

March 2019



IMAGING 3.0 IN PRACTICE

# Leaders in Patient Engagement



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## IMAGING 3.0 IN PRACTICE

### Leaders in Patient Engagement

To truly deliver value-based medicine, as outlined in Imaging 3.0®, we must engage patients and families and directly involve them in care decisions. While this is unfamiliar territory for many of us, the ACR is committed to strengthening radiologists' ability to lead in this new paradigm.

Toward this end, the ACR established the Commission on Patient- and Family-Centered Care (PFCC) about four years ago. The commission initially had approximately 45 members and has since grown to comprise seven committees and more than 120 members – including patients, patient advocates, and caregivers. A fundamental concept of the PFCC is that the person closest to the problem is closest to the solution. In other words, engaging patients and families is critical for improving the patient experience.

This means not only involving patients and families in the care setting but also in decision-making that impacts our profession and the healthcare system as a whole. Patients now participate in multiple ACR activities from the JACR® editorial board and the patient-friendly ACR Appropriateness Criteria® summary work group to annual meeting presentations and educational webinars.

The ACR has embraced engaging patients and families in our profession and in our organization. At the 2017 annual meeting, the Council Steering Committee passed a resolution to explore other opportunities for patients in the ACR. This rapid growth of patient engagement in radiology can be attributed to the progressive thinking of our membership and our continued adaptability.

The case studies in this collection highlight specific ways some radiologists are engaging patients and adding value as a result. From explaining imaging findings directly to patients and sharing their phone numbers with patients to creating videos that explain imaging exams and sending patients follow-up imaging reminders, radiologists are blazing a trail in the delivery of comprehensive, patient-centered care.

As you read these case studies, I urge you to ponder what additional improvements we can make in healthcare with patients as our partners.

**James V. Rawson, MD, FACR**  
*Chair of the Commission on Patient- and Family-Centered Care*

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#### Share Your Story

Have a case study idea you'd like to share with the radiology community? To submit your idea, please visit [acr.org/Suggest-a-Case-Study](http://acr.org/Suggest-a-Case-Study).

# Virtually Connected

Radiologists at Massachusetts General Hospital use virtual consults to review findings with patients and PCPs.

## KEY TAKEAWAYS

- Building off of MGH'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 percent 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 percent 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



*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.*

this change how patients and other physicians perceive us. This is a great opportunity 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 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. ([Learn more in the Direct to Patients case study at \[acr.org/Direct-to-Patients\]\(https://www.aacr.org/Direct-to-Patients\)](https://www.aacr.org/Direct-to-Patients))

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 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 in-person clinic also remains in operation.

## 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



*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.*

**"The more information patients have about what's going on with their health, the better."**

— Susan E. Bennett, MD

## 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 7 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, FACR, 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."

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 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



*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.*

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 percent 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."

## 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."

## 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.

*By Chris Togneri*

## FOR DISCUSSION

*What value do virtual consultations bring to patient care, and how do they strengthen the radiologist's role on the healthcare team?*

*How can your team partner with primary care physicians to review images and findings virtually with them and their patients in the clinical setting?*

*What technology does your team need to offer virtual consultations to patients, and how can it go about securing the funding for the technology?*

## FURTHER READING

*To learn more about delivering results directly to patients, check out these articles:*

### Instant Results

With the help of technologists, radiologists in Colorado are taking a more active role in patient care through an immediate results delivery program. [acr.org/Imaging3-InstantResults](https://www.acr.org/Imaging3-InstantResults)

### Class Act

Radiologists get a lesson in conveying empathy to patients. [acr.org/Imaging3-ClassAct](https://www.acr.org/Imaging3-ClassAct)

# 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 percent in 2009 to 95 percent by 2014 and continued to climb to 98 percent 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.

Kornbluth appreciated this verbiage because it accomplished two things: First, it



*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.*

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





*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.*

## 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*. ([Read the article at bit.ly/ReducingUncertainty](https://www.nytimes.com/2018/03/26/us/health/radiology.html))

"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 percent in 2009 to 95 percent 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 percent 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 immediate diagnosis, rather than waiting a couple of weeks for an appointment with my referring doctor."



*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.*





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.

## 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 loop in the referring physician. If patients ask 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."

## 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.
- Share positive feedback throughout your practice from referring physicians and patients who call you; this builds buy-in and reassures radiologists who are reluctant to include their phone numbers.

By Brooke Bilyj

## FOR DISCUSSION

*What process must referring providers and patients currently follow to reach you and the other radiologists on your team for consultation about imaging exams and results?*

*What value would providing your phone number in your reports bring to referring physicians and patients? How would it help you and your team integrate more fully into the patient care team?*

*What obstacles do you see in including your phone number in your reports, and what can you do to address these challenges?*

# Visual Learning

Radiation oncologists and neuroradiologists collaborate on personalized videos about cancer patients' specific symptoms and treatment plans to help relieve anxiety.

## KEY TAKEAWAYS

- Radiologist-narrated videos focusing on each patient's tumor sites and expected symptoms serve as concrete educational tools about cancer and its treatment.
- Brain atlas software can reveal the specific symptoms that are likely to arise for patients based on tumor location, enabling more personalized discussions and care plans around radiotherapy.
- Radiologists enhance their role on the cancer care team by dictating patient scans and noting probable treatment side effects in videos that can reduce patient anxiety.

**Editor's note:** As this article was in production, our source and friend Sam Taylor was in the final stages of his disease and passed away on December 28, 2017. His wife, Stephanie, wanted this story told as part of Sam's legacy. "I don't feel like cancer beat him. He never lost hope," she says.

Sam Taylor, CEO of Oriental Trading Company in Omaha, Neb., experienced blind spots in his vision during a family vacation in Mexico in October of 2016. Upon his return, a visit to the eye doctor yielded no explanation. However, a subsequent MRI showed a mass of the worst kind: grade IV glioblastoma multiforme (GBM).

"They told me I had 15 months to live," Taylor recalls. "I felt like I got kicked in the gut."

The father of three moved to Houston for treatment at the University of Texas MD Anderson Cancer Center, where he underwent laser interstitial thermal therapy surgery, followed by a six-week chemotherapy and radiation standard-of-care regimen. The emotional trauma for Taylor and his family, the uncertainty of treatment options, and the pure overload of self-directed disease research was overwhelming.

"As a GBM patient, you've been given a pretty dire prognosis, and you're fighting for your life," says Taylor, who created a YouTube channel ([Visit the YouTube channel at bit.ly/CancerCuresChannel](https://www.youtube.com/channel/UCyCancerCuresChannel)) in hopes of uniting the world in the battle against cancer. "You just want information, but the diagnosis and treatment often seem unclear, and physicians aren't always forthcoming with the information patients want to know."

Taylor's experience isn't unique. In fact, his doctor, Caroline Chung, MD, assistant professor and director of MR research in MD Anderson's department of radiation oncology, says many patients feel added stress as they work to comprehend their complex diagnoses and treatments and try to share this information with their family and friends.

To help, Chung and her colleagues have developed personalized patient-facing videos that explain the expected symptoms during radiotherapy in relation to their brain MRI findings and their radiotherapy plan — and, so far, the reviews are positive.

"Until I saw that video, I didn't fully understand or appreciate the science of radiation



Sam Taylor, the CEO of Oriental Trading Company who died in December of 2017, found the personalized videos invaluable during his treatment.

therapy," Taylor explains. "Patients are under a lot of stress, especially before viewing imaging results — 'scanxiety,' it's called. Patients often feel better when they have a greater understanding of their disease and treatment. It definitely helped me."

## Personalized Education

The videos go beyond how physicians traditionally educate glioblastoma patients about their disease and treatment.

Typically, physicians give patients informational pamphlets that detail an exhaustive list of potential symptoms over time. But each radiation treatment plan is different: Radiation is a local treatment that is aimed at regions of visible tumor and regions of potential microscopic spread. Therefore, most patients won't experience every side effect listed in the pamphlets.

This "exhaustive list" approach to patient education can lead to more questions than answers and can exacerbate anxiety

in patients and caregivers, Chung says. "If patients knew specifically what symptoms to expect for their unique situations, we'd be providing not only education, but hopefully a way to relieve some anxiety surrounding the unknown," she says.

To that end, Chung began creating short, personalized videos to educate glioblastoma patients about their specific tumors and possible symptoms. A neuroradiologist dictates the cases in the videos, providing clinical expertise in patient-friendly terms to alleviate anxiety.

## Video Program

Chung has kicked off her program by selecting candidates from MD Anderson Cancer Center's glioma population — patients with tumors that originate in the glial cells of the brain or spine. She provides radiation therapy plans with detailed dosimetry information to L. Anne Hayman, MD, emeritus professor of neuroradiology at MD Anderson, who reviews them along with MRI findings.

Hayman prepares a dictated narrative about functional components of the brain impacted by both the tumor's size and location and the prescribed radiation treatment. The two-minute videos, which utilize advanced image processing, also address possible areas of inflammation or complication in the brain.

Hayman has enlisted the help of medical students and assistants to edit and assemble the final narratives within 48 hours of onsite recording, and the digital videos are shared either electronically or in-person with patients. "Radiation is a local therapy, but it's a nebulous concept to many people," Chung says. "With the videos, we can actually show patients which portions of their brains the radiation affects. It's a visible and more concrete way of explaining their conditions. As they say, a picture is worth a thousand words."

Taylor agrees that seeing exactly where the treatment will be applied is helpful, especially for visual learners. "You see your brain, you see your tumor, and they show you your radiation plan," Taylor says. "The video even described areas that Dr. Chung wanted preserved, like where my long-term memory lies. That really resonated with me."

## Technology that Touches

In dictating the personalized videos, Hayman enhances presentation of the MRI findings with brain atlas software that correlates affected brain regions to specific patient symptoms or side effects, creating one integrated image for illustration purposes.

Hayman, a neuroradiologist who is also the founder and medical director of Anatom-e Information Systems, spent years developing this digital atlas of tumor location information to help physicians give patients exactly what they wanted: a succinct report about how their tumor and its treatment would impact their brain.

Hayman says that patient understanding drove her to develop the atlas. By explaining how the treatment "attacks" a tumor, the patient and care team can engage in frank dialogue about patient needs and wants regarding life after treatment.

For example, one patient told Hayman that she'd rather die than lose her vision, so the radiation therapy team took strict measures to preserve the fibers central to her sight during a treatment near the pituitary gland. "We made something people could understand quickly," Hayman says. "What they want to know is, 'What will my future be like?'"

## Functions First

Hayman analyzed 1,250 cases of glioma at MD Anderson to create the atlas and categorize patients' tumors. Using data on tumor location and vein anatomy, she discovered a logical way to categorize tumors and recall the outcomes for previous cases of that type.

The atlas also reports the critical functions that are impacted in each specific area of the brain. It's a dramatic improvement over the traditional pamphlet method of educating patients about the broad range of functions threatened by gliomas.

"The amount of functional detail in the atlas is beyond what most physicians could know off the top of their head," Chung notes. And now it is being communicated in a concrete, simple, and relevant way directly to patients.

In the information era, patients want to know more and expect to be able to take this information mobile, Chung adds. "While



*Caroline Chung, MD, assistant professor and director of MR research in MD Anderson's department of radiation oncology, is leading efforts to create personalized videos for patients and families to better understand their disease and treatment symptoms.*

some practices are using only traditional modes of communication, we need to be creative in the world we live in and use all the tools we have available to us."

## Future Hopes

Chung says that anecdotally the videos have shown that they improve patient care and satisfaction, but she plans to launch an official pilot program to quantify the videos' impact.

Chung is awaiting Institutional Review Board approval to initiate the pilot with funding from a Hackett Family Foundation grant. She plans to launch a randomized, prospective trial of 30 glioblastoma patients to measure patient anxiety levels before and after watching the videos.

After the pilot study is complete, additional studies will compare responses of video-educated patients and their families with those who received traditional communications. The authors hypothesize that videos can save the staff time by answering the patient's questions and addressing the family's concerns.

The videos are expected to improve patient satisfaction and elevate the level of interaction between patient and physician. Still, Hayman notes, this new type



of patient-directed reporting would require new curriculum during radiologist training, which currently focuses on differential diagnosis rather than the real-world meaning of imaging findings.

Chung and Hayman also envision potential applications of patient narratives for other cancer types and affected body regions. Responding to patient vulnerability requires thoughtful, clear communication, and the researchers hope these videos will help meet that need.

## Next Steps

- Identify a patient population that would benefit from personalized narrated videos at your institution, assigning roles to radiation therapy and radiology team members.
- Aggregate medical images and radiation and dosimetry information, and acquire the necessary software for creating integrated treatment images.
- Share video narratives directly with patients in an effort to increase patient satisfaction and clinical workflow efficiency.

By Kerri Reeves

## FOR DISCUSSION

*How can your team partner with other care providers to help patients with complex medical conditions better understand their diagnoses and treatment plans?*

*What are the benefits of educating patients about their individualized symptoms and treatment regimens? How does this improve patient care?*

*What resources can you provide to help patients better understand their particular diagnosis, symptoms, and treatment options?*

# Hello Rounds

A Milwaukee radiologist greets and converses with patients to make them feel more at ease.

## KEY TAKEAWAYS

- For several years, radiologist Ian A. Weissman, DO, FACR, has conducted “Hello Rounds” to greet patients awaiting treatment at the Milwaukee VA Medical Center.
- Inspiration to conduct these rounds came from time spent learning from innovative leadership practices discussed at the Radiology Leadership Institute (RLI) ([Learn more at acr.org/RLI](#)).
- The rounds increase radiologists’ visibility to both patients and clinical staff, emphasizing a team approach to patient care.

On a recent busy day in the Milwaukee VA Medical Center’s radiology department, radiologist Ian A. Weissman, DO, FACR, emerged from the reading room to find four patients on stretchers in the hallway, awaiting care.

While it is not uncommon to find patients waiting just outside of the reading room, four was a particularly high number at once. Still, Weissman was not discouraged from greeting each patient with a smile and a “hello.” Instantly, the patients lit up, and both Weissman and the patients were in happier moods, with Weissman even feeling a renewed sense of purpose.

## Thinking Differently

Weissman has been conducting these “Hello Rounds” in his department for several years. During the rounds, he leaves his reading room and says hello to each radiology patient he encounters. If the patient wants to engage in conversation, Weissman usually exchanges pleasantries or asks if the patient needs anything. When patients learn he is a radiologist, some are surprised while others are unfamiliar with who radiologists are entirely. This interaction gives Weissman the opportunity to provide more information about radiological care and to demystify the role that radiologists play in patient care.

Weissman conducts these rounds five to eight times a day, with each encounter lasting just a few minutes and taking very little time away from his traditional work. The rounds are informal, so Weissman doesn’t document the names of the patients he talks with or track them in any way. He does it simply to put patients at ease and to let them know that someone cares.

“Most people assume that these patients are being taken care of, and walk past them like they’re fixtures in the hallway,” Weissman says. “Nothing is lonelier or scarier than being on the stretcher in a hospital, waiting



Ian A. Weissman, DO, FACR, staff radiologist at Milwaukee VA Medical Center, implemented “Hello Rounds” in his department. During these rounds, he greets patients who are awaiting radiology treatment, helping them feel more at ease.



*Catherine Giannese, registered radiology technologist at Milwaukee VA Medical Center, has witnessed “Hello Rounds” and emphasizes the significant impact they have on both patient and clinical staff morale.*

for something to happen. Just acknowledging these patients can reduce their anxiety.”

## Getting Inspired

Weissman’s involvement in the ACR’s Radiology Leadership Institute® (RLI), a professional training program specifically designed for radiologists, motivated him to begin conducting these rounds. “At RLI, leaders share ideas about how to improve our profession,” Weissman says. “I am consistently impressed with their innovative approaches to care, so I adapt those approaches to my own practice.”

At one RLI event, ACR Board of Chancellors Chair Geraldine B. McGinty, MD, MBA, FACR, inspired Weissman to begin connecting with patients. “Dr. McGinty stressed the importance of arriving to work through the front entrance, not the back,” Weissman says. “The idea is to encourage radiologists to see and engage with patients. I thought, ‘Wow, yeah. That makes a lot of sense. I think I can positively impact patient care by doing that.’ So, I began to walk into work through the waiting room and started engaging with patients as soon as I arrived at work.”

But Weissman wanted to do more. Sabiha Raoof, MD, FACR, chair of radiology at Jamaica Hospital Medical Center and Flushing Hospital Medical Center in Queens, N.Y., was particularly influential in his next

steps. Following her own breast cancer diagnosis and treatment, Raoof began conducting “Make a Difference (MAD) Rounds” at her hospital. ([Learn more at \*acr.org/i3cs-patient\*](http://acr.org/i3cs-patient)) During these encounters, Raoof visited patients in their rooms and asked if they needed anything. This program has since evolved to include several teams of individuals who perform these rounds.

After hearing Raoof discuss MAD rounds at an RLI event, Weissman adapted her concept to the radiology halls of his own medical center, asking the patients he sees whether they need anything — perhaps a warm blanket or an extra pillow.

## Benefiting Patients

While Weissman was eager to interact with patients in this way, he was initially hesitant. “I wasn’t sure how the patients would receive me,” Weissman says. “I made this assumption that sick patients might not want to speak with me, and maybe I should leave them alone. However, that has never been the case.”

Once Weissman started making the rounds, he immediately saw how even this small interaction could have a big impact on the patient experience. “Acknowledging these patients brings them back into the moment and makes them feel better,” he says. “This is something anyone can do to show patients that we care about them.”

Catherine Giannese, a registered radiology technologist at Milwaukee VA Medical Center, has observed these rounds and the positive impact they have on patients. “Inpatients especially feel like they go unnoticed as they await care because many doctors lose the patient care focus and think only about the patient’s procedure or treatment,” she says. “Dr. Weissman’s rounds make patients feel like they are still people despite being ill, on a stretcher, and under a pile of blankets.”

## Connecting the Team

Patients aren’t the only ones who benefit from the rounds; Weissman also gets a lot out of the encounters, especially on frustrating or exhausting workdays. “On busy or challenging days, these rounds might take more effort, but I never skip them,” Weissman says. “When I get that positive feedback from patients, it

perks me up a bit. The benefits are a two-way street.”

What’s more, the rounds allow other staff members to connect more closely with the radiologists and better understand radiology’s role on the care team. “When we don’t see the doctors interacting with the patients, it can feel like they are disconnected from the care process,” Giannese explains. “These rounds emphasize how each person on our team is equally important to the care process and make it clear that we are all here for the same purpose — to help patients.”

Weissman encourages radiologists to modify his “Hello Rounds” to meet the needs of their individual workdays and practices and to consider how much it can mean to patients. “I don’t think patients value a fancy lobby with waterfalls,” Weissman says. “What they value is being treated like family members. Saying hello seems like a small gesture, but it can have a big impact.”

## Next Steps

- Begin shifts by arriving through the front door and engaging with patients on the way into work.
- Greet patients with a smile and a “hello,” and make a point to interact with patients in waiting areas.
- Make patients feel more at ease in treatment areas. Ask if they would like a blanket, or simply engage them in conversation.

*By Chelsea Krieg*

## FOR DISCUSSION

*What opportunities do you have to informally interact with patients?*

*How can informal interactions with patients help solidify the role of radiologists on the care team?*

*How can interacting with patients impact your work and your career outlook?*

# Watch and Learn

California radiologists implement patient-facing videos to decrease patient anxiety and physician burnout.

## KEY TAKEAWAYS

- The Holvan Group has developed a database of over 150 patient-facing videos that provide informative and succinct introductions to physicians, procedures, safety measures, and medications.
- Showing patients videos before a procedure helps alleviate their anxiety and increases their overall satisfaction with care.
- Introducing pre-procedural videos significantly decreases physician burnout by streamlining redundant tasks and providing consistent information to all patients.

After an MRI revealed a lesion on one of his kidneys, San Luis Obispo County, Calif., resident and attorney John Normanly knew he needed to act quickly. At his urologist's recommendation, Normanly made an appointment with Stephen R. Holtzman, MD, interventional radiology (IR) specialist and CEO of Radiology Associates, for a tumor ablation.

Normanly went to the hospital on the day of his procedure and was surprised when, in the preparation room, a nurse handed him a tablet computer and asked him to watch a couple of short videos before he discussed the procedure with Holtzman. The first video introduced Holtzman as the treating physician and outlined his training as an IR surgeon, his community service work, and his credentials, while the second video described what would happen during the procedure.

"Before the videos, I didn't know what I was getting into; I just hoped I would be going home at the end of the day," Normanly says. "Procedures like this always invoke a fear of the unknown, but the videos relaxed me. I knew who my doctor was and what he was going to do to my body before I even talked with him."

As demands on physicians have increased, opportunities to connect with patients like Normanly have decreased. To return the focus to building patient relationships, Holtzman founded the Holvan Group and developed a series of patient-facing, customized videos that enhance the patient experience, improve quality of care, decrease physician burnout, and reduce waste.

## Making a Change

In 2013, after years of frustration with the way volume-driven demands in medicine had increased physician burnout and decreased interaction with patients, Holtzman decided to make a change. "I really longed for the days when I could spend time getting to know my patients, and I wanted to see if I could bring that back," he says.



*Stephen R. Holtzman, MD, interventional radiology specialist and CEO of Radiology Associates, co-founded a program that implements patient-facing videos into pre-procedural medical practices.*

For years before developing his first video, Holtzman used PowerPoint presentations to explain procedures during patient consultations. The presentations took approximately 30 minutes, and despite Holtzman's best efforts, patients often had dozens of questions.

Holtzman felt as though patients often didn't fully understand or feel comfortable with the material. Instead of getting to know the patients and soothing their anxieties, Holtzman spent consultations answering basic questions about the procedures (often the same ones over and over), leaving little time to create the interpersonal relationships he desired.

As his dissatisfaction increased, Holtzman attended California Radiological Society meetings and drew inspiration from speakers who emphasized the importance of minimizing hospital waste and returning the focus to patient care. That's when Holtzman got the idea to adapt his PowerPoint presentations into short, informative videos that described



IR procedures in depth, using simple language and images.

Soon thereafter, Holtzman began working with consultants, who were already in his hospital assisting with the implementation of lean management principles, to turn his idea into reality.

## Understanding the Patient Perspective

Holtzman hoped to reimagine the entire patient care process. "I started thinking about care from the very beginning to the very end of the patient's experience," he says. "What are the patients' biggest anxiety points and biggest frustrations?"

To better understand patients' pain points, Holtzman interviewed patients, schedulers, receptionists, and nurses. Through these conversations, he identified several "bottle-necks" in the patient care process, many of which occur even before the patient arrives at the hospital. "When the nurse calls you the night before a procedure, he or she tells you a lot of information. If you're lucky, you might remember 10 percent of it," Holtzman says.

He explains that patients usually remember to leave their valuables at home, for example, but then come to the hospital without identification or health insurance cards. "I thought, 'Wow, there's probably a couple hours wasted here every day because of little things like this,'" he says, adding that "every delay pushes every other case back; it's a domino effect."

Holtzman also found that one source of patients' anxiety was not knowing the physicians performing their procedures. To address this, Holtzman created a series of videos, like the one Normanly viewed, that provide brief biographical information about the physicians who work at the hospital. "These videos reach out directly to the patient and eliminate some of the fear of the unknown," Normanly says.

In addition to physician biographies, Holtzman created videos that discuss the importance of pre-procedural safety practices,

such as hydrating only until midnight, and ones providing practical information, including where to park upon arriving at the hospital. Others outline the risks and benefits of the procedure, so patients understand and are able to digest protocols before the consultation takes place.

## Making Connections

Since Holtzman began using the videos, he has seen a considerable change in his patients' attitudes and comfort levels. "Patients who watch the videos arrive with many of their questions answered, so there is more time to get to know them," Holtzman explains. "After they've seen the biographical video, I can say, 'OK, you know a little bit about me; why don't you tell me a little about you?'"

At that point, Holtzman says that most patients become immediately more comfortable. They stop looking at the monitors and the table and start talking about their passions. "I had a guy a couple weeks ago who worked on the space shuttle, and I thought that was fascinating. I never would have known that if we had to spend all of our time discussing basic information about the procedure," he says.

Normanly was so impressed with the videos that he suggested that Holtzman share them with other medical organizations. In early 2017, The Holvan Group began offering its videos to other medical facilities.

Holtzman co-founded The Holvan Group with Michael Hollida, a software developer and IT consultant who created a HIPPA-compliant web server that allows patients to access the videos before they even arrive at the hospital.

When a patient schedules an appointment, the scheduler enters his or her information into the patient education portal and the patient receives an email with a link to view the videos for his or her procedure: one video introduces the patient to the physician who will perform the procedure; another video describes where to park at the hospital, what to bring to the procedure, and how to prepare for the procedure; and a third video explains the procedure in detail.

## Boosting Satisfaction

Across the board, patients have been pleased with the videos. After a nine-month pilot at Sierra Vista Regional Medical Center, 90 percent of surgical patients surveyed experienced overall satisfaction, and 97 percent felt prepared for their procedure after watching the videos and even before speaking with the physician.

According to patient feedback cards, some patients found the videos so helpful that they viewed them multiple times before their procedures, and others named them superior to paper handouts with the same information. "It's saying to the patient that I care enough about you that I

*Nurses provide tablet computers to patients before procedures. Patients watch videos that introduce the physician who will perform the procedure and explain procedure details.*



PHOTO COURTESY OF THE HOLVAN GROUP.

really want you to know what I am doing," Normanly says.

Not only have the videos reduced patient anxiety and increased patient satisfaction, but they have also significantly reduced physician burnout. Patients now arrive at the hospital with many of their preliminary questions answered, freeing Holtzman to see twice as many patients each day and allowing him to consistently end his work day around 5:30 p.m., instead of 8 p.m.

"It's been a huge help for my family life," Holtzman says. "I go home happy because I am stimulated by hearing my patients' stories, and I can tell my patients are happy again."

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## The videos "freed me up to focus more on patient satisfaction by more effectively alleviating their fears."

— Dean Black, MD

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Dean Black, MD, medical director at St. John's Regional Medical Center, who has been piloting Holtzman's videos since March of this year, also has positive feedback. "It's freed me up to focus more on patient satisfaction by more effectively alleviating their fears. When I see patients, they have already seen a well-designed video that tells them what the procedure will entail. We can immediately start building trust that is so crucial in the patient-doctor relationship," Black says.

Hamed Aryafar, MD, interventional radiologist and associate clinical professor at the University of California San Diego, has also been utilizing the videos in clinical and procedural settings. "I think they are hugely important in patient education and satisfaction," Aryafar says. "I can see the dramatic difference it makes in the patient's understanding of the procedures."

### Maximizing Efficiency

Black also points out that the videos protect the patients and hospital by providing a detailed and consistently informative procedural description. "If you are busy, your procedural descriptions may be less thorough," Black says.

"The videos allow you to give a consistent message across the board."

Holtzman is also hopeful that the videos will help implement lean management and Triple Aim principles, which also focus on improving patient care and population health, while minimizing systemic waste and reducing cost. As redundant tasks are automated and workloads are streamlined, physicians may work more efficiently and effectively.

"These videos set the standard for patient care in the hospital," says Kim Brown Sims, vice president of patient care services for Queen of the Valley Medical Center, who helped implement the videos during the

pilot at Sierra Vista Regional Medical Center. "They set the bar for the staff because they tell the patient what to expect. If the patient doesn't receive that care or something promised isn't done, he will ask. It's a single technology that has the potential to raise your staff and patient satisfaction as well as your surgical outcomes, all of which benefit hospital ratings and help patients take control of their health."

### Looking Ahead

Holtzman's video library now includes more than 150 videos, with over 60 focusing on radiological procedures for both diagnostic and IR topics (along with others that discuss patient safety, medication, and procedure preparation). All of the videos have been translated into Spanish by a certified medical translator. "Doctors have dreamed of something like this for years. Our patients deserve the highest quality care; these videos propel us toward that objective," Black says.

Holtzman is hopeful that his videos will extend beyond radiology to all fields of medicine, and he encourages others to look for ways to address problems they see in

the healthcare community. "We can bury our heads in the sand and just say, 'I'm too busy,' but I think physicians should take a leadership role and think about how we can make it easier on the patient," he says. "Invest a little time every day. Try to inspire a couple of people to do the same, and you will see profound results."

### Next Steps

- Get patients involved with their care by asking how to reduce anxiety and provide overall better service. Check out additional patient-facing resources on RadiologyInfo.org.
- Attend conferences and local meetings to get inspired by and connect with patient satisfaction innovators.
- Consult with clinical and administrative staff to brainstorm ways to identify and streamline tasks that take time away from patient care.

By Chelsea Krieg

### Further Reading

See other ways radiologists are using videos to relieve patient anxiety in "Visual Learning" on page 10.

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## FOR DISCUSSION

*How much time do you and your staff currently spend explaining radiology procedures to patients and answering their questions about their imaging exams?*

*How often do patients arrive anxious and unprepared for their imaging exams? What impact does it have on efficiency in your practice?*

*What can you do to ensure patients arrive prepared for their imaging exams? What role could videos and other resources play in helping patients better understand their imaging procedures?*

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# Redesigning Care

Emory University creates a unique consultative environment to deepen radiology's role in the provision of patient-centered cancer care.

## KEY TAKEAWAYS

- In partnership with ear, nose, and throat surgeons, neuroradiologists embedded in a clinic communicate with head and neck cancer patients about their disease.
- A survey shows that after consultation, 93 percent of patients wanted to review future exams directly with the radiologists.
- Former patients can offer valuable insight about direct radiologist consultation with patients undergoing cancer treatment.

A decade ago, retired Army Col. Jim Stapleton underwent a State Department physical that revealed a lump in his throat. He would not be going to Iraq for contract employment as planned, but instead would be fighting an unexpected foe at the Emory University School of Medicine's Winship Cancer Institute in Atlanta: head and neck cancer.

Visualization of the head and neck (H&N) region is a complex and challenging area for imaging, according to Patricia A. Hudgins, MD, FACC, director of H&N radiology at Winship Cancer Institute. "The lesions are small, the anatomy is difficult to navigate, and everything is in close proximity to the brain. The risks are huge."

Given the gravity, Stapleton wanted to learn about his squamous cell carcinoma from the person who could best see it — the radiologist. "Initially, my doctor talked to the radiologist and then relayed the information to me, but I wanted to talk to the radiologist directly," he says. "I wanted to ask, 'What's that?' on the images."

## Patient Understanding

Providing patients with an opportunity to interact directly with radiologists is exactly what Ashley H. Aiken, MD, associate professor in the neuroradiology division of Emory's department of radiology and imaging sciences, had in mind when she envisioned an environment that would allow radiologists to take a more active, consultative role in the treatment of H&N cancer patients. To turn that vision into reality, Emory embarked on an initiative to add a patient consultation program right in the ENT clinic.

For years, radiologists and ENT surgeons at Emory had collaborated closely, including at tumor board meetings, laying the foundation for a strong relationship between the specialties. Radiologists were key team members who helped establish the algorithms for standardized patient care.



*As a cancer patient at Emory University School of Medicine's Winship Cancer Institute, Jim Stapleton appreciated having the opportunity to review his images with the radiologists in the head and neck clinic.*

"When creating a patient consult program, we started by building relationships with referring doctors, and standardized protocols for interpreting and dictating images so all of the H&N radiologists read the same way," explains Hudgins, who first began working in the ENT clinical space in 2010 in an integrated reading room. Radiology was able to integrate their reading space during an ENT clinic move and redesign, which enabled Hudgins and Aiken to advocate for an open, centralized location for image review workstations.

Today, Emory's neuroradiologists work side-by-side with ENT surgeons and health-care providers, such as speech and hearing specialists. They share the clinical space, including five workstations for face-to-face treatment meetings with ENT surgeons, radiation oncologists, and medical oncologists.



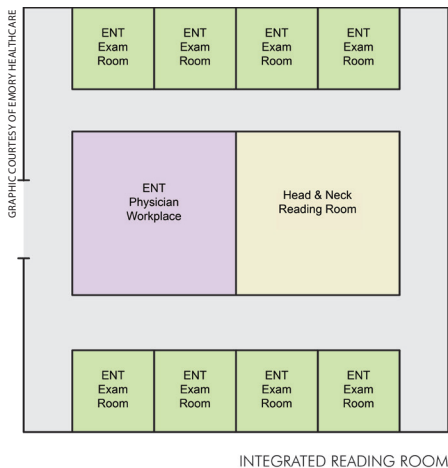


Figure 1. ENT patient exam rooms surround the Emory radiologists' H&N reading room within the ENT clinic.

## Face-to-Face

In March of 2016, radiologists also decided to add direct-to-patient communication to the care pathway by utilizing the ENT patient exam room space adjacent to the clinic reading room (Figure 1). To create the patient consult program, the Emory team realized they needed to get a patient's perspective to ensure they were delivering true patient-centered care.

Stapleton, who had been treated at the H&N clinic in 2007 and developed close relationships with his ENT physicians and radiologists, had volunteered to serve as radiology department liaison for a patient and family advisory board. Aiken then invited him to serve on a patient advocacy panel that focused on patient perception of the radiologist's role. He also offered his unique perspective about the ideal way to communicate with patients during their consultations.

As a result, the team quickly determined that one of the most important aspects of that direct interaction was helping patients understand the role of radiologists. "When we first began consulting with patients, they didn't originally think of radiologists as their doctors," explains Aiken. "To overcome that perception, we start by introducing ourselves and saying, 'We are your head and neck radiologists. We look at all of your scans

before and after treatment to ensure that there are no deep abnormalities that your ENT surgeon cannot see.' You can instantly see it makes patients feel better."

Stapleton agrees. "There's something powerful about meeting with an expert who's interpreting the images of your anatomy," he says. "I could point to the image on the screen and directly ask the neuroradiologist my questions and get immediate answers."

Aiken says a direct, communicative approach to engaging patients will change the way radiologists — and all physicians — practice medicine in the future. To begin driving toward that future, Emory Healthcare has committed to learning from the patient experience, enlisting the help of former patients like Stapleton as patient advocates, to advise clinicians (including radiologists) on the best way to talk to patients about their care.

## Program Design

Before launching the ENT clinic, Emory radiologists worked with a multidisciplinary group of surgeons, radiation oncologists, and medical oncologists to create a template that reflected a consensus for next steps in managing patients undergoing surveillance for H&N cancer. In 2016, their *Neck Imaging Reporting and Data System (NI-RADS)*<sup>1</sup> was published to standardize templates for image reading and dictation. This helped quantify "big picture" recurrence and management concerns for radiologists to successfully engage — both with surgeons and in direct patient consultation, Hudgins explains.

Mihir R. Patel, MD, assistant professor of otolaryngology at Emory, helped radiologists identify which patients would be ideal for the direct patient consultation program: those being treated for H&N cancer and under surveillance with contrast-enhanced CT (CECT), or CECT combined with PET, with the case reported via the NI-RADS template. Due to regular communication regarding treatment images, radiologists have always been a part of the ENT clinic to some degree, Patel explains, so having them consult directly with patients was a "natural step."

Here's the collaborative process the Emory team designed to ensure a seamless patient consultation:

- After an H&N cancer patient has undergone definitive treatment (either surgery, chemotherapy, radiotherapy, or a combination of these), he or she typically undergoes CECT combined with PET/CECT.
- The surgeon or nurse practitioner lets the radiologist in the clinic know when there is a patient who might benefit from a consultation.
- If needed, the radiologist spends a few minutes reviewing the images and discussing the plan with the surgeon. It is critical that the whole team knows the treatment plan to avoid sending a mixed message to the patient.
- The surgeon lets the patient know that a radiologist will be entering the consultation room to review the images and explain the findings.
- After joining the patient in the consultation room, the radiologist briefly explains his or her role in the patient's care, reviews the images on a virtual desktop PACS, and gives the patient an opportunity to ask questions about anatomy, findings, and post-treatment changes — all in five to 10 minutes.

## Implementation Challenges

Is creating a patient consultation program in the ENT clinic as easy as it might sound? Not necessarily, says Richard Duszak Jr., MD, FACR, professor and vice chair for health policy and practice in the Emory University Department of Radiology and Imaging Sciences, who advised the team on the practical implementation of patient consultations and the operational scope of the pilot program. "The concept of radiologists communicating results directly to patients is often considered foreign in radiology, with the exception of breast imagers and interventional radiologists," he says. "Patients are increasingly asking us to do something that many of us haven't been formally trained to do. Without support, infrastructure, and education, a concept like this could be doomed to fail."

Fortunately, the Emory team was able to overcome these obstacles, largely by leveraging Hudgins' and Aiken's roles as onsite

champions. Over the years, and enhanced by their onsite presence, Hudgins and Aiken had developed strong working relationships with both their referring physicians and their office staff members. Although Emory's achievements were the result of a team effort that included active engagement of administrative and faculty leadership, clinical champions were vital for success.

The team had to overcome several other hurdles along the path to creating the patient consultation program. Aiken recalls that there was some resistance from both surgeons and radiologists regarding direct imaging consultation with patients. The main challenge was making time for the consultations.

"ENT providers feared that we would add work to their already busy schedules, but that wasn't the case at all," Aiken explains. In fact, Patel emphasized that with radiologist-patient interaction, he actually has more time available for other work.

"Having our neuroradiology team review the details of a surveillance scan helps patients who are feeling anxious about the progress of their disease. This helps us tremendously because I can spend more time with other newly diagnosed patients discussing prognosis and treatment," Patel adds.

Radiologists were also worried about adding to their already full workloads, but Hudgins reports that after reading 35 to 50 H&N scans daily, her staff has become quite efficient with interpretation. As a result, the radiologists are able to work smarter and connect more intimately with patients. Fulfilling this niche with both speed and precision offers practices a huge opportunity to grow and market themselves as care providers, Hudgins notes. At Emory, the days of a faceless, nameless radiologist are long gone, she says. She also notes that radiologists' morale has greatly improved as their

role on the care team has deepened. "What we do matters," she stresses.

Manpower can present challenges, so staffing appropriately also ensures that radiologists have time to develop good working relationships with referrers, coordinate logistics with ENT physician staff, and actually meet with patients, explains Duszak. "Our consensus reporting platform, NI-RADS, has helped a lot, because everyone is on the same page with diagnostic and management criteria and recommendations."

## Practical Advice

According to Duszak, departments should get creative with staffing and workflow, since time in the clinic room means time away from image interpretation. By way of example, he suggests scheduling patient consultations on days when there are two subspecialty radiologists instead of one. He also notes the importance of each specialty staying in its own core of expertise. "Make sure roles are clearly delineated," he says. "When a patient asks a radiologist what can be done to treat their cancer, the radiologist needs to refer the patient to their oncologist."

Hudgins agrees that the team perspective

resonates well with patients. "I tell them, 'The Emory healthcare team has your back. We are caring for you as a group, and even though you might see just one or two doctors or providers, behind the scenes there is a whole team.'"

It is also vital to remember that not all radiologists are adept at delivering bad news, which is often missing from the standard radiology curriculum. "We need to educate radiologists on how to interact with patients and be prepared to break bad news," Duszak says. "We also need to teach them how to provide next steps of the action plan and offer an element of hope at the end of the discussion."

Adding the patient perspective, Stapleton advises radiologists refrain from inundating patients with medical jargon or giving bad news on Friday afternoon. Learn to go slowly, be empathetic, observe, and give undivided attention to each patient. Following the input of patient advocates like Stapleton, Emory operates on key principles that focus on communication with the patient and family.

## Ongoing Operation

Today, the patient consultation program in Emory's ENT clinic is thriving. Three

*Patricia A. Hudgins, MD, FACR, director of head and neck radiology at Winship Cancer Institute, and Ashley H. Aiken, MD, associate professor in the neuroradiology division of Emory's department of radiology and imaging sciences, review a patient's images with Mihir R. Patel, MD, assistant professor of otolaryngology at Emory, and nurse practitioner Kelly Summers.*



PHOTO COURTESY OF EMORY HEALTHCARE



specialized neuroradiologists consult with an average of five H&N cancer patients each week in the ENT clinic. Radiologists generate about eight to 10 biopsies a week through scan interpretation and have more opportunities with direct patient reporting to explain why the biopsy was necessary and how it will be done.

Emory neuroradiologists use onsite pathology and often relay results directly to patients and guide them on the next steps in their care. “We’ve redefined the role of the radiologist. As we become more involved in the ‘softer side’ of radiology, we’re watching our referrals and services expand,” Hudgins says.

Most importantly, both radiologists and surgeons agree that direct radiologist-patient interaction has enhanced the care provided to patients. “The program really works because we’re collaborative, and we share space. The patient sees that radiologists are key and that they help educate them,” Patel says. “Our neuroradiologists help educate patients about their disease, why certain imaging tests were ordered and performed, and the effects of their treatment on that disease. This is our opportunity to help patients and their families understand and take ownership of their care.”

## Patient Response

To gauge patient response to the program, the Emory team conducted a before-and-after survey. The most interesting finding, says Aiken, is that after consultation, 93 percent of patients wanted to review future exams directly with the radiologists. Patients also had a much better understanding of management, imaging results, and the radiologist’s role in their care. ([Learn more about what Emory researchers discovered at \*acr.org/Results-Realized\*](#))

Today’s patients are more proactive, asking detailed questions about different imaging options and expecting tangible specifics about their diagnoses, adds Hudgins. “Usually, patients want to talk to the radiologists after they’ve been to their clinic session. There’s something powerful about looking at their images and having them explained to them.”

Stapleton, who experienced that power

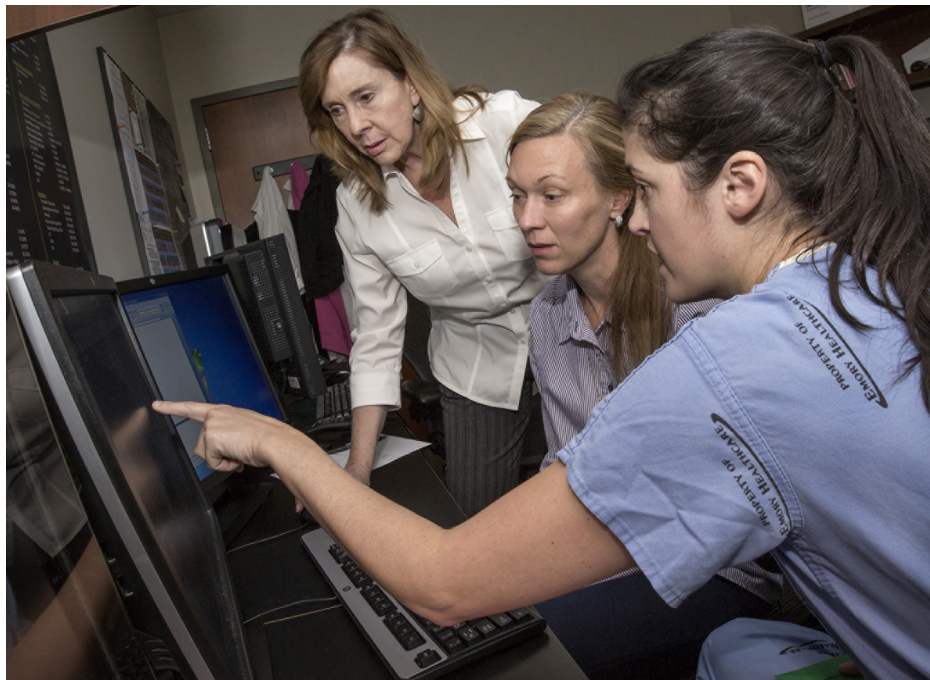


PHOTO COURTESY OF EMORY HEALTHCARE

firsthand, remains committed to supporting the H&N team in their approach to patient-centered care — both through his patient advocacy role and via a less formal duty: pastry delivery man. Each Tuesday at 6:30 a.m., he brings breakfast for the multidisciplinary tumor board members, who discuss every H&N patient seen in the last week. “They saved my life,” Stapleton says. “This is my small way of thanking them. I’m impressed that they meet this early in the morning. It just shows their tremendous dedication to their patients.”

## Next Steps

- Evaluate the potential in medical specialties for collaboration among surgeons and radiologists in addition to leveraging clinical space for patient interaction.
- Teach strategies for empathetic listening, communicating, and observing when implementing a patient-centered approach to care.
- Gather feedback from former patients regarding direct consultation with patients in a cancer care setting.

*Hudgins and Aiken review imaging with ENT resident Emily Barrow, MD, prior to surgery. The head and neck reading room is embedded in the ENT clinic to facilitate frequent consultation with surgeons, referring physicians, healthcare providers, and patients.*

## FOR DISCUSSION

*How can your group partner with other care providers to consult directly with patients in the clinical setting?*

*How can you convince your radiology team members that discussing imaging results directly with patients is the right thing to do for improved patient care and to further demonstrate radiology’s value on the care team?*

*What efficiencies can be achieved in your workflow to make more time for patient consultations?*

*How can your group work directly with patients or patient advocates to better understand what patients want from their healthcare experience and what you can do to meet those expectations?*

By Kerri Reeves



# Failsafe

Radiologists develop a program that encourages ED patients to follow up on incidental findings.

## KEY TAKEAWAYS

- Radiologists at Penn State Milton S. Hershey Medical Center led a team in the development of a program that closes the gaps in follow-up of incidental findings for ED patients.
- Participants in the program receive a letter and phone call about their incidental findings and are encouraged to follow up with a primary care provider.
- Patients have been receptive to the program, responding particularly well to the follow-up phone call.

A patient visited the emergency department (ED) for a rib injury. A CT scan showed no broken bones, but the radiologist noted a pulmonary nodule in the patient's left lung and recommended follow-up imaging. At discharge, the emergency physician suggested that the patient follow up on the nodule with his primary care physician (PCP) — but that didn't happen.

Now, a year later, the patient is having another CT, and this time the radiologist suspects and a biopsy confirms the presence of lung cancer. The patient finally begins treatment, but the chances of a positive outcome have significantly diminished.

Scenarios like this one occur every day in hospitals nationwide.<sup>1</sup> At Penn State Milton S. Hershey Medical Center, radiologists have taken the lead to address the issue with Failsafe, a program that uses letters and phone calls to inform patients about incidental findings discovered in the ED and encourages them to follow up with their PCPs. And it's having a positive impact.

In the past six months alone, 70 percent of the patients that the Failsafe team has spoken with indicated that they didn't know about their incidental findings and follow-up recommendations until they received either the letter or the phone call. "The program goes beyond the standard of care to ensure patients can address incidental findings in a timely manner," says Michael A. Bruno, MD, FACR, professor of radiology and medicine and vice chair for quality and safety at Hershey Medical Center.

## Uncovering the Cause

Bruno and his team developed Failsafe after they learned about ED patients at Hershey who didn't receive the recommended follow-up care for their incidental findings and, as above, presented later with advanced cancers. They found three gaps in the communication process for handling incidental findings in the ED: 1) the preliminary

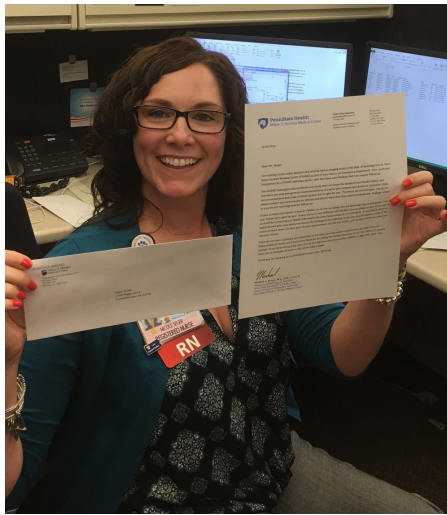


Michael A. Bruno, MD, FACR, professor of radiology and medicine and vice chair for quality and safety at Hershey Medical Center, led the creation of Failsafe.

radiology report sometimes excluded incidental findings, which were later added at the stage of the final report but may not have been noticed by the emergency physician, 2) some ED patients didn't have a regular PCP, and if they did, the PCP generally was never alerted to the incidental findings and was often completely unaware of the patient's ED visit, and 3) the emergency physician occasionally failed to communicate the findings to the patient and/or PCP.

"As a result of these communication gaps, the majority of ED patients with incidental findings that required follow up and their PCPs were never told about the findings," Bruno says.

Even when patients were informed of their incidental findings in the ED and told to follow up with their PCPs, most didn't do it. "Patients have the sort of mistaken impression that when they go to the ED, they've been thoroughly evaluated by a doctor, so they generally don't visit their primary care



Nicole Seger, MSN, RN, CPN, patient safety analyst at Hershey Medical Center, manages Failsafe.

physician right after an emergency room visit," Bruno explains. "Patients don't realize that emergency physicians provide only acute management assessment and treatment of presenting conditions. And despite being instructed to do so, patients don't always understand the need to follow up with their primary care physicians."

## Developing a Solution

To close these gaps, Bruno and his team initially thought about sending their reports to ED patients' PCPs. But most of the patients that the radiologists talked to couldn't provide their PCP's name, because they either couldn't remember it or they didn't have a family physician.

So instead, Bruno and his team opted to communicate their findings directly to patients. "We would use the patient to carry our message to their primary care physician, who could then discuss our findings and recommendations with the patient," Bruno explains. "Our thinking was that patients have the most amount invested in the information, so they would be the most likely to convey the message and help us communicate better with the clinicians we serve."

With Failsafe, the radiologists send patients letters (View a sample letter at [acr.org/fail-safe-letter](http://acr.org/fail-safe-letter)), informing them that they have incidental findings that require

follow up with their PCPs. To protect patient privacy, the letters exclude specific findings or follow-up recommendations.

"The letters have minimal customization," says Bruno, whose signature appears on each one. "We have one for adults and another for children, both available in English or Spanish, but other than that, all of the letters are the same." Eventually, though, the team discovered that the letters alone were not enough.

## Getting Team Input

After developing the Failsafe model, Bruno called several emergency physicians, PCPs, and other stakeholders to pitch the program. William M. Bird, DO, vice chair for clinical care in Hershey's Department of Family and Community Medicine, says he was relieved to learn about the program. "Most primary care docs are concerned about a small irregularity getting overlooked and then having it come back to hurt the patient months or years later, when it could have been addressed earlier," Bird says. "We agreed with the radiologists that this was an important quality issue."

Glenn K. Geeting, MD, medical director for hospital quality and vice chair for quality in emergency medicine, also saw the program's benefits. "As emergency physicians, sometimes we receive the final radiology report after the patient leaves the ED, and we aren't sure what to do with the incidental findings," Geeting says. "The findings may not be significant enough to call the patient back, but at the same time, we worry they could be a potential risk to the patient down the line. This program solves that issue and gives us peace of mind."

With stakeholder support, Bruno and his team assembled a workgroup that included emergency physicians and PCPs, an attorney from the hospital's legal team, the chief quality and chief medical officers, and both the ED and radiology department chairs. The group hashed out the program's details, such as how to handle patients who didn't have a PCP.

"We agreed to take all of those patients as new patients," Bird explains. "The letter provides a number that patients without a primary care physician can call, and we make it a priority to address their findings as soon as possible."

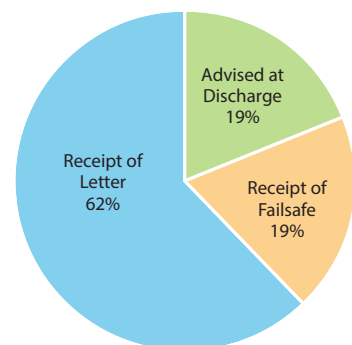
## Gauging the Impact

When Failsafe launched in 2012, Bruno sent a memo (See the memo at [acr.org/fail-safe-memo](http://acr.org/fail-safe-memo)) to care providers to ensure everyone knew about the program. The radiology department's administrative team then began sending the letters to patients without any additional follow-up. But Bruno knew he needed to actually speak with the patients to gauge the program's impact.

After the team had sent 100 letters, Bruno called about a dozen patients to hear their thoughts on the letter. "Some of the patients said the letter upset them a little, but mostly they were happy to get the information," Bruno says. "Of the patients I talked with, eight had already arranged their follow-up appointments, one said he wasn't going to follow up, and another said she wasn't going to follow up, but since I called, she would."

From those initial calls, Bruno felt good about the program's impact. But after the team sent 500 letters, Bruno called another sampling of about 24 patients, and the response wasn't as positive. Most of the patients didn't bother returning Bruno's phone calls, and a majority of the patients he spoke with said they weren't concerned about the letter. "Some said that they didn't read the letter because they assumed it was about their bill, or they thought they already knew what it was about and just threw it away," Bruno recalls. "Others said they didn't think they needed to follow up."

Influencers for Patient to Seek Follow Up



Preliminary data shows that patients are more likely to follow up on incidental findings discovered in the ED with Failsafe.

GRAPHIC COURTESY OF MICHAEL A. BRUNO, MD, FACR

## Expanding the Program

Realizing the program had an engagement problem, Bruno began advocating to hire a nurse to not only send the letters but also call the patients to ensure they received the letters and encourage them to schedule their follow-up appointments. Convincing hospital administrators to hire a nurse to manage the program wasn't easy, but Bruno made the case with help from the chief medical and chief quality officers.

Specifically, the trio argued that if the program prevented just one lawsuit, it could potentially save the hospital millions of dollars. They also argued that revenue from the follow-up appointments performed at Hershey could offset the program's cost, and that the nurse could also perform quality analysis. "These three arguments helped sway the more cost-conscious administrators, and so the hospital administration ultimately decided to cover the nurse's salary," Bruno says.

**"We're already learning a lot about patient engagement and how to reach patients more effectively."**

— Michael A. Bruno, MD, FACR

Nicole Seger, MSN, RN, CPN, patient safety analyst, joined the team and began managing Failsafe in the first quarter of 2016. Around the same time, Bruno sent out another memo via the medical staff office to remind everyone in the Hershey care community about the program.

"It's important that when you implement a program like this, your whole system knows about it because patients are going to ask questions and schedule appointments, and everybody needs to know what they're referring to and what's happening," Seger says.

## Informing ED Patients

In addition to hiring Seger, Bruno and his team worked with an IT expert to automate the Failsafe process and provide tracking capabilities. Now, when an ED patient has a non-critical incidental finding that requires

follow up, the reading radiologist enters the case into a program embedded within the department's PACS, which puts the case on a list for an oversight committee member to review each week.

Once the committee member approves the cases, Seger enters them into a tracking system that automatically pulls the patients' contact information and generates a letter for each case. Seger mails the letters and creates a flag in the system that reminds her to call the patients in 10 days to confirm that they have received the letters.

During the calls, Seger also collects and documents other information, like what the patients thought of the letter and whether they have scheduled their follow-up appointments. "Most of the patients I've called have been glad to receive the letter and have indicated that they intended to follow up with a primary care physician," Seger says. "They also say the phone call, me reaching out to them directly, increased their motivation to follow up."

## Planning the Next Phase

In the past six months, Seger has sent 106 letters to ED patients with incidental findings and reached 48 of them by phone. Of the patients she's spoken with, 21 percent said that they planned to follow up with their PCPs.

"With this preliminary data, we're already learning a lot about patient engagement and how to reach patients more effectively," says Bruno, adding that the program will also help radiologists and other providers better understand the long-term impact of incidental findings follow up.

While the team is just beginning to collect data about the program's results, the anecdotes from patients and support from emergency physicians and PCPs has convinced Bruno to expand the program again in 2018. This time he'll take it beyond the ED to include all of Hershey's radiology patients.

"We knew the ED would provide a solid proof of concept to start, but we have other patients who have incidental findings that aren't followed up as reliably as we would like," Bruno says. "We think we could do more good if we included all imaging patients to ensure they have the information they need to follow up with their primary care physicians about our evidence-based recommendations. By doing so, we could save even more patients from enduring the potential harms associated with delayed care."

### Endnote

1. Blagev DP, Lloyd JF, Conner K, et. al. Follow-up of incidental pulmonary nodules and the radiology report. *J Am Coll Radiol* 2014;11:378-383. Available at [bit.ly/IncidentalFollowUp](http://bit.ly/IncidentalFollowUp).

## Next Steps

- Identify the gaps in incidental findings follow up at your institution.
- Develop a program to close the gaps that includes sending letters and making phone calls to patients.
- Bring stakeholders together to solicit their input and ensure everyone is on board with the program.

By Jenny Jones

## FOR DISCUSSION

*How many times do you report incidental findings for ED patients and wonder whether the patient ever received the appropriate follow-up care?*

*What is your team, including ED physicians, doing to ensure ED patients are informed about and follow up on incidental findings? What methods can your team use to reach out to ED patients and referring clinicians about their incidental findings?*

*What additional resources does your team need to monitor ED patients with incidental findings, and how can you secure these resources?*



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