

Case Study: Ask a Radiologist

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

Key Takeaways:

- Inspired by other specialties, radiologists at Cincinnati Children's Medical Center spearheaded an initiative to integrate a messaging system into the electronic health record that allows patients to ask radiology-specific questions directly to radiologists through the patient portal.
- Allowing patients to ask radiologists questions through the portal can decrease their anxiety. It also allows radiologists to connect directly with patients.
- Gathering patient questions allows radiology groups to assess and improve healthcare procedures within their departments.

By Chelsea Krieg

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

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

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

The day after the system went live in 2017, the radiologists received their first message from a parent through the portal: "I would like to view the ultrasound images of my son's hip from yesterday's exam." In the weeks following the system's launch, the radiologists received approximately 20 questions. Since then, the radiologists have continued to receive an average of three imaging-related questions per week from patients and families — allowing them to play a direct role in the patient experience. "Any time radiologists can engage with patients and families, provide clarification, or answer questions about results or future exams, they're making a positive impact on the patient experience," Hater says.



Dianne Hater, patient and family advocate for Cincinnati Children's radiology department, says, "Any time radiologists can engage with patients and families, provide clarification, or answer questions about results or future exams, they're making a positive impact on the patient experience."

Answering a Need

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

In 2017, Morgan P. McBee, MD, a resident at the time, saw the opportunity to further strengthen the radiology department's patient outreach when he got the idea for a system that would allow patients and families to directly connect with radiologists through the patient portal. "The value of patient portals is often discussed at hospital board meetings, but it seemed like we radiologists were one step short of fully realizing our potential to go the extra mile for the patient," says McBee, now assistant professor of radiology at

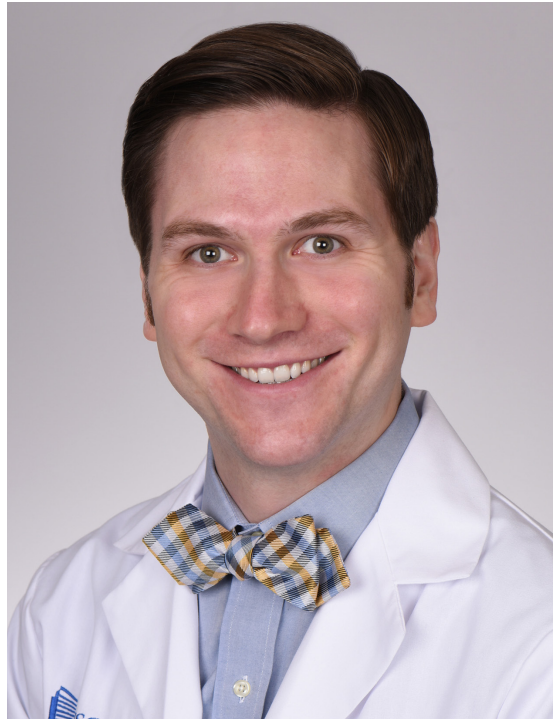
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Morgan P. McBee, MD, assistant professor of radiology at the Medical University of South Carolina, initiated the patient messaging portal project to give patients the opportunity to ask questions of radiologists through the EHR.

the Medical University of South Carolina. “The patient messaging system helps us interact with patients directly without adding a significant amount of work to our schedules.”

To set his vision into motion, McBee approached Alexander J. Towbin, MD, associate chief of clinical operations and radiology informatics and pediatric radiologist at Cincinnati Children’s. “I thought it was a great idea,” Towbin says. “We are always looking for different ways to reach out to families and connect them to our radiology team, and this seemed to fit perfectly into that goal. I wanted to work with Morgan to make it a reality.”

Securing Support

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

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

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

Achieving the Vision

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

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

Radiologists keep referring physicians in the loop by ensuring they have access to the radiology messaging system, where they can review questions from patients and families, along with the radiologists’ responses. What’s more, the radiologists can also use the EHR to document phone calls they have with patients. This not only keeps referring physicians abreast of the information that a radiologist shared with a patient and family, but it also informs other radiologists about how a question was addressed. “We try to support the patient and physician relationship,” says Blaise V. Jones, MD, professor of radiology who specializes in pediatric neuroradiology at Cincinnati Children’s. “We know that the physician may have additional information that could be valuable to contextualizing imaging results, leading to better overall patient care.”

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Alexander J. Towbin, MD, associate chief of clinical operations and radiology informatics and pediatric radiologist at Cincinnati Children's Medical Center, sees the patient messaging portal as an opportunity for radiologists to connect more effectively with patients and their families.

Leveraging the System

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

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

After a patient completes the form, the system routes it to a radiology group EHR inbox, which all 36 faculty radiologists and 10 radiology fellows can access. The subject of the message automatically populates as "Radiology Question for a Radiologist," helping the radiologists select and promptly respond to questions as they access the mailbox. Any radiologist can answer any question.

When a radiologist commits to answering a question from the system, they can click a box to "claim" the message, which alerts other radiologists that someone is working to address the patient question. From there, the responding radiologist can answer the patient's query directly through the portal, call the patient and

document the phone call in the portal, or forward the message to a referring physician, if it would be more appropriate for the referring physician to address the question.

To date, 99% of the questions have pertained to completed studies, and 47% have involved availability of results. CT, MRI, and PET/CT studies are embargoed for 48 hours per hospital policy, so these questions are often easily answered. Other common questions focus on clarification of results and access to images.

Answering Questions

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

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

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

At the time of this writing, 70% of radiologists have responded to one or more questions in the system. "At the end of the day, everyone realized that this was the right thing to do to help alleviate parent and patient concerns and lessen their anxiety," McBee says. "It is not a replacement for sitting down and talking to patients and families face-to-face, for sure, but it is a nice way to increase our patient interaction and put parent's minds at ease without leaving the reading room."

Increasing Job Satisfaction

Many of the contributing radiologists say that answering questions from patients and families has positively contributed to overall job satisfaction. "It is easy for radiologists to sit in a dark room and read the study and not spend much time considering the impact it has on patients and families," Jones explains. "The pa-

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tient messaging portal serves as a reminder that there are people behind these studies and that we have a responsibility to provide them with the best care possible — which includes answering their questions to reduce their anxiety.”

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

McBee agrees and says that initiatives like patient messaging portals build bridges between radiologists and patients in ways that benefit the patient, their family, and the radiologist. “A lot of patients don’t even know that radiologists are physicians,” McBee says. “Engaging patients in this way helps them better understand the integral role that radiologists play in their care, and it allows us to help relieve their anxiety. It’s a win-win all around.”

Endnotes

1. Woolen S, Kazerooni EA, Wall A, et al. Waiting for radiology test results: Patient expectations and emotional distility. *J Am Coll Radiol*. 2018;15(2):274-281. <https://doi.org/10.1016/j.jacr.2017.09.017>.
2. TrendWatch. Expanding electronic patient engagement. American Hospital Association Annual Survey IT Supplemental Brief 1. Published March 2018. Available at: <https://www.aha.org/system/files/2018-03/expanding-electronic-engagement.pdf>.
3. Mervak BM, Davenport MS, Flynt KA, et al. What the patient wants: An analysis of radiology-related inquiries from a web-based patient portal. *J Am Coll Radiol*. 2016;13(11):1311-1318. <https://doi.org/10.1016/j.jacr.2016.05.022>.

Now It’s Your Turn

Follow these next steps to begin implementing this approach at your institution, and tell us how you did on Twitter with the hashtag #Imaging3 or email us at imaging3@acr.org:

- Work together with your technology team to determine how you can integrate patient-forward initiatives into your existing EHR.
- Connect with other departments and borrow from existing models within your health system to integrate technological improvements to patient care.
- Don’t be afraid of change. Play to the strengths of your department when considering how to connect more effectively with patients using the EHR portal.

Share Your Story

Have a case study idea you’d like to share with the radiology community? To submit your idea please [click here](#).



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