# RISK MANAGEMENT PERSPECTIVES

## **Delayed Diagnosis of Lung Cancer:**

Risk Reduction Communication Strategies for the Healthcare Team



**CASE ONE** Radiologist Communication Failure



**CASE TWO** Work-up Failures



**CASE THREE** Inadequate Primary Care/Patient Communication Protocols

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## **Delayed Diagnosis of Lung Cancer:**

**Risk Reduction Communication Strategies for the Healthcare Team** 

## **INTRODUCTION**

Lung cancer is a leading cause of cancer deaths in the United States. Only esophageal, liver, and pancreatic cancer have lower five-year survival rates than lung cancer. Fortunately, lung cancers that are diagnosed at a localized stage have a significantly higher five-year survival rate (60%). Unfortunately, only 24% of lung cancers are diagnosed at that stage.<sup>1</sup> It follows that the earliest possible lung cancer diagnosis should be a primary patient safety goal.<sup>2</sup> Increasing survival rate should decrease medical liability risk.

Although early diagnosis of lung cancer is the goal, accomplishing it is complicated because lung cancer does not usually have definitive symptoms in its most treatable stages.<sup>3</sup> So instead of a direct diagnostic process that starts with the patient complaining of symptoms, pulmonary findings suspicious for lung cancer are frequently discovered incidentally on chest x-rays or CT scans.<sup>4</sup> In fact, approximately one million lung nodules are incidentally discovered each year.<sup>5</sup> Each of the three case studies in this publication involves the failed follow-up of an incidental lung finding.

Incidental pulmonary findings can be overlooked for many reasons.<sup>6</sup> Ambiguity in who is responsible for follow-up, workflow factors, and failure to close the communication loop are common themes in the closed claims analyzed for this article. These activities require teamwork. Another common thread is defendant physicians acting as individuals, instead of working as team members. The individualistic manner in which the defendants provided care to the plaintiff often manifested in finger-pointing during litigation, which made the defense of the claims more complicated.



## LUNG CANCER SCREENING A Key Preventive Measure for High-Risk Patients

According to the American Cancer Society (ACS), low-dose spiral computed tomography (LDCT) screening of high-risk individuals can decrease lung cancer mortality by 14 to 20%. If only half of the approximately eight million Americans who qualify as high risk for lung cancer were screened, over 12,000 lung cancer deaths could be prevented.<sup>7</sup>

The ACS is in the process of updating their lung cancer screening guidelines, which are expected to be released by the end of 2022. Meanwhile, the ACS recommends following guidance from the U.S. Preventive Services Task Force and other major organizations.<sup>8</sup> They recommend annual lung cancer screening with LDCT for generally healthy adults ages 50 to 80 years with a 20 pack-year smoking history who smoke or have quit within the past 15 years. A pack-year is a measure of how much a person has smoked over a particular period. One pack-year is the equivalent of smoking a pack per day for a year.<sup>9</sup> Various pack-year calculators are available online.

#### LUNG CANCER SCREENING RESOURCES

**U.S. Preventive Services Task Force:** <u>Lung Cancer: Screening</u><sup>9</sup> Recommendations for lung cancer screening National Lung Cancer Round Table/American College of Radiology: Lung Cancer Screening 201: Accelerating Uptake of Lung Cancer Screening<sup>10</sup> Strategies for increasing lung cancer screening, lung cancer screening program best practices, and descriptions of successful programs



## Radiologist Communication Failure: Pulmonary Findings on Preoperative Chest X-rays

In the following case, the radiologist's report was electronically transmitted to various members of the patient's healthcare team, but no one followed up. Did the radiologist fulfill his duty to the patient? The plaintiff alleged he did not: He should have picked up the telephone and ensured the ordering physician knew there was a suspicious mass in the patient's lung.

A significant number of claims against radiologists that do not involve interpretation errors involve failures to appropriately communicate findings. Plaintiffs often argue that in addition to delivering the radiology report, the radiologist has a duty to directly communicate a finding to the ordering physician (and/or patient and primary care physician (PCP)). Plaintiffs use the American College of Radiology (ACR) Practice Parameter for Communication of Diagnostic Imaging Findings to establish the standard of care for communicating radiology results, despite the guideline's caveat: "Practice Parameters ... are not intended, nor should they be used, to establish a legal standard of care."<sup>11</sup>

The following case study involved an incidental pulmonary finding that arguably should have been directly reported by the radiologist to the ordering physician. Pursuant to the ACR practice parameter, direct reporting may be warranted when a finding is "significant and unexpected;" has a "reasonable probability of impacting the patient's health;" and "if not acted on, may worsen over time and likely result in an adverse patient outcome."<sup>11</sup>

Consider the additional steps the radiologist could have taken to ensure the lung nodule he identified was worked up.

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### **CASE ONE**

**Issues:** The radiologist did not directly contact the ordering surgeon to report a lung nodule discovered in a preoperative chest x-ray, and the surgeon and anesthesiologist did not follow up on pulmonary findings, resulting in delayed diagnosis of lung cancer.

A 65-year-old man was scheduled for knee replacement surgery. The surgeon ordered a chest x-ray, since the hospital required one as part of all preoperative work-ups. The radiologist noted a well-defined 2.5 cm nodule in the right lung. He believed this could represent a malignancy. He recommended follow-up frontal and lateral views with obliques for further evaluation. He also recommended a CT correlation if the abnormality persisted. The results were automatically deposited in the surgeon's and anesthesiologist's results folders through the electronic health record (EHR) system. No follow-up occurred.

Eight months after surgery, the patient was diagnosed with adenocarcinoma with metastasis, and died shortly thereafter. His family sued the radiologist, surgeon, and anesthesiologist. They alleged the radiologist should have directly informed the surgeon about the potential malignancy. The allegation against the surgeon and anesthesiologist was that they negligently failed to act on the radiologist's recommendations.

#### DISCUSSION

The anesthesiologist and surgeon settled their cases early in litigation. The surgeon explained to his defense team that he did not usually check chest x-ray reports for knee replacement patients, as he did not believe they were relevant from an orthopedic standpoint. He essentially was ordering the x-ray for the anesthesiologist, who he assumed would review the x-ray report prior to surgery and either inform him about abnormalities, or independently follow up. However, the anesthesiologist did neither. Because he did not order the study, it would not have been his practice to follow up on an incidental lung finding.

The defense of the radiologist involved a detailed analysis of the ACR communication practice parameter recommendations for "situations that may warrant nonroutine communication." The plaintiff's radiology expert testified the defendant radiologist was negligent because he did not directly report the lung nodule to the surgeon pursuant to the ACR practice parameter. The defendant radiologist never considered directly contacting the surgeon to report the lung nodule at issue in this case because the report was emailed. He believed it was the ordering physician's responsibility to review it. A consulting radiologist who reviewed the case generally agreed with the defendant radiologist's opinion that he should be able to depend on ordering physicians to read his reports. However, the consulting radiologist also pointed out that the ACR communication practice parameter was designed to prevent the exact problem that occurred in this case: a cancerous lesion identified by the radiologist was not worked up because of a breakdown in communication.

Causation experts agreed that the patient would have had an excellent chance of survival if the lung cancer had been diagnosed and treated when it was originally identified.

Due to lack of standard of care and causation support, the case against the radiologist was also settled.



#### **RISK REDUCTION STRATEGIES**

Incidental findings provide healthcare teams with rare opportunities to diagnose and treat pre-symptomatic cancer outside of formal screening. In a perfect world, every member of the healthcare team would review radiology reports that land in their inboxes. However, since it is not a perfect world, the safest systems are those with redundancies. "Closing the loop" is an important concept in managing incidental pulmonary findings. Applied to the foregoing case study, closing the loop would

have looked like this: 1) the radiologist communicated the discovery of the suspicious lung nodule and recommendations to the surgeon, 2) the surgeon acknowledged receipt of the information and requested clarification if necessary, and 3) the radiologist confirmed that the surgeon understood the information he received.<sup>12</sup> The requirement for work-up or referral for work-up then would have rested squarely with the ordering physician (the surgeon). Although a radiologist cannot control what an ordering physician does after the loop is closed, the process can prompt the follow-up necessary to reach a diagnosis,<sup>13</sup> which can save lives and reduce liability risk.<sup>14</sup>

#### **Radiologists**

Consider the following recommendations:<sup>11,15,16</sup>

- When you see an abnormality indicative of a high-risk failure-to-diagnose condition such as lung cancer, directly notify the ordering physician about the abnormality; in other words, speak with them in person or on the telephone. (Electronic communication is allowed per the ACR communication practice parameter; however, that doesn't always equate to proving closed-loop communication.)
  - ► Document your communication with the ordering physician.
    - > Include, at a minimum, your first and last name and that of the recipient, the date and time the communication occurred, the means of communication, and what was discussed.
- Do not assume an ordering physician will discover a potentially malignant lung finding in a report sent through an EHR.
- Err on the side of caution when determining whether an incidental finding in the lungs should be directly reported to the ordering physician.
- Follow up direct communication with the final written report of findings.
  - ► Document the finding in a prominent place.

#### **Radiology Department Operations**

Consider the following strategies:17,18,19

- Provide incidental lung nodule communication guidance to radiologists.
  - Consistent with clinical guidelines, distinguish how the different types of findings (e.g., unexpected, incidental, urgent, discrepant, or emergent) should be communicated (e.g., direct telephone communication, email, etc.).
  - Outline how communication information should be documented and where it should be documented (e.g., the final report, the patient's medical record, or the department log).
- Track incidental lung nodule findings to determine the best method for closing the communication loop (e.g., use standardized language in radiology reports combined with a computerized registry designed to identify and track patients with incidental lung nodules).
- Identify workflows that are susceptible to incidental lung nodule finding communication failure.
- Create checklists that set out the steps for communicating, documenting, and following up on potentially malignant incidental lung nodule findings.
- Complementary to information provided to the patient from their PCP or ordering physician, send a letter to the patient, directly from the radiology department, to reinforce the importance of timely follow-up.

#### **ADDITIONAL RESOURCES**

#### ACR Incidental Finding Committee: <u>Incidental Findings Publications</u><sup>20</sup>

Evidence-based incidental findings recommendations built on input from clinically active radiologists

**Fleischner Society:** <u>Guidelines for Management of Incidental Pulmonary Nodules Detected on CT Images</u><sup>21</sup> Guidelines incorporating the opinions of a multidisciplinary international group of thoracic radiologists, pulmonologists, surgeons, pathologists, and other specialists



## Work-up Failures: Incidental Pulmonary Findings in Office-Based Practice

Among delayed diagnosis of lung cancer claims involving clinicians in office-based practice, failure to appropriately act on radiology reports that call out suspicious pulmonary findings is common. The root causes of the diagnostic failures can be traced back to systems failures and omissions on the part of individual physicians. In the following case, no one involved disputed the patient's allegation that the nodule identified in her chest x-ray should have been addressed. Because the defendants were not acting as a team, the abnormal finding slipped through the cracks.



**CASE TWO** 

**Allegation:** Failure to review and work up a suspicious pulmonary finding in a radiology report delayed the diagnosis of the patient's lung cancer while it was still treatable.

A 60-year-old woman was referred by her PCP to an infectious disease (ID) specialist. The ID specialist ordered a chest x-ray. The radiologist noted a suspicious 2.7 cm nodule in the right upper lung and recommended a follow-up CT scan. Copies of the x-ray report were forwarded to the ordering ID specialist and the PCP. Due to insurance issues, shortly after the first ID specialist appointment, the PCP referred the patient to a second ID specialist

who took over treatment. A copy of the chest x-ray report was populated into the patient's electronic record at the second ID specialist's office, as the radiologist and second ID specialist were part of the same healthcare system. The second ID specialist never reviewed the report, since he believed chest x-ray results were not necessary to work up the patient's condition. The first ID specialist also did not review the chest x-ray report. It was his practice to review reports in preparation for a patient's follow-up appointment. Because the follow-up appointment was canceled due to the patient transferring care to a different ID specialist, he was not prompted to review the report, and it fell through the cracks.

Shortly after the chest x-ray was completed and the reports delivered, the patient presented to the PCP. The EHR documentation from the visit indicated the x-ray report was discussed with the patient. No follow-up plans were documented.

Two years later, the patient presented to the emergency department (ED) with a cough. A chest x-ray was performed. When the current and prior x-rays were compared, it was clear that the previous nodule had increased in size. The patient was ultimately diagnosed with stage IV terminal disease. She sued her PCP and both ID specialists, alleging the delayed diagnosis caused her poor prognosis.

#### DISCUSSION

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When he reviewed the plaintiff's medical record from his office after being named as a defendant, the PCP was surprised to discover the documentation indicating he had reviewed the x-ray report with the patient. He had no recollection of doing so. Additionally, it was not his practice to review reports from tests ordered by specialists. He assumed specialists would follow-up as needed. He suspected that the EHR may have auto-populated that portion of the patient's visit note. In the alternative, if he did discuss the report with the patient, it would have been his practice to advise the patient to follow up with the ID specialist who ordered The primary care defense consultant opined that the reasonable course under the circumstances would have been for the PCP to take charge of the work-up.

the x-ray. The patient testified that she was never advised of the x-ray results, did not know why she had a chest x-ray, and was never advised she should follow up with an ID specialist.

Defense standard of care consultants who reviewed the case were not supportive. A primary care defense consultant agreed with the general position that a specialist who orders studies should follow up on them. However, because the patient's record indicated the PCP reviewed the x-ray report with the patient, the consultant asserted that the PCP became responsible for ensuring the lung nodule would be worked up. Regarding his testimony about his standard practice of referring patients back to ordering specialists for work-up, the consultant believed it should have been clear to the PCP that the ID specialist who ordered the x-ray would not be working up a lung nodule since it was outside of his specialty. Furthermore, this patient had transferred care to a different ID specialist than the one who ordered the x-ray due to insurance issues; therefore, his referring her back to the first ID specialist would have been unlikely. The primary care defense consultant opined that the reasonable course under the circumstances would have been for the PCP to take charge of the work-up.

ID consultants who reviewed the case also had difficulty supporting the care provided. In their opinions, the first ID specialist had a duty to review the report and follow up as necessary, since he ordered the x-ray. As for the second ID specialist, because the x-ray report had auto-populated into the patient's office record, the consultants believed he should have reviewed it and made sure someone was following up on the nodule.

Causation consultants believed the chances of curative treatment were high when the lung nodule was first identified. However, when the lung cancer was finally diagnosed, it was at a terminal stage.

The defense team and defendant physicians agreed that the lack of standard of care or causation support indicated this case should be settled.



#### **RISK REDUCTION STRATEGIES**

The diagnosis and treatment of lung cancer discovered incidentally requires the active participation of all members on a patient's healthcare team. The EHR is the team's shared medical record. When the patient's information is available to a defendant who chooses not to access it or defers action to another team member, defense of the inaction is often complicated. Assumptions that someone else will take responsibility for responding to study results are at the root of many malpractice claims.

Consider the following recommendations:

#### Clinicians

- Educate patients about why a chest x-ray or CT scan has been recommended, when the results will likely be available, and what process to follow when results have not been reported.
  - ► Thoroughly document the discussion with the patient.
  - ▶ Review study results you receive, particularly when you ordered the study.
  - ► Do not assume someone else will take responsibility for follow-up.
  - ► Document review of radiology reports and plans for follow-up or treatment.
- Clearly establish who among the members of your patient's healthcare team will coordinate the workup of an incidentally discovered lung nodule.
  - Keep communicating with other members of the patient's healthcare team until it is clear who will handle the ordering/directing of additional tests, consults, or treatments.
  - > Document all communication interactions with clinicians and the patient.
- When in doubt about who is taking charge of the work-up of a lung nodule identified in a radiology report, pick up the telephone and speak with other physicians involved in the patient's care and document the result of the conversations.
- Review patient visit documentation before signing off on the note to ensure it accurately reflects what occurred during the visit.

#### **Operations**

- Develop dependable steps for managing study results and adhere to these steps for all results that are received.
- Do a gap analysis of your follow-up system to detect any ways a study result could fall through the cracks, and then develop additional procedures to eliminate any gaps you discover.
- Analyze EHR programs for possible weaknesses in study result delivery, communication, auto population, and follow-up.
- Ensure the EHR system has the capability to create an inclusive list of outstanding results and can generate a flag or notation about an unresolved test/consult in an individual patient's electronic record.



## Inadequate Primary Care/Patient Communication Protocols: Pulmonary Findings in Emergency Department X-rays

Hospitals, radiology and emergency departments, and their clinicians, and staff are a team. It is reasonable for patients, upon entering an emergency medical system, to assume the team will rescue them from their emergency. It is also reasonable for patients to expect that the system has built-in redundancies that will result in the appropriate delivery of abnormal radiology findings, regardless of how challenging the process may be. One of the reasons for redundancies is the itinerant nature of radiologists and emergency physicians.

The following case study involved common occurrences in an ED that alone or in combination can increase the risk of lung cancer diagnosis delay due to follow-up failure:

- > The patient was discharged from the ED before the radiologist read the chest x-ray.
- > The chest x-ray was ordered by an ED physician who went off shift before the radiologist reviewed the x-ray.
- > The lung nodule was incidentally discovered on a chest x-ray.
- > There was a discrepancy between the radiologist's and the ED physician's interpretations of the chest x-ray.

In addition to individual responsibility, the successful communication of incidental and discrepant findings in ED imaging requires collaboration between the ED department/ED physician group and the radiology department/radiology group. These groups must promulgate policies and protocols that ensure the individuals involved have specific roles and know their roles in the process of communicating these findings to the individual in a position most likely to accomplish follow-up. According to the ACR, "Communication of information is only as effective as the system that conveys the information."<sup>11</sup> A successful healthcare delivery system requires teamwork.

In closed claims that involve failure to follow up on incidental and/or discrepant findings in images ordered by ED physicians, the ED physicians and radiologists often blame each other for not taking responsibility for initiating follow-up. However, the duties of information exchange are reciprocal.<sup>11</sup> When the system fails because of lack of teamwork, defending those who should have been engaged but weren't can be complicated.

Consider what the radiologist, ED physicians, and administrators could have done to make the work-up of the following patient's pulmonary findings more likely.



## **CASE THREE**

**Allegation:** Failure to appropriately communicate the incidental finding of a lung nodule on the ED x-ray delayed diagnosis of lung cancer.

On a Saturday evening, a 45-year-old man presented to the ED after being hit by a car. The ED physician ordered spine, shoulder, and chest x-rays. Focused on evidence of traumatic injury, he read them as negative. Because the preliminary read was negative, the images were not sent to the after-hours radiology service. The patient was discharged the next morning. On Monday morning, the hospital radiologist reviewed the images and noted a 3 cm soft tissue nodule in the lower lobe of the patient's right lung. Pursuant to his standard practice, the radiologist would have called the ED to report the nodule and recommend follow-up studies to rule out malignancy. Although the radiology report was contained in the patient's hospital record, the patient was not informed of the radiologist's findings or recommendations. He did not have a PCP.

Two years later, the patient returned to the ED due to a severe cough and chest congestion. A 5 cm well-circumscribed right lower lobe lung mass was identified on x-ray in the same location as the lung nodule identified two years earlier in the ED. The patient was subsequently diagnosed with lung cancer and died within the year. His wife and children filed a wrongful death lawsuit against the radiologist, radiology group, various ED physicians, the ED group, and the hospital. The family alleged that the failure to work up the lung nodule delayed treatment that would have increased the patient's chances of a better result.

#### DISCUSSION

This case illustrates the complexities surrounding communication of incidental and discrepant pulmonary findings in the ED. Although it would have been the radiologist's practice to directly report a suspicious lung nodule to an ordering physician, the ED defendants denied receiving a call. The ordering ED physician would not have been in the ED on the day the call ostensibly was made. The radiologist did not document a call to the ED, and there was no ED documentation of the call coming in. Other than the radiologist's own testimony, there was no evidence that he had contacted anyone about the x-ray results, which complicated his defense. The hospital did not have a protocol for directly communicating radiology findings when ordering physicians were unavailable, for example, another ED physician was not designated to receive direct reporting of radiology findings. It appeared from the patient's hospital record that the radiology report was filed and forgotten. Another measure that could have resulted in an earlier diagnosis of the patient's lung cancer was communicating the discovery of the nodule and recommendation of follow-up directly to the patient. This would have been reasonable under the circumstances,

as the patient had no PCP to whom the findings could be reported, and the ordering physician was unavailable when the nodule was discovered.

Although the ACR communication practice parameter denies setting the standard of care, it is frequently cited as evidence of it. In this case, defense consultants pointed out the direct communication guideline for "findings that are discrepant with a preceding interpretation of the same examination and where failure to act may adversely affect patient health."<sup>11</sup> It would likely be used by the plaintiffs to argue the results should have been directly reported to the ordering ED physician or their designee. If the ordering physician or designee was not available, defense consultants believed the standard of care required any ED physician receiving the lung nodule information to act on it.

Because there was no documentary evidence, and no independent memories of what occurred, if this case went to trial, liability would depend on whose testimony the jury believed—the ED physician's or the radiologist's. The chances of finger-pointing between the radiologist, ED physicians, and hospital were high, which could be expected to inflate the potential verdict. Lack of standard of care and causation support, lack of documentation, and the sympathy evoked by the plaintiffs further

complicated the defense of this claim, which was ultimately settled.

Because there was no documentary evidence, and no independent memories of what occurred, if this case went to trial, liability would depend on whose testimony the jury believes —the ED physician's or the radiologist's.

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#### **RISK REDUCTION STRATEGIES**

Every individual in the communication loop must fulfill their role in the process of delivering a potentially malignant pulmonary finding to the individual in the best position to act on it. Policies and protocols give the communication process structure. Consider the following strategies to help close potential communication gaps:<sup>11</sup>

#### Clinicians

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- Follow hospital or practice policy on communicating and responding to radiological findings.
- Practice closed-loop communication when an incidental lung nodule has been identified in an ED patient's radiology studies. Do not leave a message for an ED physician to call you back and assume your reporting duty has been fulfilled. If a message must be left, have a system in place to follow up if you do not receive a call back, and keep trying until direct communication is achieved.
- Document closed-loop communication with the ordering physician or another person who is designated to receive the information.
  - Documentation should include, at a minimum, the name of the person to whom the results were reported, the date and time of the communication, and what was discussed.
- When a radiologist directly reports a lung nodule to you, and the ED physician who ordered the study is no longer on shift, take responsibility for identifying a person in the best position to ensure the work-up is initiated and be sure they understand the responsibility for work-up has been handed off to them.
- Make it standard practice to review results of tests you ordered. This should not be limited to preliminary results.
  - ► Do not solely rely on radiologists to communicate incidental findings to you.
- Patients have a right to know what is discovered on the test you ordered, whether that result is available while they are physically present in the ED or not. Consider who may have access to these results in order to inform the patient of their results if you do not do so.

#### **Emergency Department Operations**

- With interdepartmental input, develop a standard process for tracking and communicating ED/ radiology discrepancies.
- Ensure discrepant results are communicated to the patient's PCP or the patient.
- Consider dedicating a staff person to make follow-up calls to patients whose radiology reports are not congruent with the initial diagnosis in the ED. This can ensure the ordering clinician reviews the final results of all tests ordered and the patient receives the results.
- Evaluate whether critical findings are being communicated to ordering ED physicians by radiologists in a manner consistent with hospital policy; if not, address issues at an administrative level.
- Ensure that all radiology direct communications are documented and include names of the individuals on the call, the date and time of the communication, and what was discussed.

#### **Radiology Department Operations**

- Work with the ED to create protocols for directly communicating results when the ordering ED physician is unavailable.
- Systematically audit compliance with results reporting policies and protocols.
  - Ensure direct communication practice is consistent with the ACR communication practice parameter.
  - Examine whether direct communication was documented when final reports included findings that should have been directly communicated.
  - Initiate quality improvement projects based on the findings.

## **Delayed Diagnosis of Lung Cancer:**

**Risk Reduction Communication Strategies for the Healthcare Team** 

## CONCLUSION

Delayed diagnosis of lung cancer is a frequent allegation in malpractice lawsuits. The three cases in this article all involved the delayed diagnosis of lung cancer because radiology reports fell through the cracks. The ball was dropped. Experts felt that the juries would likely be convinced that doing so was negligent and connect the negligence to the plaintiffs' injuries. When the patients' lung nodules were initially identified, their lung cancer was at a stage where curative treatment was a real possibility. By the time the cancer was diagnosed, it was terminal. The defenses offered by the various defendants in these cases had a common theme: "It wasn't my fault." However, an individual-oriented defense like this isn't enough since healthcare is a team endeavor. These cases were settled in part because juries were likely to find all or some of the defendants liable, regardless of the arguments the defendants put forward that deflected responsibility from themselves. Instead of shifting responsibility and then blame, the key to managing the risk of lung cancer misdiagnosis lawsuits like these is diagnosing and treating lung cancer when the opportunity is first presented. That requires teamwork, coordination, and accountability. The risk reduction strategies introduced in this article aim to improve the communication of actionable pulmonary findings to achieve timely work-up and facilitate diagnosis and treatment of lung cancer at the earliest stage possible.

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## **ENDNOTES**

The NORCAL Group documents referenced in this article, along with many other risk management resource documents and past editions of *Claims Rx*, are available in the Risk Solutions area of <u>MyACCOUNT</u>, or by policyholder request at 855-882-3412.

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