

Case Study: Managing Nodules

Radiologists in North Dakota collaborate with care partners to refine lung nodule recommendations for improved patient management.

By Kerri Reeves

Key Takeaways:

- After instituting heart disease and lung cancer screening programs, Sanford Medical Center Fargo saw an increase in pulmonary nodule cases.
- Sanford radiologists engaged in multidisciplinary meetings to align lung nodule recommendations with the workflow and care requirements of related specialties.
- With custom recommendations and a dedicated nodule clinic, patients receive clear navigation and personalized education about their care paths.

In 2013, cardiologists and radiologists at Sanford Medical Center Fargo began offering heart disease and lung cancer screenings to identify these potentially life-threatening conditions earlier. With the use of advanced low-dose CT (LDCT) technology for these screenings, lung nodule detection surged, and health system physicians quickly became overwhelmed with managing nodule cases for follow-up care.

It's not surprising that the screening programs increased nodule detection. Lung nodules are common, especially in people who do or have smoked, but **most are benign**. Initially, Sanford's radiologists followed the **ACR Lung-RADS™** guidelines for reporting and managing pulmonary nodules and other findings detected through lung cancer screening of at-risk patients, and the **Fleischner Society** recommendations for incidental lung nodules found through heart screening and other exams.

Many Sanford clinicians, however, were unfamiliar with these recommendations, especially primary care physicians (PCPs) and internal medicine physicians who were in frequent contact with radiologists about nodule patient care paths. Other physicians, including pulmonologists and oncologists, followed their specialty's nodule management guidelines — often leading to

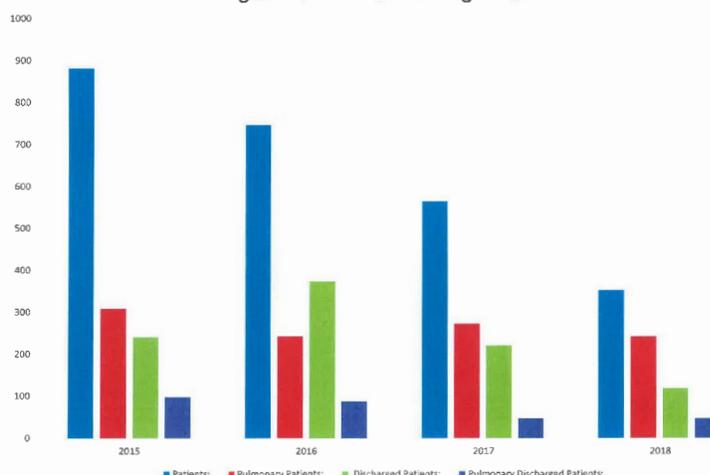
confusion regarding the next steps in care.

After initially receiving negative feedback about the screening program from various care team members, Sanford's radiologists took the lead to address the challenges. They partnered with referring physicians to develop a tailored set of lung nodule management guidelines that everyone agreed would facilitate timely, thorough, appropriate follow-up throughout each patient's care journey.

Since instituting the custom guidelines, which were developed through a series of monthly multidisciplinary meetings, radiologists have bridged the gap with PCPs and specialists to address patient management challenges and improve care.

"The primary reason for our success is that we don't believe radiology operates in a vacuum," says Martha S. Kearns, MD, radiologist at Sanford Medical Center Fargo and guidelines project leader. "We know that to provide the best service, we have to reach out to our medical partners and work together to achieve continuity of care. This project is an example of how radiologists can lead an effort to ensure patients receive the care they need, when they need it."

2015, 2016, 2017 and 2018 YTD
Lung Nodule Surveillance Program Data:



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Martha S. Kearns, MD, radiologist at Sanford Medical Center Fargo, led the lung nodule guidelines project.

Increasing Volume

Sanford's lung nodule management challenges began when the cardiovascular team started offering "self-serve" heart screenings, which are no-referral-needed exams for patients over 40 years old who have contributing factors such as high blood pressure, high cholesterol, or obesity. After EKGs, calcium scoring, cholesterol tests, and other evaluations, heart screening patients who require further testing undergo LDCT scans.

Around the same time, Sanford's radiology team began offering LDCT lung cancer screening to at-risk patients. ([Read a case study about how Sanford developed its lung cancer screening program.](#)) The U.S. Preventative Services Task Force had just released a [recommendation](#) stating that annual screening with LDCT significantly reduces lung cancer-related deaths among high-risk patients, and the radiologists at Sanford knew that lung cancer screening would help save lives in North Dakota and the surrounding states it serves.

With the heart and lung cancer screening programs both involving LDCT images of the chest, the programs revealed a high volume of lung nodule findings. The radiology team used Lung-RADS and the Fleischner criteria to recommend the next steps in care for the lung screening cases, but sending notifications, triaging cases, and ordering procedures for all of the lung nodule patients was challenging for PCPs and other providers because they weren't always confident in the recommendations.

"While the guidelines outlined management for all of the lung nodules we found, they didn't always make

sense to the clinicians taking care of patients — or to patients themselves," Kearns explains. "With all of the confusion, we realized that the patients who needed additional LDCT scans in six or 12 months could possibly fall through the cracks. We needed to standardize the follow-up pathway to make the process less overwhelming for everyone."

Establishing a Clinic

In February 2015, CMS announced Medicare's [national coverage determination](#) for lung cancer screening with LDCT, which included new requirements for lung cancer screening programs. Sanford — and systems nationwide — halted their screening program while they adjusted to meet the new requirements. This hiatus, which lasted nine months, gave radiologists and referring physicians an opportunity to determine how to orchestrate follow-up care for lung nodules.

As part of this process, PCPs petitioned hospital administrators for a lung nodule clinic run by a dedicated nurse navigator who would track follow-up care and educate patients directly about their nodule findings and next steps. "Family practice physicians were inundated with the nodules, and they didn't understand the next steps in care or who was in charge," explains Sharri Lacher, APRN, a lung nurse navigator who was eventually promoted to the lung nodule clinic's clinical nurse specialist, a reimbursable position. "Everyone was onboard with forming a dedicated clinic with a dedicated nurse navigator for managing the follow-up care of patients with lung nodules."

From there, Kearns spoke with referring PCPs, internal medicine physicians, and pulmonologists anecdotally about lung nodule management. She specifically asked what they thought of the radiologists' follow-up recommendations. More often than not, the responses were negative: Most didn't understand the recommendations or who should take ownership of follow-up care.

Building Consensus

Kearns and Lacher took the patient management concerns to an existing monthly multidisciplinary lung cancer screening oversight meeting, where members from pulmonology, cardiovascular medicine, oncology, radiation oncology, and pathology could discuss nodule processes and responsibilities. As Kearns welcomed constructive feedback from physicians regarding the nodule management, her goal was to find consensus among the care providers for recommendations of pulmonary nodules, whether detected incidentally or through the LDCT screening program.

During a series of meetings, each physician had expectations about the patient care pathways that were

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distinctive to their specialty — and were sometimes incongruent with radiology's ACR-based recommendations. All meeting participants were concerned about who would follow-up on patient no-shows to scans and appointments, while some had specific assumptions about when they would become involved in the care process and how clinical decisions were made.

"We worked through these issues as a true multidisciplinary team," says Kara Johnson, MD, pulmonologist at Sanford Medical Center Fargo. "We reviewed our progress, addressed concerns, and continued to improve our nodule management process to ensure patients received the best possible care."

Over the course of a year, the multidisciplinary team established a custom set of lung nodule management recommendations that combined components of Lung-RADS and the Fleischner criteria with other specialties' guidelines — all based on patients' risk profiles and nodule characteristics. Kearns sent these revised recommendations to each relevant department and ensured that radiology transcriptionists (before adoption of a speech recognition platform) had the latest iterations for dictation and documentation.

With new recommendations in place, the radiology department reinstated the lung cancer screening program in October of 2015. "As radiologists, we are responsible for communicating the follow-up recommendations clearly so that they make sense to both providers and patients," Kearns says. "It's our job to ensure our recommendations dovetail with how other providers practice so we can uphold care continuity for our patients."

Supporting Screening

Sanford's emphasis on multidisciplinary communication and collaboration for managing lung nodule patients has yielded positive results. Now, providers understand about what lung nodules mean, who drives the care plan at Sanford, and at what frequency surveillance LDCTs are needed to ensure patients remain on the appropriate care path.

"The lung nodule program ensures, that someone is watching closely over the nodules. Otherwise, there's always the risk of these patients getting lost in the system," says Kaushik Bhunia, MD FACP, CHCQM, medical director of Sanford's Pulmonary Rehabilitation Program. "The whole process leads to early diagnosis and early treatment and is a solid resource for exceptional patient care."

As nurse navigator and clinical nurse specialist, Lacher meets with patients to review the shared



Sharri Lacher, APRN, is a clinical nurse specialist in Sanford's lung nodule clinic.

decision-making process and explain findings in detail, alleviating feelings of apprehension and empowering them to make lifestyle changes — such as smoking cessation — to decrease cancer risk. She also works directly with providers to efficiently triage abnormal findings, ensuring patients receive timely, appropriate follow-up care.

This coordinated approach supports Sanford's successful heart and lung cancer screening programs. In 2015, Sanford performed 444 lung cancer screenings alone, and the number of screenings has continued to increase every year since then, with more than 1,000 patients from North Dakota, South Dakota, and Minnesota undergoing lung cancer screening in 2018. Through the screenings, the team has identified previously undiagnosed lung, pancreatic, breast, and thyroid cancer, improving disease detection as well as patient care through subsequent treatments.

Kearns hopes that Sanford's multidisciplinary lung nodule management solution will serve as a model for institutions nationwide, particularly as more radiology groups establish their own lung cancer screening programs. "Through our lung nodule management program, we've been able to achieve continuity of care and better collaboration among specialty departments to offer these life-saving services to our patients," Kearns says. "Our paradigm can be applied anywhere to engage patients and help treating physicians execute care plans with confidence."

Next Steps

- Seek feedback from internal medicine, PCPs, and specialists about current lung nodule recommendations.

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- Hold frequent multidisciplinary committee meetings to review the lung nodule care path and develop a consensus around follow-up recommendations.
- Establish a clinic with a dedicated nurse navigator to meet with lung nodule patients and work with providers to manage follow-up care in accordance with the new guidelines.

Reference

1. Final Recommendation Statement Lung Cancer: Screening <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/lung-cancer-screening>. Accessed on June 27, 2019.

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