



Professional improvement
ideas for today's radiologists

JOURNEY



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sky is our limit.
So keep exploring!*

José Morey, MD

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IMAGING 3.0 IN PRACTICE

Professional improvement ideas for today's radiologists

While I'm not one for making resolutions, I fully advocate that we should each take the time to regularly reflect on what we've learned and the direction we'd like our careers and lives to take. The start of the year is a natural time to think about what we want to accomplish and how we want to live in the months ahead. On New Year's Eve of 2019, I tweeted that I'm focused on ikigai – a Japanese concept that means “a reason for being.”

Ikigai can be found at the center of your passion, profession, mission, vocation, what you love, what you get paid for, what you're good at, and what you think the world needs. I'm committed to staying closer to that center this year and beyond, in much the same way that I'm committed to keeping patients at the center of their care, as outlined in Imaging 3.0.

What professional resolutions or goals have you made? How are you doing with your efforts? I know many colleagues who have resolved to engage more directly with patients, devote more time to professional improvement, and take steps to have a more positive impact on their health systems and the patients they serve.

Whatever you're working toward, the case studies and resources within this issue of *Imaging 3.0 in Practice* can help you shape and achieve your goals. The case studies provide narratives and actionable steps for enhanced patient engagement, thought leadership, care team integration, diversity, population health management, and continuity of care – while the resources can help you plot your goals.

I encourage you to keep these articles and resources on hand as you move forward in fulfilling your personal ambitions while positively contributing to society. When we take the time to periodically reflect and re-center, we can stay in tune with our ikigai – and achieve a balance that is at once good for the well-being of ourselves and those around us.

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A Direct Line to Radiologists

Radiologists in Colorado are adding their phone numbers to radiology reports, making it easier for referring physicians and patients to reach them for consultation.

KEY TAKEAWAYS

- Radiologists with Diversified Radiology started including the reading room phone number in their reports to give referring physicians, and eventually patients, an easy way to contact them with questions.
- The effort was one of several that helped the radiology team achieve the highest referring physician satisfaction rating in their practice — which increased from about 85% in 2009 to 95% by 2014 and continued to climb to 98% in 2018.
- Attention from group leadership, national publications, industry associations, and local competitors helped Diversified's radiologists scale this initiative throughout their practice.

When surgeon Kimberly Vanderveen, MD, orders imaging studies for patients at the Denver Center for Endocrine Surgery, she often speaks directly with radiologists to discuss their interpretations. But getting in touch with them hasn't always been easy. For years, locating a case's interpreting radiologist required a lot of effort.

"It's incredibly helpful to have conversations with radiologists about subtle impressions that are difficult to explain in a report," says Vanderveen, who is also medical director of Rose Medical Center's Thyroid and Parathyroid Center. "But talking to them usually required me to make a bunch of phone calls or to go to the hospital to track them down."

When Craig M. Kornbluth, MD, a body imaging subspecialist with Diversified Radiology and chair of the radiology department at Rose Medical Center, heard that referring physicians like Vanderveen were having trouble getting ahold of the radiologists on his team, he decided to address the issue. To make it easier for clinicians to reach him with questions, Kornbluth started including the reading room phone number in his reports about 10 years ago.

Since then, this simple initiative has gradually spread across Diversified Radiology's entire practice. Now, all 60 radiologists in the practice list a phone number in their reports, making themselves more accessible not only to referring physicians but also to patients — resulting in more collaborative care.

Giving Physicians Access

Kornbluth got the idea to insert the reading room phone number into his reports from a consultation note that another specialist sent to a primary care physician. "It basically said, 'Thank you for allowing me to care for your patient. If you have any questions about my report, please call me at this number,'" Kornbluth recalls.



Craig M. Kornbluth, MD, diagnostic radiologist and body imaging subspecialist at Diversified Radiology and chair of the department of radiology at Rose Medical Center in Denver, added the reading room phone number to his reports several years ago to give referring physicians an easier way to contact him.

Kornbluth appreciated this verbiage because it accomplished two things: First, it expressed gratitude in a collaborative tone, and second, it offered an easy way for referring physicians to reach out.

Recognizing the strategic nature of this simple gesture, Kornbluth added a similar message to the end of his reporting template, and referring physicians immediately responded favorably. "Doctors said they could get in touch with me faster because the number was right in the report," Kornbluth says. "They didn't have to look through a Rolodex or dial through a phone tree, so the feedback was universally positive."

The initiative was especially valuable to referring physicians outside of Denver who send patients to the hospital. "Rose is a regional referral center, so a lot of patients come from several hours away," Vanderveen says. "These ordering physicians might not have a direct line to the radiology



Simply adding phone numbers to findings reports has made radiologists more accessible to patients and to referring physicians like Kimberly Vanderveen, MD, president and founder of the Denver Center for Endocrine Surgery and medical director of the Rose Medical Center Thyroid and Parathyroid Center.

department here. Offering access to the radiologist who read their patient's report is great customer service."

Gaining Validation

Once Kornbluth started getting positive feedback from referring physicians, his colleagues took notice. He asked the other four body imaging subspecialists in his group to include callback numbers in their reports, and the positive feedback multiplied.

The team shared this feedback throughout the practice and the broader radiology community. Jennifer L. Kemp, MD, FACR, body imaging specialist and vice president at Diversified Radiology, talked about the group's accessibility initiatives at national Radiological Society of North America meetings and even gained coverage in *The New York Times*.

"The positive press coverage validated it and spurred other radiology practices across the country to include phone numbers in their reports, too," says Marc Sarti, MD, body imaging subspecialist at Diversified Radiology. "Members of our practice became much more open to providing their phone numbers when they saw other radiology groups doing it, too."

On top of that, Diversified Radiology's board of directors asked Kornbluth to speak at the company's annual retreat about how the team at Rose was earning the highest referring physician satisfaction scores in the practice — which increased from about 85% in 2009 to 95% by 2014. Kornbluth explained that the phone number inclusion effort was one of several customer service initiatives that helped improve relationships with referring physicians and increase the group's high satisfaction scores.

These results encouraged more of the group's radiologists to add their contact numbers to their reports. "The initiative gained momentum over time because radiologists just realized it was the right thing to do," Kornbluth says.

Referring physicians have appreciated the effort, and Diversified Radiology's satisfaction scores have continued to climb — reaching 98% in 2018. "The radiologists' accessibility has been fantastic," Vanderveen says. "Now that they publish their phone numbers in their reports, I don't have to go through five other steps to get ahold of the interpreting radiologist. This initiative has greatly improved the trust and speed of communication between our teams."

Inviting Patients to Engage

The phone numbers initially made the radiologists more accessible only to ordering physicians, who were the sole recipients of the reports at the time. But since then, Diversified Radiology's contracting hospitals have rolled out patient portals that give patients access to their reports — essentially opening the phone lines to patients, too.

Knowing patients would have access to the phone numbers made some radiologists nervous at first. "Our radiologists enjoy the diagnostic role of conversing with other clinicians, but some of them were uncomfortable injecting themselves into direct patient care," Kornbluth says. "They were concerned about being inundated with phone calls from patients, but that hasn't been the case."

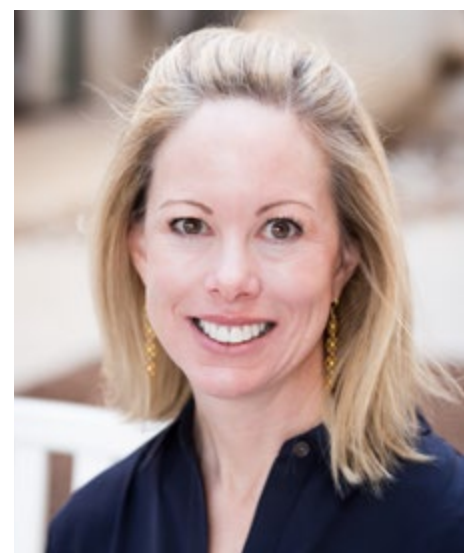
Other radiologists worried that talking with patients directly about their findings would infringe on the ordering physician's role. "I was a little uncomfortable because I had previous instances at another hospital

where I talked with patients who called about their results, and the response from referring physicians was unfavorable," Sarti says. But he soon realized that those concerns were overblown — especially at Diversified Radiology, where radiologists have built strong relationships with referring physicians over time.

The most common calls that the radiologists receive, from referring physicians and patients alike, ask them to simply explain abnormalities noted in their reports. "Benign lesions in the liver and kidneys' sound very ominous if you don't know what they are," Kornbluth says. "I'd certainly rather have patients call me than search Google."

When patient Robert B. Crew saw the report from his imaging exam, the results looked as foreign to him as Latin — so he called the number at the bottom and asked Kemp, who is also vice chair of the radiology department at Rose, to translate her findings.

"I was so impressed by her accessibility and her willingness to speak with me," says Crew, a senior judge in the Denver County Court. "I've never talked to a radiologist before; usually, you don't even get to see the report. Having her thoroughly explain her findings was a very positive experience for me. It gave me great comfort to get an



Jennifer L. Kemp, MD, FACR, vice president of Diversified Radiology and vice chair of the department of radiology at Rose Medical Center, helped drive the phone number initiative throughout the practice and across the broader radiology community.

immediate diagnosis, rather than waiting a couple of weeks for an appointment with my referring doctor.”

Closing the Loop

Kornbluth estimates that he gets several referring physician phone calls per hour while patients call once or twice a day. Sarti, who spends most of his time at another Denver hospital with different referring providers and a smaller patient population, says he receives calls from referring physicians several times a week and from patients once or twice a month.

“The number of interruptions is minimal, so it hasn’t impacted my workflow at all,” says Sarti, who is also the medical director of radiology at Presbyterian/St. Luke’s Medical Center. “The rare times that you do get to talk to a patient, it can be extremely rewarding. It’s a good reminder that you’re not just reading films — you’re treating patients.”

Though patient calls are relatively infrequent, radiologists keep referring physicians in the loop about these conversations to ensure everyone is on the same page. For example, if Sarti speaks with a particularly concerned patient or discusses any significant findings, he’ll immediately call and include the referring physician. If patients ask



Marc Sarti, MD, diagnostic radiologist and body imaging subspecialist at Diversified Radiology and medical director of radiology at Presbyterian/St. Luke’s Medical Center in Denver, says this initiative has had no negative impact on his workflow.

“So much can be gleaned by talking to the referring physician and even the patient.”

—Craig M. Kornbluth, MD

about follow-up imaging, ongoing treatment, or other next steps, the radiologists routinely direct them back to their referring providers.

“The few times I do get calls from patients, I’m always careful about discussing their findings,” Sarti says. “I’ll say, ‘Here’s what I see, but you have to discuss these findings with your primary doctor because I don’t know how this will impact your treatment.’ If something significant is discussed, I’ll reach out to the referring doc immediately and fill them in.”

Ongoing collaboration and communication are keys to the initiative’s success and are pivotal to improving patient care. “If you don’t make it easy for referring physicians and patients to communicate with you, you can’t improve the quality of care,” Kornbluth says. “Radiologists were traditionally like the Wizard of Oz behind the curtain; nobody knew what we really did. This gives us a chance to educate patients about how important we are to their healthcare.”

Instituting a Change

Kemp shepherded the phone number initiative into a new phase two years ago when she presented it to Diversified Radiology’s operations committee, which she chairs. The committee discussed how to effectively scale it from a voluntary effort to a group-wide standard without going so far as to mandate it.

“We decided that we wanted to have a name and phone number at the bottom of every report, but we gave radiologists some leeway to decide which phone number to include,” Kemp says. “We set the expectation that all radiologists would comply.”

Kornbluth met individually with radiologists who were hesitant to share their phone numbers. He explained that this was an important customer service initiative for referring physicians and patients that other

groups were starting to emulate.

Those radiologists who didn’t initially comply weren’t necessarily against the idea; they were just reluctant to change their routines and their report templates. Over the past few months, the operations committee has developed several standardized templates for radiologists — all of which include contact information by default.

Now, almost all of the practice’s radiologists include contact numbers in their reports. Most use the reading room number while others list the number for the group’s internal assistant, who transfers callers directly to the interpreting radiologist who read the case in question. This seemingly small effort has been a critical step toward collaborating more effectively with referring physicians and consulting directly with patients.

“We’re starting to see more radiology practices adopt this because it’s just better for patient care,” Kornbluth says. “So much can be gleaned by talking to the referring physician and even the patient, from both a clinical excellence and a customer service standpoint. Asking them to go through phone trees or spend time looking up reading room numbers is really poor service, so it’s time to get on board.”

By Brooke Bilyj

Next Steps

- To pilot a similar initiative in your practice, start with a small group of radiologists who already communicate regularly with referring physicians.
- Decide which phone number you want people to call, and add it to a structured reporting template for easy implementation.
- To build buy-in, share positive feedback from referring physicians and patients throughout your practice.

Socially Connected

Radiologists at Cincinnati Children's Hospital use social media to engage colleagues, referring physicians, patients, and families.

KEY TAKEAWAYS

- The radiology department at Cincinnati Children's Hospital launched a social media outreach initiative to promote its work and have a positive impact on patient outcomes.
- The department has attracted tens of thousands of followers through its social media accounts and blog, including radiologists, patients and families, and other medical professionals.
- The department's social media efforts have helped make it a thought leader in the field of pediatric imaging.

When Alexander J. Towbin, MD, associate chief of clinical operations and radiology informatics in the radiology department at Cincinnati Children's Hospital Medical Center, got the idea to use social media as a promotional tool, he initially planned to publicize his department's informatics projects. But Towbin quickly realized social media could serve an even broader purpose — promoting the entire department and increasing its visibility and influence along the way.

Under Towbin's leadership, Cincinnati Children's radiology department made its first foray into social media when it launched its Twitter account in 2013. Since then, the department has expanded its social media portfolio to include Facebook, the image-sharing networks Instagram and Figure 1 (a site exclusively for medical images), and a blog. The department leverages these communication channels to showcase its programs and distribute other imaging-related content directly to a diverse audience that includes patients, families, radiologists, and other medical professionals.

"Our department is doing a lot of fun and innovative work, like our immediate results reporting project for outpatient radiography and #MummyScan, a project that involved imaging the mummy of a Peruvian child that was on loan at the Cincinnati Museum Center," says Towbin, who is also the Neil D. Johnson Chair of Radiology Informatics. "I thought the radiology community, our patients and families, and the general public would be interested in knowing about these projects, and social media provided the ideal platform for sharing this information."

Towbin was right. In the three years since making its social media debut, Cincinnati Children's radiology department has attracted tens of thousands of followers, including more than 3,000 on Twitter, about 15,000 on Instagram, and roughly 7,000 on Figure 1. The department has also drawn more than 900 likes on its Facebook page and tens of



Cincy Kids Radiology uses its Facebook page expressly to promote its blog.

thousands of views on its blog. "With social media, we have the potential to reach millions of people across different medical specialties, not just radiology," Towbin says. "This amplifies our ability to improve outcomes for children."

Building an Audience

While the hospital has institution-wide social media channels, Towbin thought the department should have its own accounts to publicize its value-added initiatives and empower its patients and their families to make more informed care decisions. "We were looking for ways to engage our patients and families better and to share the cool things our department was doing," Towbin says. "Social media seemed like a good fit because it was free, it reached a large audience, and many of our patients' parents and many of the adolescents we care for use it."

Until then, the radiology department traditionally promoted itself through academic papers and presentations. While these efforts have been valuable in their own right, Towbin saw the potential to further increase the department's standing through social media. "Ultimately, my goal was for

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Radiologists at Cincinnati Children's Hospital engage patients and families through their blog.
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Protecting the Patient
A radiology department takes deliberate measures to protect patient privacy on social media.
acr.org/Protecting-the-Patient

Cincinnati Children's Hospital's radiology department to show up among the top search results whenever anyone Googled pediatric imaging topics," Towbin explains. "To do that, I knew we needed a blog; but before we started a blog, we needed to cultivate an audience, and that was something we could do through social media."

With that in mind, Towbin, who already had some personal experience with social media, approached Radiologist-in-Chief Brian D. Coley, MD, FACR, about launching a department-wide social media outreach initiative. Towbin proposed establishing the group's first account on Twitter because an increasing number of radiologists were using the platform. He recommended setting up the account in time for the Radiological Society of North America (RSNA) conference, which was just around the corner and would provide an immediate opportunity to begin building an audience from the scores of radiologists who typically engage on Twitter during the meeting.

Coley was a social media novice at the time but had no objections to the project. "Alex did his homework and clearly understood how to use social media as an effective engagement tool," says Coley, who is also the Frederic N. Silverman Chair of Pediatric Radiology at Cincinnati Children's Hospital and professor of radiology and pediatrics at the University of Cincinnati College of Medicine. "We saw it as a way to generate recognition for the very good work that our team is doing and as a way to engage others to benefit patient care, which is our ultimate mission."

Starting with Twitter and Facebook

With Coley's support, Towbin developed a one-page proposal outlining the radiology department's plans to use Twitter. The proposal stated that Towbin would be the only person tweeting from the account to ensure consistent messaging and that the posts would promote the radiology department's programs and educate its followers about appropriate imaging. He presented the proposal to the hospital's marketing team for approval.

"Most hospitals have a social media policy, and we wanted to make sure we weren't running afoul of that policy," Towbin explains.

From there, Towbin set up the account (@CincyKidsRad) and began tweeting about things like departmental research projects and sessions at RSNA and other educational meetings. "Every Monday, for example, I live-tweet [to post comments about an event while it's taking place] teaching points from our department's #WeekendReview educational conference, where we review interesting cases from the weekend," Towbin says. Such daily content presented in catchy tweets that sometimes include pop-culture references quickly attracted radiologists and other medical professionals — the department's target audience on Twitter.

As the department's Twitter followers began adding up, Towbin's next proposal was to launch a radiology department Facebook page. This time Towbin approached the marketing team with a plan to share content geared toward the Facebook page's intended audience of patients and families, including photographs of interesting events in the radiology department and articles from the mainstream and medical press that promoted the department. "The marketing team mainly wanted to ensure we'd have regular content and that it wouldn't become an orphaned page," Towbin explains. That turned out to be a legitimate concern.

Towbin initially had trouble finding content to share with patients and families on Facebook. He'd post photos when the department installed new equipment or articles when the media covered pediatric imaging, but such occurrences were infrequent. Still, with members of the department often sharing the posts on their personal Facebook timelines, the department's Facebook page attracted a few hundred followers. It was enough to begin driving an audience to the third leg of the department's social media outreach efforts: a blog with content for patients and families.

Once the blog was activated in 2014, Towbin began using the department's Facebook page almost exclusively to promote the blog content. The approach provides consistent content to the Facebook page and directs followers to the blog, which now offers more than 500 posts under themes like, "Meet the Team," "How We Do It," and "Patient Stories."

Joining Instagram

Soon after the blog went live, University of Cincinnati radiology resident Saad Ranginwala, MD, joined Cincinnati Children's radiology department and saw an opportunity to expand its social media efforts even further. Ranginwala, who as a medical student started a Twitter account (@EDultrasoundQA) dedicated to educating followers about emergency medicine ultrasound, approached Towbin about doing something similar with the image-sharing site Instagram.

"At the time, Instagram was one of the fastest-growing social media networks, and many businesses were taking advantage of the visual medium," Ranginwala says. "Since radiology is a visual specialty, Instagram seemed like a natural next step for our medical education efforts."

Towbin was receptive to the idea and worked with Ranginwala to develop a plan for Instagram. They determined that radiologists throughout the department would help collect cases for Ranginwala to share each day with their target Instagram audience of medical professionals. They also decided that, for consistency, each image would focus on one concept and share one teaching point.

"We were a lot more thoughtful about our approach to Instagram than we had been with our initial social media channels in part because Instagram involved sharing images from actual cases," Towbin explains.

Towbin and Ranginwala worked with the hospital's legal department to ensure sharing cases on Instagram wouldn't violate patient privacy regulations.

Once the legal team signed off on the project, Towbin and Ranginwala asked volunteers within the radiology department to begin sending interesting cases to Ranginwala to share on Instagram. In general, the volunteers — who along with Towbin include A. Carl Merrow, MD, associate professor of radiology and Corning Benton Chair for Radiology Education, and Marguerite M. Care, MD, assistant professor of radiology — collect the cases in batches, write the captions to accompany the images, and then submit them to Ranginwala to post on a daily schedule.

Posting a unique case each day is challenging (no one wants to see pneumonia all the time, for instance), but with several people collecting cases, the team makes it work and draws thousands of followers in the process. “We get comments from parents saying, ‘This is what my child had,’ and questions about the clinical follow-up for the patient,” Towbin says. “We also get comments from people who are clearly medically trained, asking detailed questions about the imaging study. So we know we have a mix of followers.”

While Towbin and his team don’t respond to every comment on their Instagram and other social media accounts, they try to respond to any unfavorable comments they receive. “We get very few negative comments,” Towbin says. “But if a parent has a specific complaint, we try to address it directly with him or her offline. The way we respond depends on the medium. For example, on Twitter or Instagram, I send the user a direct message through the platform. Negative comments on our blog are tied to an email address, so in that instance, I communicate with commenters via email.”

Adding Figure 1, Linking Accounts

After a few months on Instagram, the department’s rich, consistent content attracted more than just casual followers. It also attracted the attention of the creators of Figure 1, who were so impressed with the department’s Instagram feed that they reached out and asked the department to become one of the first hospital-based accounts on the image-sharing network for medical professionals.

“Figure 1 was fairly new at the time and was trying to gain traction, but we saw the immense potential in the platform and in being a featured partner,” says Ranginwala, noting that in 2016 alone, the department’s Figure 1 account generated 17 million impressions.

Since Instagram and Figure 1 operate similarly, Towbin and Ranginwala share the same cases on both platforms. They also share the cases on the department’s Twitter account, just as they share the department’s blog content on both its Twitter and Facebook feeds. Such cross-linking means the accounts support one another.

“We use tools to link our social media

accounts together, including a Facebook mechanism that automatically forwards posts to Twitter and a computer application called IFFT that automatically sends Instagram posts to Twitter,” Towbin explains. “This limits the amount of work each new platform requires while ensuring our content reaches the largest audience possible.”

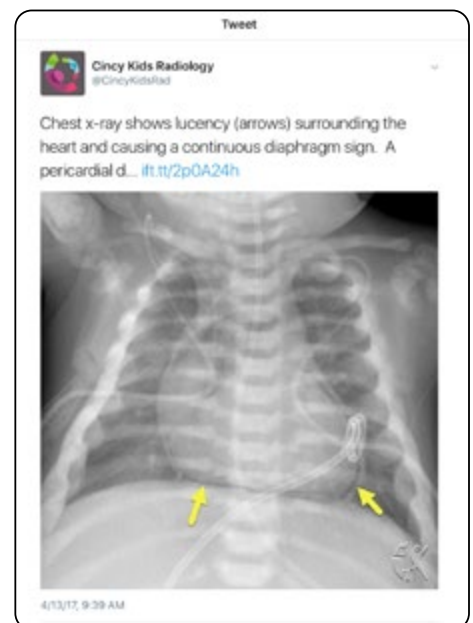
This smart use of engaging content has allowed the department to attract most of its followers organically, but it has also used low-budget advertising to draw some followers. One year, for instance, the department printed its Twitter handle and other social media accounts on business cards, which Towbin and others passed out during RSNA. The radiologists also include the department’s Twitter handle on their posters and slides whenever they give presentations, encouraging viewers to follow the feed. “I don’t know how effective these things are, but I have to think that they’ve played some part in spreading the word about our social media work,” Towbin says.

Benefiting the Group

While the department has generated an impressive number of social media followers, defining the value of any social media outreach initiative can be nebulous. Still, Towbin credits the department’s social media efforts with elevating its status as a thought leader in pediatric imaging and spreading the word about Cincinnati Children’s imaging program much further than would have been possible through any other means.

The efforts have also attracted the attention of both the mainstream and medical press. In fact, Towbin credits the department’s social media engagement with earning it a spot as a semi-finalist for Aunt Minnie’s “Best Radiologist Training Program” award two years in a row, even though Cincinnati Children’s Hospital primarily trains only pediatric radiology fellows.

“It’s the result of our social media outreach with education,” Towbin explains. “We have people coming to us both nationally and internationally who say our Instagram account was the only thing they used to study for the pediatric part of their board exams. That tells me that, at least in that segment, we’re doing it right.”



Cincy Kids Radiology tweets about departmental research, educational conferences, and other information geared toward its target Twitter audience of radiologists and other medical professionals.

But perhaps more importantly, the department’s work on social media and its blog is beginning to achieve the goal Towbin set when he started the outreach initiative — for the department to become a resource for anyone searching the internet for information about pediatric imaging. “In many cases, our content now appears prominently in the search results,” Towbin says. “That’s satisfying because it means people are reading our content and hopefully feeling more informed about appropriate imaging as a result.”

By Jenny Jones

Next Steps

- Pick a social media platform and target audience to begin your social media outreach efforts.
- Collaborate with your marketing, legal, and other stakeholder teams to ensure your social media efforts align with your institution’s policies.
- Determine what type of content you will promote on the platform, and develop a plan to ensure you have consistent content to share.

Breaking Down Barriers

An academic radiology department develops an initiative to eliminate barriers and narrow the gender gap in radiology.

KEY TAKEAWAYS

- Vanderbilt's Women in Radiology initiative provides career development, networking opportunities, and executive skills to help women assume leadership positions.
- The radiology department is effectively bridging the gender gap with significant advancements in recruiting, hiring, and promoting women leaders.
- More than 63% of women felt better prepared to advance into a leadership role and 69% believed they have better access to mentoring opportunities as a result of the effort.

It's no secret that a major gender imbalance exists in radiology. The 2017 ACR Commission on Human Resources Workforce Survey indicates that nationally just 21.5% of practicing radiologists are women.¹ And the number of women in radiology leadership roles is even worse: Only 8% of all women are leaders as compared to 15% of all men.²

Academic radiology departments are not exempt. At the assistant professor level, the number of men and women are roughly equal; however, women aren't promoted as quickly as men.³ Gender disparity is significant among senior and tenured faculty, and women are grossly underrepresented in departmental leadership roles.⁴

When it comes to the lack of gender diversity, however, not all academic radiology groups accept the status quo. At Vanderbilt University Medical Center (VUMC) in Nashville, Tennessee, for example, the radiology department is effectively bridging the gender gap with a program called Women in Radiology. Launched in 2014 as part of the department's extensive diversity and inclusion efforts, the program has helped attract more women radiologists to the department and is priming more women radiologists for leadership positions.

The results have been impressive. In just two years, the number of women on the department's faculty increased from 30% to 39%. And several women radiologists have advanced in their careers due in part to a Women in Radiology initiative called Leadership Intervention to Further the Training of Female Faculty (LIFT-OFF).

Here's a look at how Vanderbilt developed its Women in Radiology program to help women radiologists advance their careers, leading to a positive impact on VUMC and patient care.

Ignite a Spark

In 2014, Lucy B. Spalluto, MD, associate director of diversity, equity, and inclusion, and Stephanie E. Spottswood, MD, MSPH, professor of radiology and chief of pediatric nuclear medicine, set out to address gender disparities at VUMC. "We recognized, anecdotally, that many women in our department seemed to remain at the assistant professor level longer than their male counterparts," says Spalluto. "We also noticed that there were few women in leadership positions and that women were underrepresented in our residency and fellowship programs. So, we put our heads together and came up with the idea for a Women in Radiology initiative."

To put the idea into action, the two radiologists took the plan to Reed A. Omary, MD, MS, FACR, the Carol D. and Henry P. Pendergrass Professor and chair of radiology at VUMC. Omary and Spottswood had recently established the Office for Diversity, Equity, and Inclusion in the radiology department. So, a program aimed at meeting the needs of the



Lucy B. Spalluto, MD, associate director of diversity, equity, and inclusion, co-founded the Women in Radiology initiative to attract more women radiologists and prepare them for leadership positions.

Related Content

Bridging the Gender Gap

The radiology department at Vanderbilt University Medical Center is gaining expanded funding and national recognition as a model for improving gender equity in the specialty.

acr.org/Bridging-the-Gender-Gap

minority of women in the department was a natural fit.

“When we approached Dr. Omary, he strongly supported the idea and encouraged us to develop a program that would meet the needs of women in the department — at all levels of training and across clinical and research backgrounds,” Spalluto says.

Omary believes programs supporting women in radiology are imperative. “Radiology has traditionally been behind the curve in terms of gender diversity. If we’re going to continue to flourish and thrive as a specialty, we need to be intentional about creating an environment that fosters both the entry of new women into our specialty and the ability for women in the specialty to grow and expand their impact,” he says. “At VUMC, establishing the Women in Radiology program was the first step in changing our culture to recruit and retain more women and to prepare them to move into leadership roles.”

Beyond the impact on the field of radiology, gender diversity can also have a positive impact on patients, says Spalluto, who is also an assistant professor in Vanderbilt’s department of radiology and radiological sciences. “More than half of our patients are women, and the demographics of our healthcare providers should better reflect our patient populations,” she says.

Prepare for LIFT-OFF

After getting the greenlight from Omary, Spalluto and Spottswood began to chart a course for Women in Radiology. To start, they conducted a comprehensive needs assessment to measure the perceptions of gender equality, faculty research and teaching needs, and the perceived barriers to the advancement of women faculty members within the department. The web-based survey covered the following: demographics, perceptions of gender equality, work-life balance issues, perceived obstacles to career advancement, and faculty development, research, and teaching needs.

“The survey results showed that the two most significant barriers holding women in our department back from advancement were an understanding of promotional guidelines and a lack of mentorship,” says Spalluto who,

along with Spottswood, used this feedback to develop a two-year curriculum aimed at developing knowledgeable, successful, confident women who are prepared to achieve career success and assume leadership positions.

LIFT-OFF consists of 14 priority topics, including work-life balance, CV enhancement, conflict management, and the art of self-promotion. In addition, ongoing gatherings to hear speakers and network among junior and senior faculty provide opportunities to strengthen intradepartmental mentoring.

“We invited all of the women in the department, including those on the clinical track, researchers, nurse practitioners, and medical physicists,” says Spottswood, who heads the department’s diversity office and is co-creator of Women in Radiology. “Initially, our events were potluck style, with women in our department bringing food and beverages to hear expert speakers and to come together and share experiences and knowledge.”

One of the women who has benefited from both education and networking is Mary Ann Keenan, DMP, an assistant professor of radiology and radiological sciences. “This program has been a godsend for me,” she says. “As a medical physicist, I don’t fit the ‘radiologist mold,’ and I often feel like an outsider. It has been wonderful to get to know some of the other professional women, with everybody sharing their trials and tribulations and solutions. And, of course, hearing the speakers has been very insightful and motivating.”

She adds, “Now when I visit our regional imaging clinics, I know my colleagues there; they’re my friends. Because of that, whenever there is an imaging issue, they feel comfortable talking to me about it. With teamwork, we can resolve most issues. That’s one of the most important things I’ve gained from this program.”

Develop a Culture

Initially, the program targeted only women in radiology. As the program grew, women from other specialties, including emergency medicine and cardiology, expressed interest in attending the events. So, the Women in Radiology team opened the program to their women colleagues from across VUMC. Over

time, LIFT-OFF expanded to include fellows, residents, and medical students, and the large departmental programming events welcome men.

Spalluto says, “While our mission is to develop a culture supportive of the career advancement of women in radiology, we recognized that many of our programs would benefit the men in our department, as well. Because we value diversity and inclusion, we have intentionally invited men to speak at our events. And as the initiative grows, we plan to welcome men to more of our programming.”

LIFT-OFF’s initial educational programming ran from June of 2015 through September of 2017. “Early on, we wanted to start with a defined program that we could measure and assess outcomes to see if we were making an impact,” Spalluto says. “We did a thorough evaluation of the program at the completion of year one.”

In the study, 46% of the early career women faculty who responded said that they were satisfied with their professional advancement, as compared to only 25% before the program. “That metric was important to us,” says Spalluto. “We wanted women in our department to feel like they were able to advance their career paths and that this program was helping them do that.”

Make an Impact

Other results from the evaluation showed that LIFT-OFF was making significant progress toward its primary goals:

- 86% of the women agreed or strongly agreed that the LIFT-OFF program provided a better understanding of the department’s promotional guidelines than they had prior to LIFT-OFF.
- 75% indicated that they now have better access to faculty development opportunities.
- 69% felt the program offered more access to mentorship opportunities than before.
- 63% believed the program helped them prepare to move into a leadership position.
- 62% reported improved access to career advancement opportunities.

Although long-term success for women advancing their careers will not be evaluated

for several years, short-term outcomes are favorable: Two faculty members have been promoted, one has been awarded her first grant, one has had her first scientific abstract accepted, one has accepted a leadership role in alumni relations, and one is pursuing a seminar to assist in a mid-career transition to leadership.

“The impact of the Women in Radiology initiative and LIFT-OFF educational programming has been seismic for our department,” Omary says. “In 2018, we hired five new female clinical faculty members. The Women in Radiology program is a significant reason why many of those women radiologists have chosen to come here.”

More than a recruitment tool, Women in Radiology is also an incubator for women leaders. “It’s one of the places I go as a chair to listen to needs, to get help solving problems, and to discover future leaders in the department,” Omary says. “For example, Women in Radiology recommended one of the department’s radiologists, Dr. Stephanie Kurita, to head our alumni association, the Vanderbilt Radiology Society. Dr. Kurita is now on the board of alumni for VUMC and has a seat at the table for alumni affairs for the entire medical school. We used the concrete results she achieved to assemble her dossier for promotion to associate professor.”

Based on these stellar results, Women in Radiology has been recognized throughout VUMC and by the greater radiology community as a model for improving gender equity in the specialty. “As we began publishing our findings — including a seminal *JACR*[®] article and an *Academic Radiology* article that was awarded the 2017 Association of University Radiologists’ Joseph E. and Nancy O. Whitley Award — other institutions reached out to us for help to develop similar programs,” Spalluto explains. “It’s an incredible way to move this from a local, grassroots movement to a national level.”

Build a Community

At Vanderbilt, the Women in Radiology initiative continues to expand and evolve to meet emerging needs. “Over time, the initiative has become much more than a women’s faculty development program,” Spalluto says. “After LIFT-OFF, we have continued to host



Stephanie E. Spottswood, MD, MSPH, collaborated on the effort to develop knowledgeable, successful, confident women prepared to achieve career success.

educational programming (such as grand rounds speakers) and presentations at quarterly departmental leadership meetings. We’re more involved in recruitment of trainees and faculty, and we put forth names of women for leadership positions. On our website, we highlight the achievements of the women in our department through a quarterly “In Focus” newsletter article, which helps increase the visibility of women in our department.”

According to women in the radiology department, like Keenan, one of the most valuable benefits of the Women in Radiology initiative is the ongoing opportunities to come together as a group. “Despite our jam-packed lives, women radiologists have to make this a priority,” she says. “Many times, I almost didn’t go to the sessions because I was tired and still had work to do. But I went, and I have never regretted it. I’ve always walked away with something that has helped me get through the next month.”

Omary agrees. “The ongoing gathering of Women in Radiology builds community,” he says. “We’re beyond the era where any one person can do something alone. To really generate impact, we need to collaborate with others. In radiology, building a community that is supportive of women’s career advancement is more imperative than ever before.”

Spalluto agrees that coming together to bridge the gender gap is vital for the

radiology specialty to thrive into the future. “It doesn’t matter what size your practice is, whether you’re an academic or in private practice, the most important thing is to promote a culture that supports gender equity,” she says. “When we have more diversity, we make better decisions, and we can solve more complex problems. Ultimately, we will all have more success.”

By Linda Sowers

Next Steps

- Develop a culture that supports gender equity, provides access to mentoring and guidance for career advancement, and ensures transparency in recruitment, hiring, and promotion.
- Understand the specific needs and challenges of the women in your practice or department, and tailor your program to have the greatest impact.
- Start with a defined program and measure your impact to see if your efforts are moving the needle on recruiting, retaining, and advancing women into leadership. Then share your results with the specialty to encourage greater diversity in radiology.

ENDNOTES

1. Bluth EI, Cox J, Bansal S, et al. The 2017 ACR Commission on Human Resources Workforce Survey. *J Am Coll Radiol.* 2017;12:1613–19.
2. Lightfoote JB, Fielding JR, Deville C, et al. Improving diversity, inclusion and representation in radiology and radiation oncology. Part 2: challenges and recommendations. *J Am Coll Radiol.* 2014;11:764–70.
3. Vydareny KH, Waldrop SM, Jackson VP, et al. Career advancement of men and women in academic radiology: is the playing field level? *Acad Radiol.* 2000;7:493–501.
4. Association of American Medical Colleges. FACTS: Applicants, Matriculants, Enrollment, Graduates, MD/PhD, and Residency Applicants Data - Data and Analysis - AAMC. bit.ly/2AAMCFacts. Accessed Jan. 13, 2020.

2020 RESOLUTIONS



Alexander J. Towbin, MD

My resolution is to improve my in-person and digital communication skills. I am looking forward to learning more about effective communication at the ACR Quality and Safety Conference.



Lucy B. Spalluto, MD

I resolve to plan at least one vacation that I totally unplug during. No email, no social media, no phone calls. Just me and my family.

Carolynn M. DeBenedectis, MD



In 2020, I resolve to empower more female radiology attendings and trainees to pursue leadership roles because radiology needs more female

leaders to increase the diversity of ideas and make radiology an even better place. I also resolve to be even more patient facing during the clinical day because patients need to know what radiologists do and the value we bring to their care.

Tessa S. Cook, MD, PhD



I plan to focus on being more mindful at work and, perhaps more importantly, more present when I'm not at work. Too often moments pass us by without much consideration. I'm trying to be more deliberate about my experiences and the time I share with others.



Dania M. Daye, MD, PhD

My resolution is to talk to more patients about their imaging results.

Reed A. Omary, MD, FACR



I resolve to manage my work schedule using a newly developed method for prioritization.

In practice, this involves 3 tiers:

- 1. Tasks that I plan to attend to ASAP this week, in an open slot (if available) or taking up my own personal time. These are only for very important, time-limited matters.*
- 2. Tasks that I plan to attend to in any open slot this week*
- 3. Tasks that I plan to attend to in the next available open slot within the next couple of weeks*

On a personal level, I have taken on the new identity of "vegan."



Jennifer L. Kemp, MD, FACR

I resolve to arrive to work and meetings on time. I also resolve to read one journal article each evening.

Advocating for Change

Forging and maintaining relationships with legislators and advocating for patients are tangible ways to provide quality care.

KEY TAKEAWAYS

- Advocating for patients is a concrete way for radiologists to demonstrate value.
- Cultivating relationships with elected officials is key to helping pass legislation that matters to the radiology specialty and its patients. Advocacy also helps legislators and the general public understand radiologists' role in healthcare.
- Once a bill has passed, radiologists must conduct outreach to inform the general public of its benefits and answer any questions patients might have.

“Screening saves lives” is an adage that radiologists frequently espouse. Often, however, patients forego potentially lifesaving screenings, like mammography, because of access issues — including cost, time spent away from work, and lack of child care. So, when opportunities arise to help solve some of these issues through legislation and outreach, radiology advocates (or “radvocates,” as they call themselves) rise to the cause.

Such was the case for Amy K. Patel, MD, medical director of the Women’s Imaging Center at Liberty Hospital and assistant professor of radiology at the University of Missouri-Kansas City School of Medicine, when she learned that the Missouri state legislature would be considering a bill to mandate insurance coverage of 3D mammography during its 2018 session. At the time, Medicaid and Medicare covered 3D breast tomosynthesis mammography in Missouri, but not all private insurers did — leaving patients to pay out of pocket for this advanced screening.

“Missouri has access-to-care issues, and many patients can’t afford to pay for this procedure out of pocket,” Patel says. “It’s concerning that patients can’t access this life-saving procedure because 3D mammography is proving to find more cancers when they are much smaller compared to 2D mammography, which can result in less invasive treatment for the patient. It also makes lesions more conspicuous to our eye compared to 2D mammography and benefits patients with dense breasts, which can obscure lesions and make them more difficult to see on a static 2D mammography image.”

Recognizing the opportunity to improve care for Missouri women, Patel and other members of the Missouri Radiological Society worked with legislators on a bill that would require insurance companies to cover 3D mammography in accordance with the ACR Appropriateness Criteria®, which say that average-risk women should be screened annually



Amy K. Patel, MD, medical director of the Women’s Imaging Center at Liberty Hospital and assistant professor of radiology at the University of Missouri Kansas City School of Medicine, advocated for legislation to cover the cost of 3D mammography for women in the state.

starting at age 40. They then conducted outreach to help generate legislative support for the bill.

In April of 2018, the radiologists’ work paid off when the Missouri legislature unanimously approved the bill. Now, women throughout Missouri have access to annual 3D mammography screening beginning at age 40, with no out-of-pocket costs. “This bill improves access to care, as private insurers in the state of Missouri are now required to cover both 2D and 3D mammography annually beginning at age 40. Under previous legislation — which had not been amended since the early 1990s — insurers were only required to cover 2D mammography every other year beginning at age 50. So many more women will be covered under this new legislation and not have to pay out of pocket,” Patel says.

Getting Involved

Patel’s involvement in the Missouri measure was a natural fit. She has been interested in

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ACR Appropriateness Criteria®
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advocacy since her residency, when the Kansas Radiological Society and her mentor, John Lohnes, MD, encouraged her to get involved in the ACR, which ultimately connected her to advocacy work. “During my first ACR meeting as a first-year radiology resident, I was hooked. I knew that it was crucial to get involved in this governing body of my profession, and I knew that getting involved early was imperative,” Patel says. “Dr. Lohnes also introduced me to Dr. Geraldine McGinty, who is also one of my beloved mentors and who I attribute much of my career success to thus far.”

With her mentors’ support, Patel applied to and received the 2015 ACR Rutherford-Lavanty Fellowship for Government Relations, which allows residents to work alongside ACR government relations staff to learn about state and federal legislative and regulatory processes. The fellowship also teaches residents about ACR’s advocacy work and governmental factors that play important roles in shaping radiology. “Combining my love of politics with the realization that I could be a part of the process to advocate for patients was a win-win in my eyes,” Patel says.

From there, Patel became increasingly involved with other advocacy groups, such as the Radiology Advocacy Network and RADPAC. In 2017, when she took a breast imaging position in Massachusetts, Patel joined the Massachusetts Radiological Society, which afforded her the opportunity to leverage her advocacy skills as part of the mammography committee — work that would prove beneficial when she moved to Missouri.

While Patel was in Massachusetts, state Sen. Joan B. Lovely (D) introduced a bill that mandated insurance coverage for 3D mammography, as well as other supplemental screenings. To help garner support for that bill, Patel and other radiologists testified at the Massachusetts statehouse, sharing their expert insights about the benefits of 3D mammography.

Crafting Legislation

Meanwhile in Missouri, legislative affairs were heating up, and the Missouri Radiological Society and the Missouri State Medical Association (MSMA) were poised to partner on advocacy efforts. “The Missouri Radiological Society and the MSMA are relatively small

organizations, so we always work together,” explains Karen Goodhope, MD, FACR, immediate past president of the Missouri Radiological Society. “The MSMA often need our support, expertise, and backup on laws that relate to radiation safety and radiology. In turn, they lobby on our behalf.”

In December of 2017, the Missouri Radiological Society received word that state Rep. Dean Plocher (R) was introducing H.B. 1252, mandating insurance coverage of 3D mammography. Insurance companies would be required to reimburse physicians administering 3D mammography for women receiving a baseline mammography at age 35, biannual mammography for women ages 40 to 49, and annual mammograms beginning at age 50. Insurers would also be required to cover 3D mammography if a physician recommended it for a patient who did not fall into these categories and was at-risk due to a family history of breast cancer.

“I was grateful for the chance to introduce this lifesaving, cost-saving bill,” Plocher told the *Missouri Times*.¹ “The success rates for breast tomosynthesis (3D) versus traditional X-rays are encouraging, and I believe this legislation will truly act to improve healthcare for women and men and serve as a lifesaving measure.”

Before Plocher could introduce the bill, however, members of the Missouri Radiological Society wanted to work on its wording. “When we first reviewed the bill, the suggested intervals for mammography did not align with what radiologists would recommend,” says Goodhope, adding that rather than the ACR’s guideline of annual mammograms starting at age 40, the bill included different screening intervals based on various ages (for example, biannual exams for high-risk patients ages 40 to 50, then starting annually later).

“Without our intervention, the bill would have been completely uninformed and not aligned with established guidelines from the radiology specialty. As physicians, we must be paying attention to things like this for our patients because while legislators may mean well, they’re usually laypeople from a medical standpoint and don’t have the specialized knowledge needed to serve the best interest of patients,” Goodhope says.

Communicating with Representatives

While working in Boston, Patel accepted the medical director position at Liberty Hospital in Missouri through Alliance Radiology. The move was a return home for Patel, who completed her fellowship at Washington University in St. Louis, attended medical school at the University of Missouri-Kansas City School of Medicine, and was born and raised in rural northwest Missouri.

“By the time I decided to take the job in Missouri, the Missouri Radiological Society knew I was relocating,” Patel says. “They also knew I had been working on the mammography bill in Massachusetts.” Patel reached out to Goodhope and offered to help edit the Missouri bill and to testify at the statehouse in support of the legislation.

Together, Patel and the Missouri Radiological Society crafted a letter that the MSMA general counsel and director of government affairs, Jeff Howell, sent to Plocher. The letter stated that both the ACR and the Society of Breast Imaging recommended that annual mammography screening begin at 40 and provided data to support the guideline. Plocher agreed with their suggested changes and amended the bill.

In the meantime, Patel and Goodhope both reached out to state senate representatives to garner support for the bill. Goodhope sent an email to her state senator, introducing herself as the president of the Missouri Radiological Society and explaining why she supported H.B. 1252.

Patel called Rep. Marsha Haefner (R), a senior state representative who had the authority to generate support from other representatives and with whom Patel had a personal connection through mutual friends. During the phone conversation, Patel explained why she supported the bill and offered to send Haefner a handout that she could share with her legislative colleagues about why radiologists recommend mammography at 40.

Patel says that this type of outreach to elected officials is critical to successful advocacy. She notes that beginning a relationship is as simple as sending an email to a legislator and their legislative assistant. From there, she says, radiologists should continue to keep in touch with the officials’ legislative

assistants. “Over time, you’re more likely to get access to the elected official themselves, and then you can develop that relationship further,” she says. “The more you cultivate relationships with people in your local legislative offices, the more likely you are to garner support because your representative will view you not just as a constituent or a doctor but as a partner.”

Moving Beyond Passage

In Missouri, once legislation has been introduced, representatives often discuss and vote on it with little notice. For testimonies, the Missouri Radiological Society often calls on a general radiologist who lives in Jefferson City, Missouri’s capital, and therefore can get to the statehouse on short notice, Goodhope says.

In the case of H.B. 1252, the legislators discussed the bill in April of 2018, unbeknownst to the Missouri Radiological Society. While Patel did not get a chance to testify, both the house and senate unanimously approved the bill. “I found out about the legislation passing when I received the weekly MSMA legislative update. We are almost always notified about these bills ahead of time by the MSMA and our lawyer. I was delighted it passed so quickly,” says Goodhope.

Although the bill passed, Patel’s work wasn’t done: It was time to educate the public about the legislation and its impact on patient care. “If the public doesn’t know about the bill, or if they don’t understand it, they can’t take advantage of it,” says Patel, noting that radiologists should take the lead to disseminate information to both the public and to other physicians about new imaging-related legislation. “The last thing you want is someone who is not knowledgeable about radiology publicly commenting on the legislation,” she says.

Such was the case with Missouri’s 3D mammography bill — Patel noticed articles in which breast surgeons were commenting on the new law without any input from radiologists. “Breast surgeons do incredible work, but they may not be privy to the inner workings of mammography. It was important for me to get out and explain why 3D mammography is technologically superior for patient care and share that the majority

of Missouri women can now take advantage of it because they don’t have to shoulder the cost. Previously, many women were not able to afford it,” Patel adds.

Spreading the Word

Patel contacted her hospital’s marketing and public relations department about spreading the word to patients about the legislation.

“I told them that I wanted to do everything I could, whether it was the news or speaking engagements. I accepted every opportunity they offered, and I’m still accepting,” says Patel, who has appeared on televised news segments, interviews on the radio, and in various newspaper articles.

H.B. 1252 took effect in January of 2019. Although it is too early to assess the legislation’s impact, Patel says she’s received an overwhelmingly positive response from patients. “We had a patient come in who had seen me on the news. She asked to meet with me and when she did, she was in tears — she had wished for legislation like this for a long time,” Patel says.

In addition to informing the general public, Patel has also arranged for her state legislators to visit her and her team at Liberty Hospital. The visits give legislators a firsthand chance to see the impact of the legislation that they helped pass. This is important, Patel says, because it helps them better understand patient needs and encourages them to work more closely with physicians. “Most elected officials think radiologists still look at films on a view box,” Patel notes. “Without seeing the work we do every day, how can legislators understand that radiologists are imaging experts?”

Patel worked with the Liberty Hospital Foundation, the hospital’s charitable foundation that often assists with women’s health needs, and the hospital’s marketing and public relations department to invite the legislators to visit her group. RADPAC can also help radiologists arrange site visits with their legislators. As long as they work with their schedules, elected officials are usually receptive to these visits, Patel says. “One of my state senators visited for about 20 minutes the other day, and we have already discussed future legislative efforts,” Patel explains. “Even short site visits can result in big changes and important coverage for our patients.”

Continuing the Effort

With H.B. 1252 now law, Patel is committed to continuing her advocacy work, and she encourages other radiologists to get involved, as well. “Advocacy is a huge value that radiologists can provide in the care of our patients, and as healthcare transitions to value, it’s important that we’re seen doing this work,” Patel says.

For radiologists interested in joining advocacy efforts, Patel recommends that they begin by reaching out to their state radiological societies or ask the ACR for help with state contacts. Those wishing to get involved at the national level should contact RADPAC or the ACR Government Relations team, Patel suggests. Both have resources to help radiologists get started with advocacy, understand the issues, and make contacts, she says.

Patel invites all radiologists to join the cause. “Political advocacy is everywhere. We’re looking for advocates across the country,” says Patel. “We know healthcare is competitive; we know insurance providers are pushing back on reimbursements. But we can’t change anything unless radiologists take initiative and get involved.”

By Meghan Edwards

Next Steps

- Contact your state radiological society, RADPAC, or the ACR Government Relations Team to find out how to get involved in advocacy.
- Contact your local state legislator or their legislative assistant to begin cultivating a relationship.
- Invite legislators for a site visit to educate them about your day-to-day work and the expertise of radiologists.

ENDNOTES:

1. Shurr A. General assembly approves of bill aimed at improving breast cancer detection. *Missouri Times*. Available at bit.ly/MissouriTimes. Published May 15, 2018. Accessed May 23, 2019.

Clinical Comfort

A thriving interventional radiology clinical practice takes ownership of patient care and communicates the specialty's critical role.

KEY TAKEAWAYS

- Interventional radiologists (IRs) at the University of Virginia (UVA) transitioned their specialty from an ancillary service to a clinical practice through incremental changes and ongoing communication of value to administrators.
- The IRs allocate time for outpatient referrals, clinic visits, hospital rounds, and referring physician consults to optimize patient care.
- UVA updates its curriculum regularly to ensure the next generation of IRs understands how to provide periprocedural and longitudinal care over the course of a patient's disease.

On Feb. 4, 2004, Betsy Houston presented at her local hospital in Lexington, Virginia, with massive hematemesis. Doctors gave Houston 40 units of blood, but that didn't seem to matter — they couldn't identify the source of the bleeding to stop it. "No one thought she'd live through the night," recalls Houston's husband, Stuart.

Unable to help further, the local care team ordered a flight to medevac Betsy to the University of Virginia (UVA) Medical Center in Charlottesville, Virginia. There, a multispecialty team, including radiologists, determined that her bleeding stemmed from portal hypertension from previously undiagnosed liver disease.

The source of the bleeding identified, John "Fritz" Angle, MD, professor of radiology and medical imaging and division director of vascular and interventional radiology (IR) at UVA, emergently placed a transjugular intrahepatic portosystemic shunt into Betsy's liver — saving her life.

For the next decade, Angle monitored and managed Betsy's complex medical condition in collaboration with UVA's gastroenterologists. All the while, the multidisciplinary team included the Houstons in every treatment decision. "We always knew what had been done to Betsy, what was being done to Betsy, or what was going to be done to Betsy," Stuart recalls. "The medical team kept us informed all the time, which was extremely important to both of us."

Betsy ultimately succumbed to progressive liver disease in May of 2015. "We all knew that death was a possibility," Stuart says. "I sure miss her. But I got 11 years with her that I didn't think I'd have, and the interventional radiology department was a major player in those 11 years."

Establishing the Model

This patient-centered approach was also vital to Maureen Womack, RN, of Chesapeake,



Betsy and Stuart Houston appreciated the care that Betsy received at UVA Medical Center. Betsy was treated for complex medical issues for more than a decade before passing away in May of 2015.

Virginia, who receives IR care at the UVA Health System for ongoing management of fibromuscular dysplasia. She affirms an unparalleled provision of care due to transparency and treatment of her "whole person." Alan H. Matsumoto, MD, chair and Theodore E. Keats Professor of Radiology in the department of radiology and medical imaging at the UVA Health System, is her IR physician. "He always explains every single scan and procedure in depth and at a level my husband and I can understand. This type of communication helped to diffuse my fear, and enabled me to go on with life," she says.

UVA's interventional radiologists (IRs) began establishing a patient-facing, multidisciplinary care model in the late 1990s to manage complex diseases and treat the entire person. Since then, they have spent over two decades building the visibility and credibility of IR into a thriving, patient-oriented practice — one that imparts guiding principles to the next generation of IRs. "We feel comfortable taking care of patients and believe we have real responsibility for and accountability to the care of patients," says Matsumoto. "We've always

wanted them to see us as their physicians.”

To that end, Matsumoto and Angle worked tirelessly in those early years to demonstrate the visibility of IR in the hospital setting and build a strong and cohesive clinical service. They consulted with patients in the prep and recovery area of the procedure suite and provided clinical notes in patient charts, adding complementary and timely information to the admitting specialty’s notes. Their input provided not only relevant case details, but also illustrated the breadth of expertise and value the IRs bring to patient care.

Such efforts did not go unnoticed. In fact, several members of the IR team received the UVA School of Medicine’s Dean’s Clinical Excellence Award the first five years the model was implemented, bolstering the specialty’s clinical reputation in Virginia and beyond.

Getting a Space

By 1998, hospital administrators had taken notice of the awards and interventional radiology’s presence on the care team. Impressed with the efforts, administrators agreed to support the cost of transforming a small waiting room into a clinic for IR outpatients. But the IRs didn’t have a receptionist, clinic nurses, interns, or residents to support the clinic. Eventually, they spent their own money to hire a nurse practitioner.

Despite the staffing challenges, the IRs pressed on. “All of us saw this outpatient

clinic as a ‘must-do’ situation,” Angle explains. “The ability to provide ongoing clinical care, even for non-hospitalized patients, is where IR needed to go. The clinic was not only an opportunity but also a responsibility we had to our patients.”

The IRs took several steps to ensure the clinic’s success. Among them, they made a concerted effort to actively participate in tumor boards and collaborate with other specialties to optimize treatment plans. “If you’re going to build a practice, you can’t be a wallflower at tumor boards,” explains Angle, noting the importance of understanding the anatomy, pathophysiology, and natural history of the disease from both the IR perspective and the perspectives of others in the meetings.

They also committed to making themselves available whenever a patient or referring provider requested services. “By making the clinical pathway easy for both the patient and the referring providers, we can help them navigate the way to optimize the patient’s care,” Matsumoto says.

Securing Leadership Support

After opening the clinic, the IRs focused on growing the practice and conveying a message to hospital administrators that IRs, like cardiologists and gastroenterologists, need robust infrastructure to provide meaningful longitudinal care. In making their case, the

IRs emphasized the positive outcomes that IR brings, especially for trauma, transplant, dialysis, oncology, and vascular disease patients.

Matsumoto also established credibility in part by demonstrating IR’s impact as a contributor to positive business margins and its role in providing the immediacy of care required of a hospital that is both a Level 1 trauma and transplant center. Additionally, he noted that when compared to the 21 other clinical departments in the hospital, IR is the fifth largest referrer for outpatient imaging studies — a metric that got administrators’ attention. “When asking for resources, it’s important to explain the business IR brings to the table and the return on investment (ROI) it provides,” Matsumoto advises.

Jim Amato, then radiology administrator and now chief of clinical ancillary services at UVA Medical Center, admits that he didn’t initially appreciate that the IR clinic needed resources and support, just like any other clinic, but the data the IRs presented, including number of clinical visits, staffing-to-demand ratios, and outcomes measurements, convinced him. “When viewed through that lens, it’s clear that the IR clinic really should be seen as an ambulatory operation, not just an appendage of a radiology suite,” he says.

Achieving Significant Growth

In 1999, as UVA began planning a hospital expansion primarily for cardiology and the operative suites, Matsumoto, along with his cardiology and surgical colleagues, convinced administrators to include IR in the discussions for clinical space. Once approved, he and Angle spent four years designing plans and mapping out every square foot of what became their clinical home in 2006.

Between 1997 and 2006, they increased the number of physician extenders from one to six, and the nursing staff grew from two to 13 staff members. “This took ongoing continuous negotiation with administrators to demonstrate not only our growth but also the ROI in our services,” Matsumoto explains.

Today, UVA’s IR team performs about 15,000 procedures on more than 6,000 patients annually and sees 2,500 outpatients in the clinic



Alan H. Matsumoto, MD, consults with patient Christina M. Swanson in the UVA IR clinic about her past medical history and current clinical symptoms in preparation for a discussion about potential treatment options.

each year, a volume that continues to increase. The IRs treat a wide range of conditions, including vascular and nonvascular diseases, and have a separate and very active interventional neuroradiology outpatient clinic.

"Having a wide breadth of less-invasive procedures available to our patient population, with access to all our subspecialty physicians, has been critical to our success as an institution," Amato says. "Our patient satisfaction in IR is extremely high because the patient has an early and ongoing relationship with our IR physicians pre-procedure, during the procedure, and then post-procedure and beyond."

Preparing the Next Generation

Sometimes, though, the IRs have the greatest impact when they don't perform a procedure at all. "We impart our clinical judgement about improving the patient's health versus being solely a proceduralist," Matsumoto says. "To just complete a procedure because it's requested makes you a passive participant and glorified technician rather than an integral part of the care delivery decision process. We want to use our expertise to help drive care decisions."

It's an approach UVA's IRs strive to impart to their trainees. "The university setting is unique because we're training the next generation of IRs, instilling in them the belief that they're accountable to and responsible for not only the acute but also the longitudinal care of their patients," Matsumoto says. "We teach them that if you leave the hospital early instead of seeing your patients, you're deferring to the other services as being the primary manager of those patients."

Trainees are fully immersed in this philosophy as part of the Vascular and IR (VIR) clinical pathway that UVA implemented in 2001. Medical students are directly matched into the six-year pathway, just like all other residencies. Angle engineered the curriculum to ensure that VIR residents receive dedicated clinical experience during their residency.

"When the VIR clinical pathway was implemented, it was our belief that the next generation of IRs would now have the opportunity to experience formal clinical training beyond an internship year so that they would actually feel much more

comfortable admitting and taking care of patients both acutely and longitudinally," Matsumoto explains.

Making a Difference

Taking ownership of patients in this way means assuming responsibility for them in their most vulnerable states. "I am fortunate enough to have access to a doctor who has saved my life," Womack says. "Dr. Matsumoto is just of a different class of physician, not just in his technical skills, but in the compassion he has shown me."

Knowing that UVA's IRs are committed to preserving and advancing this patient-centered approach means a lot to patients and families. Stuart believes this approach was central to those extra years he got with his wife, Betsy.

"We had the very best hands-on care that anyone could ever have," says Stuart, who is so thankful for the care his wife received that he has established grants and programs in her honor to further research and education at UVA. "Dr. Angle was there with me and Betsy whenever we needed him," he says. "It made all the difference."

By Kerri Reeves

Next Steps

- Identify suitable clinic space to meet with IR patients before and after their procedures and to collaborate with referring specialties to optimize care.
- Gather data on IR procedures, clinic visits, and consults to demonstrate the ongoing positive impact of IR on patient care. Such data will demonstrate IR's positive ROI and will help justify the need for increased support for IR services.
- Continue to iterate the IR training curriculum to meet new clinical demands and business models and facilitate an ongoing culture shift toward patient-facing and patient-focused IRs.

RESOLUTION IDEAS

Suggestions to help you achieve the principles of Imaging 3.0.



Spend more time consulting directly with patients



Use social media to engage colleagues, referring physicians, and patients



Join a hospital or healthcare system committee or board



Include my phone number in my reports for referring physicians and patients



Identify challenges to optimal patient care and work to overcome them



Take intentional steps to interact with colleagues outside of the reading room



Pay attention to my mental and physical health and take breaks when necessary



Make time to learn something new for personal or professional growth



Reach out to referring physicians to build or strengthen collaborative relationships



Leave my workstation to eat lunch and rest my eyes



Read a book, magazine, or article for enjoyment



Help referring physicians implement clinical decision support



Do more to ensure patients stay at the center of everything I do



Take actions to promote inclusivity within my department and beyond



Obtain leadership skills through training programs, such as the Radiology Leadership Institute®, and mentorship opportunities

Virtually Connected

Radiologists at Massachusetts General Hospital use virtual consults to view findings with patients and Primary Care Physicians.

KEY TAKEAWAYS

- Building off of Massachusetts General Hospital's existing patient consultation clinic, radiologists develop a virtual consults program that allows them to remotely review their findings with patients and primary care physicians (PCPs).
- Virtual consults give patients a better understanding of their diagnoses and how their bodies are responding to treatment, while keeping their PCPs in the loop.
- Approximately 90% of patients who had virtual consults say the encounters significantly improved their healthcare experience.

A primary care physician (PCP) at Massachusetts General Hospital (MGH), Susan E. Bennett, MD, dreaded those moments: She would sit to review an imaging study with a patient and point out some type of abnormality — a lung nodule, perhaps, or a small amount of emphysema on an older smoker's lungs. Then she would do her best to explain the results and reassure the patient that an abnormality was not always as bad as it might seem.

But the imagination runs wild. And in those instances, Bennett would often see an all-too-familiar look in the patient's eyes. "I'd see a look that conveyed fear and confusion," Bennett says. "I struggled to find the language to explain what an incidental finding means. Patients were hearing about findings that seemed scary, and I was unable to reassure them. PCPs don't have the training to point out subtle abnormalities on imaging studies or explain the differential diagnoses of incidental findings."

The solution: In early 2016, MGH embarked on a virtual radiology consultation pilot program that would allow patients to discuss their results directly with the doctor who knows imaging best — the radiologist. By early 2017, the pilot — which involved two radiologists, three PCPs, and 10 patients — was expanded to include five radiologists and more than 50 patients.

So far, the program has had a positive impact, with 90% of patients saying that the consultations markedly improved their healthcare experience. And the radiologists are benefiting, too.

"Radiologists have an image problem — few avenues exist for radiologists to talk to patients, and very few patients know their radiologist. An image is worth a thousand words, but that doesn't matter if we don't explain the findings," says Dania Daye, MD, PhD, a radiology resident at MGH. "Programs like this change how patients and other physicians perceive us. This is a great opportunity



Dania Daye, MD, PhD, a radiology resident at Massachusetts General Hospital, co-led implementation of a virtual consults program that allows patients to discuss their images directly with a radiologist through videoconferencing.

for radiologists to contribute more directly to patient health and to increase our own value by becoming more involved with patients."

Expanding Results Delivery

The virtual consults program has roots in a 2012 initiative that started when a woman with cancer asked her radiologist to see her imaging so that she could better understand how her treatment was working. That encounter led a team of MGH radiologists to establish a clinic in which they conducted in-person consultations with patients during limited hours.

Patients responded favorably to the in-person consultations — they started following their doctors' advice more regularly and sticking to care regimens more often. But the in-person consults were held at MGH only once a week, so in early 2016, Daye and

Related Content

Direct to Patients

Massachusetts General Hospital's radiology consultation clinic puts radiologists in direct contact with patients.
acr.org/Direct-to-Patients

a colleague brainstormed ideas to give more patients direct access to their radiologists.

They came up with the concept of virtual consultations and pitched it to radiology department leaders, who saw the potential benefits and greenlighted a pilot program. "As we thought about scaling our results delivery program, we decided that the virtual consults would provide an efficient way to broaden our reach without disrupting our workflow," says Daye, noting that the original in-person clinic also remains in operation.

Engaging Radiologists

To start, Daye and her team selected a couple of radiologists who already embraced the idea of direct communication with patients to take part in the pilot. Daye notes that no radiologists had to be convinced of the concept's merits. Indeed, she says, "During the initial pilot, we were approached by many other radiologists who had heard about it and were interested in participating."

While MGH's radiologists were eager to join the project, some worried about the amount of time the virtual consults would take. These concerns were quickly dispelled, however, when they realized that the average virtual consultation lasts fewer than seven minutes.

"I was particularly sensitive about making sure this program would not interfere with our other duties, so we kept it simple, and we're instituting it incrementally," says Dushyant V. Sahani, MD, director of computed tomography at MGH and associate professor of radiology at Harvard University. "As we do more of these consults, we expect them to just blend into our normal workflow."

Empowering Patients

The radiologists then partnered with three PCPs, who began recruiting patients for the project. The PCPs asked patients during their regularly scheduled appointments if they would be interested in the virtual consults, providing them with an informational brochure that MGH developed. Ten patients participated in the initial pilot.

Each consult unfolds the same way: When a patient opts for a consult, the PCP calls a radiologist in the same specialty and says

that the patient would like to speak with him or her. The radiologist then uses videoconferencing in the reading room or any other place with an accessible computer and a camera to appear virtually in the patient's exam room.

On the patient's end, the consults are conducted on an iPad, the first of which was purchased with money from a small grant that Daye secured from MGH's Center of Expertise in Quality and Safety. The rest were purchased with a grant the team secured from the ACR. The iPads feature split screens that show the images on one half and the radiologist on the other, or the radiologist in a smaller window on the bottom left and the patient's images on the rest of the screen. The setup allows the radiologists to review the images and findings directly with patients and their PCPs.

The goal is to educate patients about their findings, motivating them to make healthy lifestyle changes and to follow their doctors' orders. The thinking, Bennett says, is that when patients see their clogged arteries, they will get more serious about losing weight, and when they see their damaged lungs, they will be more inclined to quit smoking.

"As radiologists, we don't always factor in how much we need to share information with patients and how interested they are in their care," Sahani says. "It is remarkable how engaged patients become when you actually discuss their bodies with them. Empowering them with this knowledge is in their best interest. It's their data, after all."

Gauging the Impact

Survey results show that patients in the initial pilot found value in the virtual consults, which they said helped them better understand their care. Based on this positive response, the hospital secured an ACR Innovation Fund Grant in January of 2017 to expand the pilot program to five radiologists and more than 50 patients.

Daye wrote the grant proposal with input from Bennett and Sahani. "The objective was to assess the value of virtual consultations with primary care providers and patients as a new means of optimizing patient-centered care in radiology," Daye says.

During this expanded pilot, the PCPs



Susan E. Bennett, MD, primary care physician at Massachusetts General Hospital, appreciates that the radiologists are available to talk with patients about their image findings.

found that patients were following doctors' orders better than patients who were not involved in the virtual consults. "Patients told us that they understood their medical conditions a lot better after interacting with the radiologists, asking questions, and seeing firsthand what the insides of their bodies look like," Daye says. "As a result, they were more apt to take actions, such as losing weight, to improve their health."

According to surveys, 90% of patients in the expanded pilot were "very satisfied" with the virtual consult experience. They found listening to the PCP and radiologist discussing their care particularly beneficial. "The consults give patients insight into how we think and how we make decisions, which is important because things are not black and white in medicine," Bennett explains. "The more information patients have about what's going on with their health, the better."

The radiologists intend to track these patients to study the program's lasting impact. "In the expanded pilot, we are demonstrating the overall value of the framework," Daye says. "Next, we intend to conduct long-term patient follow-up to look at patient outcomes in specific diseases."

“When we talk to patients, radiologists can make a tremendous contribution to their care by giving them a better understanding of their conditions, diagnoses, and treatments.”

—Dushyant V. Sahani, MD, FACR



Dushyant V. Sahani, MD, FACR, director of computed tomography at Massachusetts General Hospital and associate professor of radiology at Harvard University, says the virtual consults program empowers patients as active participants in their care.

Looking to the Future

For Bennett and other PCPs, the program helps drive higher quality care. “Now, when a patient has a finding on an imaging exam, I no longer have to stumble through, trying to explain what the finding means,” Bennett says. “I know I can loop in the radiologist to provide a detailed explanation of the finding, and then the patient and I can work together to determine the next steps in their care.”

MGH’s radiologists have also responded favorably to the program. By interacting with patients, even in this virtual way, the radiologists are no longer regarded as ambiguous figures who sit in dark rooms all day examining images. Instead, they are viewed as they should be: as key members of the care team focused on improving patient health.

The results of the pilot have been so positive that MGH’s radiologists have adopted the

virtual consultations as a permanent initiative, adding more PCPs and extending the program to include surgical specialties, such as urology.

They also envision developing a template that other radiologists could follow to implement similar virtual consults at their own institutions, and they hope to eventually collaborate with other radiologists to test the program at institutions nationwide. Daye says that such consults could be particularly beneficial in rural areas where patients and their radiologists are often separated by hundreds of miles.

Sahani says that efforts like this are critical to advancing high-quality care. “When we talk to patients, radiologists can make a tremendous contribution to their care by giving them a better understanding of their conditions, diagnoses, and treatments,” he says. “And the bonus is that we can see the difference we are making directly with the patient and the PCP. We don’t always get that kind of feedback. This is a fantastic model for the future.”

By Chris Tognen

Next Steps

- Secure technology that will allow radiologists to meet with patients and primary care physicians virtually to review images and findings.
- Start with a pilot project that includes physicians who understand the benefits of radiologists delivering results directly to patients.
- Show patients their images and describe the findings to help them better understand their diagnoses and treatment options.

QUESTIONS FOR GOAL DEVELOPMENT

Topics to get you thinking about your goals.

- How can I further integrate into the patient care team?
- What can I do to increase my interaction with patients?
- What do I want to learn this year, and what steps can I take to learn it?
- What can I do to start or enhance my practice’s lung cancer screening program?
- How can I help my team improve patient care?
- What is one challenge in my department that I can help resolve?
- How can I reach out to underserved patients in the community to ensure they receive appropriate medical care?
- How can I be a champion for clinical decision support?
- What tools can help me expand my work outside of the reading room?
- How can I involve my group in efforts to “ditch the disk” and advance electronic image transfer efforts?

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