

Case Study: Early Detection Matters

Radiologists in Michigan collaborate with administrators and care partners to develop a successful lung cancer screening clinic and enhance population health.

By Linda G. Sowers

Key Takeaways:

- After numerous trials proved that low-dose CT lung cancer screening could reduce mortality rates, a radiologist in Michigan spearheaded a dedicated clinic in line with Imaging 3.0 and other leadership practices he learned through the ACR's Radiology Leadership Institute.
- The lung cancer screening clinic has served nearly 2,500 patients to date, with a 3% lung cancer detection rate and a Stage 4 detection rate that is 8% better than the national average.
- To encourage maximum participation, the team focused on eliminating potential hurdles for both patients and referring physicians.

More people die of lung cancer than any other cancer. According to the American Cancer Society, lung cancer accounts for a quarter of all cancer deaths in the U.S.¹ The good news is that when lung cancer is diagnosed early, the five-year survival rate can be as high as 90%.²

Multiple research studies show that lung cancer screening decreases lung cancer mortality. Data from the [National Lung Screening Trial \(NLST\) in 2011](#), showed a 20% reduction in lung cancer mortality in patients who received low-dose CT (LDCT).³ Based on the study, the U.S. Preventive Services Task Force made lung cancer screening with LDCT a public health recommendation in 2013. And both CMS and private insurers now cover lung cancer screening for [qualified individuals](#) — with no copay or cost-sharing by the patient.

Despite these advances, millions of smokers and former smokers who qualify for lung cancer screening are not getting the preventative scans that could save their lives. So, a cadre of radiologists is stepping up to lead lung cancer screening programs that break down the barriers to patients getting the care they need before it's too late.

One such radiologist is Samir J. Parikh, MD, MBA, who launched a lung cancer screening clinic in Jackson, Mich., in 2015. Since its inception, the clinic has served nearly 2,500 patients, with a 3% lung cancer detection rate. The goal of the clinic is to detect lung cancer early, when there is still time for life-saving treatment — and it's working. At a national level, 44% of lung cancers are not detected until Stage 4. In Jackson County, the late-stage cancer rate is just 36%.

Here's how a dedicated team of caregivers implemented this life-saving lung cancer screening program, enabling earlier detection and treatment of this deadly disease.

Stepping Up to Lead

As the healthcare industry recognizes that lung cancer screening saves lives, radiologists like Parikh are also positioning themselves to deliver more value-based care for patients. Trained in cardiopulmonary radiology



Recognizing that radiology is central to lung cancer screening, Samir Parikh, MD, MBA, a diagnostic radiologist at Jackson Radiology Consultants, collaborated with care partners to establish a dedicated clinic.

with a focus on lung diseases, Parikh immediately recognized that radiology is central to lung cancer screening and volunteered to lead a lung cancer screening program for his health system, Henry Ford Allegiance Health.

"Lung cancer detection starts with a CT of the lungs, so the radiologist is at the center of the entire chain of care," Parikh says. "As we began considering a lung cancer screening program, I was also learning about [Imaging 3.0™](#) and other leadership practices through the [Radiology Leadership Institute](#). Learning about the importance of value over volume and leadership best practices sparked me to ask the question, 'How can I make a difference in patient care?'"

For Parikh, the answer was to ensure that his practice was among those developing and implementing a lung cancer screening program. Parikh is a diagnostic radiologist at Jackson Radiology Consultants, a small private practice serving Henry Ford Allegiance Health, a medium-sized community hospital in Jackson County.

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Results from the clinic demonstrate that when care partners, like Mohan G. Kulkarni, MD, a thoracic surgeon affiliated with Henry Ford Allegiance Health in Jackson, partner with radiologists and administrators, lung cancer can be detected more often, and at earlier stages.

He shared his idea for the clinic with his colleagues at the eight-radiologist practice, and they were immediately on board.

Improving Population Health

Parikh is a member of the health system's multidisciplinary Lung Disease Site Team, a group dedicated to improving care around this particularly deadly cancer. As such, he began talking with other care partners on the site team, including pulmonologists, thoracic surgeons, and hospital administrators, about establishing a lung cancer screening clinic in 2015 as an adjunct to its existing lung nodule program.

After reviewing the area's demographic data, the team determined that a lung cancer screening program was a particularly worthwhile endeavor for the patient population the health system serves. In Jackson County, 30% of the population smokes, and in Jackson city, 35% of residents are smokers — compared with 23% of residents throughout the state of Michigan. "We have a significantly higher number of smokers in our community than the rest of the state, so many people meet the criteria for lung cancer screening," Parikh explains.

The team also found that, according to the Commission on Cancer registry, 44% of lung cancers in 2010 were not diagnosed until Stage 4 in the U.S. "Based on our at-risk population, we felt like screening could detect lung cancer at an earlier stage," says Mohan G. Kulkarni, MD, a thoracic surgeon affiliated with Henry Ford Allegiance Health in Jackson and the physician co-chair of the Lung Disease Site Team. "As a result, we can

intervene at a point where we can impact the course of the disease and save lives."

With recognition of both need and opportunity, Parikh and Kulkarni came together with other clinicians and administrators from Henry Ford Allegiance Health to form the lung cancer screening program. Karen Yacobucci, administrative director of Henry Ford Cancer Institute (HFCI), Central Region, was the force behind the successful execution of the program.

Putting Ideas into Action

When the group started its program in 2015, CMS was not yet covering lung cancer screening, so an important first step in establishing the screening clinic was to find funding to cover the cost for patients. "Immediately recognizing the clinic's life-saving potential, the health system created a fund with a contribution from The Tony Open, a local charitable foundation seeking to make a difference in the community, to pay for lung cancer screening for qualified patients who couldn't afford it," Parikh says.

After lining up funding, the team began actively implementing the lung cancer screening program, including finding space for the clinic and securing dedicated time to use the CT equipment. Parikh met with his radiology group partners and proposed that he would schedule a block of time each week for lung cancer screening patients. With their support, he schedules one morning a week, from 7 a.m. to noon, for the clinic.

Next, he approached Yacobucci and other administrators and requested the same dedicated time to use the CT scanner for lung cancer screening. He also asked for a place to meet with patients to discuss their scans and findings. "I need that dedicated space and time, because I want to speak with every patient," Parikh says. "The hospital administrator looked at the NLST trial data and our demographics and realized it was the right thing to do for our patients."

Other care partners agreed that the face-to-face conversations between the patient and radiologist were critical to the program's success. "Dr. Parikh is not a typical radiologist who spends most of his time in the dark reading images and creating reports," Kulkarni says. "He wants to have patient interactions to ensure anxious patients with potential findings of lung cancer don't leave without having a clear understanding of what comes next."

Breaking Down Barriers

To make the program work effectively, Parikh and the team focused on eliminating potential hurdles for both patients and referring physicians. For patients,

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the screening clinic provides an easy and seamless pathway from undergoing the initial CT and receiving tobacco counseling to reviewing results of the scan and ordering follow-up imaging and scheduling appointments. Here's how the process works:

When a patient comes in for screening, a technologist conducts the scan, and then the patient goes to see Carol Zawacki, RN, LMSW, a certified tobacco treatment specialist and health educator, while Parikh reads the scan. "I didn't want patients to have to come back for separate tobacco counseling," Parikh explains. "The goal is to have everything happen on the same day, which encourages people to get the follow-up care they need."

Zawacki says that in-person counseling and treatment is the most effective for facilitating tobacco cessation. "I talk briefly with patients about their relationship with tobacco: the physical addiction, plus the psychological, emotional, social, and behavioral aspects," says Zawacki, who was invited to join the screening team based on her ongoing efforts to counsel lung nodule patients about smoking cessation. "Most people have tried to quit. Most want to quit. I'm a resource to offer support, empathy, understanding, and education."

Evidence shows that patients have a 50% greater chance of quitting smoking when they combine some type of counseling with a nicotine replacement therapy or medication.⁴ "While patients are here, I can submit an order for that treatment and then follow up with them afterwards about other support they need to quit," Zawacki says.

The data shows this on-the-spot tobacco counseling is working. The overall smoking cessation rate for patients in the lung cancer screening program has gone from 13% in 2016 to 15% in 2017. Even better, the quit rate for screening patients with negative screening results increased from 8% in 2016 to 14% in 2017. According to Parikh, these results can be attributed to Zawacki's direct interaction with patients as a tobacco cessation counselor.

Empowering Patients

By the time a patient has finished speaking with Zawacki, Parikh has read the scan and compared it to previous scans and applied the **ACR Lung-RADS®** lexicon. The patient then joins Parikh and Christi Bartlett, RN, BSN, the screening program's nurse navigator, in the reading room, where Parikh reviews the images with the patient.

In these shared decision-making consultations, Parikh orients the patient with the anatomy, identifies any



For patients with suspicious findings, nurse navigator Christi Bartlett RN, BSN, obtains authorizations and often schedules follow-up procedures before the patient even leaves the clinic.

nodules, and describes the findings. Each consultation takes 5 to 15 minutes, depending on how many questions the patient has for Parikh. Every patient leaves the clinic with exam results in hand.

In instances in which the findings are negative, Parikh stresses that, while there is no indication of lung cancer, patients are still at high-risk for developing the disease and should quit smoking. Bartlett makes an appointment for annual screening and reinforces that patients should keep returning to ensure they have a chance to catch developing lung cancer early.

From there, Kayla Brow, lung program coordinator, monitors annual screening patients. Brow enters and tracks all results within the EMR's lung screening dashboard and the HFCI database to ensure that patients have follow-up appointments within the appropriate timeframe. Brow also generates and mails reminder letters to each lung screening patient one month prior to their recommended screening. Before any new or returning patients are scheduled into the lung screening block, Brow verifies the order, reviews the chart to ensure the patient meets CMS criteria for lung cancer screening, and then reaches out to the patient to schedule the exam.

When the findings are suspicious, Bartlett, who is also the lung nodule nurse navigator, contacts the referring provider for appropriate follow-up based on Lung-RADS. She also facilitates orders for Henry Ford Allegiance physicians to co-sign, ensures proper order authorization, and schedules follow-up appointments

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Carol Zawacki, RN, LMSW, a certified tobacco treatment specialist, counsels patients on smoking cessation while the radiologist is reading the scans.

— most within 14 days. For outside physicians, Bartlett contacts the physician's office with results and recommendations, then watches to ensure an order for follow-up imaging is placed.

For patients with findings that require follow-up, Bartlett stays in close touch to ensure they get the recommended scans. "I reach out to them by phone," she says. "I call three times, and if I haven't spoken with them, I send a certified letter about the importance of keeping their appointments. That's when many people realize it's serious, and they need to come in."

Bartlett also reports back to those patients' referring physicians, letting them know what's happening and what exams and appointments have been scheduled. "Our ordering physicians find it reassuring that our clinic is facilitating all of it. As a result, the referring physicians are more inclined to encourage their patients to come for screening, so everybody wins."

Patients are also comforted to know that Bartlett is there to assist them through the screening process and that they can always reach out to her with questions. "It makes all the difference having someone there for the patients to guide them through and make sure nothing is overlooked," Parikh says. "Our patients know someone is watching out for them behind the scenes. It's reassuring when they know the order has been placed for them before they even leave the clinic."

Finding Cancer Earlier

Based on the clinic's efforts to make screening as easy as possible for patients and referrers, it is making

inroads in its goal of catching lung cancer early. "One thing we're all concerned about is missing cancer until it's too late, when the treatment is harder and the prognosis is worse," says Kulkarni. "We tried to come up with a program to capture people before they come in with advanced disease. Our goal is to find cancers at an earlier stage and get that intervention, so we can save more lives."

The results of the lung cancer screening program speak for themselves. Since the program began, the team has seen nearly 2,500 patients and has found a total of 53 cases with pathologically proven lung cancer at all stages. The program has also detected nine other potentially deadly cancers, including esophageal, kidney, adrenal, transverse colon, abdominal, and lymphoma.

In 2018, the cancer detection rate for the lung cancer screening program was nearly 3%. And the incidence of Stage 4 cancer was just 36% in 2018 as compared to the national average of 44%. "Many times, our patients think that when we catch cancer, it's too late," says Bartlett. "But if we catch it when it's small, it's not too late. We just need to get you in here, get you checked, and watch out for you. We can make a difference."

With their strong record of success, the team is now focused on getting even more patients in for lung cancer screening. "We are all passionate about reaching out to our community — especially the lower socioeconomic population where smoking is more prevalent — and encouraging people to get the screening that can save their lives," says Parikh.

To that end, Parikh asks patients to share their screening experiences with their family and friends — knowing that people who smoke usually know others who smoke. The team also conducts outreach at events, like Rotary or Lions Club meetings, and at the county fair, parades, festivals, health fairs, and industrial parks, as well as at the hospital's annual "Shine a Light on Lung Cancer" event.

Additionally, the team regularly visits medical practices and referring physicians whose patient populations include a high number of smokers to provide education and promote the screening program. "People are starting to realize that every time a patient comes in for a physical, their doctors need look into their smoking history and promote lung cancer screening," Parikh says.

Kulkarni believes that having a collaborative team of people who believe in the power of lung cancer screening is the most important factor in the success of their program. "When you have buy-in from administration along with dedicated clinicians and a

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forward-thinking radiologist coming together with a focus to improve care for a particular cancer, miracles can happen," he says. "The evidence shows that we can have an impact when we work together."

Next Steps

- Review findings directly with patients and recognize that low-dose CT for lung cancer screening is a teachable moment for smoking cessation.
- While patients are in the clinic, order scans and set follow-up appointments to encourage patients to continue screening or treatment and take the burden off of referrers.
- Focus on patient outreach and engagement. Identify a strategy to reach the highest risk patients, including those in lower socioeconomic groups.

End Notes

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