ACR LEADERSHIP | INTEGRITY | QUALITY | INNOVATION DECEMBER 2020 | VOL. 75 | NO. 12

Bulletin

Common Knowledge

The Data Behind the Disease

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.

Being Well Together

According to the 2019 Medscape Radiology Lifestyle Report, almost half of radiologists surveyed experienced burnout.

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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.

ALSO INSIDE

FROM THE CHAIR OF THE BOARD OF CHANCELLORS

Howard B. Fleishon, MD, MMM, FACR

2020 Hindsight

The past year has thrown the profession a myriad of challenges, but radiology has survived — and even thrived.

As we reflect on 2020, we realize how much COVID-19 has changed our lives. The typical holiday cheer will be modified by the need for social distancing, masks, and other health and safety precautions. Many traditional holiday events will take place virtually for the first time.

When the pandemic hit in March, it also disrupted our professional lives and ravaged many of our practices. Volumes dropped precipitously, by as much as 80% in some cases (learn more at bit.ly/JACR_COVIDVolume). Practices applied for relief through the Paycheck Protection Program and applied for advanced payments through CMS (read more at acr.org/COVID-Economic-Impact). Radiologists were encouraged to work remotely. New health and safety measures were required, including cleaning equipment, increasing time between exams, and adopting teleradiology workflows. Initially, personal protective equipment was a scarce resource. The Centers for Disease Control and Prevention updated recommendations frequently with, at times, confusing guidance. Educational programs had to reinvent themselves almost overnight. Radiology's role in COVID-19 became a fluid topic as pandemic testing became, and continues to be, a challenge.

Yet, our practices have adapted. Volumes are returning to pre-pandemic numbers. Our educational programs are establishing a new normal. Meetings that have been virtualized are realizing the benefits of reaching a larger audience with the ability to apply new methods for learning and communication.

Radiology is also facing the daunting prospect of an 11% reduction in reimbursement due to the evaluation and management code revaluations. Our government relations team has put together a multipronged approach to address regulatory and legislative opportunities for relief. However, the task is Herculean, especially with all the wind in Washington focused on the recent election, the Supreme Court, and the amount of money that has been dedicated to float the economy during the pandemic. Throughout this challenge, the government relations team has been able to coordinate an alliance of more than 70 organizations to join us in the fight — an incredible accomplishment. ACR is leading the charge and whether or not we are successful before Jan. 1, we have no doubt this fight will continue into 2021.

The radiology profession continues to be resilient. We have faced many legislative and regulatory challenges. My mentors considered Medicare legislation to be the end of radiology. RAPS, the resource-based relative value scale, the multiple procedure payment reduction, the Affordable Care Act, and the Medicare Access and CHIP Reauthorization Act of 2015 have all posed threats to our profession and our ability to provide our patients access to medical imaging. However, we have survived — if not thrived. Through innovation and operational excellence, we continue to be one of the most respected specialties in medicine.

For several years, the rapid development of AI was perceived as an existential threat to radiologists. Some pundits have speculated that decreases in residency applications in the past were due to fears of professional displacement by AI. A glossary of medical startups has been based on AI replacing radiologists. Yet, as the industry matures, more are recognizing that AI tools will facilitate our workflows. AI has the potential to augment our diagnostic and therapeutic capabilities — to extract even more information from the digital data that we produce. In the "Cockpit of the Future," the vision is to create a workspace where we can process all the integrated information coming to us from not only our studies, but from every silo in healthcare — putting us at the epicenter of patient care and management.[1]

Above all, radiology continues to be gifted with some of the best and brightest in medicine. Our growing patient-centered focus, data science centricity, palate of minimally invasive therapeutics, emphasis on innovation, and promising future of possibilities continue to attract future innovators, leaders, and entrepreneurs. And, as brought to us by ACR President Geraldine B. McGinty, MD, MBA, FACR, I leave you with a sentiment by the late Irish poet, Derek Mahon: "Everything is going to be all right." B

ENDNOTE

1. Krupinski E, Bronkalla M, Folio L, Keller B, Mather R, Seltzer S, Schnall M, Cruea R. Advancing the diagnostic cockpit of the future: an opportunity to improve diagnostic accuracy and efficiency. *Academic Radiology.* 2019;26(4):579-581.

The Fellowship of the Future

Making a case for getting involved in scholarly publishing.

Each year, one staff radiologist is selected for the Bruce J. Hillman, MD, Fellowship in Scholarly Publishing, which provides a concentrated experience in medical editing, journalism, and publishing for a physician interested in pursuing an aspect of medical journalism as a part of their career. Typically, the fellowship involves hands-on experience at ACR's headquarters in Reston, Va., as well as a trip to New York City to spend time with the *JACR*'s publisher, Elsevier.

This year, due to COVID-19, the fellowship was carried out virtually for the first time. The *Bulletin* spoke with Anand K. Narayan, MD, PhD, a member of the breast imaging faculty, diversity officer of the radiology department, and co-chair of the Radiology Diversity, Equity, and Inclusion Committee at Massachusetts General Hospital (MGH), about his experience as the first virtual Hillman fellow.

How effective was the fellowship experience in a virtual setting?

The *JACR*® has become an innovative scholarly publication, from increasing its digital footprint to expanding the types of manuscripts it presents to readers. It makes sense that in the wake of COVID-19, the experience had to move to a virtual format and become a fellowship of the future.

In an ideal world, you would first meet people in person during your fellowship. Once the pandemic hit, I didn't know how this was all going to unfold, so I'm grateful to the journal for putting so much time into making this a really useful educational experience for me. Despite the fellowship taking place virtually, there were so many opportunities to meet people from different areas of the publishing process. I was exposed to different perspectives and an in-depth view of all of the various aspects of academic publishing, from start to finish.

Why should radiology researchers and educators apply for the fellowship?

For those who write articles for the *JACR* — and for those who submit articles to other research journals and scientific publications — the fellowship gives you an in-depth look at how the entire publishing process occurs. You get to meet leaders in radiology research, like Ruth C. Carlos, MD, MS, FACR, *JACR* editor-in-chief, and Christoph I. Lee, MD, MS, MBA, *JACR* deputy editor, who are dedicated to the future of academic publishing. It's been a tremendous learning experience for me as someone who's interested in scholarly publications.

Anand K. Narayan, MD, PhD

Do you have any advice for those applying for the 2021 fellowship?

I would advise applicants to think about what they hope to get out of the experience; to really consider their personal interest in scholarly publications and how the fellowship could maximize that interest. If you really want to get involved with the journal — not just from the perspective of writing articles — the fellowship presents a great opportunity. With the ongoing health crisis, I don't know what format the fellowship will be in for next year's candidate, but my sincere hope is that applicants will recognize that it is an incredibly high-value experience, whether it's virtual or in person.

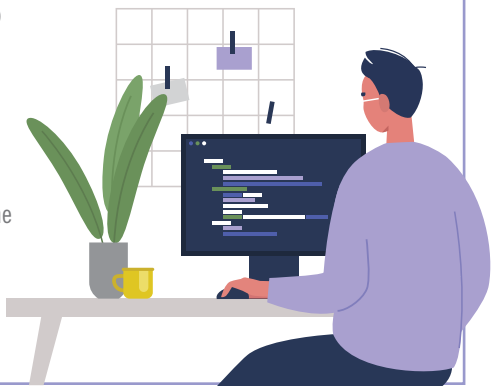
Which journal projects are you looking forward to in 2021?

I'm excited about the 2021 Special Issue on Health Equity, spearheaded by co-editors Melissa A. Davis, MD, MBA, assistant professor at Emory University School of Medicine, and Efrén J. Flores, MD, officer of community health improvement in the radiology department at MGH. It's going to be an incredibly timely contribution in the movement to make our specialty more diverse, equitable, and inclusive. The issue will be a combination of articles, reviews, and commentaries from a variety of perspectives. It will be a great resource for radiology departments and practices looking for ways to increase health equity and diversify their own workplace environments. B

Interview by Cary Coryell, publications specialist, ACR Press

Apply Now for the 2021 Hillman Fellowship

The Bruce J. Hillman, MD, Fellowship in Scholarly Publishing supports talented physicians in pursuing an aspect of medical journalism as a part of their careers. The fellowship includes an ongoing project with the *JACR*®, a one-year appointment to the editorial board, and an invitation to the editorial retreat. The application deadline is Jan. 30.
To apply, visit acr.org/Hillman.



Gregory N. Nicola, MD, FACR

Najeeb M. Mohideen, MD, FACR

Chair, Economics Committee on Radiation Oncology

Guest Columnist

A Look at RO Payment Reform

A hasty adoption of the radiation oncology model will jeopardize the well-being of patients and the stability of cancer care into the future.

CMS issued the long-awaited Final Rule on an Advanced Alternative Payment Model (APM) for radiation oncology (RO Model) on Sept. 18, with a start date of Jan. 1, 2021. Physician groups had several concerns but the most urgent had been the start date, which gave practices little time to implement the changes. The good news is, CMS listened to the stakeholders and will be delaying the start date to July 1, 2021.

The RO Model will be mandatory and will test prospective site-neutral, episode-based payments to physician group practices, outpatient departments, and freestanding radiation therapy centers. It includes 90-day episodes of care in 16 types of cancer in randomly selected core-based statistical areas (CBSAs). The CBSAs selected for the RO Model contain approximately 30% of all eligible Medicare fee-for-service radiotherapy episodes.

Episode payments will be prospective — half will occur when the RO episode is initiated, the rest when it ends. Payments are split into a professional component (PC) for radiation therapy services that may only be furnished by a physician, and a technical component (TC) for related technical costs.

Participant-specific payment amounts are determined using national base rates, trend factors, and adjustments for each RO participant's case-mix, historical experience, and geographic location. CMS further adjusts amounts by applying a discount of 3.75% for the PC and 4.75% for the TC. The amount is also adjusted for withholdings due to incorrect payments (1% for PC and TC), low quality scores (2% for PC), and low ratings around patient experience (1% for TC starting in 2023). RO participants can earn back all or some of the withholds based on their quality score and other factors. The RO Model qualifies as an APM and a Merit-based Incentive Payment System (MIPS) APM under the Quality Payment Program.

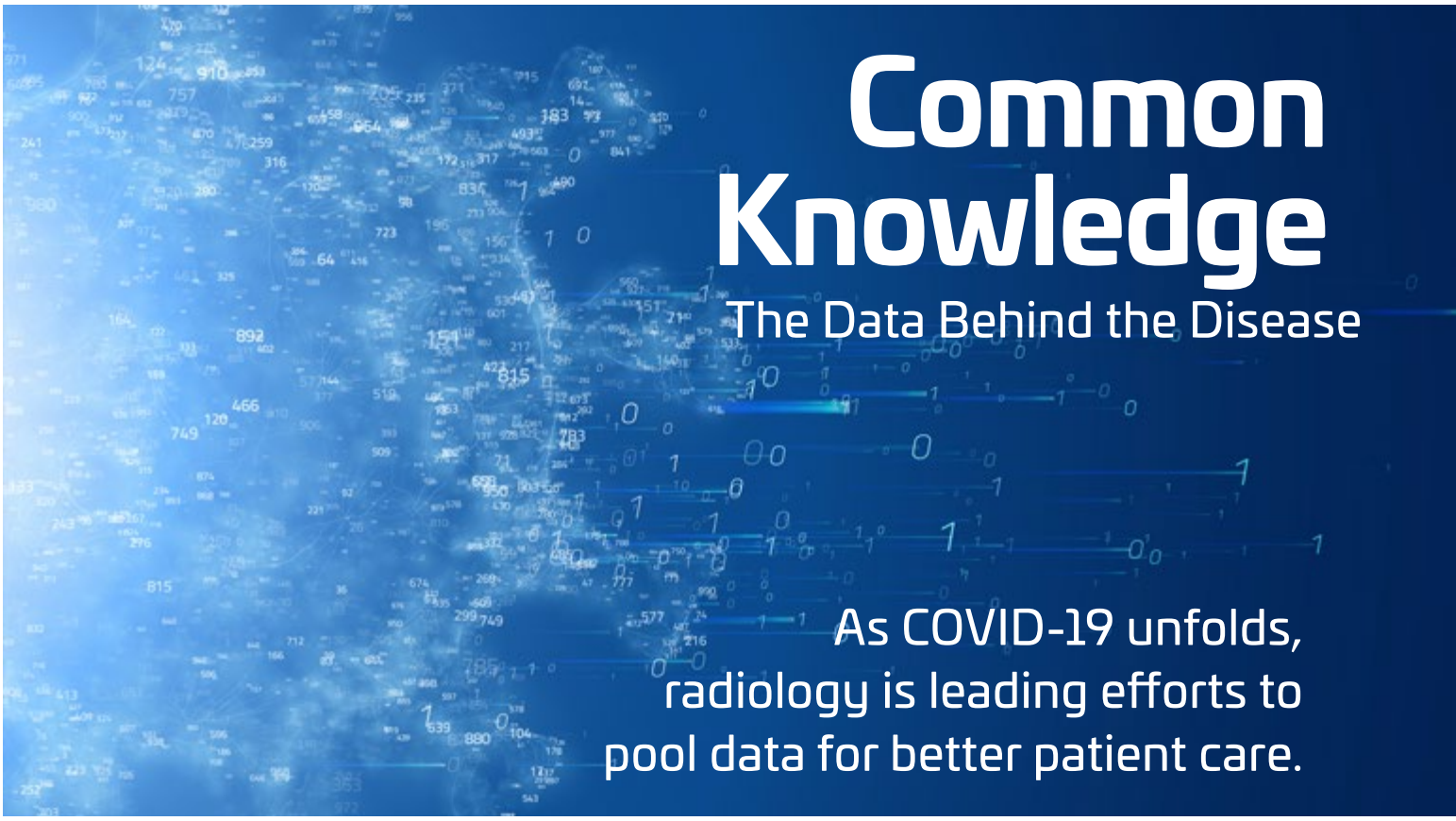
While the six-month delay is helpful, without regulatory or legislative adjustments, a mid-2021 start could actually prevent RO Model participants from qualifying for the 5% APM incentive on professional component payments. Also, there is no clarity on how practices participating in MIPS will transition to the RO Model in the middle of 2021.

The discounts of 3.75% and 4.75% on professional and technical payments, respectively, are out of step with other APMs and the Medicare Accessibility and CHIP Reauthorization Act (MACRA). The Final Rule estimates cuts of 6% on participating group practices and 4.7% on hospital outpatient departments. RO services rely heavily on the use of advanced technology and equipment that require a significant financial investment. They have higher fixed costs (that far outweigh the variable ones), compared with other specialties — with limited scope for generating savings. As a comparison, CMS also released a new mandatory payment model for kidney disease providers on Sept. 18 — and despite a far greater number of participants and kidney disease representing multiples more in Medicare spending, CMS estimates only $25 million in savings over five years there. The estimated savings on the RO Model are around $230 million for the Model period. The RO payment cut looks vastly disproportionate.

There are other unknowns at this point that could further cut payment rates. The proposed 2021 Medicare Physician Fee Schedule Conversion Factor (CF) is to be set at $32.26 — around 10% lower than the 2020 CF rate update of $36.09 — to meet the mandated budget-neutrality requirement. The RO Model payment methodology incorporates a trend factor to account for utilization and payment rates for RT services outside the model. As these could be driven down outside the model due to the reduction in the CF, we could have a negative trend factor on the PC side if the proposed CF rate holds in the Final Rule.

Radiation oncology group practices and hospital outpatient departments have been hit hard by the pandemic. Federal officials expect increases in COVID-19 cases through winter, which will continue to stress radiation oncology clinics and other health providers. In addition to the concerns listed above, the RO Model adds on new administrative burdens and costs to those practices that are required to participate in the model. They will have to accommodate unreasonable clinical data reporting requirements, including maintaining separate billing systems and collecting and reporting significant new amounts of information — much of which cannot be found in the Electronic Health Record.

Payment reform succeeds when stakeholders unite to improve clinical quality and outcomes, while containing costs. As providers, we are key participants and our concerns need to be heard. The stakes are too high: the well-being of patients and the stability of cancer care into the future. B



Common Knowledge

The Data Behind the Disease

As COVID-19 unfolds, radiology is leading efforts to pool data for better patient care.

"When COVID-19 came, it was clear that creating a searchable data platform — housing clinical and imaging data — to inform and empower radiologists during the pandemic was crucial. Providing that kind of integrated data isn't easy, but we believed it was possible," says Sharyn I. Katz, MD, director of research for thoracic radiology at the University of Pennsylvania and chair of the ACR's COVID-19 Imaging Research Registry (CIRR) Steering Committee.

The CIRR emerged earlier this year — a joint effort of the ACR Center for Research and Innovation™ (CRI), the ACR Data Science Institute® (DSI), and in collaboration with the Society of Thoracic Radiology. The registry's aim is to aggregate diagnostic imaging and clinical information to provide a real-time integrated data stream that can serve as a public health surveillance tool. The first phase will focus on COVID-19, with a longer-term expansion to include other diseases.

"We believe the registry will enhance the quality, safety, and effectiveness of patient care during this public health crisis," says Etta D. Pisano, MD, FACR, chief research officer of the ACR. "Using both clinical and imaging data is more important than ever, as COVID-19 is still a serious threat — particularly in rural areas where data may not be easily accessible," she says. "The idea is to monitor and predict the course of the pandemic as we move into 2021."

The goal of the registry is to translate new, evidence-based research into clinical practice. In addition to radiology, the registry will engage clinical experts and diagnostic modalities, including clinical medicine, biomarker discovery, and laboratory sciences. Participating sites will contribute demographic information, clinical data on signs and symptoms, images, laboratory test data, and outcomes for U.S. patients tested for COVID-19.

The CIRR will include the U.S. adult and pediatric population — those patients tested for COVID-19 on or after January 2020, and those with at least one imaging exam for the same period. The registry's aggregated data can guide radiologists in the treatment of the viral disease.

"Aggregating case data across this country is necessary to inform care for patients, develop treatments, and predict vulnerable groups," Katz says. CRI's registry will allow for the linking of other existing COVID-19 registries and datasets, and CIRR data collection and uploading is now underway.

"We are hoping to have a robust dataset that empowers the big data needs in radiology," Katz says. "The data can complement AI research, broaden COVID-19 education, accelerate regulatory processes, and so on." In the bigger research picture, she says, ACR is working with other medical specialty and science-based groups who are committed to guiding healthcare providers through the persisting pandemic.

PROGRESSIVE PARTNERSHIPS

The ACR, the RSNA, and the American Association of Physicists in Medicine formed a research consortium earlier this year to develop the Medical Imaging and Data Resource Center (MIDRC). The MIDRC is funded by the National Institutes of Health and hosted by the University of Chicago. The open-source database will house medical images from thousands of COVID-19 patients. CIRR will contribute clinical and imaging data to MIDRC. The resource represents the country's largest medical imaging associations, and its data platform will provide a critical tool for doctors and scientists to better understand COVID-19 and its effects, Pisano says. "The MIDRC will help them diagnose, monitor, and treat the disease through the collection, analysis, and dissemination of imaging and related data. This will ultimately help providers save lives," she says.

CRI has also partnered with the Society of Critical Care Medicine to evaluate the safety and efficacy of COVID-19 practices through the Virtual Infection and Respiratory Illness Universal Study (VIRUS). CRI will collect diagnostic images for the VIRUS COVID-19 registry and establish links between those images and SCCM clinical data. Archived images will then be available to participating sites through combined dashboard reporting.

"These types of collaborations are very important as we continue to monitor and work to predict the course of the pandemic in the months ahead," Pisano says. "Merging clinical and imaging data is critical, and VIRUS is laying the groundwork for future collaborative efforts that really harness the power of bringing data together in an accessible model."

In yet another collaboration, CRI is working with Oregon Health & Science University to provide image coordination for the COVID-19 Observational Study (CORAL) as part of the Prevention & Early Treatment of Acute Lung Injury (PETAL) Network. PETAL is a consortium of academic and affiliated hospitals funded by the National Heart, Lung, and Blood Institute, and is part of the NIH.

"We are proud to be part of this effort by our colleagues who are caring for patients hospitalized with COVID-19," Pisano says. "This imaging and clinical data from the PETAL project may well lead to improved treatment and diagnosis of COVID-19 complications — including advanced lung disease, stroke, and cardiac dysfunction."

Collaborating in a Crisis

The Medical Imaging and Data Resource Center contains thousands of COVID-19 images and helps physicians better understand, diagnose, and treat patients with this new disease. This is a multi-organization effort, created by the ACR, RSNA, and the American Association of Physicists in Medicine, hosted by the University of Chicago, and funded by the National of Biomedical Imaging and Bioengineering. Learn more at bit.ly/MIDRC.

MIDRC
MEDICAL IMAGING AND DATA RESOURCE CENTER

COLLECTIVE BENEFITS

"With data ready to upload to the CIRR by the end of this year, we have a number of institutions now engaged and ready to contribute," Katz says. "One of many good things that comes from that engagement is that any participating institution also has access to its own data, curated by our registry," Katz says. "This kind of centralized and searchable access is something any institution conducting research would want — and could hopefully translate into practice." This is in addition to the access to multi-institutional data curated by ACR, including physical data, statistical analyses of that data, and other tools included in the CIRR.

Institutions that have built their own COVID-19 databases since the outbreak can upload all data to the CIRR. "You shouldn't need someone to manually enter the information of all the patients who have come in for diagnosis and treatment," Katz says. "The idea is to aggregate as much data that already exists as quickly and easily as possible, then add to that data over time. CIRR and ACR, via existing platforms like TRIAD®, already have the ability to upload information from the data collection systems of institutions/practices.

Because patient privacy is top of mind during any clinical or imaging data exchange, Katz emphasizes that no personal information will be shared with the COVID-19 data. "We know it could be a barrier to participation if institutions are concerned they are putting patients' identities out in the open," Katz says. "A patient's identity, medical record number, date of birth, and other personal identifiers will be removed before any data sharing takes place."

The process involves anonymized unique case identifiers and study accession numbers that are deposited into the registry in lieu of real medical record numbers. Follow-up imaging can then be linked back to a patient without exposing their identity. The same identifier will also support future links with other datasets without disclosing private patient data.

VALUE-ADDED DATA

"I'm proud to see ACR, the CRI, and our membership leading this COVID-19 data resource charge," says Christine Davis, MBA, senior director of CRI. "Our whole mission is around supporting and managing research studies that translate new evidence into better clinical practice."

"ACR is already well-positioned to simplify and streamline imaging exchange. Imaging submission tools like TRIAD® (an application that allows for image submission electronically for ACR Accreditation, National Radiology Data Registry, and clinical research) and ACR Connect (a communication platform for data exchange) make data contribution to CIRR easy," Davis notes. "With TRIAD already installed at over 38,000 sites, we have a pre-established site network able to collect and aggregate data. It

makes sense for radiologists and the CRI to take a leading role in navigating COVID-19."

A multi-institution, searchable COVID-19 registry brings together siloed hospital and state findings on the disease, Davis says. CIRR will demonstrate how COVID-19 is affecting patients and practitioners, and can show which therapies are working and which are not. "It has been designed as a public health tool, and we think this approach is the only way to truly, statistically identify the most vulnerable patient populations," she says.

A small percentage of ACR members participate in research or are leading a research project, Davis says. With a disease like COVID-19 that affects so many of us and we're learning while fighting it, there's an urgency to break down walls, aggregate data, and share insights, she adds, especially with the pandemic unchecked moving into winter. Radiologists are counting on ACR to provide guidance and best practices.

> "Physicians from ACR's membership have led this effort scientifically, designing the registry by informing the data elements it collects. We are tremendously grateful for their countless volunteer hours, sharing of expertise, and collaboration."
>
> – CHRISTINE DAVIS, MBA, SENIOR DIRECTOR OF CRI

"With a novel pandemic viral disease like COVID-19, the ability to better understand disease spread, prevent infection, and treat affected patients — possible through the aggregated information of CIRR and other research registry efforts has huge potential," Davis says. "Evidence-based findings may also lead to new health policy and cost-effectiveness strategies." In addition to research and data collection, CRI is seeking approval by CMS to incentivize participation in the registry. "We are in the process of working with CMS to get improvement activity credit under the Merit-Based Incentive Payment System for participating sites who submit data."

It is worth pointing out that CRI's operational budget is self-sustaining — funded entirely by grants and commercial contracts. "We are not funded by ACR membership dues and that allows us to operate independently, as an honest broker in our research collaborations not swayed by perceived or actual bias," says Davis. That matters when it comes to data collection and the prolific white papers that are expected to emerge from CIRR.

"Physicians from ACR's membership have led this effort scientifically, designing the registry by informing the data elements it collects. We are tremendously grateful for their countless volunteer hours, sharing of expertise, and collaboration. They are glad ACR is taking the lead in this space and we are happy to spotlight them," Davis says.

INFORMED POLICY

"The research that the ACR CRI is involved with today will translate into the imaging innovations of tomorrow," says Pamela K. Woodard, MD, FACR, chair of the ACR Commission on Research and a member of the ACR BOC. "It is important that radiologists do evidence-based research so that we will know which new technology developments and imaging paradigms answer the questions needed to drive the best patient care."

"When we approach CMS, we should be approaching them with data from rigorous research that has informed us in terms of imaging procedures and policy as well as what is best for patients — when we should image and when we should not," Woodard says. That is not to say that other groups and institutions are not doing imaging research, she adds. The NIH's National Institute of Biomedical Imaging and Bioengineering, for instance, had been working to improve health through the development and application of biomedical imaging technologies well before COVID-19 and the creation of the MIDRC.

More research is needed, Woodard says, and radiologists should be finding the data — always independently of financial incentives. "Imaging has the potential to add to the understanding and management of COVID-19, and the ACR is committed to an investment in scientific and data-driven approaches to patient care," she says.

"ACR's unique contributions allow us to combine research with the practical, everyday understanding of imaging application and how imaging will be implemented through the radiologist to their patients," Woodard says. "It is a combination that can have a powerful impact on healthcare."

"The COVID-19 registry is going to serve not only individual participants, but the radiology community as a whole," Katz says. "We are expecting many contributors, and we are open and ready to go." B

By Chad Hudnall, senior writer, ACR Press

COVID-19 Imaging Research REGISTRY™

Contributing to the COVID-19 Imaging Research Registry

Participating sites will contribute demographic information, clinical data on signs and symptoms, imaging exams, and laboratory test data and outcomes. The data collected will be used for educational purposes, AI algorithm development, and research studies. Complete the form at acr.org/COVID-Registry and a member of the ACR CRI team will follow up with you.

A Life-Saving Approach

A breast imager urges radiologists to work with other healthcare providers to promote the benefits of early screenings.

In his 33-year career as a breast imager and educator, Michael N. Linver, MD, FACR, has been a strong proponent of mammography and has contributed his expertise to the development of local and national quality screening guidelines. Linver, clinical professor of radiology at the University of New Mexico, has also traveled across the world to present on quality mammography and the importance of patient-centered communication skills. Linver, who was recently named the 2020 recipient of the Gold Medal from the Society of Breast Imaging for his outstanding contributions to the field of breast imaging, spoke with the *Bulletin* about the future of AI in breast imaging, the importance of early screening, and his passion for teaching.

How can healthcare providers educate women about the benefits of early screenings?

The science shows clearly that screenings should begin at age 40, but there are several different organizations that issue their own recommendations. If the public thinks the experts can't even agree, then women start to think it must not be a very good test — and many women don't seek mammography for that reason.

The ACR offers resources for physicians to use in their own practices so they can convey accurate information to their patients (available at acr.org/breastimaging).

Clearly, radiologists need to be advocates for their patients, but we should also be working with clinicians to empower women to be a voice for their own health and protection.

Is AI well-suited to aid breast cancer screening and diagnosis?

AI will never replace a radiologist — there's still an art to reading breast imaging. AI is still a modality in evolution. It's not standardized or controlled, and there are no official guidelines for how it should work. However, I see potential for AI to act as a screening triage for images that are totally normal. AI can help us integrate what's in a patient's history and her risk factors, which will ultimately enable us to make better decisions and more accurate diagnoses. Perhaps it will be able to cut down on the workload and allow us to spend the vast majority of our time on the cases that do require more study.

You have presented on the life-saving aspects of screening in 37 states and 25 countries. What lessons can radiologists share with the next generation of imagers?

In 1986, I decided to devote my life to breast imaging after hearing a lecture from László K. Tabár, MD, FACR, (Hon), professor emeritus of radiology at Uppsala University in Sweden, during his first visit to the U.S. To me, his presentation was an epiphany — I decided then to devote my life to mammography.

Radiology is more than a job. Now more than ever, we have the tools to make a huge difference in a woman's ability to survive breast cancer. I have the opportunity to save women's lives every single day — that's what drives me. That's the most important thing to teach our younger colleagues. B

Interview by Meredith Lidard Kleeman, freelance writer, ACR Press

(L-R) Vinay Sandhir, senior director of ACR's Education Center, Margaret Samples, ACR PFCC Liaison, Michael N. Linver, MD, FACR, Jenny Jones, managing editor, Imaging 3.0®, and ACR CEO William T. Thorwarth Jr., MD, FACR, are pictured following Linver's Grand Rounds presentation, "Winning the War Against Breast Cancer," at ACR's HQ in Reston, Va., in October 2019.

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PHOTO: STEPHEN BRASHEAR/GETTY IMAGES

When an Amtrak train derailed near Tacoma, Wash., in December of 2017, Madigan Army Medical Center received many of the more than 70 people who were injured in the crash.

Ready for Anything

A radiologist leads mass casualty preparedness planning at a military medical center in Tacoma, Wash.

U.S. Army Col. Eric A. Roberge, MD, radiology consultant for Regional Health Command - Pacific and chief of the department of radiology at Madigan Army Medical Center in Tacoma, Wash., began focusing on mass casualty preparedness while serving as a flight surgeon in Korea in 2001 and then as chief of radiology at the 47th Combat Support Hospital in Anbar Province, Iraq, in 2009. When he returned stateside, Roberge no longer had to respond to combat casualties, but his interest in mass casualty preparedness didn't wane — in fact, it only deepened as he considered the myriad scenarios in which hospitals across the U. S. might have to respond to mass casualty events, such as natural disasters, transportation and industrial accidents, and terrorism.

Based on lessons learned in combat, Roberge often presented about mass casualty preparedness at professional conferences and frequently studied and talked with colleagues about radiology's role in responding to potential domestic mass casualty scenarios. But it was two mass shootings — one at a nightclub that left more than 100 dead and injured in Orlando, Fla., in 2016 and another at a concert that left more than 800 dead and injured in Las Vegas in 2017 — that moved Roberge to action.

"It was really after those two big, high-profile incidents that I stopped treating civilian mass casualty preparedness as an esoteric thought experiment and really started to put deliberate action toward developing my department's mass casualty plan," he says. It was an unusual step for a radiologist, many of whom are often left out of mass casualty planning despite radiology's great potential for improving triage during such events.

Since then, Roberge has become the radiology representative on the trauma committee at Madigan Army Medical Center, a network of healthcare facilities in Washington and California that serves active-duty military members, their families, and veterans. In this role, Roberge has led development of an interdepartmental mass casualty exercise among his hospital's radiology, emergency, and surgery departments and opened the lines of communication among the departments to develop a robust emergency operations plan that deliberately integrates radiology into the mass casualty response.

"We've established ourselves as trusted experts who can be relied upon to contribute meaningful work as part of the hospital's disaster response," Roberge says. "It's clear now that we're a team of teams, not individual teams."

Recognizing a Need

To start, Roberge reviewed Madigan Army Medical Center's existing mass casualty preparedness plan, the radiology portion of which dated back to 2002. According to the document, radiology would cancel all of its routine scheduled cases during a mass casualty, and many of the radiology department's employees would go into the hospital's labor pool (which often handles moving patients and other ancillary tasks) to support operations in the emergency rooms (ERs) and operating rooms (ORs).

"The problem with radiology going into the labor pool is that radiology is often super busy during a mass casualty," Roberge says. "If it's a penetrating mechanism, like a mass shooting, radiology's role may be more limited, but if it's a bus crash or a train derailment and everybody has blunt force trauma, all of those people are going to need CT scans. Either way, radiologists are needed to assist with patient care during a mass casualty incident — not just as part of the labor pool."

As Roberge read the plan, it was clear that the radiology department hadn't been consulted about its role in mass casualties — something he has found is common at many hospitals. "I have traveled to hospitals around the country, not just military hospitals but civilian ones, and have found that it is a consistent, recurring theme where the radiology portion of the mass casualty plan is written by a non-radiologist," Roberge explains. "They all tend to say that radiology will supply people to the hospital's labor pool."

"But pulling radiology employees from their critical work demonstrates a lack of insight into the essential role that radiology plays during a mass casualty," Roberge continues. "If used correctly, radiology can help clinicians more accurately prioritize which patients they should see next and protect critical resources in the hospital, like ORs, for those who truly need them. This level of triage can ensure that as many lives as possible are saved."

Developing an effective mass casualty plan that includes radiology is imperative for all hospitals and health systems nationwide, Roberge says. "It's important to look at disaster and mass casualty planning not as preparing for something rare or unlikely," he says. "Disasters don't just happen in big cities or as part of military operations. There's a pediatric hospital in Alabama that received about 120 patients following a series of tornadoes. A hospital in Seattle received a busload of international students after a duck boat crash. Hospitals across the country respond to mass shootings almost every day of the week. There are vehicle pileups on icy roads in North Dakota, floods in Houston, and hurricanes and earthquakes in Puerto Rico. Fertilizer factories explode in Wyoming. The point is: This stuff happens everywhere — and it's our job as physicians to be prepared to respond when it does."

Engaging Care Partners

Recognizing deficiencies in Madigan's plan, Roberge began talking informally with clinicians in the hospital's emergency and surgical departments about radiology's role in mass casualty events. "I asked them what they needed from radiology during a mass casualty incident and provided various scenarios that could result in mass casualties in the Pacific Northwest," he says. "For instance, we are in an area known as the Cascadia Subduction Zone, which is a fault line that is overdue for a huge earthquake and tsunami. So I asked them, 'What would happen if we had an earthquake followed by a tsunami?'"

"If used correctly, radiology can help clinicians more accurately prioritize which patients they should see next and protect critical resources in the hospital, like ORs, for those who truly need them."

— U.S. Army Col. Eric A. Roberge, MD

Roberge received various responses from emergency physicians and surgeons about how they viewed radiology's role in mass casualty events. For example, one surgeon who Roberge has worked with closely said that he saw radiology as a hurdle to avoid during mass casualties. "He said, 'I just need to get patients to the OR really fast, and radiology just slows things down,'" Roberge recalls. "His big complaint was that in a mass casualty, patients are often bleeding to death, and the clock is ticking. He saw radiology as taking a long time, which in his calculus wasn't worth the investment."

The feedback challenged Roberge to think about how radiology could improve its response during mass casualty events and other care scenarios. "If I'm not giving the surgeons, one of my internal customers, what they need — rapid, accurate diagnoses — then I'm not doing a good job, and I'm actually becoming a bottleneck to patient flow," Roberge explains. "I knew I had to come up with ways to provide more efficient service for better triage accuracy." The conversations also allowed Roberge to

demonstrate radiology's commitment to effective patient care. "If you're a good, active listener who asks thoughtful questions, people will come to trust your expertise and see that you have good intent," he says. "You can then build on that relationship to extend influence."

Most of the emergency physicians and surgeons with whom Roberge spoke were surprised, but not offended, to see a radiologist take the lead in mass casualty preparedness. "Leadership is leadership," says Lt. Col. Nathan K. Friedline, MD, deputy chief of Madigan's department of emergency medicine and assistant professor at the Uniformed Services University of the Health Sciences. "I was impressed that Dr. Roberge was stepping out of his normal role to collaborate across departments and improve our response to mass casualty events. These scenarios can be very daunting and scary, so practice and planning among teams beforehand is pivotal. I appreciate his interest in trying to achieve the best-case scenario."

> "These scenarios can be very daunting and scary, so practice and planning among teams beforehand is pivotal."
>
> **— Lt. Col. Nathan K. Friedline, MD**

Identifying Potential Weaknesses

After speaking with ordering providers, Roberge developed a process map to identify weaknesses in radiology's workflow — from receiving orders to conveying results to clinicians — during a mass casualty event and other emergency situations. For instance, the hospital planned to switch to electronic health record (EHR) downtime procedures in a mass casualty, meaning it would initially stop using the EHR, allowing response to take priority over documentation of care.

"The problem is that radiology doesn't run on paper; it runs on computer systems," Roberge explains. "Under the proposed workflow, you would have to hand-enter paper orders into the radiology information system (RIS), which is time-consuming and adds to the concerns that ordering providers expressed about radiology delaying a mass casualty response. So we reflected on the need for radiology to use the EHR for imaging orders in the revised plan."

Roberge also considered lessons from actual mass casualty events throughout the country. One lesson came from a Boston hospital that received patients from the Boston Marathon bombing, a terrorist attack that killed three people and injured hundreds more in 2013. As is typical, he says, the hospital assigned trauma names to patients until they could identify everyone. Each name was about 30 characters long, but the RIS could only display the first 12–15 characters. "If the stem of every trauma name is identical, you can't differentiate among patients, which is what reportedly happened during the Boston Marathon bombing," Roberge says. "They ended up changing their trauma names as a result, and it was something I paid attention to here at Madigan, as we considered shortening our naming conventions."

In 2017, Roberge was able to further analyze Madigan's emergency operations plan when the hospital participated in a multistate Federal Emergency Management Association (FEMA) exercise called Cascadia Rising. The scenario imagined a magnitude 10 earthquake along the Cascadia Subduction Zone, a 620-mile-long fault in Northern California, which triggered a tsunami and destroyed all of the area's highways and bridges. Roberge concentrated solely on radiology's response during the exercise, using a 200-pound dummy to determine the throughput rate of trauma patients on one CT scanner. The team found that its throughput rate was reasonable at three to four patients per hour.

Coordinating Care

A few months after Cascadia Rising, Roberge sent an email to about 30 of his colleagues and other care partners about conducting another mass casualty exercise at Madigan in which patients would be transported to different sections for care. "During Cascadia Rising, I was focused on my department, and the ER was focused on operations in the ER, and the OR was focused on operations in the OR," Roberge says. "I knew everybody was going to do well within their own teams, but the hospital is a team of teams. Patients are handed off as they move from one area of care to another. Transitions of care are where mistakes occur, and I thought it was important to simulate those and identify opportunities for improvement."

An actual test came just a few days later when Amtrak Cascades Train 501 derailed and careened off of a bridge in Tacoma, killing three people and injuring more than 70 others — many of whom were transported to Madigan for care. As patients from the train derailment arrived at the hospital, many of the issues that Roberge warned about came to fruition. "The emergency department was crowded with people trying to be helpful but who were unfamiliar with their roles in the emergency operations plan," he recalls. "As a result, we had communication issues and challenges identifying and tracking patients."

Once the emergency was over, Madigan reflected on lessons learned and compiled an after-action report to document what transpired during the event. Hospital leaders recognized that they needed to update their mass casualty plan.

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Democratizing AI

A multi-site federated learning approach to AI algorithm training can protect patient privacy and help make AI development more generalizable to widespread clinical use.

The hype around AI and its impact on radiology is growing. More and more AI algorithms are emerging, of which 84 are currently FDA cleared. Preliminary results from the ACR Data Science Institute® (DSI) survey show that, in practice, less than 30% of radiologists are using AI algorithms — including 10% that are using self-developed algorithms.

These numbers are hardly surprising, given the current challenges the industry is facing. The development of AI algorithms is primarily happening in institutions with extensive informatics and data science resources. Furthermore, this development usually happens in single institutions, as it is difficult to share data outside of institutions due to patient privacy concerns, and only a small percentage of FDA-cleared algorithms have undergone external validation. These are key limiting factors, especially because algorithms need widespread exposure to a variety of equipment and patient demographics to be generalizable to widespread clinical use.

To accelerate the adoption of AI into clinical practice, the ACR recognizes the need to involve more and more institutions in algorithm training, testing, and validation. This democratization of AI includes a multi-site federated learning approach for training AI algorithms by including data from a variety of practices — while protecting patient privacy. By including data from multiple sites, federated learning allows AI models to evolve and become less brittle when exposed to the amalgam of equipment and patient demographics that will be seen in actual clinical use. This need for democratization led the DSI to develop the AI-LAB™, the ACR's data science toolkit that empowers radiologists to use their own patient data to participate in algorithm evaluation and development. The ACR's revamped IT communication platform, ACR Connect, provides the means to transfer analytical tools and AI algorithms to a variety of sites, so that the sites can then safely use their own data for federated learning. Additionally, AI-LAB and ACR Connect provide the infrastructures to securely access local data for multiple purposes, such as hands-on experience and education in medical imaging AI, model creation or tuning, and model validation. Commercial algorithms seeking FDA clearance or those developed at single institutions seeking to become more generalizable could be transferred and validated at multiple institutions without the need to transfer local data. Finally, the ACR is also working with a number of developers to use AI-LAB as a means to allow facilities to evaluate AI algorithms using their own data prior to purchase.

While some of the features of AI-LAB are available now in the ACR cloud, to test these on-premises features, the ACR has deployed AI-LAB on site at seven institutions. The Tufts University School of Medicine's Lahey Hospital and Medical Center is one of those sites, and during the 2020 Imaging Informatics Summit, Christoph Wald, MD, MBA, PhD, FACR, Adam Medina, and Ali Ardestani, MD, shared their first-hand experience in using AI-LAB. The team emphasized that even though they are a smaller institution with limited institutional IT support, installation and implementation were straightforward. They discussed each fundamental step of their workflow — the hardware selection, the institution's IT policy, the institutional review board process, and the installation of AI-LAB. According to Wald, professor of radiology at Tufts University Medical School and chair of the ACR Commission on Informatics, the data processing step — which required the identification of series of images, multi-reader assurance of ground truth, and standardized annotation — was the most time-consuming, while the actual algorithm development was surprisingly fast and straight-forward.

The Lahey team's successful implementation of AI-LAB demonstrates that AI can truly be democratized. The DSI is planning to install AI-LAB in more than 20 additional institutions in the next phase, with hopes for widespread deployment next year. AI-LAB and ACR Connect will seamlessly allow every radiologist and institution to evaluate and use AI to enhance the care they provide their patients. B

Dan Cohen-Addad, MD, is a radiology resident at SUNY Downstate Medical Center and a member of the ACR Commission on Informatics' Advisory Council.

DATA SCIENCE INSTITUTE™
AMERICAN COLLEGE OF RADIOLOGY

The ACR Data Science Institute® (DSI) has introduced several COVID-19 resources for clinical radiologists and researchers fighting the spread of the virus. The AI-LAB provides free access to ACR DSI use cases for COVID-19, coronavirus learning cases, and a repository of AI algorithms available for local evaluation, including scenarios where AI could impact clinical care of COVID-19 patients. Learn more at acrdsi.org.

Learning From Mistakes

The vice chair of the Commission on Quality and Safety discusses the critical role of just culture and peer learning in improving Q&S — without judgment or blame.

The effectiveness of a radiology quality and patient safety program is enhanced by an ongoing understanding of prevailing errors. Many tools are available to assist in analyzing errors and understanding their cause, but this understanding cannot happen unless errors are revealed in the first place. Staff members are often reluctant to reveal their own or others' mistakes if they fear adverse consequences or potential disciplinary action. Unfortunately, this is the case in many practices today. Although adverse events may ultimately come to light when patient harm occurs, even under those circumstances, less consequential errors or near misses may remain hidden, and future patients remain at risk.[1]

A just culture is an environment in which errors and near-miss events are evaluated in a deliberately nonpunitive framework, avoiding a culture of blame and responsibility and focusing instead on error prevention and fostering a culture of continuous quality improvement. Adoption of a just culture requires careful attention to detail and relies on continuous coaching of individuals and teams to build a culture of safety.[2] In a recent interview, Jennifer C. Broder, MD, vice chair of the ACR Commission on Quality and Safety (Q&S) and vice chair of Q&S at Lahey Hospital and Medical Center's department of radiology in Burlington, Mass., shared her insight on why it is important to build a just culture, and how peer learning is an expression of just culture for radiologists.

What is just culture and how does it work?

The most important part of improving Q&S in your practice is to establish a just culture — where people can trust their errors will be treated fairly and humanely. At Lahey Hospital and Medical Center, we have been working for several years to implement a just culture model, which is a method of investigating why errors happen and how to address them in a consistent, fair, and transparent way. This model is used to review errors across all aspects of our work in the department, from administrative to clinical.

The just culture method directs management through a set of guiding questions to determine the underlying causes of an unfavorable event: Was the mistake the result of human error, at-risk behavior, or reckless behavior? Once we determine the intent behind the person's actions, the model outlines appropriate responses for each scenario. Human error results in consolation, at-risk behavior results in coaching, and reckless behavior results in disciplinary action.

While it is more challenging to apply an algorithmic approach to reviewing interpretive errors — rather than, for instance, errors in RT workflow — the tenets of a just culture establish the ground rules for our peer learning program. Peer learning is, in essence, the manifestation of a just culture for our clinical work.

How would you describe peer learning?

A new paradigm for peer review has emerged, peer learning, which is a group activity in which expert professionals review one another's work, actively give and receive feedback in a constructive manner, teach and learn from one another, and mutually commit to improving performance as individuals, as a group, and as a system. Many radiology practices are beginning to transition from score-based peer review to peer learning.[3] By avoiding judgment and focusing on learning, we promote collegiality and collaboration that, in turn, fosters a culture of learning and improvement.

The primary benefit of peer learning is that it cultivates an environment in which we're all working together to learn without judgment. The beauty of a well-functioning peer learning system is that everyone in the practice understands it's their responsibility to help their peers learn and improve, and they don't mind

doing it because it helps build relationships and improve their own practice as well. In practices with robust peer learning programs, we not only learn from our mistakes, we also identify times when people do a great job and help everyone else learn from that experience. I call it "learning from the masters" — we use the opportunities when people are really doing well to help everyone else learn how to succeed in the future.

Beyond individual and group learning, the second major benefit of peer learning is that a well-organized program will consistently find ways to translate learning opportunities into systems improvements. For example, at our institution the review of one neuroradiology case led to the creation of a hospital-level diagnostic pathway involving multiple disciplines.

Why has peer learning come more to the forefront in Q&S?

The value of peer learning is that it allows people to focus on how to improve without the negative side effects of judgment or blame. Medicine is traditionally set up to review each other's work with a heavy hand. Many people who come into medicine are perfectionists, and we take great pride in our work. When judgment is associated with times we haven't succeeded, it results in shame. That shame has two consequences. One: It makes people feel terrible, which really destroys an opportunity for learning. We all know that we don't learn well when we are shrouded in negative feelings. Two: It makes other people not want to bring up mistakes, errors, or opportunities for improvement, because we don't want to make each other feel bad.

A lot of judgment among peers in medicine ends up working against what we want to promote, which is collegial, close working relationships. To achieve the most benefits from peer learning programs, to create highly functional collegiality, it's critical to eliminate all opportunities for peer-to-peer judgment. It's also important to note that a key starting point for peer learning is to establish a just culture.

How can radiologists become more engaged in peer learning?

One of the most exciting initiatives of the ACR Commission on Q&S is the new Peer Learning Committee, in which we will be working to help more practices establish peer learning programs. We're developing the Peer Learning Committee in response to the growing momentum across the country and internationally among practices to implement peer learning. The goal of the committee is to look at what's being done, establish best practices, and define what constitutes a rigorous peer learning program. Then we'll work to support implementation of new peer learning programs across varied types of radiology practices through education, outreach, and mentorship. Eventually, we hope to coordinate formal adoption of peer learning as a pathway for peer review in the accreditation process. B

Interview by Linda Sowers, freelance writer, ACR Press

ENDNOTES

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Creating a Q&S Program

All radiology departments are now expected to create organized and comprehensive quality and safety programs. Just culture and peer learning are essential principles in establishing effective programs. Learn more about the principles and pitfalls of creating a Q&S program at bit.ly/QS_JustCulture.

Bringing Stories to Life

The RLI podcast gives voice to radiology leaders' advice and lessons learned.

The ebb and flow of medical advances, new technologies, healthcare organizational models, economic conditions, and regulatory priorities have been an endless source of fascination since I began my career over 30 years ago. One of the most rewarding aspects has been connecting with the smart, creative, and daring leaders whose work propels us forward. With a diversity of backgrounds and interests, the common threads to their impact have been their passion for fearlessly engaging, taking chances, and conveying humility — imbued with a spirit of continuous learning and openness to ideas from the full breadth of their communities.

Over the past two years, it has been my privilege to explore the lives of some of our most accomplished and impactful radiology leaders in the ACR's Radiology Leadership Institute® (RLI) podcast, "Taking the Lead." Since our first offering with ACR CEO William T. Thorwarth, Jr., MD, FACR, debuted in September 2018, we have released 27 episodes. In our recently completed second season, we heard from 14 extraordinary leaders — and while their collective accomplishments are astounding, most fascinating to me are their journeys. "Taking the Lead" focuses on the journey — the peaks, chasms, and terrain in between.

Inspired by the "Women in Focus" session held at the 2019 European Congress of Radiology, the second season began with a special episode. ACR President Geraldine B. McGinty, MD, MBA, FACR, served as guest host and spoke with Hedvig Hricak, MD, PhD, FACR, past president of RSNA, about her groundbreaking career and some of the unique barriers that she overcame as the first woman to chair the department of radiology at Memorial Sloan Kettering Cancer Center in New York. Next, Sanjay K. Shetty, MD, MBA, FACR, executive vice president for corporate and business development at Steward Health Care, took us through his remarkable ascent from the Wharton School of the University of Pennsylvania to the C-suite of Steward Health Care. RSNA Past President Valerie P. Jackson, MD, FACR, shared how her penchant for volunteering led her to presidencies of multiple societies — including the Society of Breast Imaging and the ACR. Elias A.

Zerhouni, MD, professor emeritus of radiology and biomedical engineering at Johns Hopkins University, regaled us with his unparalleled experience from a small village in Algeria to his appointment as the 15th director of the National Institutes of Health (NIH) by President George W. Bush and subsequent roles with the Obama administration.

While these brief descriptions do not do justice to the richness of the conversations I've had with these pioneers over the past two years, my hope is that they serve as a roadmap for your own leadership journey.

We kicked off 2020 with RAD-AID International CEO Daniel J. Mollura, MD, whose NIH and Wall Street expertise, coupled with his passion for public service, led to RAD-AID bringing radiology to underserved and resource-limited regions around the world.

"Taking the Lead" subsequently took us on a tour of remarkable leadership within academia. Theresa C. McLoud, MD, FACR, vice chair for education and radiology residency program director at Massachusetts General Hospital, discussed becoming the first woman to serve as a radiology department section chief. Bruce J. Hillman, MD, FACR, founding editor of the *JACR*®, walked us through his innovative and impactful contributions as founding chair of the ACR Imaging Network. Pek-Lan Khong, MBBS, MD, FRCR, clinical professor and head of the department of diagnostic radiology at the University of Hong Kong, shared her journey from Singapore to radiology chair and the subsequent opening of a 2000-bed hospital in Shenzhen.

The peak of the COVID-19 pandemic in the spring was the focus of our next four episodes. Representing a breadth of practice environments across the five New York boroughs, Robert J. Min, MD, MBA, FACR, chair of radiology at Weill Cornell Medicine and president of the Weill Cornell Physician Organization, Sabiha Raoof, MD, FACR, chief medical officer and chair of radiology for Jamaica and Flushing Hospitals and chief medical officer for Medisys Health Network in New York, Michael P. Recht, MD, Louis Marx professor and chair of the department of radiology at NYU Langone Medical Center, and Judy Yee, MD, FACR, chair of the ACR Colon Cancer Committee and professor and chair of the department of radiology at Montefiore Medical Center in Bronx, N.Y., provide us with a multifaceted, in-depth exploration of the leadership, resiliency, creativity, and commitment required to overcome the disease within severely resource-constrained environments.

We wrapped up the podcast's second season with strategies to empower physicians and staff to flourish — while combating burnout and building esprit de corps. Stephen J. Swensen, MD, MMM, FACR, who served patients at the Mayo Clinic for three decades in a variety of roles including department chair, shared the five behaviors that when practiced by a leader, drastically reduce team burnout rates. Katherine P. Andriole, PhD, associate professor of radiology at Harvard Medical School and recipient of the inaugural RADxx Trailblazer Award, discussed her pioneering work in imaging informatics.

While these brief descriptions do not do justice to the richness of the conversations I've had with these pioneers over the past two years, my hope is that they serve as a roadmap for your own leadership journey. The field of radiology boasts a deep bench of trailblazers who inspire those around them to dream, learn, and do — and through this podcast, the RLI brings their stories to life. B

Geoffrey D. Rubin, MD, MBA, FACR, professor and chair of the department of medical imaging at the University of Arizona, is the host of the RLI's "Taking the Lead" podcast. He welcomes feedback and future guest suggestions at rli@acr.org or on Twitter @geoffrubin.

Leaders on the Record

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 a rapidly shifting healthcare environment that's been upended by COVID-19. The series is available on iTunes, Spotify, and everywhere you listen to podcasts. New episodes are released each month. 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.

Colorectal cancer screening has dropped by 86% during the pandemic — and radiologists can help patients return to care.

The impacts of COVID-19 on healthcare continue to evolve. As radiologists, we face unique opportunities — and challenges — as we work to prioritize safe and quality patient care while we navigate this pandemic.

At the start of the COVID-19 outbreak, most non-emergent healthcare was halted — including cancer screening. Unfortunately, cancer incidence does not stop with the pandemic. For some patients, skipping or postponing screening now could mean a delayed diagnosis, an increased cancer burden, and/or worse outcomes in the future.

Like so many of us, I was deeply saddened to hear the news of actor Chadwick Boseman's passing as a result of stage IV colon cancer. I was also amazed by his strength as he persevered through his illness to bring us so many remarkable films and the Black superhero, King T'Challa, in Marvel's *Black Panther*. I was deeply moved by the fact that, during his own treatment, he often visited with young cancer patients.

For me, as a Black physician at UT Southwestern Medical Center, the best way I can personally honor his legacy is by working to prevent losing more young Black men like him to colorectal cancer by encouraging screening. Black people have the highest rates of colon cancer of any racial ethnic group in the U.S., according to the American Cancer Society (ACS). Black individuals are about 20% more likely to be diagnosed with colorectal cancer and 40% more likely to die.[1] But it doesn't have to stay that way.

Some have pointed out that Boseman's death at only 43 makes him even younger than the recommended age at which to begin regular colorectal cancer screening (age 45). That is true, for those at average risk of colorectal cancer. But those with a personal or family history of colorectal cancer or inflammatory bowel disease — or those who are experiencing symptoms like rectal bleeding — might need to start screening before age 45, be screened more often, or get specific tests.

Virtual colonoscopy, known medically as CT colonography, is a highly accurate, safe, and minimally-invasive test that is preferred by many who can't or won't get a colonoscopy. It is also recommended by the ACS. Virtual colonoscopy takes about 20 minutes, during which pictures are taken of the inside of the colon using a CT scanner. It does not require being put to sleep, so patients can drive themselves to and from the screening and return to their normal daily activities immediately after the test. It can also be performed in a lower risk manner that maintains social distancing in the COVID-19 era. If a pre-cancerous polyp is found, patients can have a follow-up colonoscopy to have it removed before it becomes a cancer (it is estimated that only 14% need to go on to colonoscopy).

Conventional colonoscopy is another option — which is the only other exam that can reliably detect pre-cancer polyps throughout the entire colon before they turn into cancer. It can also be performed in a low-risk manner during the COVID-19 pandemic. Patients will need to be put to sleep for this exam and have a driver, but if a polyp is found, it can be removed during that exam.

On average, 30% of patients who should be screened for colorectal cancer don't get tested — and that was before the pandemic. Unfortunately, colorectal cancer screening has dropped by 86% during the pandemic relative to averages prior to Jan. 20, 2020.[2] Radiologists have an opportunity to support the lifesaving benefits of colorectal cancer screening. We need more radiologists to become active in performing and interpreting CT colonography. As a less invasive cancer screening test that requires less PPE than the alternative optical colonoscopy, we can provide a safe and more practical option during and after the pandemic. Pick up the gauntlet and start a CT colonography screening exam in your practice. Encourage patients to return to screening. We can act together to help our patients return to care with the opportunity to save lives. B

Cecelia C. Brewington, MD, FACR, is a professor and radiologist practicing at UT Southwestern Medical Center in Dallas, and a member of the ACR Colon Cancer Committee and the Commission on Patient- and Family-Centered Care's Population Health Management Committee.

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

For information and resources for radiologists who perform CT colonography, visit acr.org/colorectal.

Leading From Behind

ACR's president urges radiologists to foster thriving mentor-mentee relationships.

ACR President Geraldine B. McGinty, MD, MBA, FACR, believes in empowering her team and giving them supported opportunities to stretch — letting her mentees have the spotlight. This concept of leading from behind is one that she tries to regularly practice in her activities at the ACR and in her role as chief strategy officer of Weill Cornell Medicine.

McGinty spoke with Ragni Jindal, MD, radiology resident at NYU Langone Winthrop Hospital, about the opportunity for radiologists to lead from behind in their own professional relationships.

ACR President Geraldine B. McGinty, MD, MBA, FACR

Ragni Jindal, MD

What does the concept of leading from behind mean to you?

Leading from behind creates an atmosphere with your team that empowers them to take risks. I try to practice it regularly in my work with the ACR. For example, I recently invited Melissa A. Davis, MD, MBA, assistant professor at Emory University, to take over my Twitter feed for a day to share her perspectives on how we can make radiology more inclusive.

In my role at Weill Cornell Medicine, I constantly look for opportunities to allow my team to grow professionally. Just recently, I developed a financial forecasting model for my health system with my team, which I've presented to senior leadership on several occasions. For one particular meeting, I wasn't sure I could change my clinical schedule to present, so I had to entrust this important presentation to a team member. As it turns out, I was able to attend but when I checked in with my colleague, she was ready. She did a terrific job and represented our team effectively. Leading from behind is not always putting yourself out there but using whatever opportunity you can to let your team grow and stretch.

How have other radiology leaders helped you in your role at the ACR?

Early in my career, when I was a member of the ACR's Commission on Economics, the chair of the Commission, Bibb Allen Jr., MD, FACR, asked me to give a presentation to the ACR Council at a difficult time for reimbursement. The fact that he was willing to let me speak on a pretty challenging topic gave me visibility and credibility within our membership.

What are some of the challenges that radiologists might encounter when leading from behind, and how can they overcome them?

Women are often not given as much credit for their contributions as their male colleagues, so it can feel like a risk to let someone else on your team take the spotlight. I certainly recognize that I'm at a stage in my career where I should be comfortable letting someone else take the stage. However, I'm sympathetic to a mid-career professional, especially a woman or person of color, who is thinking, "I'm already struggling to be heard, so why would I put somebody else out there?" For that person, I'd argue that senior leaders need to act to amplify and sponsor emerging leaders on their team to give those colleagues the confidence that they need to be seen and heard.

What place does this concept play in the future of radiology?

The profession is seeing its fair share of challenges right now — dealing with the ongoing pandemic, understanding financial ramifications, and exploring how we are going to incorporate AI into our workflows. However, there's never been a time when it has been more important for us to have one voice in radiology. This means that organizations like the ACR need to be a place where radiologists convene and get involved. I am a big proponent of the concept of "new power," which affirms that successful organizations will be those who open themselves to more engagement and decision-making from their entire membership rather than just a small group at the top (learn more in the *JACR*® at bit.ly/New_Power). We will maintain our relevance and amplify our voice if we offer opportunities for younger members to be involved — to showcase their talents and to contribute meaningfully. B

This article is the final of a four-part *Bulletin* series. Throughout 2020, readers accompanied Ragni Jindal, MD, as she highlighted inspirational stories from radiologists around the country.

Ready for Anything

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Using an iterative process — from reviewing lessons learned to revising and testing new workflows — they made critical changes and detailed each department's roles and responsibilities during such an event. For radiology, this involved refining patient naming conventions, honing its communication procedures, tweaking its preliminary reporting methods, and updating its CT protocols for use in mass casualties, says Roberge, who adds that radiology framed this work as a quality improvement project to ensure it was well-resourced and coordinated with the department's overarching policies and procedures.

> "We expect a real-world response to a mass casualty to include multiple systems of care. As such, we need to be prepared to work seamlessly with our partners."
>
> **– U.S. Army Col. Eric A. Roberge, MD**

With the changes in place, Roberge organized a team to develop a mass casualty exercise to test the revised plan across departments. The core group included two emergency operations center planners, an emergency physician, a trauma surgeon, and a family practice physician. "We also had a broad coalition of hospital staff, including logistics personnel, pastoral services, security services, and clinical services, and we coordinated with our joint partners in the Air Force, as well as state and local partners," Roberge says. "We expect a real-world response to a mass casualty to include multiple systems of care. As such, we need to be prepared to work seamlessly with our partners."

Testing the Plan

Over the next eight months, Roberge and the group developed an exercise called Mile Square, which imagined that a C-17 transport plane had crashed into a chapel filled with people on a weekend. "The exercise served as a measurement of progress and after-action review of the fixes that the hospital implemented following the train derailment of 2017," says David B. Misner, MD, EMS medical director at Joint Base Lewis-McChord and clinical staff attending in the department of emergency medicine at Madigan Army Medical Center, who was involved in planning the exercise. "It was rather unusual to see a radiologist involved, but it was refreshing to see the common goal setting and quantitative approach to a chaotic situation."

Madigan held the Mile Square exercise a year and a half after the Amtrak train derailment. During the exercise, individual departments — including radiology, emergency medicine, and surgery — got a chance to sharpen their internal operations. But more importantly, the departments tested patient transitions and interdepartmental communications, with radiology central to the response, says Maj. Tyler A. Dailey, MD, radiologist at Madigan. "During mass casualty events, radiology becomes a hub that many clinicians, particularly surgeons, rely on to quickly and accurately identify injuries and triage patients," he says.

The exercise showed that many updates to the emergency operations plan improved the overall response. For instance, assigning a specific point of contact within radiology for patients who required immediate surgery ensured more timely care. The exercise also uncovered additional challenges that the team hadn't considered, including image transfer time for large data sets from the CT scanner to the PACS. When multiple scanners were simultaneously sending 6,000 to 9,000 images across the network, it took as long as 30 minutes for each transfer. This led the team to scrutinize its network performance and to consider scaling down to "bare bones" protocols during mass casualties.

"Many of the things we worked on performed better than they had with the train derailment, though not all," Roberge says. "It's one of the reasons why planning and testing should be an iterative and thorough process."

Preparing to Respond

The Madigan team plans to continue holding similar mass casualty response exercises to ensure everyone remains prepared to respond to an event and to continue to refine its plan as needed. Roberge encourages other hospitals — and radiology departments in particular, given their central role in triaging patients and directing downstream care — to take the time to develop a comprehensive response plan and practice it regularly.

"Radiologists and other physicians must take a close look at their systems to consider how they will function during a mass casualty situation — both the operations within their own departments as well as interfaces with other departments — and how the system can break down," Roberge says. "It's something we should be doing every day in preparation for not only mass casualty events but also for efficient and effective daily care delivery — that's what performance improvement is all about." B

By Jenny Jones, managing editor, Imaging 3.0®

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