

Earlier detection and better patient follow-up of incidental lung nodules at Summa Health

Nuance radiology reporting and analytics solutions advance care for emergency patients presenting with incidental findings.

Challenge

- Cumbersome process for identifying and facilitating follow-up of ED patients with incidental lung nodules
- High risk of missed lung nodule follow-ups

Solution

- mPower Clinical Analytics
- PowerScribe 360 Reporting

Results

- Automated management and tracking of lung nodule patients
- Nearly 8X increase in positive identification of patients with lung nodules requiring follow-up
- Increased patient volume supported the opening of new Lung Nodule Clinic

Summa Health System in Akron, Ohio, is a growing healthcare organization dedicated to caring for the overall health of the more than one million patients it serves every year. Summa has more than 1,300 licensed inpatient beds, providing comprehensive acute, critical, emergency, outpatient, and long-term/home care. Summa's commitment to providing patient-centered, integrated, and coordinated care has a positive impact on the health of the community and guides its "triple aim" objective: To focus on improving the care experience and health of the populations it serves while lowering the total cost of care.



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Chairman of Imaging
Summa Health

Challenges with incidental findings

As Summa and other healthcare organizations increasingly use chest CT imaging to evaluate patients seeking emergency care, clinicians are finding more incidental lung nodules. However, these nodules historically are at risk of not receiving appropriate follow-up by patients and primary care physicians alike.

“When patients visit the emergency department (ED) and have a chest CT or diagnostic chest radiograph, there are times when we find a lung nodule incidentally,” states David Rosenblum, DO, Summa’s Chairman of Imaging. “Ensuring these patients receive the recommended follow-up and care was a challenge.”

When an incidental lung nodule is identified, radiologists flag that incidental finding. However, because of the nature of an ED visit, the focus is most often on what is emergent, rather than on the incidentally detected nodule. “Although we identify lung nodule cases for referring physicians, it was too easy for the patients to fall through the cracks,” notes Dr. Rosenblum.

Turning insights into actions

To help improve health outcomes, Summa established a lung nodule multidisciplinary team in 2014, involving pulmonologists, radiologists, pathologists, oncologists, cardiothoracic specialists, navigators, and analysts who focus on screenings, diagnostics, treatment therapies, follow-up, tracking, communications, and quality improvement.

“We had the right people in place,” said Laura Musarra, Senior Business Performance Analyst. “But we needed to find a way to automate the process of identifying and managing ED patients with incidental lung nodules to facilitate appropriate follow-up care.”

Already a longtime PowerScribe reporting and mPower Clinical Analytics customer, Summa Health turned to Nuance for help.

The Summa team knew that mPower could provide easy-to-understand, detailed, and actionable information from the unstructured radiology report narrative. By expanding their use of mPower’s advanced language processing capabilities to extract actionable insights from within PowerScribe, they realized they could easily analyze all ED patients’ radiology reports to identify documented incidental lung nodules.

“It took some trial and error at first—we needed to uncover the most reliable data from thousands of imaging studies with unstructured dictated notes with various findings and terminology,” explained Musarra, but the team soon landed on an effective process. “We could now query and analyze vast amounts of data which was simply impossible before.”

Identifying priority patients

Once ED patients with lung nodules are identified through the data search process, the information is sent to the team of lung navigators to interpret and determine next steps. “Data is extracted right from PowerScribe,” said Musarra. “It provides all the documentation our navigators need—including the radiology report with details such as nodule size and any follow-up recommendations.”

As lung care specialists, the navigators can interpret that information and decide how to best serve the patient—whether the referring physician simply needs the information or whether to make a prompt referral to Summa’s Lung Nodule Clinic for further consultation. Navigators are critical team members because they

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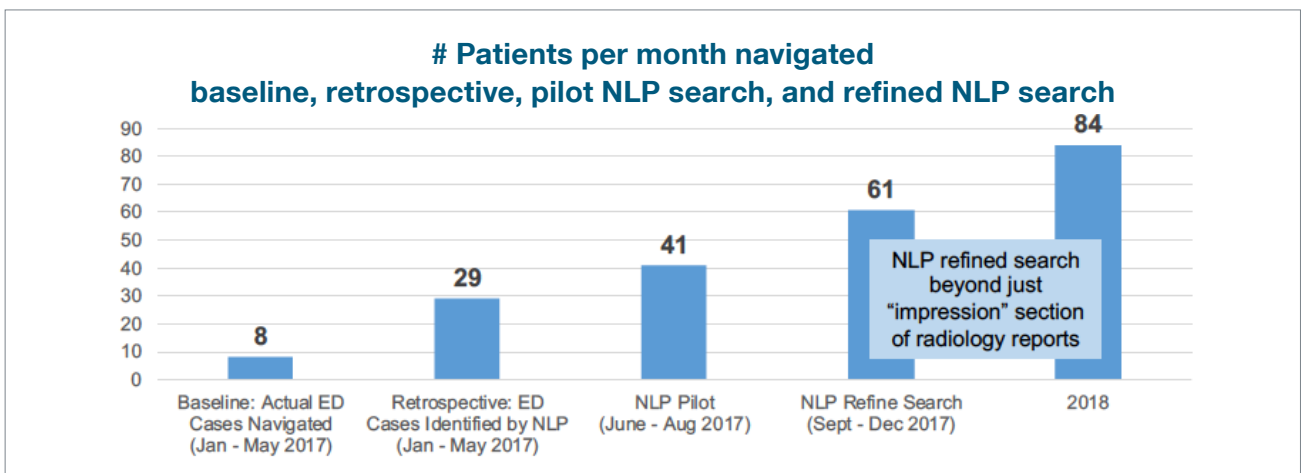
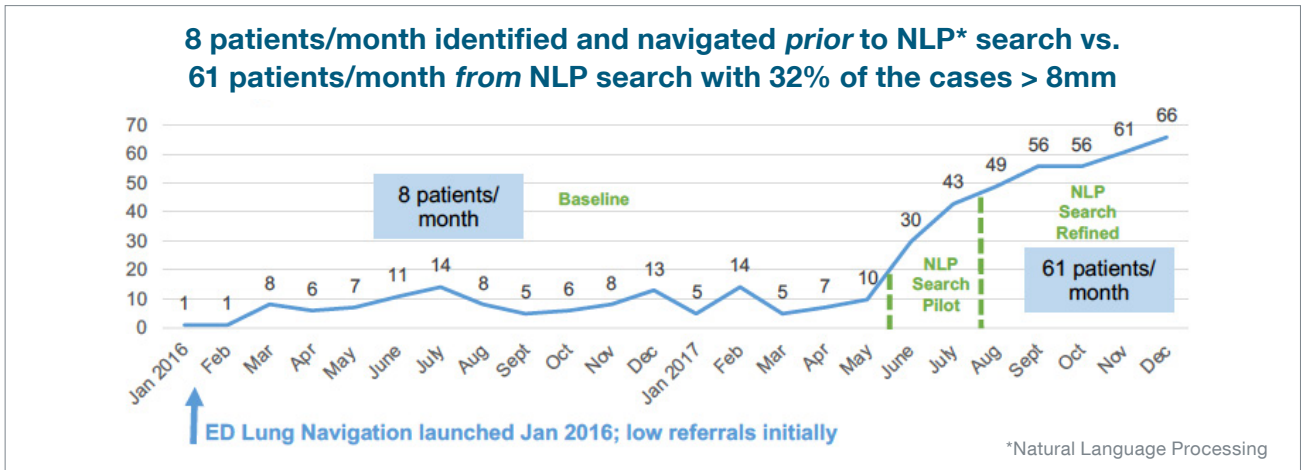
Laura Musarra
Senior Business Performance Analyst
Summa Health

follow up directly with the primary care physician notifying them of findings and acting as a patient liaison to facilitate, manage, and track appropriate follow-up testing and outcomes, including expediting care for actionable nodules.

Every week, Summa’s multidisciplinary team reviews the lung nodule data generated by mPower Clinical Analytics, continuously identifying those patients who may need vital pulmonary care. Cases are carefully evaluated based on national guidelines to refine the patient list further and help avoid overdiagnosis.

Improving treatment outcomes

Before using mPower’s AI-driven data analytics, an average of eight ED patients per month were referred to Summa’s lung navigators with incidental nodules. According to Musarra, the team now identifies about 60 patients per month—nearly an 8X increase. Additionally, among these referred cases, over 30% presented with lung nodules greater than 8mm, which is the threshold at which the risk of malignancy increases significantly, making these actionable findings, according to Fleischner Society Guidelines.



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These achievements highlight the value of a multidisciplinary approach and the importance of the navigator’s role in helping expedite care for actionable nodules. As a result of Summa Health’s new incidental nodule process, notified patients have higher follow-up rates. Additionally, it supplements traditional lung screening programs that focus on people at high risk for lung cancer based on their smoking history. “Now, we’re able to identify cancers at an earlier stage, when they are more treatable, for many identified patients regardless of their smoking history,” said Musarra. “By sending all nodule sizes to our navigators—not just those that appear actionable—we ensure a more careful review while adhering to best practices that will help avoid overdiagnosis.”

“The patient population in our area is older, and the instance of smoking is still fairly high,” said Dr. Rosenblum. “This type of program offers a safety net for our community for people who might otherwise fall through the cracks.”

Looking ahead

Embracing AI-powered language processing capabilities allows organizations to unlock vast amounts of data from within radiology reports, leading to improved population health strategies. This technology enabled Summa Health to optimize its PowerScribe reporting environment and create a process that helped establish a Lung Nodule Clinic

in early 2018. “Our initial focus was to unlock valuable information in our imaging studies to strengthen our lung program, but that was only the beginning—now mPower is helping drive multiple new initiatives,” said Musarra.

Summa Health recognizes that there are many other incidental imaging finding opportunities that can lead to earlier detection and treatment of pathology. “As radiologists, we are in a gatekeeping role. The data is there. With time being a critical factor in treatment success, clinical analytics like mPower offer us another piece of the puzzle and can help providers investigate findings sooner,” said Dr. Rosenblum. “By combining our navigators’ expertise with mPower clinical analytics, not only are we identifying more patients at risk for lung cancer, but we’re also helping reduce medical liability through better identification and coordination of follow-up care.”

Adds Dr. Rosenblum, “Furthermore, mPower is a very powerful tool which can help improve reporting in your group, drive added imaging volumes, and increase physician satisfaction, so that referring physicians are eager to join your team.”

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