery to radiology practice as it neared the new millennium. The project was all-consuming, establishing slide sets, videos, books, congressional recognition, a postage stamp, a travelling exhibit display, and recognition and displays in Disney's Epcot Center and Smithsonian Institute.

Linton ended his professional career as executive director of the International Society of Radiology and provided consultant work for radiology protection organizations. For his dedicated service and accomplishments to the ACR and field of radiology, he was awarded the ACR Gold Medal in 2003. He also received the Gold Medal of the American Roentgen Ray Society in 1995 and was an honorary member of the RSNA in 1990.

To learn more about Linton's life and work, visit isradiology.org.

FCRI Grant Announcements Coming Soon

On behalf of the ACR® Center for Research and Innovation®(CRI), Pamela K. Woodard, MD, FACR, chair of both the ACR Commission on Research and the Fund for Collaborative Research in Imaging (FCRI), would like to thank all ACR member applicants who submitted project proposals to the FCRI Request for Applications. Many excellent applications were received, and a committee review and selection process is now underway. Funding announcements will be made in the Spring. Learn more about the Grant at acr.org/FCRIGrant.



Register for the SBI/ACR Breast Imaging Virtual Symposium

The first-ever SBI/ACR Breast Imaging Virtual Symposium will take place April 9–11, 2021, and offer more than 60 live sessions across all breast imaging modalities, access to ePoster abstracts, and industry-sponsored learning labs. Registration is currently open for what is sure to be an informative and engaging event.

To register for the Symposium, visit bit.ly/SBIACR21.



**Richard E. Heller III, MD,
MBA, and Sarah S. Milla,
MD**

Co-Chairs, Economics
Committee on Pediatric
Radiology

Guest Columnists

Don't Steer Us Wrong on Pediatric Imaging

Several large health insurance companies have launched programs that direct pediatric patients to freestanding, non-hospital affiliated imaging centers.

The word “steerage” has several definitions. It can mean “controlling the course of” or refer to the cheapest area on a passenger ship. Over the last few years, several large health insurance companies have launched programs that direct patients to freestanding, non-hospital affiliated imaging centers for their imaging needs. Such “steerage” programs are directing patients away from hospital-affiliated outpatient imaging due to cost-related issues. This is a subject of concern — particularly for the pediatric physician community — since many of these imaging centers may not be as well-equipped for children’s care as a dedicated pediatric facility.

Anthem was the first major insurer to institute a site-of-care imaging steerage policy. Their guidelines indicate that unless medically necessary, advanced outpatient imaging — such as CT, MRI and PET — must be done at freestanding non-hospital affiliated imaging centers or Anthem will not cover the exam. Few exceptions are listed, such as the need for anesthesia or a history of cancer. Anthem’s policy indicates that children 9 years of age and younger may be imaged at a hospital-affiliated facility, but children 10 years of age and older are essentially considered adults for imaging purposes. Thus, a 10-year-old child with seizures and requiring a brain MRI would not be approved to go to a hospital-affiliated facility, including a children’s hospital. Subsequent to Anthem’s announcement, United Healthcare (UHC) instituted a similar site-of-care policy, utilizing the same age criteria as Anthem. With UHC’s announcement, the two largest health insurance companies in the country had formalized steerage programs directing children away from hospital-affiliated imaging.

Broad-based, collaborative advocacy efforts involving representatives of the ACR, the American Academy of Pediatrics, and the Society for Pediatric Radiology were able to effectively communicate concerns to UHC, who agreed to alter their policy. Their updated criteria indicate that patients under 19 years of age are automatically

permitted to have their imaging done at hospital-affiliated facilities. Despite our advocacy efforts, Anthem did not alter their criteria. Recently, Cigna, the fourth-largest health insurance provider, unveiled a similar policy — again using the 10 years of age cut-off.

The difference in cost between hospital-based imaging and freestanding centers can be significant. In addition to a fiduciary responsibility to their investors, insurance companies are seeking ways to limit costs to their consumers. Affordability of healthcare is a major concern in the U.S. A survey showed that one in four people skipped care due to cost issues. Even those with private health insurance are not immune to financial challenges from care. Research has shown that even with insurance, patients may face significant out-of-pocket expenses from advanced medical imaging.

Although there are financial differences between sites of care, there are also potential differences in the quality of care. Specifically, do freestanding non-hospital affiliated centers offer the same level of service to children and families as dedicated pediatric centers? Beyond the value of interpretations by pediatric radiologists, there are dedicated pediatric RTs and child life specialists who ensure that the exam is performed appropriately. Radiation doses have been shown to be lower in dedicated pediatric facilities compared to general practices. Importantly, pediatric centers have personnel, procedures, and equipment to deal with adverse events in children, should they occur.

In addition to issues of quality and safety, there are concerns about choice, as well as patient- and family-centered care. For example, receiving care at one facility but imaging elsewhere inconveniences the family and may require multiple missed days of work for a parent. It can create a fractured medical record. There is also redundancy and waste, as many of the exams will require reinterpretation or even reimaging at the dedicated pediatric centers.

As physicians, our first duty is to our patients and their care. Though cliché, the phrase, “children are not little adults” is true. While not ignoring economic issues, we must recognize and vocalize that children have specialized imaging needs. We must advocate for our pediatric patients and their families, as many are not aware of the nuances of imaging subspecialization. We hope that Anthem and Cigna will follow UHC’s lead and exempt all children from their site-of-care policies. **B**

CONSIDERING ALL ANGLES

A sense of belonging, appreciation, and being of service to their community is driving the career decisions of many medical students.



ILLUSTRATION BY OIVIND HOVLAND / IKON IMAGES

Given the state of medical school curricula, many medical students are learning more about radiology from non-radiologists, who often perpetuate many misconceptions that deter students from entering our field,” says Yasha Gupta, MD, chief resident at Mount Auburn Hospital in Cambridge, Mass., and education liaison for the ACR RFS Executive Committee. “There are a lot of misconceptions, and students need more knowledge — an early introduction to the specialty — to dispel myths and misinformation that threaten our strongest future.”

Connecting with medical students to impart the value of the specialty — through outreach, education, revised curricula, and straightforward resources — will ensure a diverse pipeline toward coordinated, collegial healthcare to ensure the best patient outcomes. Radiology is frequently underrepresented in the formal curricula of medical schools — and taught by non-radiologists. Often the educational materials do not cover technological advances, the current scope of radiological practices, or the role radiologists play in the patient care continuum.¹

“Physicians are charged with ordering the most appropriate studies for their patients throughout their careers,” says Lori Deitte, MD, FACR, chair of the ACR Commission on Publications and Lifelong Learning and vice chair of education at Vanderbilt University Medical Center. “In our role as expert consultants, we are the source for our colleagues with questions about imaging.” To that end, better understanding the central role of the radiologist and how imaging helps direct patient care is important for medical students, Deitte says.

INTEGRATED EDUCATION

Stressing the value of radiology for medical students goes beyond showcasing the latest imaging capabilities. In addition to learning about the technology behind the images, medical students need more information about the radiologists day-to-day, their central role in a patient’s care journey, and the various subspecialties that make up the profession.

The specialty also needs to counteract misinformation students may encounter. They may be told that AI will decimate the specialty or that radiologists are shut away reading images in a dark room. Medical students may also be misinformed about how much patient interaction radiologists have or the changing demographics of the specialty. Whether or not medical students decide to go into radiology, it’s integral that these future clinicians understand the specialty and how imaging impacts patient care.

Deitte co-chairs the ACR Task Force on Medical Student

We want to give medical students an opportunity to engage in educational activities that could influence their career path — using a longitudinal curriculum that can assist with better matches to corresponding residency programs.”

- Lori Deitte, MD, FACR

Education, formed as a result of a Council-passed resolution from the 2020 ACR annual meeting. The Task Force is investigating more avenues for introducing medical students to imaging — including diagnostic radiology, IR, and radiation oncology. “The idea is to have radiologists and radiation oncologists teaching and interacting with students throughout their first through fourth years,” she says. “We want to be represented early in medical schools’ curricula.”

The task force is divided into three teams, each working on specific activities related to medical student education and engagement. These groups will report out by the end of this month, providing perspectives from diverse stakeholders, ranging from medical students to a medical school dean. The group will aggregate the findings and make recommendations for ways to accelerate medical students’ understanding of radiology and add value to their educational experiences. The Task Force will present a report on the group’s work at ACR 2021.

“We want to give medical students an opportunity to engage in educational activities that could influence their career path — using a longitudinal curriculum that can assist with better matches to corresponding residency programs,” Deitte says. “We think integrating radiology taught by radiologists into an existing curriculum will be the most successful approach,” she adds.

A failure to teach the fundamentals of radiology will have huge long-term effects on the profession, says Christopher M. Straus, MD, professor of radiology and director of medical education at University of Chicago Pritzker School of Medicine and co-chair of the Task Force with Deitte. At his institution, Straus is expanding a radiology interest group, with a fundamental goal of integrating radiology into first-year coursework.

“We are operational with first-year activities here, and we are networking in the Chicago area with medical schools of different types, sizes, and philosophies to share and formalize what we’re doing,” Straus says. “After testing the radiology interest group, we plan to approach the ACR later this year to use our strategy on a national scale.” The group is building out from an existing effort to encourage students interested in imaging or a career in radiology to meet with radiologists from Pritzker to learn more about the specialty. “We’re moving this project up in the queue in part because of COVID-19 and the increased readiness and willingness to establish remote education experiences,” Straus says.

VIRTUAL CONNECTION

In response to the COVID-19 pandemic reducing medical student presence on clinical services and in classrooms, academic institutions are using virtual formats to continue medical student education.²

"We had to terminate a clerkship when COVID-19 began," says Christopher F. Beaulieu, MD, PhD, professor of radiology and associate chair of education at Stanford University. "Medical students were sent home and everyone was sort of left out in the cold."

Beaulieu says his institution quickly recognized that virtual radiology education was an option. "We put together a two-week online clerkship. Instead of the usual 8 or 10 students we typically get, we got 80," Beaulieu says. "It went quite well. It was time well spent for faculty and residents who taught — and the feedback was tremendous." A little more than half of the students surveyed at the end of the course said they would consider radiology as a career choice.

"Our residents are quite proactive and enthusiastic about participating," Beaulieu says. "Teaching is a benefit for them. They learn what they know and what they don't know when they teach." There is evidence that involving radiology residents in medical student teaching — giving lectures — may benefit residents and students alike.³

The clerkship aimed to teach students some very basic image interpretation skills for things like chest X-ray and abdominal CT, which are good to know for any physician, Beaulieu says. "Then we want them to learn to be a good clinician consumer of radiology. They need to learn how they can collaborate with radiologists," he says. "I hope that social piece of it is going to be ingrained in them."

"One of my concerns about going virtual was the loss of face time and the in-person experience," Beaulieu admits. "But to be honest, a lot of students who visit a reading room see the experience as some kind of downtime. They can get bored and don't feel engaged. If you do something virtually, it can be much more concentrated and effective."

Pre-pandemic, Stanford Radiology had been planning to host informal radiology-themed lunch seminars for medical students once per week for one credit. Last fall, the school instituted an imaging seminar online (minus the lunch) and paralleled it with gross anatomy. "We called it 'Imaging for Human Anatomy.' There is an anatomy schedule in their curriculum already, so we added 10 seminars to go along with that coursework. We had a great turnout, with 26 students enrolled," Beaulieu says. "A first-quarter introduction will be a huge plus for radiology down the road."

SOCIAL PLATFORM

In a way, COVID-19 has leveled the playing field among medical schools, where big and small programs essentially have the same virtual platform at their disposal. It is an opportunity to connect with potential future radiologists — establishing mentoring and education resources through familiar social media outlets, for instance. This approach could be more successful than mandatory courses that come too late to spark interest.

To capture some of these opportunities, Gupta has spearheaded a number of efforts at her institution around education, mentoring, and a future career in radiology. "We're working on a variety of things," she says. "We just did a 'How-to-nail-your-virtual-interview' webinar — a COVID-19-borne response to the new virtual interview scene for radiology residencies." Gupta was involved in a *JACR*[®] tweet chat on the same subject.

Social media platforms promote webinars and national radiology conferences — often with specific educational content and service opportunities for medical students. Twitter, in particular, has become an effective way for students to collect and share the accounts of program directors, residents, educators, and institutional training programs.⁴ "I also created a future radiology residents group (@futureradres) on Twitter," Gupta says. "It has basically evolved into its own mini-organization."

An @futureradres virtual mentorship program last summer, with support from the ACR, was a tremendous success, with around 500 students interested in radiology signing up. The ACR's Medical Student Subcommittee, of which Gupta is a member, has a keen interest in developing a mentorship program, and members of all ages and experience are ready to participate. "Recently, the ACR Senior and/or Retired Section reached out to me with interest in doing a similar virtual mentorship program with medical students and younger residents," Gupta says.

ACR RESOURCES FOR MEDICAL STUDENTS

The College provides a host of resources with the goal of educating medical students about the field of radiology and their potential role in its future.

ACR's Medical Student Hub offers continuing education resources, ACR Appropriateness Criteria[®] guidelines, information about scholarship and internship opportunities, and online networking platforms.

[Learn more at acr.org/MedicalStudent](https://www.acr.org/MedicalStudent).

ACR's Medical Educators Hub provides resources for medical student educators, such as radiology student workshops and other tools. [Learn more at acr.org/Medical-Educator-Hub](https://www.acr.org/Medical-Educator-Hub).

The Medical Student Subcommittee, part of the ACR RFS, develops resources for medical students and provides input to ACR committees on issues related to membership retention and medical student outreach. This year, the Subcommittee will focus on initiatives like AI and machine learning, diversity and inclusion, mentorship programs, radiology interest groups, and a virtual symposium for medical students. [Learn more at acr.org/RFS](https://www.acr.org/RFS).

ACR's Pipeline Initiative for the Enrichment of Radiology (PIER) offers an internship to first-year medical students at institutions across the U.S. This initiative began through the Commission for Women and Diversity to give underrepresented minorities and women an opportunity to explore the radiology specialty and engage in research. Once selected, scholars are paired with at least one instructor in the student's area of interest. The 2021 PIER program will be virtual. [Visit acr.org/PIER for more information](https://www.acr.org/PIER).

Radiology-TEACHES[®], an online resource hub that uses case vignettes integrated with the ACR Select[®] clinical decision support tool, allows radiology programs to keep their students informed and engaged during COVID-19. [Learn more at acr.org/radiology-teaches](https://www.acr.org/radiology-teaches).

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The Big Purchase

Now that AI is becoming more accessible, hearing from those who have put a program into place can provide valuable insights.

Practical considerations for implementing AI technology into clinical workflow were the focus of the closing session of the 2020 ACR Imaging Informatics Summit, “You’ve Purchased an AI Model. Now What?” The varied practice settings offered several workable strategies for implementing AI and ensuring a successful program.

Work With Vendors to Develop Implementation Solutions

Kicking off the presentations at the Summit, ACR Informatics Commission Chair Christoph Wald, MD, MBA, PhD, FACR, joked that “all of the data scientists in Boston had already been hired by MGH and Brigham.” So, the Lahey Hospital & Medical Center team — without a data scientist onsite — relied heavily on working relationships with a single AI vendor and a third-party workflow orchestrator to integrate AI algorithms into their clinical workflow. This approach aided in developing a context-sensitive widget to be deployed within the PACS viewer to alert radiologists to the presence of AI results on a given study. Wald emphasized the importance of collecting user (i.e., radiologist) feedback that is aligned with specific tools and conveyed to the internal quality assurance team as well as to the vendor.

Communicate With Radiologists and Staff

These points were further supported by the complementary presentations of Arun Krishnaraj, MD, MPH, chair of the Commission on Patient- and Family-Centered Care, and Christopher M. Gaskin, MD, FACR, associate chief medical information officer at the University of Virginia (UVA) Health System, on their experience implementing AI models at UVA. Krishnaraj discussed their approach to implementing AI by first focusing on how a particular tool is mapped onto its intended use case to determine how it should integrate into the clinical workflow.

According to Gaskin, working with UVA’s AI vendor was important to tune the implementation and presentation of results, including decisions regarding the precise timing of when the images were exposed to an algorithm and when the results are presented to the interpreting radiologist. Ultimately, UVA’s system was set up to alert radiologists to the arrival of new AI results after a report has been finalized and to facilitate integrated review of those results post hoc.

The UVA experience raised a critical point that clear communication with radiologists and staff throughout the process of developing and implementing AI into the clinical workflow is necessary to ensure success. Krishnaraj focused on the implementation of a lung CT de-noising algorithm to expand CT lung

cancer screening to underserved populations in rural Virginia — a fantastic example of AI helping facilitate a public health initiative within their department. He found the biggest challenge in this project was “keeping everyone informed across multiple remote imaging sites during implementation.” Communication became even more important when an algorithm had to be taken out of the clinical workflow at UVA, due to the vendor’s decision to conform to an update to the FDA’s regulatory pathway.

Communication can also play a big role in mitigating the “expectation-reality mismatch,” described by Jayashree Kalpathy-Cramer, PhD, scientific director at Massachusetts General Hospital and Brigham and Women’s Hospital Center for Clinical Data Science. In one example, the initial excitement around AI at UVA — particularly among the trainees and younger faculty — waned over time as radiologists were “underwhelmed” by the AI algorithm’s performance in clinical workflow. According to Kalpathy-Cramer, this is most often due to data heterogeneity and poor generalization of AI algorithms introduced to new sites after initial training and validation elsewhere. Though performance issues like these are well known in data science circles, communicating them to radiologists can help manage expectations for AI in the workflow.

Determine the Value Proposition

While academic departments like UVA’s have a mission to support research and the technological advancement of the field, private practices are more motivated to implement AI if there is a business case for it. At the Summit, Nina E. Kottler, MD, MS, vice president of clinical operations at Radiology Partners, addressed this issue — or, as she put it, “Who is going to pay for AI?”

Different actors in the radiology ecosystem have different incentives. For radiologists, particularly in private practice, efficiency is important enough that radiology practices might be willing to pay for productivity gains. Payors and hospitals have different incentives: For payors, decreasing costs is the priority, while hospitals strive to improve patient throughput. Kottler cautioned that “quality is an expected component of our product as radiologists,”

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Building AI Into Practice

For practices looking to incorporate AI into clinical workflow in the future, the following keys to success emerged:

- Partner with AI and/or platform vendor(s) who are willing and available to work with you to develop the right implementation solution for your practice.
- Maintain open lines of communication with involved parties throughout the process
- Focus on AI tools that fit a specific business case and educate your radiologists to keep them engaged with the technology.

Future Shock

No one can predict the future, but scenario planning can help you prepare for the best, worst, and everything in-between.

When it comes to scenario planning, 2020 was the year we've been training for. While no one can predict the future, we can plan for a variety of timelines and prepare our practices and careers accordingly. And in this tumultuous year, scenario planning has never been more relevant.

To understand how radiologists can use scenario planning to meet healthcare's ever-changing needs, the *Bulletin* caught up with ACR Vice President Alexander M. Norbush, MD, MS, chair of radiology at the University of California at San Diego School of Medicine and co-director of the 2020 Radiology Leadership Institute® (RLI) Summit Spotlight; Frank J. Lexa, MD, FACR, chief medical officer of the RLI and chair of the ACR Commission on Leadership and Practice Development; and Liam Fahey, PhD, co-founder and executive director of Leadership Forum and professor of management practice at Babson College. Fahey was also a speaker on scenario planning at the 2020 RLI Summit.

How is scenario planning different from strategic planning?

AN: Strategic planning typically refers to a plan utilized as a roadmap to take an organization forward in a 3- to 5-year time window to accomplish ambitious goals. Such a strategic plan looks forward to a single, most likely, and pragmatic future point — where conditions and probabilities are concerned and plans for that single, most likely future. Scenario planning, alternatively, presumes that we cannot be confident about a single, most likely future since there are so many variables that shift and change as we arrive at the future. Scenario planning looks at a range of possible futures, including futures that are likely and futures that are unlikely, and tries to identify common actions and initiatives that benefit an organization across the broadest range of potential futures, also typically within a 3-to-5-year time window. For example, not many single-point strategic plans would have necessarily included a pandemic, although a scenario planning exercise two years ago could have easily included such disasters as pandemics as we are considering a broader range of optimistic and pessimistic futures.

FL: With scenario planning, you're generating ideas. Scenario planning is eventually getting to the point where you understand a future that could be radically different. For example, when the Yom Kippur War occurred in the 1970s and affected the oil industry, the Royal Dutch Shell Oil Company had already somewhat predicted it and was prepared. They had engaged in scenario planning and one of the scenarios imagined what might happen if a war in the Middle East occurred — shaken oil markets, cartel behavior, and boycotts. So, when the war actually happened, they had already considered the possibilities of what would happen to their company and had formulated a strategy based on that. Strategic planning asks the question, "What do you do about those changes?" It's your action plan.

LF: The intent of doing scenario planning is to understand what kinds of opportunities or threats may be confronting you, what kinds of strategies might or might not work, and what kinds of operations make sense. Scenario planning generally provides input into most phases of strategic planning.

Why is scenario planning an important skill for radiologists to learn?

AN: Scenario planning empowers radiologists to think about the future and anticipate course corrections to position themselves better. It's particularly valuable for radiologists, given the issues surrounding the specialty: turf conflicts, intense scrutiny due to our income profile, and the fact that we are not as visible to patients. Radiologists need to be strategic and understand how they can adapt for a better future.

FL: Scenario planning is a way of trying to think about "what if" types of questions. For radiologists, it's important because many of us have jobs that are very immersive. We're focused on the "here and now" — reading our studies — and don't always step back to consider what could happen in the future. The future is likely to be different than the one we expect. Things are changing while we're working, and we don't want to get left behind in the future because we're so focused on today.

LF: We're all living in a world of change — social, cultural, technological, and political. For radiology, we'll see changes to things like the population of radiology patients as well as the advent of new and disruptive technology. The intent of scenario work is to anticipate those possible events and plan how your practice or department will meet the future.

How can radiology turn challenges into opportunities through scenario planning?

AN: Mindset is a determinant of success in many instances. One of radiology's challenges is that the specialty has been very strong and secure in many of the things we do, and that security has granted us a level of resistance in moving in a different direction. Part of what we must do is not only engage with new ideas, but also create a more entrepreneurial or solution-oriented mindset by understanding that change is constant. Scenario planning is a bit of a paint-by-numbers approach to understanding how we deal with problems and formulate solutions that are optimistic and deal with the inevitability of change. It's done in a structured and stepwise progression — starting with deciding on deliverables and goals and ending with creating a roadmap for successful implementation.

FL: Once you have an inkling of what could happen in the future, you try to make those things that feel like threats manageable — or even turn them into successes. If you think that we're going to a single-payer plan, how do you adapt to do well under that plan? And what changes can you make before everyone else is trying to do the same? Scenario planning is like choreographing and practicing a dance, because you want to be ready to make the right moves, but you also want to ensure that you're using your resources wisely. You can't be ready for every potential threat. We all have limited resources and must balance the present with the future. Look at the things that are most likely to happen and anticipate the unexpected.

The ACR Strategic Plan update process is currently underway. How does scenario planning figure into that process?

AN: Currently, there are many complex drivers and forces that are affecting our specialty. Everything from payment reform to holography to cloud computing to big data and AI. With the understanding that the future is going to be hard for us to predict, scenario planning is an ideal tool for the ACR to use to build its strategic plan — especially given all the uncertainties we dealt with in 2020.

FL: We live in a rapidly changing world. Scenario planning should help inform ACR about what to expect about a variety of changes that could come in the future. And if this process succeeds, it will help us build a strategic plan that will have a shelf life several years into the future, because the plan will have anticipated various changes versus a set future. This better positions the ACR to provide ongoing member value and better support the specialty.

What can radiologists do to start scenario planning or get involved in the ACR's Strategic Plan update process?

AN: Learn, reflect, and engage. Read articles in the *JACR*[®], visit the RLI's resources, and browse publications like *Harvard Business Review*. Engage with others who are also interested — fellow physicians, business administrators, friends in other fields. This way, you have the chance to develop your ideas. We all have so much to learn from each other.

FL: A lot of people think the ACR's Strategic Plan is very secret and behind closed doors, but we have a lot of people involved and we are very interested in input from a wide variety of people — both members and non-members. Learn more about how you can contribute by contacting Pamela Mechler, MS, CAE, ACR vice president of strategic planning and business excellence, at pmechler@acr.org. Scenario planning and strategic planning are both critical skillsets for radiologists, and training about these leadership topics and more are available from a variety of RLI programs. **B**

INTERVIEW BY MEGHAN EDWARDS, FREELANCE WRITER, ACR PRESS

SCENARIO PLANNING: A Paint-By-Numbers Approach

Scenario planning looks at a range of possible futures, including futures that are likely and futures that are unlikely, and tries to identify common actions and initiatives that benefit an organization across the brightest range of potential futures — typically within a 3- to 5-year time window. Here is a structured and step-wise progression of scenario planning:

1. Decide on deliverables and goals
2. Determine the broad range of drivers and forces that affect one's domain
3. Aggregate and categorize drivers and forces
4. Distinguish certainties from uncertainties where aggregated drivers and forces are concerned
5. Select between 3 and 5 total scenarios based on combinations of the axes of uncertainty
6. Create highly colorized scenarios reflecting a range of potential futures
7. Determine the actions that secure the best future across the broadest range of futures
8. Create a roadmap to ensure successful implementation of the beneficial actions

THE BIG PURCHASE

continued from page 11

so it may be hard to justify paying for AI that only targets improvements in quality.

Start the AI Adoption

Kottler was asked where a practice should begin if it has not yet adopted AI. Harkening back to points made by Wald, Krishnaraj, and Gaskin earlier, Kottler emphasized that in selecting an AI technology, the focus should be on selecting a vendor based on their willingness and availability to work with your organization, rather than on selecting a specific algorithm. Wald reminded us that this is particularly important for practices without a data scientist on site.

In follow-up to the previous question, a conference participant asked about how practices might go about trialing an algorithm from a vendor prior to committing to a contract. Laura Coombs, PhD, ACR vice president of data science and informatics, said the ACR AI-LAB™ platform Evaluate module will be able to provide this service. This is important because algorithms are notoriously brittle in environments different from where they were trained, and practices should attempt to "try before they buy" — using their own data. The ACR Data Science Institute[®] has received interest from vendors in engaging in this service and the details are being worked out.

A final point to consider: Panelists repeatedly said they believe imaging AI tools — in their current form — are not "ready" for permanent storage. They do not routinely store AI results in PACS, but rather store results in a separate archive for quality assurance purposes. However, the results could indirectly become a part of the medical record if a radiologist acknowledges them in the report.

Finally, practices must recognize that algorithms can degrade over time and they will need a solution for longitudinal monitoring. The ACR AI-LAB platform's Assess-AI module links to the ACR National Radiology Data Registry to collect longitudinal data regarding algorithm performance, as well as examine metadata, enabling practices to detect if — and how — an algorithm's performance degrades with time. **B**

BY WALTER F. WIGGINS, MD, PhD, CLINICAL DIRECTOR OF THE DUKE CENTER FOR AI IN RADIOLOGY

The Pathway to Fellowship

Early career professionals can embark on the journey to attaining the prestigious FACP.



Kathleen A. Ward, MD, FACP

Fellowship is one of the highest honors an ACR member can achieve and recognizes a history of service to organized radiology and medicine, teaching, and/or research. Fellows are represented by diagnostic radiologists, radiation oncologists, nuclear medicine physicians, interventional radiologists, and medical physicists.

The ACR Committee on Fellowship Credentials (CFC) measures each candidate's credentials against the nomination criteria rubric. In an interview with the *Bulletin*, Kathleen A. Ward, MD, FACP, fellowship chairperson of the Illinois Radiological Society and a member of the CFC, discusses how the ACR is ensuring that Fellowship is available to all members who have demonstrated outstanding service — and urges early career professionals to start preparing now for the honor to build their careers toward earning this highest level of ACR membership.

What does an FACP application entail?

The online application opens each January at acr.org/FACP. Each chapter sets its submission deadlines running from March through June (visit acr.org/FACP for a drop-down menu of deadlines by chapter).

Candidates must have at least 10 post-training membership years and should have completed at least one achievement among any of the following domains: service, teaching, and/or research.

A successful application for ACR Fellowship also requires:

- Current CV outlining achievements
- At least two letters of endorsement from ACR Fellows (only one letter may be from a Fellow from the same business entity as the candidate)

What prevents an eligible FACP application from being approved?

Each year, nearly 100 Fellowship applications are left incomplete and not submitted. Some of these eligible members may be Fellows today, had they completed their applications.

The primary reason that a Fellowship application is not submitted is the lack of at least two endorsement letters. I would urge candidates to reach out to their chapter Fellowship chair for a review of their CVs, a recommendation on when to apply, as well as assistance with identifying potential endorsers. This guidance may improve an application's chance for successful approval.

How do early career members find opportunities to improve their applications?

Volunteering and networking provide connections to other

professionals in the radiology or medical community. An important entry to volunteering is your local ACR chapter. Many chapters have volunteering opportunities listed on their websites. I urge early career professionals to attend their local chapter meetings, serve on chapter committees, and support advocacy efforts. Major volunteer positions, such as past president of a chapter, hold great significance on an FACP application.

Early career members should also consider volunteering service to medical societies and performing community outreach, as well as attending subspecialty meetings and the ACR annual meeting. The current trend in virtual meetings provides ease of attendance, with increased networking opportunities.

Teaching also affords opportunities for nomination criteria fulfillment. I encourage early career members to offer to lecture at their local chapters' scientific meetings. Such involvement may possibly lead to invitations to participate in courses, seminars, and visiting professorships.

Finally, research opportunities offer another pathway to Fellowship. Early career professionals should apply for research grants and contribute to national research studies. They can participate in their local and institutional collaborative trials and national research studies, as well as serve on local institutional review boards.

We suggest each candidate reach out to FACP@acr.org or visit acr.org/FACP for additional assistance. We wish each candidate the best of luck in their pursuit of this prestigious award. B

INTERVIEW BY JULIE HUXSOLL, FACP ADMINISTRATOR, ACR

Your Fellowship Application To-Do List

By adhering to the following recommendations, you will improve your pathway to the FACP.



▶ Update your CV every six months to document your recent achievements, such as publications, presentations, and committee and leadership positions. Be sure to itemize your accomplishments with dates.



▶ Seek a mid- or late-career ACR member to serve as your professional mentor.



▶ Assess your schedule to add volunteer time for radiology organizations.



▶ Network with current Fellows who may write letters of endorsement.



▶ Connect with your local chapter as you approach ACR Fellowship eligibility, especially the chapter fellowship chair.



▶ Be aware of your chapter's FACP application submission deadline.



▶ Maintain your ACR membership, as it increases your eligibility to become an FACP. While all post-training membership years contribute toward eligibility, any lapse in membership will delay the opportunity to apply for ACR Fellowship.

Establishing Effective Peer Learning Workflows

An ACR virtual program will help radiologists answer questions about establishing workflows for their peer learning programs.

For radiology departments striving to improve patient safety, transitioning from a peer review to a peer learning model may be key to creating a “just culture” of shared learning. A growing movement, the just culture workplace philosophy acknowledges that even experienced professionals make mistakes and provides an open and safe reporting system where all staff can speak up without fear of reprisal. From there, errors can be discussed as opportunities and systems, rather than people, evaluated for flaws. As some departments transition to a just culture, they find that they are in need of a different way of reviewing errors than what they have done in the past, a method which supports non-judgmental sharing of learning opportunities and supports teamwork.

“Peer learning eliminates scores attached to cases and creates a system where radiologists anonymously submit learning opportunities found in their peers’ work,” says Jennifer C. Broder, MD, vice chair for radiology quality and safety at Lahey Hospital and Medical Center in Burlington, Mass., and chair of the ACR’s newly-formed Peer Learning Committee. “We want to transform radiologists’ peer review processes into peer learning processes, which are collaborative and focused on learning.”

Identifying a Need

“Peer learning uses errors to create opportunities to learn instead of focusing on identifying and tracking errors,” says Regan City, PA-C, a healthcare quality and performance improvement specialist with Radiology Partners. “The approach requires an understanding of human performance and the importance of individual and organizational improvement, facilitating a culture of safety.”

City is a member of the Peer Learning Committee, which is hosting two webinar sessions in March, entitled “How to launch your peer learning program next week” ([register for the March 18 session at bit.ly/PeerLearning1](https://bit.ly/PeerLearning1) and the March 25 session at bit.ly/PeerLearning2). The idea for the webinar — co-chaired by City and Richard E. Sharpe Jr., MD, MBA, department value advisor for Kaiser Permanente in Denver — came out of a breakout group session during the ACR Annual Conference on Quality and Safety in October.

“We heard from radiologists that they want to do peer learning, but they don’t know how to start,” says City. “They want the nuts and bolts — the operationalizing of peer learning, and what it looks like from start to finish.”

According to City, when a radiologist finds what they think is a learning opportunity on a study, they have to ask questions such as, “What did we learn from that experience?” and “How will we share that learning in our practice or in the wider community of radiologists?” She notes that the March webinar will showcase concrete, specific examples of how radiology practices can make the principles of peer learning operational.

Creating Programs in Practices

Sharpe points to a 2015 Institute of Medicine landmark report on improving diagnostic accuracy, which recommended that healthcare organizations establish a work system and culture that supports quality improvement measures in diagnostic performance. According to Sharpe, the collaborative processes that are key to peer learning programs are essential to improving patient care in complex healthcare systems — and what he hopes the March webinar will convey to ACR members. “We want to get radiologists excited to learn about how they can create and implement workflows to manage peer learning programs in their practices,” says Sharpe. “We want to transform radiologists’ peer review processes into peer learning processes, which are collaborative and focused on learning. It eliminates the judgment and review aspect and allows for radiologists to be more relaxed with each other and grow together and collaborate.”

According to Sharpe, who is also a member of the Peer Learning Committee, practices need a mechanism to allow their radiologists to submit learning opportunities to a centralized location. “Before you can talk about learning together, you need to identify some cases in your practice that make for good conversations about growth opportunities,” he says. “Practices need a leader to review the submissions and create content for regular programming for the team so they can engage in these conversations.”

Sharpe notes that the March webinar will support radiologists in identifying learning opportunities in their clinical practice, identify submissions that have high learning potential, facilitate team discussions, and create an improvement strategy. “We’re also going to look at some of the technological solutions to support groups that want to do peer learning,” he says. “We want to talk about some of the gaps or challenges with current technologies or solutions that are impeding effective peer learning programs.”

According to City, the March webinar will be the first output of the new committee — and will bring actionable details of how radiologists can efficiently put together programs so conducting peer learning is not harder, but easier for them to do. “If the time is right for change, we want to facilitate radiology practices picking peer learning over the way they’re doing things now,” says City. “We all know it’s the right thing to do, but when it comes to actually doing it, the devil is in the details.” **B**

BY NICOLE B. RACADAG, MSJ, MANAGING EDITOR, ACR BULLETIN

Ask a Radiologist

A radiology-specific, online messaging system allows patients and families to ask questions directly to radiologists through the patient portal.

For the parent of a sick child, every minute circling the unknown is excruciating. Every moment spent waiting for test results or a diagnosis is a moment too long — particularly when it comes to imaging. A recent study shows that nearly half of all radiology outpatients experience anxiety as they await their imaging results.¹

To mitigate this unease and empower patients and families in their care, over 90% of hospitals now allow patients to view their test results online, and 68% of these hospitals allow patients to message questions to their providers through a portal in the EHR.² A study from a large academic medical center shows that 3% of all patient-initiated messages relate to imaging studies, yet radiologists rarely see these messages.³ Instead, the messages usually go to referring physicians who may be unable to provide the most accurate information about radiology exams.

Recognizing this, radiologists at Cincinnati Children's Medical Center partnered with the hospital's information technology team to integrate a messaging system into the patient portal that allows patients to contact them directly. The system helps patients and families get the answers they need — from the experts in imaging — in a timely fashion. "If parents have questions about their scans, communicating directly with a radiologist ensures they get accurate information without having to call around to find a person who can answer their questions," says Dianne Hater, patient and family advocate for Cincinnati Children's radiology department.

Answering a Need

Connecting radiologists to patients through an online messaging system aligns with Cincinnati Children's many patient-centered care initiatives. In 2015, for example, the radiology department worked with Hater and other patient and family advocates to implement a direct results delivery program that gives patients and families a chance to discuss their exam results with a radiologist immediately following image acquisition.

In 2017, Morgan P. McBee, MD, a resident at the time, saw the opportunity to further strengthen the radiology department's patient outreach when he got the idea for a system that would allow patients and families to directly connect with radiologists through the patient portal. "The value of patient portals is often discussed at hospital board meetings, but it seemed like we radiologists were one step short of fully realizing our potential to go the extra mile for the patient," says McBee, now assistant professor of radiology at the Medical University of South Carolina. "The patient messaging system helps us interact with patients directly without adding a significant amount of work to our schedules."

To set his vision into motion, McBee approached Alexander J. Towbin, MD, associate chief of clinical operations and radiology informatics and pediatric radiologist at Cincinnati Children's

Medical Center. "I thought it was a great idea," Towbin says. "We are always looking for different ways to reach out to families and connect them to our radiology team, and this seemed to fit perfectly into that goal. I wanted to work with Morgan to make it a reality."

Securing Support

Towbin took the idea to Brian D. Coley, MD, FACP, radiologist in chief at Cincinnati Children's and professor of radiology and pediatrics at the University of Cincinnati College of Medicine, who agreed that the messaging portal would provide great value to patients and to radiologists. "This portal is another way for us to communicate directly with our patients and families to clarify questions and allay concerns," Coley says. "It also helps us raise awareness about the central role that radiologists play in patient care while reinforcing the connection between the images that we interpret and the real patients and families that are looking to us for answers."

After securing administrative support, Towbin and McBee met with radiology's lead systems analyst and the senior EHR analyst to discuss options for developing the messaging portal. During the meeting, the group outlined seven preferred functions that it wanted the messaging portal to provide and met over several months to develop the platform. The technology team took on the radiology messaging portal as a special project, so no additional budgeting was required to customize the technology.

Working within the limitations of the EHR, the group achieved five of the seven preferred messaging functions. The two other functions involved patient access to the portal directly from the imaging report and minimizing the amount of information, like date of the study and study type, that the patient needed to manually input into the system. Both were unsuccessful due to limitations of the EHR.

Achieving the Vision

Still, the team was able to largely achieve its vision — developing a robust system that allows patients to ask about both completed and upcoming studies. "We thought it was important to allow patients to ask about future studies because they often have questions before exams, and radiologists are the best suited to answer questions about what to expect and how to prepare for an exam," Towbin says.

Regardless of whether questions involve completed or upcoming studies, all of the questions go to all of the radiologists, as opposed to just the interpreting radiologist. "We wanted to simulate the way that other physician messaging portals work without tying radiologists to their inboxes," McBee explains. "This allows the radiologists to contribute added value to a patient's overall care without adding a lot of additional tasks to their workloads."

Radiologists keep referring physicians in the loop by ensuring they have access to the radiology messaging system, where they can review questions from patients and families, along with the radiologists' responses. What's more, the radiologists can also use the EHR to document phone calls they have with patients. This



We are always looking for different ways to reach out to families and connect them to our radiology team, and this seemed to fit perfectly into that goal. I wanted to work with Morgan to make it a reality.

— ALEXANDER J. TOWBIN, MD

not only keeps referring physicians abreast of the information that a radiologist shared with a patient and family, but it also informs other radiologists about how a question was addressed. “We try to support the patient and physician relationship,” says Blaise V. Jones, MD, professor of radiology who specializes in pediatric neuroradiology at Cincinnati Children’s. “We know that the physician may have additional information that could be valuable to contextualizing imaging results, leading to better overall patient care.”

Leveraging the System

Patients and families can access the radiology messaging system through the “Ask the Radiologist a Question” link on the test results page of the patient portal. “We thought this would be the best place for the link because it’s where patients go to view lab and imaging results and would likely be visible when questions arose,” McBee says.

Once a patient or family member clicks the link, the system presents a form where they can enter a question. Additionally, there are places to identify the type of radiology study, the date of the completed or upcoming study, and how the patient or family member prefers to be contacted. The form also includes a field that asks patients how they heard about the messaging portal, helping the team identify the most effective means of advertising the portal to patients.

Towbin sees the patient messaging portal as an opportunity for radiologists to connect more effectively with patients and their families. After a patient completes the form, the system routes it to a radiology group EHR inbox, which all 36 faculty radiologists and 10 radiology fellows can access. The subject of the message automatically populates as “Radiology Question for a Radiologist,” helping the radiologists select and promptly respond to questions as they access the mailbox. Any radiologist can answer any question.

When a radiologist commits to answering a question from the system, they can click a box to “claim” the message, which alerts

other radiologists that someone is working to address the patient question. From there, the responding radiologist can answer the patient’s query directly through the portal, call the patient and document the phone call in the portal, or forward the message to a referring physician, if it would be more appropriate for the referring physician to address the question.

Answering Questions

Once the team finished building the system, the radiologists leading the effort worked to build buy-in among the rest of the radiology team. The group introduced it during faculty meetings, offering one-on-one training to teach radiologists how to access the system and appropriately answer questions. As a result, radiologists could see firsthand how easy the patient messaging system is to use before the team finally took it live in October of 2017.

Initially, McBee fielded most of the questions from patients and families because many of the other radiologists thought that taking the time to answer questions would be disruptive to their already heavy workloads. But with some encouragement from McBee and Towbin, more and more radiologists started responding to the questions.

Jones was one of the radiologists who were initially skeptical about the program. “I was initially concerned we would be flooded with questions, adding a difficult task to our already demanding schedules,” he admits. “But it has been much less time intensive than expected. Most of the questions are straightforward and take only a few minutes to answer, and the information we provide is important to alleviating parent and patient anxiety.”

Increasing Job Satisfaction

Many of the contributing radiologists say that answering questions from patients and families has positively contributed to overall job satisfaction. “It is easy for radiologists to sit in a dark room and read the study and not spend much time considering the impact it has on patients and families,” Jones explains. “The patient messaging portal serves as a reminder that there are people behind these studies and that we have a responsibility to provide them with the best care possible — which includes answering their questions to reduce their anxiety.”

Additionally, the radiologists have found that fielding questions from patients and families is helping them identify areas for quality improvement. “Many questions involve clarifying terms in our reports for patients and families,” Jones explains. “Having these regular reminders that people are on the other end of our reports encourages us to make them more understandable.” **B**

BY CHELSEA KRIEG, FREELANCE WRITER, ACR PRESS

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Improving Women's Health

The chair of the O-RADS™ Committee discusses how a standardized lexicon for describing the imaging characteristics of ovarian and adnexal masses will improve the specialty — and patient care.

In the summer of 2015, the ACR Ovarian-Adnexal Reporting and Data System (O-RADS™) Committee was formed with the purpose of creating a standardized lexicon for describing the imaging characteristics of ovarian and adnexal masses and applying it to a risk stratification and management system for evaluation of malignancy. That goal and its impact on improving women's health is what drives Rochelle F. Andreotti, MD, FACR, chair of the O-RADS Committee and professor of clinical radiology, clinical obstetrics, and gynecology at Vanderbilt University Medical Center in Nashville, Tenn. In a recent interview with the ACR, Andreotti shared the impact that O-RADS has on the specialty — and on women's health.

What is O-RADS and what is its importance for improving quality and safety?

O-RADS is one of nine published ACR reporting and data systems for quality and safety (Q&S). It functions as a quality assurance tool and clinical support system for standardized description of ovarian/adnexal pathology and its management. The system includes a common lexicon that radiologists can use to categorize all levels of risk and assign associated management strategies.

There is a critical need for O-RADS. Too much unnecessary surgery is performed for benign ovarian/adnexal lesions. Most of these lesions are physiologic, non-neoplastic or benign neoplasms; and ovarian cancer is lethal, but rare. Surgery-associated morbidity has also been reported to be as high as 15%. On the other hand, initial surgery is frequently performed by a general gynecologist when there are much better outcomes with malignancy when management is by a gynecologic oncologist.

For all of these reasons, we need guidelines to manage benign disease conservatively and to know when to refer patients to a gynecologic oncologist when there is significant suspicion of malignancy. This is where O-RADS comes into play. The goal is to optimize ovarian cancer outcomes while minimizing unnecessary surgery in patients at low risk of malignancy.

What has been the journey of the O-RADS Committee in developing these guidelines?

O-RADS is an international initiative that has involved extensive collaboration with competing national and international societies. Our membership was primarily derived from several major initiatives that prompted our formation, including:

- “The Society of Radiologists in Ultrasound Consensus Statement,” a North American initiative helpful in determining management of cystic lesions
- The International Consensus, the first collaboration of European and North American management approaches promoting a more conservative, standardized approach while optimizing the referral pattern to a gynecologist when malignancy is suspected
- Terms and risk stratification models developed by the International Ovarian Tumor Analysis Group (IOTA)

The Committee also consisted of members representing national and international societies who could contribute to and eventually help promote our system. As a result, development of the O-RADS guidelines has been a collaborative, multidisciplinary, international effort that brings together two US approaches:

- The pattern-based approach commonly used in North America
- European-based IOTA models with the incorporation of the Assessment of Different NEoplasias in the adnexa (ADNEX) model, a mathematical risk prediction model

What has been the work of the O-RADS Committee to date?

The O-RADS Committee comprises two parallel working groups with experts in radiology, gynecology, gynecologic oncology, and pathology: one for US, which is the primary modality, and another for MRI, which is a secondary, problem-solving tool. Both groups have members representing multiple national and international imaging and non-imaging organizations. In addition to chairing the entire committee, I have chaired and have been primarily involved with the US Working Group, and Caroline Reinhold, MD, MSc, associate chair and professor of radiology and gynecology at McGill University Health Center in Montreal, has chaired the MRI Working Group.

Our first phase was the development of a lexicon, a practical uniform vocabulary where we describe the imaging characteristics of ovarian and adnexal lesions. In phase two, the lexicon was applied to risk stratification, which is critical for consistent follow-up and management. Only O-RADS US includes management strategies, although these management recommendations may include an MRI.

Collectively, the members of the O-RADS Committee feel that this system will have a significant impact on the practice of radiology and women's healthcare by emphasizing structured classification and reporting of adnexal masses.

What steps should radiologists take to improve Q&S for ovarian and adnexal mass patient care?

First, one must understand that to have the highest quality of care, everyone needs to be speaking the same language, which we hope to be the lexicon of O-RADS. This begins with the two general categories of findings that are either physiologic or lesions and continues with the five main subcategories of lesions. In addition, a uniform lexicon will permit the collection of reports employing structured tools, providing the opportunity for data scientists to improve outcomes research and ultimately improve ovarian cancer detection rates. Across the board, we all need to use the same terminology.

With terminology in place, we can use the common lexicon to assign the lesion to the correct risk category and recommend

Mobile Access to O-RADS™



Download the ACR Guidance app for mobile access to the Ovarian-Adnexal Reporting and Data System (O-RADS™) quality assurance tool. This interactive app allows easy access to standardized descriptions for managing ovarian/adnexal pathology. The new app is now available in the Apple® App Store or Google Play™ store.*

[Learn more at acr.org/ORAD.](http://acr.org/ORAD)

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appropriate management. Patients with benign-appearing lesions can be offered conservative management, preventing unnecessary surgery. Patients with lesions of higher risk of malignancy in the O-RADS category 3 can be managed by a gynecologist using minimally invasive surgery. Those in O-RADS categories 4 and 5 would need involvement of the gynecologic oncologist for appropriate supervision of care.

How do you hope your contributions to O-RADS will impact the specialty and women's health in general?

Collectively, the members of the O-RADS Committee feel that this system will have a significant impact on the practice of radiology and women's healthcare by emphasizing structured classification and reporting of adnexal masses. As for me, any success that I have had in the field of medicine can be attributed to a desire to influence and leave this world a little better in some way. My hope is that this data system will make a meaningful contribution as my legacy to women's healthcare. **B**

INTERVIEW BY LINDA SOWERS, FREELANCE WRITER, ACR PRESS



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Lung Cancer Screening for All

New guidelines have the potential to address inequities for marginalized groups.

Lung cancer is the leading cause of cancer deaths in the U.S., adding up to more than 135,000 deaths per year, about the same as the next three leading cancers combined.¹ The U.S. Preventive Services Task Force (USPSTF) has recently proposed new recommendations for lung cancer screening (LCS) that involve two key changes to the current LCS guidelines: first, they seek to drop the age of recommended screening from age 55 to 50. Second, the proposed guidelines would allow individuals who have smoked fewer cigarettes over their lives to become eligible for screening — reducing the pack-year smoking history from 30 pack-years to 20.

LCS is in the first six years of implementation nationwide, according to Andrea Borondy Kits, MS, MPH, lung cancer and patient advocate and board member of Rescue Lung Society, a not-for-profit medical society with a mission to save lives at risk for lung cancer through high-quality CT lung screening today and pioneering early detection innovations tomorrow. However, according to Philip M. Alberti, PhD, senior director of health equity research and policy at the AAMC, “Evidence suggests that the current guidelines underselect Black patients, women, and people with lower socioeconomic status,” giving rise to ever-increasing health inequities in these groups. The new USPSTF recommendations seek to address this problem.² The *Bulletin* spoke with Borondy Kits and Alberti about the new guidelines — and what radiologists can do to help make LCS more equitable.

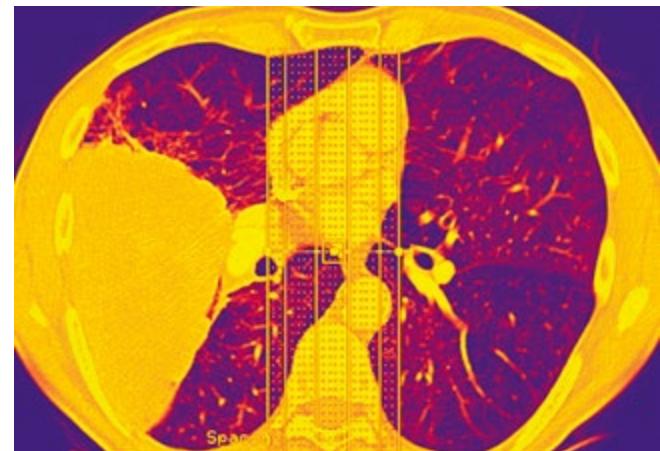
How will the new USPSTF shifts being proposed impact patients?

PA: These new recommendations could impact health outcomes for members of marginalized groups in important ways. Despite having a higher risk of lung cancer than white patients, many Black patients who smoke aren’t eligible for screening based on the current guidelines because, on average, they smoke less than white patients who smoke. This recommendation would change that and open up screening to more Black patients who are at risk. Early detection leads to early treatment, which can, in turn, lead to better, more equitable outcomes.

Why is it important that those in the medical community challenge some of their assumptions about standards that may not encourage equitable care for all?

ABK: There are a lot of criteria and risk assessments that actually have different coefficients by race — but race really is not a biological difference. That difference really comes about from the circumstances people grew up in or where they currently live. In reality, 80% of our health and our healthcare outcomes are determined by our zip code.³ So when physicians meet with any patients, it’s important to understand — and really question — whether something is driven by race/biology or whether it’s driven by social determinants of health.

PA: Just because people have potential access to specialty care or



a screening tool, does not mean it automatically happens. There are other systemic and structural barriers that get in the way. For example, Black Americans are more likely to be uninsured or underinsured, which is a huge barrier to screening. LCS isn’t available everywhere and traveling to a facility might be impossible for people without cars or who live in communities without adequate public transportation, including many communities of color and low socioeconomic communities across the country. There’s solid evidence that people of color are less likely to be screened for lung cancer than whites are even if they are eligible — and it comes back to implicit bias.⁴

What can radiologists do to help make LCS more equitable?

ABK: First of all, they need to advocate for Medicare, CMS, and USPSTF to make sure that the eligibility criteria for LCS are equitable. Secondly, they can try to raise awareness within their communities and within other specialties at their institutions. LCS is a multidisciplinary effort, so radiologists need to be advocating for their patients each step of the way. Radiologists should reach out to their referring providers and make sure they have the eligibility criteria and all of the information to talk to their patients about LCS.

Lastly, the little things really make a big difference. Does the patient have transportation? Do they have to pay for parking? Are interpreters available? Is there culturally tailored patient education? Is there financial counseling?

PA: Being vocal advocates for our patients is key. Working directly with patients and families to develop systems of care that function better for all patients, regardless of demographics, is also important. Finally, given the crucial role healthcare organizations play as anchor institutions within their own communities, providers and health system leadership have an obligation to engage in multi-sector, community-wide conversations and efforts to dismantle the complicated structures and systems that restrict our patients’ access to care. **B**

INTERVIEW BY CARY CORYELL, PUBLICATIONS SPECIALIST, ACR PRESS

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

How can radiologists educate medical students early about the value of radiology in healthcare?



“Medical students are either future radiologists or, alternatively, will be physicians ordering imaging studies. Engaging medical students throughout their education and during their clinical rotations with case-based scenarios, and reviewing and applying the ACR Appropriateness Criteria®, will help them see the value of radiology, and radiologists, in diagnosing diseases and disorders.”

— Sarah Sarvis Milla, MD, chief of pediatric radiology at Children’s Hospital Colorado in Denver, and vice chair of the University of Colorado’s department of radiology



“Medical students do not receive much formal exposure to radiology in their curriculum. Radiologists need to utilize every opportunity to demonstrate how imaging is critical to all areas of medicine. We can spend a minute or two pointing out CT anatomy when a student comes down to get results for a patient. We can give a lecture or seminar explaining all the indications of a radiology test. We can advocate before the medical school curriculum committee to have radiologists present more material to students. It is only through engagement at multiple levels that radiologists will be able to demonstrate their value in patient care.”

— Sammy Chu, MD, FACR, chair of the ACR CAC Network, and president of the Washington State Radiological Society

CONSIDERING ALL ANGLES

continued from page 10

It is heartening to see more senior and retired radiologists stepping forward to share leadership experience and serve as mentors, Gupta says. "Connecting early is the best way to ensure a strong future for radiology — and hopefully with a more diverse pipeline," she says.

RESPECTED FIELD

More diversity in radiology is definitely something we need to be working on, says David M. Naeger, MD, director of radiology at Denver Health, professor and vice chair at the University of Colorado School of Medicine, and immediate past president of the Alliance of Medical Student Educators in Radiology (AMSER). "It is mission critical. We are one of the least diverse fields in medicine, and it hinders our field and the care we provide to our patients. It's hard to get the best and brightest when students may feel like they don't belong," he says.

Getting the best students interested also hinges on changing their perceptions of a longstanding misunderstanding of what radiologists actually do. "They may have concerns about collegiality and respect between radiology and our referring colleagues," Naeger says. "We operate a little bit behind the scenes. If you don't understand what the job is, you may get a skewed view. If radiology is invisible to students and trainees, quality communication and respect might be lacking downstream once students and trainees graduate."

To build a solid foundation, medical students need to be exposed to the role radiology plays in clinical medicine, ideally as part of their pre-clinical curricula and in their early clinical experiences. "We just proposed and got accepted for a full, hands-on IR course for third-year students, right as students are experiencing their first in-depth clinical rotations," Naeger says. "It's an important time to engage students — to show the significance of radiology in a clinical setting."

"Students mostly see patients bedside and think all the action is happening there," Naeger says. "They don't realize the care started sometimes well before that point, when a highly trained physician read the images that made the diagnosis or changed the course of care for that patient," he says.

"The message that AI is not going to replace radiologists, for example, has not permeated medical schools," Naeger says. "That's an area where we need to set the record straight and quell the hysteria."

It is the perfect example of the kind of misinformation that causes some medical students to shy away, Straus agrees. "If we let AI fundamentally change our role in the eyes of the general public, referring providers, and patients, we are really hurting ourselves," he says. "AI can be used as a tool, but that messaging is not getting through. And those who control the education of medical students may cast AI as another reason not to become a radiologist."

"This is a misunderstanding on all fronts — among medical students and the general public alike," Straus says. Until relatively recently, reaching medical students has not been top of mind. "We're finally beginning to realize that we need to change our attitude and focus — to target our efforts and put a face on radiologists for students. We need to teach them properly, so they understand the role of imaging — which, in turn, may motivate them to pursue a career in radiology," he says.

"The ACR has been extremely good in its efforts to reach medical students," Straus says. "With so many issues around referring physicians and reimbursement battles on the Hill, it is clear that we need to start this outreach early on in medical school training."

CHANGING PERCEPTION

"While radiology is integral to the physician experience, medical students largely do not have a basic understanding of how imaging works and can be used," says Joan Lynch, coordinator of the ACR's Medical Education & Student Outreach (MESO) program. "Of course, we would like more students to pursue radiology, but our objective with MESO is for every medical student to understand at least some basic imaging."

ACR membership is free to medical students — and comes with a host of resources and education opportunities (see page 10). Educating medical students on the true role radiologists play in patient care is critical to attracting more students to the profession and ensuring appropriate imaging for all patients.

Although radiology may be a more highly compensated specialty, this alone is not enough to attract the best and brightest to the specialty. "There is a high level of idealism among medical students," Naeger says. "They won't pursue radiology for material or lifestyle reasons." A sense of belonging, appreciation, and being of service to their community is more likely to drive the career decisions of many. Plus, medical students are nowhere near sending out resumes. "They aren't really paying attention to the job market eight years down the road," he adds.

"Medical students want to know that radiologists will have a seat at the table with other specialists," Straus says. "They see and hear snippets about the field — maybe something about one component of it. They hear the easy-to-repeat sentence and that's what gets spread."

Radiology is not a supplemental element of patient care or the learning process, Straus says. "Educating medical students early about the value of radiologists in healthcare may not only create a more robust pipeline to the future, it also validates the central role of imaging in patient care today," he says. "That education needs to start on day one for students. The only thing worse than not learning about radiology is learning the wrong things." **B**

BY CHAD HUDNALL, SENIOR WRITER, ACR PRESS

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JOURNEY



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Efren Flores, MD

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