

Case Study: A Targeted Approach



Charlotte Radiology's thriving interventional radiology clinic is driven largely by its interventional oncology program.

By Jenny Jones

Key Takeaways:

- Carolinas Medical Center spent \$450,000 to construct Charlotte Radiology's new interventional radiology clinic three years ago.
- Interventional radiologists consult with patients and show them their images prior to and following interventional procedures.
- The interventional radiology clinic has dedicated coordinators who help generate patient referrals.

By 2009, Indian Trail, North Carolina resident Pat McFadden couldn't go anywhere that didn't have a toilet nearby. Nine years earlier, McFadden was diagnosed with carcinoid cancer that had metastasized to his liver, and chronic diarrhea was a primary symptom of the disease. McFadden wasn't a surgical candidate because he had lesions on both lobes of his liver and no viable chemotherapy options existed to treat his disease. As a result, his oncologist closely monitored his slowly advancing condition with CT scans and blood tests. As McFadden's symptoms worsened and his quality of life deteriorated, his oncologist referred him to Charlotte Radiology, which had started an interventional radiology (IR) clinic to assess oncology patients for minimally invasive treatment options.

Established in 1967, Charlotte Radiology is a private practice with more than 90 physicians, including 13 subspecialty trained interventional radiologists (IRs). The group has an exclusive contract with Carolinas HealthCare System, which operates Carolinas Medical Center (CMC) and other hospitals in and around Charlotte, North Carolina. Charlotte Radiology began its IR clinic more than a decade ago to evaluate and treat patients with uterine fibroids, peripheral vascular disease/chronic limb ischemia, pelvic venous congestion, and vascular malformations with minimally invasive IR techniques. However, a majority of the clinic's patients are evaluated for interventional oncology procedures. "We started the clinic because it is important to assess patients in an outpatient setting, prior to scheduling IR procedures," says Eric A. Wang, MD, vice chief of the department of radiology at CMC. "When we review the imaging with patients and their family members, we find that they understand the treatment plan better and are more relaxed on the day of their procedure."

For years, the IR clinic operated out of a converted ultrasound room and previously unused storage area within the hospital. That's where Wang saw McFadden for the first time. But nearly three years ago, CMC constructed a new \$450,000 clinic, with a dedicated waiting area, consultation room, and two clinical examination rooms. The new clinic and increased dedicated staff allow Charlotte Radiology's IR practice, known as Vascular & Interventional Specialists, to provide comprehensive clinical patient care. "The



VASCULAR &
INTERVENTIONAL
SPECIALISTS

A DIVISION OF CHARLOTTE RADIOLOGY

clinic gives us a lot of valuable face time with patients," Wang explains. "We provide interpretations of images and talk with patients, empowering them to make educated decisions about whether or not to proceed with their treatment. We also ensure patients receive proper follow-up care, as most patients will continue to be seen in the clinic following their procedure."

Developing the Program

Charlotte Radiology's IR clinic really took off in 2005, when Wang and three of his IR colleagues expanded the practice's interventional oncology program. "It became clear there were a number of minimally invasive procedures that were challenging, interesting, and offered opportunities for very good patient outcomes," Wang says. "It's great to see some of our patients progress from being a nonsurgical candidate to an eventual surgical resection after down-staging from our procedures. In these cases, the cancer can be completely resected and eradicated."

In addition to treating nonsurgical and non-transplant candidates, the program treats patients who need a break from chemotherapy or who are not responding well to traditional chemotherapy methods. "Our particular treatments are very targeted and are largely administered to the liver, where primary cancers tend to metastasize," Wang says. The program's imaging-guided treatments — chemoembolization, radioembolization, microwave ablation, cryoablation, and irreversible electroporation — are effective minimally invasive procedures that control and eliminate cancer while allowing patients to retain the function of the affected organs.

From the program's onset, the interventional oncology team has been dedicated to providing clinical care in the same manner as a surgeon or other physicians.

ACR
1891 Preston White Drive
Reston, VA 20191
703-648-8900
www.acr.org/Imaging3

©Copyright 2015
American College of Radiology

Media contact: pr@acr.org

Continued on next page

Case Study: A Targeted Approach



Continued from previous page

"Patients need to understand what we are going to do, and, in our eyes, that means reviewing the imaging with them so they can see where the cancer is," Wang says. "Once we review the images, we are able to more effectively discuss available treatment options."

Providing Individualized Care

When McFadden visited the clinic for the first time in January of 2009, he didn't know what to expect. He had never considered seeing an IR for cancer treatment. "I didn't know anything about interventional oncology until I talked with Dr. Wang," McFadden says. "But once I understood what he wanted to do, I had no hesitation about proceeding with the treatment."

Wang began by showing McFadden and his wife, Shirley, herself a 20-year breast cancer survivor, his CT scans and describing how McFadden's liver lesions had grown over time. Like most patients, McFadden had never seen his images before. "Patients finally get to see these lesions they've been hearing about for so long, and it helps us explain what we're going to do as far as targeted localized treatment," Wang notes. McFadden says that seeing his images was a bit scary, but it helped him understand how the radioembolization would work. "It made so much sense when Dr. Wang told me he would put the radiation right where the problem was rather than throughout my whole body," McFadden says.

As part of his commitment to patient-centered care, Wang gave McFadden his cell phone number and encouraged him to call any time throughout the treatment process. "When we started the clinic over 10 years ago, people said that I was crazy for giving patients my cell number and that I would regret it," Wang recalls. "But I can count on one hand how many patients have abused that policy over the last decade." McFadden never called, but he appreciated Wang's gesture. "I didn't feel like Dr. Wang gave me his cell phone number because he felt he had to; I felt he did that because he really wanted me to call him if I was having any problems," McFadden says.



As he does with every patient, Wang ordered imaging following each of McFadden's treatments, which also included chemoembolization and microwave ablation procedures. "We waited until each scan came through to decide the next step toward curing me," McFadden says. "I liked that Dr. Wang looked at me as an individual and analyzed my specific situation." Once McFadden completed his treatments, blood tests and imaging confirmed that his cancer was in remission. The diarrhea that had disrupted his life had also stopped. Like other interventional oncology patients, 68-year-old McFadden continues to see Wang periodically to ensure the cancer hasn't returned.

Building Relationships

With successes like McFadden's, the interventional oncology program drove a significant increase in patient volumes during the clinic's early years. To help manage the demand, Charlotte Radiology hired its first dedicated IR coordinator in February 2009. "We wanted to have someone who could establish relationships with other coordinators from referring physicians' offices and who could develop a good rapport with our patients and also schedule cases, follow-up imaging, and consults in a timely fashion," Wang says. "It's been very effective and has allowed us to drive more downstream revenue to the hospital and radiology department in the form of procedures, imaging, and additional treatments."

Referrals also rose as Wang and his partners became more integrated into the patient care team. The IRs regularly attend tumor boards, multidisciplinary conferences, and continuing medical education activities. They discuss cases with oncologists, surgeons, transplant hepatologists, and other referring clinicians to help determine the best treatments for patients, whether interventional oncology or another approach. Reza Nazemzadeh, MD, gastrointestinal oncology specialist at Levine Cancer Institute, appreciates the IRs' involvement. "It's great, because the more you see people and establish a relationship with them, the better you are at communicating with them. And good communication ultimately leads to better patient care," he says.

When they're not in multi-specialty conferences, the IRs maintain communication with referring clinicians through emails, text messages, electronic medical records, and phone calls. David Iannitti, MD, chief of hepatobiliary and pancreatic surgery at CMC and professor of surgery at the University of North Carolina School of Medicine, says the efforts have made the IRs invaluable partners in oncology care. "Sometimes people assume that because they're interventionalists and I'm an interventionalist, we have competing interests. I completely disagree with that," Iannitti says.

ACR
1891 Preston White Drive
Reston, VA 20191
703-648-8900
www.acr.org/Imaging3

©Copyright 2015
American College of Radiology

Media contact: pr@acr.org

Continued on next page

Case Study: A Targeted Approach

Continued from previous page

"When you're dealing with complex cancers, which is what we do, patients must be seen and managed by a multidisciplinary team. We have a mutual trust for what the IRs and other specialists bring to the table, and at the end of the day, we all do what is best for the patient."

Growing the Practice

While the IR clinic experienced steady growth, in 2011 Wang and other members of Charlotte Radiology's marketing and operations team noticed that referrals from procedures at CMC hospitals were lower than expected. Mendi Mullis, Charlotte Radiology's assistant director of IR, interviewed referring clinicians and staff at one of the hospitals and discovered that many providers were unaware that Charlotte Radiology offered IR services. "They were connecting Charlotte Radiology's name and logo only with diagnostic imaging," says Katie Robbins, Charlotte Radiology's director of marketing and practice relations. "They didn't think of our physicians as interventionalists who consult with patients and perform procedures."

To address the issue, the marketing team obtained board approval to develop a branding strategy specifically for the IR department. The team tried tweaking the practice's existing logo but couldn't change it enough to adequately represent the IR department without harming the 50-year-old Charlotte Radiology brand, Robbins says. The IR department needed its own name and logo to successfully illustrate the services it provides. It selected a logo that resembles the inside of a vascular system and adopted the name Vascular & Interventional Specialists, a Division of Charlotte Radiology. The marketing team began using the brand in media outreach efforts, such as a *PBS special* featuring McFadden.

As the department developed its brand, it became clear that the IR clinic had outgrown the converted ultrasound room and storage area, where it had been housed since its inception. "It was actually kind of embarrassing to bring patients to the clinic, because the space obviously wasn't designed for that purpose," Wang recalls. "We decided that if we were going to do cutting-edge IR and interventional oncology procedures, we needed to step up our game and have a better clinic."

In 2012, the IR team delivered a presentation to hospital administrators, advocating for a larger, more appropriate clinic space near the hospital's IR procedure suite. The team provided return on investment statistics, highlighting, among other things, that the department's six interventional oncology IRs generate more relative value unit cases and imaging than the hospital's top 10 non-radiologist physicians



combined. "Put another way, of the top 16 referring clinicians to radiology, six IRs order 55 percent of these radiology studies," Wang says.

The team also met with hospital administrators several times. During one of these meetings, the group spent some time in the dated clinic, where the hospital president experienced the inadequate space firsthand. The hospital ultimately agreed to fund the clinic's construction, and Charlotte Radiology hired additional staff to operate the clinic, which now has three IR coordinators and 16 physician assistants (PAs), who work on a rotating basis. After implementing the branding strategy in 2012 and opening the new clinic the following December, the IR department's 2014 evaluation and management code charges increased 19 percent over the previous year, Wang says.

Enhancing Patient Care

Now active for more than 10 years, the interventional oncology program continues to drive the clinic's patient volumes. The clinic sees at least 130-140 patients per month, about 85 to 90 of which are interventional oncology patients. The clinic offers seven appointments for IR patients each day and allows add-on appointments at the request of referring clinicians. "We want to give patients a chance to explore interventional treatment options immediately instead of asking them to come back in a couple of weeks," says Wang. "Those are the kinds of steps we've taken to establish key referral patterns with our physicians and improve upon the value of patient care."

Wang and his colleagues conduct patient consultations between procedures, which can make for a hectic day. Wang attributes the clinic's success to its team of dependable coordinators and PAs and says the chaotic workday is worth it to help patients in need. "Not every cancer can be treated with chemotherapy drugs or surgery," Wang notes. "We're able to extend patients' lives and improve patients' overall quality of life, while helping them through a very stressful time. It's very rewarding." For patients like McFadden, the work Wang

ACR
1891 Preston White Drive
Reston, VA 20191
703-648-8900
www.acr.org/Imaging3

©Copyright 2015
American College of Radiology

Media contact: pr@acr.org

Continued on next page

Case Study: A Targeted Approach

Continued from previous page

and his colleagues do is immeasurable. "As a result of the treatments I received, I feel relieved and have a better understanding of the importance of taking better care of my health," McFadden says. "I know my cancer could return someday, but thanks to Dr. Wang, I can approach this situation in a more positive manner. I can't express my appreciation enough."

The IRs' approach to patient care has even changed how some referring physicians view IRs and the radiology profession. "The perception used to be that radiologists would rather go in their hole and hide than do patient care," Nazemzadeh says. "But that is changing, and I think it's great because what radiologists do is nuanced and technical, and they can explain the procedures much better than I can. Radiology consultations provide a lot of patient education, which is very helpful and enhances care."



Next Steps

- Identify space to see patients in consultation and begin building the clinical practice.
- Regularly attend multidisciplinary conferences and tumor boards to integrate into the patient-care team and develop relationships with referring clinicians.
- Hire a dedicated and reliable staff of IR coordinators and experienced PAs.

Join the Discussion

Want to join the discussion about how Charlotte Radiology's interventional radiology clinic has helped improve patient care? Let us know your thoughts on Twitter at #imaging3.

Have a case study idea you'd like to share with the radiology community? Please submit your idea to <http://bit.ly/CaseStudyForm>.



A Targeted Approach by *American College of Radiology* is licensed under a *Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License*. Based on a work at www.acr.org/imaging3. Permissions beyond the scope of this license may be available at www.acr.org/Legal.

ACR
1891 Preston White Drive
Reston, VA 20191
703-648-8900
www.acr.org/Imaging3

©Copyright 2015
American College of Radiology

Media contact: pr@acr.org