clinical
series

a risk management distance learning cme course

Failure to Diagnose Acute Myocardial Infarction

clinical & risk management perspectives

NORCAL
Mutual Insurance Company

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Introduction/CME Information

Needs Assessment

Activity needs were assessed through a review of the following:

- National claims data from the Physician Insurers Association of America (PIAA)
- NORCAL claims experience
- Current medical literature

Why a Risk Management CME Course on Failure to Diagnose Acute Myocardial Infarction (MI)?

NORCAL Mutual Insurance Company is proud to publish the 2nd edition of our CME course on failure to diagnose acute MI. We feel physicians should maintain up-to-date training in diagnosing and treating a condition that is prevalent, deadly, difficult to diagnose, managed most effectively if recognized and treated within minutes to hours and the cause of frequent, expensive malpractice awards.

Approximately 70,100,000 Americans have one or more types of cardiovascular disease (CVD), according to the latest statistics available from the American Heart Association (AHA). Within that group are 13,000,000 Americans who have coronary heart disease (CHD), including MI and angina pectoris.[1] The incidence is rising, due to both the aging of the U.S. population, and to the alarming increase in the prevalence of known risk factors for CVD, such as hypertension, obesity and type 2 diabetes.

More worrisome than the prevalence of CVD is its deadliness. It has been the number one killer in this country in every year since 1900 except 1918. To put these numbers in perspective, "CVD claims more lives than the next 5 leading causes of death combined, which are cancer, chronic lower respiratory diseases, accidents, diabetes mellitus, and influenza and pneumonia."[1]

To make matters worse for physicians and patients alike, MI must be diagnosed and treated in a matter of minutes to hours in order to minimize the risk of death, strokes and other major complications, and to preserve the quality of the patient's life. Unfortunately, quick diagnosis is not always the case: the PIAA Myocardial Infarction Study revealed that 40 percent to 45 percent of MIs go unrecognized and undiagnosed.[2]

The physician's task would be made easier if diagnosing an MI were a straightforward matter, but the condition is difficult to diagnose for a number of reasons. Many patients fail to recognize the symptoms of a heart attack and delay seeking treatment until it is too late, while others with known coronary artery disease (CAD) don't report changing or escalating symptoms to their physicians. As many as 35 percent of patients may have "silent" MIs; that is, they do not experience the telltale signs and symptoms.[3] The most common patient complaint, chest pain, can be caused by a wide variety of conditions, ranging from life-threatening ones—MI, aortic dissection, pulmonary embolus, esophageal rupture, pneumothorax and cardiac tamponade—to benign conditions such as muscle strains and heartburn.

Failure to quickly and correctly diagnose two serious manifestations of CVD, unstable angina and MI, can lead to significant patient harm, including death. Medical malpractice claims alleging failure to diagnose and appropriately treat these two dangerous clinical conditions are among the most expensive for physicians and professional liability companies alike.

Using NORCAL data, national data and case studies, this course examines the most common reasons that physicians miss a diagnosis of MI, including delays in ordering tests, misinterpreting tests and failure to refer patients for appropriate care. We offer risk management strategies that can help reduce patient death due to physician negligence and, as a result, reduce malpractice risk.

What Are the Common Threads in Acute MI Claims?

The data from the PIAA illuminates several themes in acute MI litigation.[3*] "Diagnosis error" tops the list of medical misadventures associated with this condition. Other misadventures less frequently associated with this condition include the following:

- Failure to supervise/monitor case
- Procedure/test not performed
- Failure/delay in admission to hospital
- Procedure/test performed when not indicated
- Failure to recognize a complication of treatment
- Failure/delay in referral or consultation
- Delay in performance

Associated issues with acute MI claims include the following:

- Problems with medical records
- Premature discharge from institution
- Communication problems between providers
- Lack of adequate facilities or equipment
- Consent issues
- Abandonment
- Problems with patient's history, exam or workup

The top five medical specialties associated with acute MI claims are internal medicine, general/family practice, cardiology, emergency medicine and general surgery. A 2003 PIAA report showed the average per claim indemnity for acute MI claims to be $208,424 (figure includes all medical specialties).

How Was This Course Developed?

All of NORCAL's CME courses are rooted in an analysis of NORCAL and industry-wide claims experience. When we develop a course, we examine claims data and analyze the financial loss by condition/procedure and outcome. Then we look at closed cases in which there was a significant dollar amount awarded. These cases are used to write clinical vignettes which explore the outcome from both clinical and risk management perspectives. The review process is the same for each case study:

1) Identify instances during a patient's treatment that compromise a good outcome
2) Suggest methods and strategies that may have improved the outcome of the case
3) Prevent similar outcomes from ocurring in the future

* Keep in mind that the information from the PIAA is limited to cases that resulted in professional liability claims. The actual incidence of medical errors related to acute MI may be greater than that which is presented in this course.

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This enduring material is a monograph.
The method of physician participation in this educational activity is to read the monograph and complete the Evaluation and CME Attestation Form.

Because the failure to diagnose acute MI can result in such serious consequences, it is important to examine the causes from both clinical and risk management points of view. While it is neither our intention nor our scope of practice to set the standard of care, this course does contain summarized national guidelines and specific risk management recommendations. In NORCAL's extensive claims experience, these are the areas in which physicians continue to leave themselves vulnerable to allegations of malpractice.

What Forms the Basis for the Standard of Care?

In order for a physician to be sued and found liable for a CVD-related claim, four elements must be established: duty, negligence, damages and causation. First, there must be an established doctor-patient relationship that creates a **duty** to care for the patient. If the physician's involvement in the patient's diagnosis and/or treatment is not consistent with the standard of care in the community where he or she practices, that care is deemed **negligent**. Finally, the patient must have sustained verifiable **damages** that were **caused** by the physician's **negligence**.

Whether or not the standard of care was met is determined through the testimony of medical experts. Clinical treatment guidelines are playing an increasing role in expert assessment of physician negligence, especially since their publication on the Internet makes them widely available regardless of the physician's location. These guidelines are produced by panels of specialists in the medical field after an exhaustive review of the latest research.

The acknowledged primary sources of clinical information about the detection, diagnosis and treatment of acute MI are the materials jointly produced by the AHA and the American College of Cardiology (ACC). The guidelines set by these organizations are based on evidence gleaned from clinical experience and published, peer-reviewed articles. These guidelines and NORCAL's decades of claims and risk management experience form the backbone of the recommendations made in this course.

How is the Course Organized?

This course contains three closed cases that illustrate adverse outcomes related to failure to diagnose CVD cases. Each case comprises the following:

- **Learning objectives**
- **A chronological narrative** that outlines the patient's care
- **A case analysis** that explores the physician's errors and lessons that can be learned from them

In addition to the closed cases, there is a more in-depth discussion of various clinical and risk management topics.

INTRODUCTION/CME INFORMATION

Learning Objectives

To prevent delays in the diagnosis and treatment of acute myocardial infarction and unstable angina, develop and adhere to chest pain protocols that are grounded in evidence-based clinical guidelines.

To better appreciate the need for improved communication with patients, review clinical vignettes based on closed malpractice claims and seek educational opportunities to improve your communication skills.

To reduce the number of failure-to-diagnose claims made against physicians, increase efficiency in the ordering and tracking of important follow-up studies and document each step in patient medical records.

Target Audience

This course is intended for all healthcare providers involved in the diagnosis and treatment of CVD including general/family practice physicians, internal medicine physicians, emergency medicine physicians, physicians practicing in urgent care settings, cardiologists, radiologists and allied healthcare practitioners.

Credit Designation Statement

NORCAL Mutual Insurance Company designates this educational activity for a maximum of 2 *AMA PRA Category 1 Credits*™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

ACCME Accreditation Statement

NORCAL Mutual Insurance Company is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Instructions for Completing the Course and Receiving CME Credit

After reading through the closed cases and discussion, complete the Evaluation and CME Attestation Form.

Important: You must attest to the number of hours you spent in this educational activity on the form. CME certificates will be issued approximately seven to ten business days after the form has been received.

Mail your Evaluation and CME Attestation Form to:

NORCAL Mutual Insurance Company
Attn: Risk Management
560 Davis Street, 2nd Floor
San Francisco, CA 94111

NORCAL PLANNING COMMITTEE

James R. McFarland, MD
Insurance Operations Committee Chairperson

Stephen M. Farber
Vice President, Risk Management/Continuing Medical Education

Jo Townson
Risk Management Specialist

EXPERT REVIEWERS

Mary A. Fitzsimons, MD, FACEP, MBA has been a Regional Director with California Emergency Physicians Medical Group, overseeing management at four emergency departments within the Sutter Health System, as well as maintaining an active clinical practice in the Emergency Department at Sutter Delta Medical Center in Antioch, California. Board certified in Internal Medical and Emergency Medicine, Dr. Fitzsimons is also a 1999 graduate (Dean's Scholar Award) of UC Irvine's Medical Executive MBA Program. Dr. Fitzsimons is an active member of the American College of Emergency Physicians (Fellow), the American Medical Women's Association and the National Association of Female Executives. She has also been a member of the Sutter Delta Medical Center Hospital Board of Trustees, and is presently a member of the Board of Directors of California Emergency Physicians Medical Group. Dr. Fitzsimons received her medical training at Northwestern University and completed her internship and residency at the McGaw Medical Center of Northwestern University.

William R. Vetter, MD, FACC is a practicing cardiologist in Sacramento, California. He is board certified in internal medicine and cardiovascular disease and is an active member of the American Heart Association, Sacramento-El Dorado Medical Society, California Medical Association and the NORCAL Board of Directors. Dr. Vetter is the director of the Coronary and Intensive Care Units of Methodist Hospital in Sacramento. He received his medical training at Columbia University and completed his internship and residency at the University of California at San Francisco.

Disclosure Policy

As a sponsor accredited by the Accreditation Council for Continuing Medical Education (ACCME), NORCAL Mutual Insurance Company must ensure balance, independence, objectivity, and scientific rigor in all its individually sponsored or jointly sponsored educational activities. All faculty participants in a sponsored activity are expected to disclose to the activity audience any significant financial interest or other relationship (1) with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services discussed in an educational presentation or related to the topic of that presentation, and (2) with any commercial supporters of the activity. (Having a significant financial interest or other relationship can include such things as receiving grants or research support, or being an employee, consultant, major stockholder, member of speaker's bureau, etc.). The intent of this disclosure is not to prevent a faculty member with a significant financial or other relationship from making a contribution to the course, but rather to provide the audience members with information about which they can make their own judgments. It remains for the audience to determine whether the faculty members' interests or relationships may influence the course content. In addition, faculty members must make a meaningful disclosure to the audience of their discussions of unlabeled or unapproved drugs or devices.

Disclosures

The NORCAL Planning Committee and expert reviewers had nothing to disclose. This course does not include a discussion of unlabeled or unapproved drugs or devices.

Disclaimer

Although the information in this course has been obtained from sources generally considered to be reliable, accuracy and completeness are not guaranteed. The information is intended as risk management advice. It does not constitute a legal opinion, nor is it a substitute for legal advice. Legal inquiries about topics covered in this course should be directed to your attorney.

Guidelines presented should not be considered inclusive of all proper methods of care or exclusive of other methods of care reasonably directed to obtain the same results. The ultimate judgment regarding the propriety of any specific procedure must be made by the physician in light of the individual circumstances presented by the patient.

Case One

LEARNING OBJECTIVES

After reading this case and the associated discussion, consider implementing the following risk reduction measures:

- Use the presence of known coronary artery disease, prior angina and cardiovascular risk factors to increase suspicion for acute myocardial infarction and require the need to rule it out.
- Perform a risk stratification analysis on all patients presenting with chest pain.
- Exercise special caution when evaluating chest complaints in women.
- Provide patients with discharge instructions that clearly state the patient's primary diagnosis as well as the differential diagnoses, including worst-case scenarios and symptoms that require immediate action.
- Immediately communicate life-threatening results of tests and studies to all involved physicians, or, if the physician cannot be reached, to the patient.
- Communicate a patient's emergency department visit and diagnosis to the patient's primary care physician.
- Develop and use written protocols for the use of the telephone in patient care.
- Resolve acute problems and follow proper procedures for terminating the physician-patient relationship.

Allegation:

Failure to diagnose acute myocardial infarction resulting in death of a 46-year-old female.

The Event

A 46-year-old woman with a history of angina presented to the emergency department (ED) complaining of chest pain radiating to both arms. The patient first noticed the chest pain two days earlier and took some nitroglycerin, which did not relieve the pain.

The patient had a history of angina and coronary heart disease (CHD) and was currently being treated with Procardia® (nifedipine) and nitroglycerin. A full cardiac workup completed a year prior to this visit indicated coronary artery stenosis up to 30 percent, but no significant lesions. The patient's cardiac risk factors included a history of obesity (100 pounds overweight), cigarette smoking (two packs per day), hypertension and high cholesterol. She underwent hysterectomy and bilateral salpingo-oophorectomy eight years earlier.

The ED physician noted a positive family history, but he did not elicit specific information. Physical examination revealed that the patient's pain was in the area of the pectoralis muscle. The physician was able to reproduce the pain upon examination and the patient reported that the pain was relieved when she pressed her breasts together.

An ECG revealed nonspecific ST-segment elevations and a CPK was at a "high normal" level but within normal range. (A day after the patient's visit, a cardiologist reviewed the ECG. He could not exclude acute anterior wall myocardial infarction (MI) and suggested a repeat ECG. This information was sent in report form to the patient's primary care physician.)

Based on the physical examination and without the benefit of a cardiology consult, the ED physician diagnosed costochondritis and prescribed Ansaid® (flurbiprofen) and Vicodin® (hydrocodone bitartrate/acetaminophen).

The ED physician referred the patient to a cardiologist and also advised the patient to follow up with

her primary care physician. In addition, he provided discharge instructions describing costochondritis. These preprinted instructions specifically indicated that the chest pain the patient was experiencing *was coming from the chest wall and not from the heart or lung*. Furthermore, it explained that *the pain was annoying and sometimes very painful, but not dangerous*.

A week after the ED visit, the patient called her primary care physician asking for samples of Procardia®, as she was unable to afford the prescription. Her physician explained that he could not issue samples or a prescription unless she made an appointment to be seen. The patient refused because she could not afford the visit. Her physician was unaware that she was seen in the ED a week earlier complaining of chest pain. He discharged her from his practice because of the patient's refusal to make appointments and inability to pay.

Three days later, she presented to the same ED physician with complaints of increasing pain—unrelieved by Vicodin®—and diaphoresis. Despite oxygen saturation levels of 84 percent that only improved to 93 percent with oxygen, and without benefit of a repeat, comparison ECG, he again diagnosed chronic costochondritis, gave her a different analgesic and told her to follow up with her primary care physician. Eight hours later, she returned to the ED. Examination revealed chest pain radiating into the shoulder blades and down both arms, shortness of breath and bibasilar rales one-fourth of the way up the lungs. An ECG was obtained and read as abnormal, and a cardiology consult was obtained. She was noted to have an anterior wall MI; emergency angioplasty was unsuccessful. Despite bypass surgery, she remained in critical condition and was pronounced dead that evening. An autopsy revealed multiple myocardial infarcts, ranging from four hours to eight weeks old. The native circulation to the heart was severely atherosclerotic, with some vessels having only a pinpoint opening.

Case Analysis

The following bullets summarize the ways in which the physicians in this case made themselves vulnerable to allegations of malpractice. Each problem is discussed in detail below:

- Failure to weigh reproducible pain against signs and symptoms of acute coronary syndrome (ACS)
- Failure to account for the patient's history, cardiac risk factors, and signs and symptoms
- Possible failure to consider MI in women presenting with chest pain
- Failure to alert primary care physician of ED evaluation of chest pain
- Failure to immediately and directly communicate results indicative of a life-threatening condition
- Providing falsely reassuring diagnosis and discharge instructions
- Inadequate telephone screening of patient problems and improper termination of the physician-patient relationship

The ED Physician

The ED physician in this case was falsely reassured by being able to reproduce the patient's pain and he erroneously arrived at a musculoskeletal diagnosis. First, the patient's history of coronary artery disease (CAD) and angina, and the presence of multiple risk factors, were certain red flags for ACS. In this scenario, the standard of care requires that ACS or MI be ruled out. Second, although the reproducible pain made a cardiac diagnosis less likely, the woman reported that the pain radiated to both arms and was not relieved by nitroglycerin. The presence of these classic symptoms of MI greatly increased the likelihood of ACS over costochondritis. While costochodritis could have continued in the differential diagnosis had the ED physician performed a risk stratification analysis on this patient, he may have arrived at the conclusion that ACS or MI needed to be ruled out with certainty by pursuing diagnostic testing.[5,6,7,8]

This fundamental error in diagnosis led to other related errors and omissions on the part of the

ED physician: he failed to alert the patient's primary care provider of the ED evaluation of chest pain and provided falsely reassuring diagnosis and discharge instructions to the patient. To help construct safety nets for patients, EDs should consider notifying the primary care provider whenever a patient presents to the ED. This can be accomplished by faxing a copy of the ED notes or discharge summary. The ED physician or nurse should also encourage the patient to notify his or her primary care physician immediately to schedule a follow-up visit.

Furthermore, the patient in this case was sent home with a diagnosis of costochondritis and her preprinted discharge instructions emphasized the nonserious nature of the condition. The ED physician had the responsibility to tell the patient there may have been another, life-threatening diagnosis. Patients with known CAD who present with chest pain need careful, precise discharge education. The ACC stresses that patient education materials should include the signs and symptoms of ACS, and how and when to access emergency care.[5]

The Cardiologist

The patient's care was severely compromised when the cardiologist did not immediately notify the ED and primary care physicians that he could not rule out an MI, and that a repeat ECG was needed. Pathologists, radiologists, cardiologists and ED physicians often interpret studies or receive results of studies after the patient has been discharged. Each physician should establish written policies and procedures that clarify 1) which results indicate life-threatening conditions and need to be communicated directly and immediately, and 2) how that communication should take place.

In this case, the patient's life might have been spared had a telephone call been placed to the treating physician, or, if he could not be reached, to the patient herself. When speaking to patients, it is important to be very specific about the condition, the type of follow up required and the consequences of not getting it. While physicians may be reluctant to alarm patients, it is better to be direct and honest when the patient's life is at stake.

The Primary Care Physician

The primary physician's handling of the patient's phone request for samples of Procardia® demonstrated inadequate telephone screening of patient problems and improper termination of the physician-patient relationship. The medication she was requesting was part of her treatment for hypertension so he should have been concerned that she was unable to follow her treatment regimen. (Ironically, the physician could have harmed the patient if he had refilled the Procardia® prescription. It is now known that short-acting dihydropyridrine calcium antagonists such as Procardia® are contraindicated in patients in danger of having a heart attack.[9]) Rather than focusing on issues of payment, he could have instead inquired about the status of her health. Questioning her about her health and any calls or visits to other healthcare providers might have elicited the information about the ED visit and led to a prompt office visit, or a recommendation to immediately return to the ED.

Discharging a patient with acute health problems without proper notice can lead to patient harm and allegations of patient abandonment. While physicians are not obligated to provide free care, they do have a duty to treat the patient until the acute problems are resolved, and the physician-patient relationship is formally terminated. Before discharging any patient, the physician should ensure that he or she is not terminating the patient for discriminatory reasons, resolve all acute problems, evaluate contractual obligations, give the patient written notice that includes other sources of care, continue to treat during the notice period and, upon written authorization, provide a copy of the medical record.

Associated Issues

The principal problem in the diagnosis of coronary disease in women is not considering the diagnosis early enough. Although men are at higher risk than women of suffering an MI at a younger age, women's rates accelerate more quickly than those of men after age 45.[10] Both early menopause and surgical menopause are associated with an increased and earlier risk of heart disease. According to the AHA, in terms of total deaths, CVD has claimed

the lives of more women than men since 1984, and continues to be the "#1 killer" of both men and women. For women, it causes more deaths than the next six causes of death combined. Sixty-four percent of women who died suddenly of CHD had no previous symptoms of the disease.[1]

Studies have indicated that women with confirmed MI tend to have more atypical presentations than men have. Women are also more likely than men to experience abdominal pain, dyspnea, neck and shoulder pain, nausea or vomiting, and shortness of breath in addition to or instead of chest pain, whereas men are more likely than women to report diaphoresis. In addition, women appear to experience a larger proportion of unrecognized MIs compared to those experienced by men. Differences in early symptoms, signs and pathology may make CHD more difficult to recognize in women, leading to delayed or missed diagnosis. These differences include the following:

- Lower incidence of ACS
- Longer intervals between the onset of symptoms and presentation
- Higher prevalence of unstable angina rather than MI
- Higher likelihood of having clinically significant disease on angiography. [11,12,13]

Case Two

LEARNING OBJECTIVES

After reading this case and the associated discussion, consider implementing the following risk reduction measures:

- Rule out myocardial infarction before arriving at GI-related condition as the cause of chest pain.
- Use serial serum markers to diagnose and rule out myocardial infarction if the initial ECG is nondiagnostic.
- Make use of prior ECGs for comparison (when available).
- Administer nitroglycerin to all patients with chest pain for therapeutic and diagnostic purposes.
- Notify the primary care provider of emergency department visits for chest pain.
- Confirm the patient understands the diagnosis and treatment plan before discharge from the emergency department.

Allegation:

Failure to diagnose acute myocardial infarction resulting in death of a 53-year-old male.

The Event

A 53-year-old man presented to the emergency department (ED) complaining of a burning sensation in his chest after eating a hot dog. The burning sensation, which occurred about one hour earlier, was accompanied by some dizziness and diaphoresis and lasted for approximately 30 minutes. The patient had a similar episode lasting seven minutes the day before.

Although the patient denied any history of hypertension or high cholesterol, review of records revealed he had been treated for hypertension in the past with Lopressor® (metoprolol tartrate), and he had also tested positive for elevated cholesterol (272 mg/dl). In addition, he reportedly smoked two packs of cigarettes per day and consumed at least two alcoholic beverages per day. He denied any family history of coronary artery disease (CAD).

The patient's blood pressure was 170/90. Examination of the heart revealed a regular rhythm without extra sounds or murmurs. The physician noted that the patient appeared diaphoretic; however, he did not appear to be in acute distress and remained pain free throughout the examination. CBC, Chem-7 panel, CPK, CK/ISO, Troponin I and chest x-ray were all interpreted as normal. His ECG revealed a left bundle branch block. There were no prior ECGs available for comparison.

The ED physician suspected the burning sensation was caused by peptic esophagitis and advised the patient to take an antacid. The patient was advised by the ED physician to follow up with his primary care physician the following day, and was discharged with instructions to return to the ED if his chest pain recurred.

The following day a cardiologist reviewed the ECG and noted slight ST-segment elevations in V1-V4. He felt the elevations might be due to early diastolic repolarization, but noted that upon comparison with a prior tracing, the changes appeared more marked. He suggested a repeat ECG if ischemia was suspected.

The patient failed to visit his primary care physician the following day, choosing to work on his house and go out for drinks in the evening. During the night, the patient awoke complaining of chest

pain. The patient's wife phoned the primary care physician and told him of the ED visit and diagnosis. The physician felt that the patient was again experiencing peptic esophagitis. He recommended that the patient take two antacids and call him in the morning.

Soon after the call, the patient collapsed and his wife called 911. Despite considerable efforts to revive the patient, he died shortly after arriving at the hospital. Autopsy revealed that the patient had moderately severe atherosclerotic coronary vascular disease with 70 percent stenosis of the left main coronary artery, 85 percent stenosis of the circumflex artery and 60 percent stenosis of the right coronary artery.

Case Analysis

The following bullet points summarize the ways in which the physicians in this case made themselves vulnerable to allegations of malpractice. Each problem is discussed in detail below:

- Failure to weigh cardiac risk factors, signs and symptoms against gastrointestinal (GI) complaint
- Failure to provide a trial of nitroglycerin
- Failure to communicate with the patient's primary care physician
- Failure to compare current ECG with a prior ECG on file in the same hospital
- Failure on the part of the cardiologist to communicate results indicative of a life-threatening condition

The ED Physician

Physicians frequently consider GI sources as the possible cause of chest pain, given the number of GI conditions that present that way. The patient safety and professional liability risk in not first ruling out MI before arriving at a GI diagnosis is that patients with MI frequently ascribe their symptoms to a GI source. Indeed, this is the most common frame of reference for individuals who have not previously experienced such symptoms, or been told that the pain they are having is due to coronary disease. Using a GI framework, closed malpractice cases reveal that physicians employ reassurance instead of pursuing a rigorous workup and risk stratification to rule out MI.

In this case, a careful analysis of this patient's history and presenting signs and symptoms should have alerted the ED physician to the high likelihood of acute coronary syndrome (ACS). First, although the patient was not a reliable historian, even his reported history included significant cardiac risk factors: age, male gender, smoking and current blood pressure of 170/90. Second, his pain lasted 30 minutes and was accompanied by dizziness by patient report and by diaphoresis by physical examination. These are classic symptoms of MI. Moreover, the length of the pain and the diaphoresis put the patient in the high short-term risk category, requiring prompt admission and treatment. Even the epigastric location of the pain was consistent with ischemic chest pain accompanying MI. Although it was tempting to relate this pain to the ingestion of a hot dog, this was a repeat, prolonged episode. Had this patient's diagnosis—given the presence of risk factors, and prolonged, repeated chest pain accompanied by dizziness and diaphoresis—resulted in a diagnosis of "accelerating angina, rule out MI," his life may have been saved. Peptic esophagitis could be included in the differential diagnosis, if and when MI had been ruled out.[5,6,7,8]

Another example of how the ED physician did not meet the standard of care in this case is his failure to provide a trial of nitroglycerin. Current ACC/AHA guidelines call for all patients presenting with chest pain to be given oxygen, aspirin, nitroglycerin, and, if needed, morphine sulfate. To facilitate recall, American Cardiac Life Support (ACLS) protocols remind healthcare providers that "Mona (morphine, oxygen, nitroglycerine, aspirin) greets all patients."[15,16] In addition to its therapeutic benefits, nitroglycerin is of value diagnostically. Nitroglycerin dilates peripheral arteries and veins, which decreases oxygen demand on the heart. If the pain subsides when nitroglycerin is administered, the physician should assume the pain to be cardiac in origin until proven otherwise. Nitroglycerin is unlikely to relieve pain caused by

gastroenterological or musculoskeletal conditions, except for esophageal spasm.[15]

As with Case One, on discharge, the ED physician verbally advised the patient to follow up with his primary care physician, but he did not speak with or call the primary care physician to communicate this advice and did not fax a copy of his records. Again, personally contacting the patient's primary care physician by telephone helps to maintain the continuity of care and reduces the risk of the patient "falling through the cracks." In this case, the primary care physician may have been able to tell the ED physician about the patient's history. This communication would have added weight to the probability of a diagnosis of "rule out MI" over esophagitis.

Finally, this case shows that the cardiologist who reviewed the ECG the next day had the ability to compare the current ECG with a prior ECG on file in the hospital. If the ED physician had access to the previous ECG tracing, he may have been able to make the correct diagnosis and thereby avoid discharging the patient. This underscores the point that to maintain continuity of care and reduce medical error, EDs should have access to all patient records after hours.

The Cardiologist

Again, as in Case One, the cardiologist reviewing the ECG the following day failed to communicate the results to the treating physician when he identified new findings of ST elevation. Putting patient safety first requires that this information be shared as soon as possible with the ED physician and the primary care physician. If the cardiologist had phoned or faxed the information to either physician, that physician might have contacted the patient, repeated the ECG and made the diagnosis in time to save this patient's life. Again, the risk management recommendation is that each physician establish written policies and procedures that clarify the following: 1) which results indicate life-threatening conditions and need to be communicated directly and immediately, and 2) how that communication should take place.

Case Three

LEARNING OBJECTIVES

After reading this case and the associated discussion, consider implementing the following risk reduction measures:

- Ensure that chest pain protocols address the need for nurses to report significant signs, symptoms and laboratory results to the physician, and for the physician to confer with nurses and read the nurse's notes before discharging the patient.
- Know and screen for cardiac risk factors in all patients presenting with chest pain.
- When cardiac risk factors are present, perform repeat ECG and serum markers, and noninvasive testing before arriving at the final diagnosis and disposition.
- Keep ECG interpretation skills current.
- Obtain a cardiology consult to evaluate non-specific ECG changes.
- Carefully compare prior and current ECGs.

Allegation:

Failure to diagnose acute myocardial infarction resulting in death of a 65-year-old male patient.

The Event

A 65-year-old man presented to the ED at 5 a.m. complaining of an episode of chest pain the previous day and again one hour before arrival. Although the pain had been occurring repeatedly over the past four months, the patient had not reported it to his primary care physician.

The history was significant for hypothyroidism, rib fractures, and a fall five months prior that roughly coincided with the onset of the chest pain. The patient had been a long-time cigarette smoker. He denied any family history of heart disease.

During the nursing evaluation, the patient reported chest pain on a scale of 4/10, and sweating. The patient told the nurse that the pain radiated into his left shoulder, and the nurse observed diaphoresis during the pain. This information was documented in the nurse's notes.

The history the patient gave the ED physician differed. He denied any shortness of breath, nausea, vomiting or pain, and the physician noted that the patient was pain free during his examination. The patient was afebrile, with a blood pressure of 186/101, heart rate 76 and respiratory rate 18.

A CBC, chemistry panel and PT/PTT with INR were within normal limits. Cardiac enzymes demonstrated a CK of 27 (55 to 170), CK-MB of 4 (0-10) and a troponin of less than 0.6. The laboratory readout stated that a troponin of 0.6 to 2.0 ng/ml required clinical correlation, and stressed that while the current level of less than 0.6 ng/ml did not indicate an MI at that time, repeat testing in 4 to 6 hours was necessary if there was clinical suspicion of an MI. The ECG was interpreted as showing normal sinus rhythm with nonspecific ST and T wave abnormalities. An ECG from five months prior was available for comparison but the ED physician found no interval changes.

Noting in his dictation that the patient was pain-free during the time he was observed, the ED physician diagnosed the patient with acute atypical chest pain and discharged him. The patient was advised to follow up with his primary care physician or to return with new or worsening symptoms. He was given a copy of his laboratory studies.

The patient was brought back to the ED by paramedics one hour after his discharge. He had suffered a full cardiac arrest on the side of the road, where he received basic life support resuscitation

from a policeman who responded to the 911 call. In the field, he was defibrillated three times and intubated. He presented to the ED with no pulse, but regained normal sinus rhythm after being defibrillated again. Cardiac catheterization revealed near total occlusion of the left anterior descending artery (95%) with fresh thrombus, while the echocardiogram showed left ventricular relaxation. He needed stent placement and eventually six vessel recanalization to stabilize his cardiac condition. Probably as a result of the cardiac arrest, he experienced anoxic encephalopathy resulting in persistent memory loss, confusion and agitation.

Case Analysis

The following bullet points summarize the ways in which the healthcare providers in this case made themselves vulnerable to allegations of malpractice. Each problem is discussed in detail below:

- Failure to read nurse's notes (i.e., communication problems among providers)
- Failure to appreciate the signs of unstable angina and the presence of cardiac risk factors
- Failure to interpret current ECG and appreciate changes when comparing ECGs

The nurse in this case observed and clearly documented that the patient was experiencing radiating chest pain accompanied by diaphoresis. Moreover, when she questioned the patient, the nurse was told that the pain increased with walking. The physician, by contrast, did not personally observe any pain, and based on the history he obtained from the patient, did not feel there was an exertional element to the pain. Without reading the medical record or conferring with the nurse, he discharged the patient.

It is not uncommon for patients to alter their history each time they are questioned. Many factors contribute to these differing accounts, including fear, anxiety and differing styles of communication. Many patients may be intimidated by doctors and fear wasting their time with insignificant complaints. They may feel more comfortable telling nurses their story in more detail. To ensure continuity of care and patient safety, physicians and nurses alike have a duty to read all entries made in the medical record, and to promptly discuss any discrepancies with one another. When noted, these differences should alert healthcare providers to carefully reassess the patient.

To further reduce professional liability risks and create a tighter safety net for patients, chest pain protocols should clearly indicate information that should be immediately reported to the physician. This would certainly include the signs and symptoms of MI, along with laboratory findings indicative of acute MI. The policy should also require physicians to confer with nurses and read nurses' notes before arriving at the final diagnosis and disposition.

Returning to the case, diaphoresis accompanying chest pain put this patient in the high-likelihood-of-ACS category. The patient's age, gender and history of smoking also put him at higher risk for an MI. Current clinical guidelines recommend an observational period with serial ECGs and serum markers, and noninvasive testing before discharging a patient with diaphoresis and cardiac risk factors.[5,6,7,8] Significantly, the patient arrived at the ED at 5 a.m. complaining of chest pain that occurred at 4 a.m. The timing of the onset of the chest pain (nocturnal pain) and its recurring nature should have alerted the physician to the probability of MI.

Finally, when reviewers of this case looked at the series of events retrospectively, it became clear that this ED physician also failed to correctly interpret the patient's current ECG and appreciate changes when comparing it to the prior ECG. This physician noted ST- and T-wave abnormalities on the ECG, which were later identified as 1 mm ST elevation in V1 and V2, and T-wave inversions suggestive of cardiac injury. Moreover, although the ED physician did not notice this, the prior ECG revealed no ST elevation, making the new finding of ST elevation and T-wave inversion worrisome. The comparison thus should have led to a diagnosis of MI.

CASE THREE

Inaccurate interpretation of ECGs is one of the main causes of failure to diagnosis MI. All physicians involved in the assessment of chest pain need to regularly refresh their ECG interpretation skills; this is especially true of ED physicians. To promote patient safety and reduce their liability exposure, ED physicians should err on the side of caution in obtaining cardiology consults. ECGs can be easily faxed to the cardiologist on call. In this case, had the ECG abnormalities, history and risk factors prompted a cardiology referral, this patient's outcome may have been much less devastating.

About Heart Disease

KEY POINTS

- Heart disease is a leading cause of death among Americans.
- "Unrecognized" myocardial infarctions happen frequently.
- Hypertension, smoking, hypercholesterolemia, sedentary lifestyle, obesity, diabetes, age and family history are all positive risk factors for coronary disease.
- Differences in early symptoms, signs and pathology may make coronary heart disease more difficult to recognize in women.

Coronary heart disease (CHD) is a leading cause of death among Americans. Approximately every 26 seconds an American will suffer a coronary event, and approximately every minute someone will die from one.[1]

The following statements are adapted from the American Heart Association (AHA) Heart Disease and Stroke Statistics—2005 Update.

- In 2005, an estimated 700,000 Americans will have a new coronary attack. About 500,000 will have a repeat attack.
- The estimated incidence of myocardial infarction (MI) is 565,000 new attacks and 300,000 repeat attacks annually.
- Approximately 335,000 people a year die of CHD before they reach a hospital. These are typically sudden deaths brought on by cardiac arrest resulting from ventricular fibrillation.
- Over 83 percent of people who die from CHD are age 65 or older.
- Approximately 50 percent of men and 64 percent of women who died suddenly of CHD had no previous symptoms of the disease.

"Unrecognized" MIs, in which symptoms are so atypical that neither patient nor physician associates them with acute myocardial damage, have also been reported as a significant occurrence. Sheiffer et al.'s review of relevant literature that discussed either "silent" or "unrecognized" MIs found that unrecognized MI may represent 22 percent to 35 percent of all MIs. Women may have a higher risk for unrecognized MI, but because many healthcare providers do not fully appreciate coronary events in women, the likelihood of accurate recognition of cardiac symptoms may also be lower in women.[3]

Risk Factors

The AHA has identified many risk factors for CHD, some of which can be treated or controlled, others which cannot. Some risk factors significantly increase the risk of cardiovascular disease (CVD), others are associated, but their significance hasn't been precisely identified.[17]

Non modifiable Risk Factors

Heredity: Children of people with heart disease are more likely to develop the disease themselves. Hereditary heart disease includes racial/ethnic heredity. For example, African Americans have more severe high blood pressure than Caucasians as well as a higher risk of heart disease. Mexican Americans, American Indians, native Hawaiians and some Asian Americans have higher heart disease risk than Caucasians, which is partly related to higher rates of diabetes and obesity.[17] A Physician Insurers Association of America (PIAA) study of 349 closed professional liability cases involving acute MI noted that 32 percent of patients (plaintiffs) had reported a family history of coronary artery disease (CAD).[2]

Male sex: Male sex is another risk factor for CHD. Men have a higher risk of heart attack than women, and men tend to have heart attacks earlier in life.[17]

Increasing age: Finally, older Americans have the most deaths attributable to CHD. (Over 83 percent of CHD deaths are in patients 65 or older.)[17] In the PIAA acute MI study cases, the average patient age was 52 years. Seventy-four percent of the patients in the cases analyzed were under age 60, and 47 percent were under age 50.[2]

Modifiable Risk Factors

Smoking: Smokers have a 2-4 times higher risk of developing CHD than nonsmokers. Exposure to second-hand smoke increases the risk for nonsmokers as well.[17] The PIAA acute MI study noted that 57 percent of patients (plaintiffs) suffering from MIs in their thirties and forties had been smokers.[2]

High blood cholesterol: The risk of CHD increases as a person's blood cholesterol rises. This risk increases more dramatically when other risk factors are present (e.g., high blood pressure and smoking).[17]

High blood pressure: High blood pressure increases a patient's risk of stroke, heart attack, kidney failure and congestive heart failure. When paired with other risk factors, the risk of heart attack increases several times.[17] The PIAA study reported that 36 percent of patients (plaintiffs) age 40 and younger had been hypertensive.[2] Furthermore, according to AHA statistics, nearly 1 in 3 adults has high blood pressure. Of these, 30 percent do not know they have it.[1]

Sedentary lifestyle: A sedentary lifestyle is a risk factor for CHD. Moderate to vigorous activity performed on a regular basis is necessary to control risk.[17] The relative risk of CHD associated with physical inactivity is comparable to that observed for high blood pressure, high blood cholesterol and smoking. Unfortunately, current statistics indicate that 38.6 percent of the American population engages in no leisure-time physical activity.[1]

Obesity and overweight: People who are overweight or obese, particularly if their body fat is stored around the waist, are more likely to develop heart disease even if they have no other risk factors.[17] The PIAA study of closed professional liability cases involving acute MI revealed that more than 33 percent of the patients (plaintiffs) had been obese.[2]

Diabetes mellitus: Diabetes increases a patient's risk of developing heart disease. The risks are greater if a patient's blood sugar is not well controlled. According to the AHA, approximately three quarters of people with diabetes die of heart or blood vessel disease.[17] The prevalence of diabetes appears to be on the rise, with an 8.2 percent increase from 2000 to 2001. Physician-diagnosed diabetes patients accounted for 6.7 percent of the American population in 2002, while the prevalence of undiagnosed diabetes accounted for another 2.8 percent. An additional 7.0 percent of the total population has "pre-diabetes."[1]

Other contributing factors for heart disease include stress and excessive alcohol consumption.[17]

Gender and Heart Disease

Note: The information in this section was adapted from the following article: Bello N and Mosca L. Epidemiology of coronary heart disease in women. Prog Cardiocasc Dis 2003 Jan-Feb;46(4):287-95.

While heart disease is a leading cause of death for both men and women, some key gender differences must be understood in order to improve diagnosis and outcomes in female patients in particular.

Gender differences in CHD include later age of onset for women, increased incidence of comorbid conditions related to heart disease and differences in the initial presentation of the disease. In addition to the standard risk factors for heart disease, women have additional risk factors including high sensitivity C-reactive protein (hsCRP), homocysteine and lipoprotein.[13]

Despite the later age of onset for women, the incidence gap narrows with advancing age. Due to the increased rate of comorbid diseases, there is an increased mortality among women. Authors Bello and Mosca report that women have a worse prognosis post MI than men: 38 percent of women will die within one year of an unrecognized MI compared to 25 percent of men. And younger women have been noted to have higher death rates than

men of the same age. Notably, from a racial/ethnic perspective, African American women have a much higher death rate from heart disease (69 percent) compared to non-Hispanic white women.[13]

As was discussed in Case One of this course, while chest pain is the most frequent presentation for all patients presenting with acute MI, women have a higher likelihood than men to present atypically. In addition to chest pain, women suffering from MI have presented with symptoms ranging from nausea to jaw pain. Due to the larger number of unrecognized MIs among women (50 percent as compared to 33 percent among men), it is crucial for healthcare providers to recognize and appreciate these differences.[13]

From a patient safety and risk management perspective, it is essential that physicians perform a complete workup for all women who present with any potential cardiac symptoms, and not dismiss those symptoms as gastrointestinal, somatoform or musculoskeletal in origin.[13]

Conclusion

Because heart disease is a leading cause of death among Americans, it is crucial to be aware of the risk factors and how they present differently in men and in women. It is important to advise patients that in addition to high blood cholesterol, high blood pressure and cigarette smoking, obesity and physical inactivity contribute significantly to the occurrence of coronary disease. Differences in the early symptoms, signs, and pathology make CHD much more difficult to diagnose in women. As a result, women are more likely than men to experience "unrecognized" or "silent" MI. Be careful not to overlook coronary disease in women.

KEY POINTS

- Ruling out the worst possible diagnosis is a proven axiom of healthcare risk management.
- To prevent delay in diagnosis and treatment, patients should be encouraged to go to the emergency department as soon as possible after onset of chest pain.
- Physicians and hospitals should develop and adhere to written chest pain protocols based on evidenced-based clinical guidelines.
- Emergency department physicians should keep their ECG interpretation skills current.

Initial Evaluation and Assessment of Chest Pain

Coronary artery disease (CAD) is a chronic disorder with a natural history that spans multiple decades. It can cycle in and out of a number of clinically defined phases that include asymptomatic or presymptomatic disease, stable angina, progressive angina, unstable angina and acute myocardial infarction (MI). The patient safety and risk management goal when patients present with complaints of chest pain is to rapidly determine if the patient is in a life-threatening cycle of the disease known as acute coronary syndrome (ACS). ACS includes unstable angina and two types of myocardial infarction (MI), STEMI, which is diagnosed by ST-segment elevation or bundle branch block, and NSTEMI, which has ST depression rather than ST elevation.

Good patient outcomes are dependent upon timely and accurate diagnosis. To prevent patient harm and reduce liability exposure, it may be prudent to treat chest pain as an MI until proven otherwise. Many other life-threatening conditions mimic MI in initial presentation; these too must be ruled out.

Ruling out the worst possible diagnosis is a proven axiom of healthcare risk management. One of the simplest but most helpful formulations of this advice is the "witty" or "WIT-D" approach to patient safety proposed by Carolyn Buppert:[18]

W = Worst thing (identify it, rule it out)
What is the worst thing the patient could have with this presentation? This guides the physician in establishing a prioritized differential diagnosis. When the patient complains of nontraumatic chest pain, the doctor must rule out ACS and other life-threatening conditions.

I = Information (needed to rule out the worst thing)
What information is needed to rule the worst case scenario in or out? Knowing what information to seek will guide the physician in performing the history and physical, ordering studies and asking for consultations. To rule out MI, it is essential to perform a focused history and physical and to obtain and interpret an initial ECG and baseline serum markers.

T = Tell someone (about the worst thing)
What information must the physician share—with the patient and other involved healthcare providers—to ensure that he or she is notified of all signs and symptoms that could help establish the diagnosis and determine the treatment plan? For example, enlist the patient's help by encouraging him to immediately tell you of any change in the chest pain. Write explicit orders for nurses on signs and symptoms you want reported to you at once. Share your decision-making process and differential diagnosis; for example, emergency department (ED) physicians should share the information with the patient, all consultants and the patient's primary care provider.

D = Document
Documenting your decision-making process is crucial for both continuity of care and defense of your actions should your care later be questioned.

Prehospital Issues

Ensure Prompt Arrival at the Eemergency Department (ED)

Effective treatment of acute MI requires both prompt diagnosis and rapid access to emergency care that includes defibrillation, thrombolytics, angioplasty and infarct-limiting agents such as nitroglycerin and beta-blockers. Early access to emergency care is of benefit not only to patients with acute MI, but also to those with unstable angina, for whom it may help prevent the progression of the disease, loss of cardiac function and even death.[5]

As discussed in the previous chapter, of the 700,000 Americans who will have new coronary attacks in 2005, about 335,000 will die without being hospitalized. Most of these sudden deaths are caused by cardiac arrest, usually resulting from ventricular fibrillation or other arrhythmias that could have been treated or even prevented by early management.[1] It has been shown that early treatment results in reductions in mortality, infarct size and improved left ventricular (LV) function.[6]

Unfortunately, most patients do not seek medical care for 2 hours or more after symptom onset. Many wait 12 hours or more, at which point reperfusion therapy may offer little benefit.[18] Studies have identified many factors responsible for the delay in accessing emergency care. These include patient and family denial, time taken to contact physicians responsible for the care of patients with chest pain (and time taken to implement their instructions), and limitations in emergency care access systems.[2]

Physicians who are not proactive in addressing these factors may face liability exposure.

When a Patient Calls Your Office with a Complaint of Chest Pain

To prevent delay in diagnosis and treatment, patients must be encouraged to present to the ED as soon as possible after the onset of chest pain. The American College of Cardiology (ACC) has emphasized the importance of early triage of patients with chest discomfort.[5] To accomplish this goal, the ACC recommends careful patient education and clear triaging protocols that direct patients to the facility best equipped to meet their treatment needs. All physicians, but especially those in rural communities or in locations far from hospitals with cardiac laboratories, will need to know and respect these local triaging protocols and educate their patients about them.

The 2002 ACC/AHA Guidelines for Unstable Angina caution that "Patients with symptoms that suggest possible ACS should not be evaluated solely over the telephone but should be referred to a facility that allows evaluation by a physician and the recording of a 12-lead ECG."[6]

All physicians who treat patients susceptible to chest pain of cardiac origin should have written protocols that address 1) handling of telephone calls about chest pain, and 2) instructions for accessing emergency care. Clear and prompt documentation of telephone patient encounters is crucial to maintaining the continuity of care and minimizing malpractice risk. The goal is to have patients suspected of ACS evaluated as soon as possible at a hospital equipped to provide treatment. Please take note of the following protocols:

1. Written telephone protocols guide staff in handling patient-related calls for appointments, prescriptions, medical advice and test results. Each physician should determine, based upon his or her specialty and patient population, the patient complaints that warrant specific telephone protocols. One of these protocols must clearly instruct staff on how to deal with patients who call complaining of chest pain. The purpose of the protocols is to prevent delay in determining which patients should be sent to the ED for evaluation, and which can be safely seen in the office.

Before developing written guidelines on telephone triage of chest pain, each physician must consider many factors: his or her own skill and experience in diagnosing and treating acute MI; available diagnostic and treatment resources, such as ECG and ability to perform stat lab work, or presence of an automated external defibrillator (AED) or defibrillator; distance from the patient and from the ED; patient population; the availability and scope of

Professional Liability Risks of Telephone Screening of Chest Pain

- **Allegation: Delay in diagnosis and treatment due to hindering access to emergency care.** The federal law known as COBRA or EMTALA (Emergency Medical Treatment and Active Labor Act) is designed to ensure access to emergency care for all persons who feel they have an "emergency medical condition." The standard used to determine the presence of the emergency condition is that of the "prudent lay person," not the physician or healthcare insurer. Many states, such as California, have similar laws. Decisions about seeking emergency care cannot be based upon the patient's ability to pay or conditions of insurance. To avoid penalties, fines and licensure action under these laws, make sure your staff, answering service and answering machine all give the same clear message: "If you feel this is an emergency, seek emergency care by ..." The message should then give the emergency access information for your community.[1]

- **Allegation: Failure to obtain informed refusal.** Studies have demonstrated that patients with chest pain are often in denial about the seriousness of the condition causing it, and that this denial leads to delays in seeking care.[2,3] If your telephone evaluation leads you to suspect an acute coronary syndrome or other life-threatening event, and you are unable to persuade the patient to seek emergency care, then you must obtain and document informed refusal. To do so, you must explain to the patient what you feel the condition is, as well as the risks, benefits, and alternatives to emergency care. It is essential that you clearly communicate to the patient what could happen if the patient does not follow your recommendations. State the consequences in clear, unambiguous terms: "Louise, I am very worried that the pain you are experiencing is caused by a heart attack. If I am right, then only the hospital is equipped to provide you with the treatment you need. What's more important, you have to get the treatment right away in order for it to work. If you are having a heart attack and don't immediately seek emergency care, you could die or suffer permanent, serious damage to your heart. Do you understand what I am saying?" Document the conversation carefully. If you spoke to other family members, note that, and always indicate the language, if not English, and the name and relationship of the translator.[4]

- **Allegation: Aiding and abetting the unlicensed practice of medicine.** Only physicians can make medical decisions about the evaluation and treatment of chest pain and other medical conditions, and provide medical advice. While it may be consistent with the scope of practice of registered nurses to conduct telephone triage, few medical practices include such staff. As discussed above, physicians need to be especially cautious about the role unlicensed personnel, including medical assistants, play in telephone care. Physicians have been successfully sued for advice given by their receptionists or medical assistants, if that advice was not based on physician input, exceeded the legal scope of services and was not reviewed and approved by the physician. Implement the risk management recommendations in this course to protect patients, your staff and yourself.

- **Allegation: Negligent supervision of allied health professionals.** Laws in each state establish the scope of practice and supervision requirements for registered nurses in expanded roles, nurse practitioners and physician assistants. Most states, including California, require detailed written protocols and documented evidence of physician supervision. Regardless of the laws and regulations, prudent risk management dictates that each physician treat chest pain as a high risk condition that requires immediate consultation with the physician, if not transfer of care. Make sure the written protocols address the training required to interpret ECGs. Failure of the physician to evaluate the ECG has been a successful allegation in lawsuits, so always perform your own, independent analysis. Create safety nets for your patients by instructing your licensed staff to immediately involve you in the evaluation of patients presenting with chest pain. Do not allow such patients to leave the office without being examined by you. Failure to personally examine the patient and review the care provided has also been a factor in many lawsuits.

(Continued on page 23...)

■ **Allegation: Delay in diagnosis of acute myocardial infarction, negligent management of coronary artery disease:** Statistics show that patients with known coronary artery disease are both more likely to have acute myocardial infarction and less likely to admit it and call for help.[2] Indeed, 80 percent of all sudden cardiac deaths occur in persons with known cardiovascular disease.[3] For this reason, the American College of Cardiology stresses the need for careful education of patients with known coronary artery disease and those deemed to be a high risk for cardiovascular events. This education should include the signs and symptoms of acute coronary syndrome and how and when to access emergency care. At a minimum, patients with known disease should be advised to quickly seek medical attention when symptoms occur, especially if the pain is sustained (i.e., noticeably longer than usual) or there are multiple, recurrent episodes.[2] The American College of Cardiology/American Heart Association guidelines call for educational efforts in simple, understandable terms, *during each office visit* for treatment of CAD, that include possible symptoms and the action plan.[3] ■

Notes

1 For more information on EMTALA, refer to the March 1999 Claims Rx titled *Treatment of Patients with Emergency Medical Conditions*. Available at: www.norcalmutual.com.

2 Physician Insurer's Association of America (PIAA). Enduring Material of Acute Myocardial Infarction Claims. Rockville (MD): Physician Insurers Association of America; 1999.

3 Buppert C. A Witty (WIT-D) Approach to Avoiding Mistakes, Gold Sheet 4(6), 2002. Available at www.medscape.com/viewarticle/438381. Accessed: 7/16/2002. The Gold Sheet is published monthly by the Law Office of Carolyn Buppert.

4 For more information on informed refusal, including a sample form, refer to the NORCAL CME course titled *Informed Consent*. Available at: www.norcalmutual.com.

practice of licensed staff; and the scope of service of unlicensed staff such as receptionists and medical assistants. When there is an unanticipated outcome, such as an allegation of delay in diagnosis of MI, it is important to show that your practice has a well-thought out, *written* telephone protocol for chest pain that is known to all staff, consistent with your abilities and capabilities and respectful of the standard of care in your community.

At the very least, every staff member must know 1) that chest pain may indicate a life-threatening condition regardless of the patient's age or gender, 2) that patients with chest pain need immediate attention, and 3) how the physician/practice wants these calls handled.

Physicians without ECG capability, as well as those with limited staff resources or little experience in treating chest pain, may decide to refer all patients who complain of recent or current chest pain to the ED ("You're having chest pain now? Dr. Jones wants all of his patients with chest pain to immediately call 911. It is very important that you call an ambulance now. Is that clear?").

Other physicians may ask that all such calls be immediately transferred to them ("Dr. Smith will speak to you right away about the pain you are having. Please give me your name, phone number and address in case we are disconnected, and then hold on while I transfer you".)

Larger practices with telephone advice lines staffed by registered nurses may have more elaborate protocols that authorize registered nurses to independently triage the patient, determine the type and timing of treatment and provide home care advice for nonurgent causes of chest pain.

2. Emergency care access instructions. These instructions should be given as soon as it is determined that the physician wants the patient to be evaluated at the ED. These emergency care access instructions vary by community and depend upon factors such as the distance to the hospital and the availability of ambulance and paramedic services. The physician and staff must be familiar with and comply with community standards when instructing patients. Some areas have well-established procedures that instruct patients to call 911 for rapid EMT and ambulance response. Areas without 911 codes or ambulance services may have different community protocols, such as instructing family members to drive the patient to the hospital. Each

staff member must know what instructions to give patients about emergency care access.

3. Documentation. To ensure continuity of care and to protect the physician if the care is ever called into question, phone calls about patient care must be documented and made part of the patient's permanent medical record. The need to document the call applies to all contacts with patients, whether the patient is reassured, given a prescription, home care instructions or an appointment, or instructed to go to the ED. Physicians have been sued for malpractice based on a single phone call, and lack of documentation of the call seriously compromises the physician's defense. Be sure to carefully note the details of the telephone call about chest pain: include the time of the call, the name and status of the person who answered it, the patient's complaint in the patient's own words, questions asked, and the answers to those questions. Note the exact time the physician was notified, and when the patient was instructed to go to the hospital. Include the precise emergency care access instructions given and why (per protocol, per physician, etc.). In each case, it is important to ensure and document that the patient agreed with and understood the instructions. Lack of understanding or agreement on the patient's part should always result in the physician talking directly to the patient, again if need be. If the patient refuses to follow the recommendation, the physician (not another staff member) needs to obtain and document informed refusal.

4. Physician involvement. If you speak to the patient, carefully document the information you gathered and your assessment and treatment plan. If staff handled the call per protocol, review the documentation, then cosign it by adding the date, time and your initials. Whenever possible, call the ED and alert them to the patient's arrival. Give them pertinent information about the patient's history verbally and by fax. If you have an ECG in the medical record, fax it to the ED for comparison purposes. Document all conversations with the ED and note which medical information was provided, when, how and to whom.

When a Patient Presents to Your Office with a Complaint of Chest Pain

As noted above, patients having chest pain are often in denial about the seriousness of the problem, and regardless of your instructions, may choose to come see you rather than go to the ED. Instruct your staff to inform you immediately if a patient at the office complains of chest pain. The patient safety and risk management goal is to quickly determine whether the patient needs to be transferred to the ED for further evaluation and treatment.

Most treatment algorithms for chest pain are designed for the hospital setting. Both the ACC/AHA 2002 Guideline Update for the Management of Chronic Stable Angina (CSA) and the *Best Practice of Medicine* "Approach to the Patient with Acute or New-Onset Chest Pain" provide information that can guide physicians through a rapid assessment in the office.[8,20] The goal of this initial assessment is to quickly separate low-risk patients who can be safely evaluated in the outpatient setting from intermediate- to high-risk patients, who should immediately be sent to the ED.

Always document your assessment and treatment of the patient, including the time emergency care was requested and when it arrived. Note the condition of the patient upon discharge from your office and send all records along with the patient. Call the ED to alert the physician in charge of the arrival of your patient, and provide the patient's medical history. Document the details of your communication with the ED.

ED Evaluation

According to the authors of the Erlanger Chest Pain Evaluation Protocol, about five million people in the United States present annually to the ED with a primary complaint of nontraumatic chest pain. 11,000 of these patients will have an acute MI but will be inappropriately discharged due to problems in diagnosis and management.[7] This failure to diagnose acute MI leads to significant morbidity and mortality, as well as large numbers of medical malpractice allegations.

Recognizing the severity of the diagnostic problem and the urgency of a prompt but accurate

diagnosis, various professional societies and medical centers have developed guidelines to assist the ED physician. The best known practice guidelines for heart disease are those jointly developed by the ACC and the AHA. The societies make these evidence-based guidelines widely available; the ACC/AHA guidelines can be downloaded at no cost by accessing the AHA web site at www.americanheart.org. The American College of Emergency Physicians (ACEP) has published a clinical policy addressing suspected acute MI and unstable angina, which is available at www.acep.org. Each hospital should review these and other relevant clinical guidelines in order to prepare their own institutional protocols for patients presenting with chest pain.

The Erlanger protocol builds upon the ACC/AHA and ACEP guidelines to focus attention on the need for careful monitoring and recategorization criteria for patients with risk factors who do not (yet) meet the diagnostic criteria for ACS. The authors of this protocol note that it is equally important to determine who is *not* having an acute MI, so as to optimize use of available hospital resources and alert the physician to seek an alternative diagnosis, such as pulmonary embolism, aortic dissection and other potentially life-threatening conditions that frequently mimic ACS.

The Importance of the History and Physical

The history and physical examination are the cornerstones of the initial evaluation. The history and physical guide the selection of further diagnostic and therapeutic interventions, as well as referral to a cardiologist or admission to the hospital. The following points, in addition to evidence-based guidelines from your professional society, can help guide the evaluation:[5,6,8,20]

- Characterize the chest pain by asking about the quality, location, duration and provoking and relieving factors in order to determine if it is angina.
- Assign a category to the angina (e.g., typical, atypical, noncardiac).
- Assess the stability of the angina (e.g., stable versus unstable).
- Assess the symptom complex for signs of ACS.
- Assess the patient's short-term risk for adverse events.

It is important to remember that the physical examination is essentially normal in patients with ACS. The physical examination may be more helpful in the diagnosis of nonischemic causes of chest pain, such as aortic dissection, pulmonary embolism, spontaneous pneumothorax, cholecystitis or pericarditis.[8]

Interpreting the ECG

The goal of almost all chest pain protocols is to establish the diagnosis of ACS and determine candidacy for fibrinolytics or reperfusion therapy within 10 minutes of arrival in the ED. The ECG is the most available and widely used diagnostic tool for patients presenting in the ED with symptoms of acute MI.[21] In almost all protocols, the path in the decision tree is initially determined by the results of the 12-lead ECG.

The ability to correctly interpret the ECG is thus the critical factor in both patient safety and in professional liability. Physicians need to be able to recognize the ECG findings associated with ACS and other life-threatening conditions. If there is any doubt about the ECG, immediately consult with a cardiologist. If a cardiologist is not readily available, the use of advanced mobile phone or fax transmission should be employed. Failure to do so can lead to serious patient harm and considerable liability exposure for the physician and the hospital.

In most cases, patients with acute MI will demonstrate ECG changes, which gives the ECG significant value as a diagnostic tool. A normal ECG, however, does not rule out the possibility of acute MI or unstable angina, and certain clinical presentation, such as acute pericarditis and left bundle branch block, can make ECG interpretation difficult.

If a patient's angina is episodic, the physician should consider repeat ECGs. Repeated after 30 minutes or during pain, the ECG can show changes

from previous studies, allowing for greater accuracy in diagnosis.[22]

Other Diagnostic Tests

The history, physical exam and ECG findings represent the primary elements in the initial evaluation and assessment of patients presenting to the ED with chest pain. The ECG analysis in particular enables physicians to place patients into a treatment category and proceed with interventions.

Patients who present to the ED with chest pain, but initially have no ECG changes diagnostic of acute MI or unstable angina, represent a diagnostic dilemma for physicians and are the source of countless malpractice lawsuits. (Indeed, the vast majority of lawsuits related to the diseases of the heart stem from problems in the diagnosis, rather than the management, of acute MI.) To promote patient safety, each facility should have detailed protocols addressing the need for an observational period that includes further testing for signs and symptoms of ACS. Physicians need to fully understand how to use serial cardiac markers, serial or repeat ECGs, exercise testing, echocardiography and cardiac radionuclide imaging to assess the patient's likelihood for CAD and ACS, and to assess the patient's short-term risk of death or nonfatal MI.

The Observation Period and Cardiology Consult

Most clinical practice guidelines call for additional observation and testing in patients without diagnostic changes in the ECG. That testing initially includes serial cardiac markers and serial or repeat ECGs. The results of these tests, along with an analysis of the patient's chest pain and vital signs during the observational period, help the physician recategorize the patient and determine the need for further risk stratification.

This observation period can occur in the ED or, with increasing frequency, in chest pain units. Regardless of the location, our malpractice claims experience suggests that ED physicians can improve patient outcomes and decrease their liability through early consultation with a cardiologist, who assumes or shares the responsibility for diagnostic and management decisions.

Intervention

After the initial assessment and risk stratification, a number of treatments are available for management of a patient with atherosclerotic heart disease. A typical treatment plan depends on the clinical capabilities of the local acute care facility, the location and developmental stage of the atherosclerotic lesions and overall cardiac function. Again, the clinical guidelines mentioned in this course should guide physicians in selecting the appropriate order of interventions for the presenting situation.

Conclusion

From a patient safety and risk management perspective, it should be the goal of the entire healthcare team to standardize immediate care for all patients presenting with chest pain. Evidence-based, peer-reviewed clinical guidelines and chest pain protocols should play the primary role in making safe diagnostic and treatment decisions. Most guidelines emphasize the importance of physician skill and competence in performing certain diagnostic procedures and interventions. Stay apprised of developments in the diagnosis and treatment of heart disease, and ensure that your organization is aware of such developments as well. Following the guidelines, documenting your decision-making rationale, and obtaining and documenting informed consent from the patient can go a long way in defending a claim should one be brought against you.

Risk Management

KEY POINTS

- Acute myocardial infarction is the third most expensive condition generating professional liability claims nationwide.
- Improved communication with patients can increase compliance and minimize professional liability exposure.
- Improved communication among providers can ensure that all positive, suspicious or incidental findings are followed up.
- Discharge instructions and followup help to close the gaps in patient care.
- Appropriate, consistent and accurate documentation is essential.

As was outlined in the introduction to this course, acute myocardial infarction (MI) is the third most expensive condition generating liability claims nationwide, following brain damaged infants and breast cancer.[4]

As evidenced in the closed case examples, NORCAL claims experience shows that acute MI claims are typically associated with the following physician errors:

- Failure to account for patient risk factors, cardiac risk factors and symptoms
- Errors in ECG interpretation
- Communication problems/failures between providers (i.e., emergency department (ED), cardiology and primary care)
- Inadequate discharge instructions

This section has been written to help physicians implement risk management strategies that are proven to help prevent malpractice allegations from arising. When litigation does occur, having taken these steps can help defend you.†

Effective Communication

Since symptoms associated with MI can present atypically and therefore lead to delayed diagnosis, physicians can better ascertain which symptoms require focused attention if they ask patients detailed questions during history taking. Effective communication with patients is crucial to eliciting this information.

Techniques that help the physician elicit a comprehensive history include the following:

- **Listen to the patient.** Listening shows respect for the patient and demonstrates interest in the patient's condition and well-being. The physician who actively listens can elicit more information from the patient.
- **Exercise patience and perseverance.** A patient's emotional state—be it fear or stoicism—when confronting a cardiac condition can prevent him or her from giving a complete or reliable history.
- **Confirm your understanding** of what the patient is reporting by rephrasing the patient's statement.
- **Rephrase questions** to ensure that the patient is giving as much information as possible.
- **Enlist the help of a qualified interpreter** or family member, if appropriate, when a language or other communication barrier exists.
- **Avoid biases,** such as attributing anxiety to women or assuming that a patient's repeat visit means that he or she is presenting with the same complaint. These sorts of assumptions

† For more in-depth risk management information, refer to NORCAL's *Communication & Follow Up* and *Medical Records Management & Practice Management* CME activities.

often result in the physician missing vital information and, ultimately, the diagnosis.

- **Use diagrams, videos, photographs or written materials,** where appropriate, to enhance communication when discussing diagnosis and intervention.

These techniques not only improve the physician's ability to gather meaningful information, but also can establish a more positive and productive interaction between doctor and patient. Should an adverse outcome occur, be it a missed or delayed diagnosis, a physician who has taken the time to perform a complete history and physical, showing competency and compassion, may be less likely to be the target of a professional liability action.

Patient Education

Patient education is one of the most valuable measures physicians can take to avoid delayed diagnosis and treatment of unstable angina or MI. Written handouts, booklets and videos are excellent materials to have available in the office for patients who may be at risk for a life-threatening cardiac event. As with specific discharge and follow-up instructions, these materials should be concise, informative and presented in lay terms that the patient and patient's family can understand. A patient who is educated about heart attack risks and symptoms and the steps to take in order to receive prompt care may be less likely to suffer the consequences of delayed treatment.

A patient handout should include the following basic information about heart attacks.[23] (This general information is often incorporated into discharge instructions.):

- Causes of chest discomfort (e.g., stress, gastritis, lung problems, muscular or cardiac pain)
- Definitions of angina and heart attack
- Heart attack symptoms (e.g., heavy, squeezing pressure on chest, trouble breathing, sweating, nausea, sudden weakness)
- What patients should do if they think they're having a heart attack (e.g., call 911, then call physician's office)
- How physicians diagnose heart attack (e.g., history, physical, ECG, enzyme tests)
- Risk factors (e.g., hypertension, smoking, hypercholesterolemia, sedentary lifestyle, obesity, diabetes, age, family history, gender)
- Prevention steps (e.g., smoking cessation, weight reduction, high blood pressure medication, blood sugar control if diabetic, exercise with physician's approval)

Communication between Physicians

An error in medical judgment does not necessarily constitute negligence. However, a *failure to communicate* important information such as test results can lead to a delayed or missed diagnosis and may be deemed below the standard of care.

Both referring physicians and consulting cardiologists can establish a consistent approach to quality care, while helping to reduce the chance of liability, by considering the following measures:[24,25]

- Discuss with each other and *document* communication that occurs with the patient (and, if appropriate, the patient's family). Documentation should include informed consent or informed refusal discussions, as well as signed and dated informed consent or refusal forms, if used.
- Plan and agree on who will take primary responsibility for the patient or how care will be shared.
- Maintain clear and complete documentation of differential diagnoses, impressions, treatment plans and followup.

Role of the Referring Physician

A study on the consultation and referral process found that the quality of consultant feedback to the referring physician was directly related to the quality of communication from the referring physician to the consulting physician.[26]

Tips for Avoiding Acute Myocardial Infarction Claims

Anchored in evidence-based practice guidelines and malpractice claims experience, this course contains numerous tips and strategies for promoting patient safety and reducing your likelihood of being named in a professional liability lawsuit. The following bullet points summarize the risk management recommendations made in this course.

- Perform a thorough evaluation of complaints of chest pain in the following situations:
  - When the patient first presents to you (either as the primary care provider or a consultant);
  - When the symptoms change in intensity, frequency, or duration;
  - When your diagnosis cannot account for the patient's presentation; or
  - When the patient does not respond to treatment for the condition you diagnosed.
- Develop and adhere to an established process for evaluating complaints of chest pain that includes:
  - Obtaining a detailed history
  - Evaluating the symptom complex for anginal equivalents and symptoms associated with myocardial infarction
  - Deciding the type and stability of angina
  - Performing a physical examination
  - Establishing the likelihood of coronary artery disease as the cause of an acute coronary syndrome based upon the patient's age, sex and the presence of cardiovascular risk factors
  - Calculating the patient's short-term risk of death or nonfatal MI
  - Ruling out life-threatening conditions

(Continued on page 30...)

The following suggestions for referring physicians can help improve communication with consulting physicians and improve the level of care that the patient receives:[24,25,26]

- Communicate in writing the specific consultation request and include information about the patient's condition and expectations. Written communication should be clear and concise. A fact sheet containing relevant clinical information, any clinically suspicious findings and the physician's impression is an effective communication tool that can help ensure optimal test results.
- If a patient is referred following imaging or lab tests, relay results or information from those tests to the consultant. Document this communication in the patient's medical record.
- Call the consulting physician and document the call if the consultant's report is not received in a timely manner, something in the report is unclear, the clinical findings do not match the report or the consulting physician suggests follow up that seems inappropriate.

Role of the Consulting Physician

A consultant's communication with the referring physician and the patient is essential in focus-

(...Continued from page 29)

- Obtain an ECG during chest pain episodes.
- Obtain and compare prior ECGs before interpreting the current one as normal.
- Keep your ECG interpretation skills current.
- Obtain a cardiology consult in the following situations:
  - When there are findings that make interpretation difficult
  - When there are questions about the ECG interpretation that could affect the timely diagnosis of acute myocardial infarction or unstable angina
  - When there are limited, specific questions about management of patients with chronic stable angina
- Refer patients to cardiologists whenever there are doubts about the diagnosis, treatment plan or long-term management of patients with ischemic heart disease.
- Develop and implement follow-up procedures for communications between referring and consulting physicians.
- Develop and implement chest pain telephone treatment protocols.
- Develop and implement protocols to determine the site of further evaluation and treatment when patients present to the office with chest pain.
- Develop, utilize and distribute educational materials that ensure that patients understand the signs and symptoms of a heart attack, how and when to access emergency services, and the location of the nearest hospital with 24-hour emergency cardiovascular care. ■

ing priorities and expectations and reducing the potential for conflict. A consulting cardiologist should notify the referring, primary care physician of the visit and of any significant findings and consider the following suggestions in particular:[24,25]

- The written report should address the referring physician's request and note any other issues related to the patient's condition. An effective written response might restate the referring physician's question, provide specific recommendations supplemented by patient history, physical examination and diagnostic test result, and conclude with a discussion to clarify the recommendations.
- In a hospital setting, notify the patient's primary care physician of the patient's admission and provide that physician with discharge plans so that follow-up visits can be arranged.
- Allow the patient's primary care physician to coordinate additional referrals to other consultants.
- Correspond with the primary care physician regarding subsequent follow-up visits to your practice.
- After providing care, refer the patient back to his or her primary care physician.
- Discuss with the referring physician any new issues that may arise, such as the need for additional consultations with other doctors, further testing, patient and family expectations, and whether the patient's care will be comanaged by both physicians.

- Make sure to close the loop with regard to follow up. Correspondence with the primary care physician should request an action, such as: "If I don't hear from you within ___ days, I'll consider my participation in this case closed."

Ordering and Performing Tests

A physician **ordering** a test should do the following:

- Sign the order, which creates documentation and alerts the physician performing the test that the results should be returned to the ordering physician.
- Provide sufficient clinical information to the physician performing the test. A "fact sheet" containing relevant clinical information, any clinically suspicious findings and the physician's impression is an effective communication tool that can help ensure more accurate test result interpretation.
- Create a tracking and reporting system for test results—both normal and abnormal—to ensure timely follow up with the patient. Such systems, followed consistently, can help avert diagnostic delays.

A physician **performing** a test should do the following:

- Have policies and procedures in place for communicating his or her interpretations to the physician who ordered the test and for documenting those interpretations. The telephone is the fastest and most effective way to communicate an urgent finding to the physician who ordered the test.
- Include the patient's chart with test results and consultation reports so that the referring physician can respond appropriately.
- Document the actual, or attempted, direct communication with the referring physician and place that documentation in the diagnostic report.

Physician-Patient Communication Issues

The following section outlines communication strategies that physicians can adapt during history taking to maximize the quality of information gathered during the patient's visit. However, even when a physician performs a complete and comprehensive examination and reaches a diagnosis, certain communication issues that arise in the evaluation of suspicious cardiac conditions can contribute to adverse outcomes and potential liability for the physician. These issues include discharge and/or follow-up instructions, physician follow up and the patient's decision to forgo further treatment or ignore medical advice.

Conscientious Follow Up

Analysis of closed claims alleging a failure to appreciate a significant cardiac finding reveals that patients often suffer a life-threatening cardiac event upon release from the hospital or physician's office. In many cases, these devastating events are the result of a patient not following the physician's discharge and follow-up instructions.

Physicians should clearly communicate discharge and follow-up instructions to the patient and, if appropriate, to the patient's family members in order to lessen the occurrence of these incidents. The patient should acknowledge his or her receipt and understanding of the instructions by signing them.

A patient being evaluated for a condition that the physician suspects is of cardiac origin needs to receive the following information (preferably verbally and in writing) upon discharge:

- Which evaluation(s) he or she has undergone.
- What the evaluation indicates (e.g., the diagnosis and differential diagnoses). If the physician sends the patient home with a particular diagnosis, such as costochondritis, and the instructions are specific to this condition, the physician also needs to explain to the patient what should alert the patient to return for reevaluation.

- What actions the patient needs to take and in what time frame, and how and where to access further care (e.g., rest, medication, appointment with primary care physician or a specialist for further studies, return to the ED if experiencing further symptoms).
- How to take medications properly, including correct dosage, notification of side effects and interactions, or contraindications with other drugs.
- If any life-threatening conditions are part of the differential diagnosis.
- Which new and/or recurring signs and symptoms require the patient to act immediately.

Need for Written Instructions

Written instructions are not intended to replace discussions between the physician and the patient. The physician should verbally review discharge and follow-up actions with the patient, using the written instructions to reinforce the discussion. When preprinted discharge instructions are given in the ED, physicians should be familiar with their content.

Written instructions should be thorough, but expressed in lay terms that the patient and family can understand. If the patient does not speak or read English, instructions should be provided in a language that the patient understands.

Written instructions allow the patient to review his or her responsibilities in a private environment, in a less emotional state. Further, should symptoms recur and memory of the discussion with the physician has faded, the patient can take action based on reading those written instructions.

Importance of a Follow-up System

The extent of patient follow up and adherence to instructions is often a reflection of the quality of the physician's system of follow up and communication. A system should be developed to verify whether patients keep referral appointments. If they do not, the physician should attempt to contact them and should document the results of that attempt. In pursuing a patient's adherence to instructions, physicians also need to consider the possibility that a patient has moved, does not have a telephone or does not speak English. The follow-up system should also include measures to prevent errors in transmitting reports to other physicians and should ensure that office staff members schedule follow-up appointments in a timely manner.

Accurate and Objective Documentation

Documentation is emphasized throughout this course, from conducting the history and physical examination to communicating with other physicians and the patient about follow up and treatment needs.

Why is documentation so important? First, complete and accurate documentation creates the record of patient care. Primary care physicians and their staffs rely on this record, as do consulting physicians and hospital personnel, should the patient be admitted for treatment. The information contained in the record allows healthcare professionals to maintain continuity of care for the patient.

Second, documentation provides a record of the physician's actions and rationale for those actions. Medical record documentation is one of the strongest weapons available to the physician in defending against an allegation of negligence because it provides a *concrete account* of events. For example, if a physician orders cardiac enzyme tests and documents that he or she has done so and why, and the outcome is still adverse, the physician can demonstrate that a thorough diagnostic effort was pursued.

The medical record should contain documentation of the following in relation to coronary heart disease (CHD):

- All patient complaints of pain and/or pressure and the anatomical location of the pain or pressure, duration of symptoms, associated symptoms and aggravating factors
- Family and personal history of heart disease

- Risk factors
- Physical exam findings
- Results of any previous cardiac studies and recommendations for subsequent diagnostic studies
- Test results
- Differential diagnoses
- Treatment and follow-up treatment recommendations
- Decision-making rationale
- Informed consent and informed refusal discussions and their outcomes
- Signed and dated informed consent or informed refusal forms
- Patient receipt and understanding of discharge and follow-up instructions (including an explanation of patient's condition and differential diagnosis) and a copy of the instructions.

CONCLUSION

Professional liability claims data illustrate the importance of thorough patient evaluation from a risk management as well as a clinical perspective. This course has offered concrete strategies to address this need and thus reduce the potential for diagnostic delays. Physicians are urged, above all, to refer and/or admit a patient presenting with any symptoms that could be associated with an MI *until the diagnosis has been ruled out*. Applying the principles of effective communication, conscientious follow up and accurate and objective documentation can go a long way in improving the diagnosis of MI and avoiding malpractice lawsuits.

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Failure to Diagnose Acute Myocardial Infarction

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Was the activity effective in meeting the identified needs (listed below)? ❑ Yes ❑ No

CVD has been the number one killer in this country in every year since 1900 except 1918. Failure to quickly and correctly diagnose two serious manifestations of CVD, unstable angina and myocardial infarction, can lead to significant patient harm, including death. Medical malpractice claims alleging failure to diagnose and appropriately treat these two dangerous clinical conditions are among the most expensive for physicians and professional liability companies alike. This course was designed to help physicians evaluate their current systems and implement practice changes that will improve the timely diagnosis of cardiovascular diseases. The goal of this monograph is to increase patient safety while reducing professional liability risk.

Learning Objectives and Learning Contract

Learning Objective	**Teaching Effectiveness** *Degree to which this presentation provided you with knowledge or skills to implement in your practice?*	**Learning Contract** *State a practice change you are committed to make based on these objectives.*	**Degree of Certainty** *How certain are you that you will make this change?*
To prevent delay in diagnosis and treatment of acute myocardial infarct-tion and unstable angina, develop and adhere to chest pain protocols that grounded in evidence-based clinical guidelines.	❑ 5 (Superior) ❑ 4 (Good) ❑ 3 (Satisfactory) ❑ 2 (Fair) ❑ 1 (Poor)		❑ 100% ❑ 80% ❑ 60% ❑ 40% ❑ 20% ❑ 0%
By reviewing clinical vignettes based on closed malpractice claims, appreciate the need for better communication with patients and seek educational opportunities to improve your commun-ication skills.	❑ 5 (Superior) ❑ 4 (Good) ❑ 3 (Satisfactory) ❑ 2 (Fair) ❑ 1 (Poor)		❑ 100% ❑ 80% ❑ 60% ❑ 40% ❑ 20% ❑ 0%
To reduce the number of failure to diagnose claims made against physicians, increase efficiency in the ordering and tracking of important follow-up studies, documenting each step in patient medical records.	❑ 5 (Superior) ❑ 4 (Good) ❑ 3 (Satisfactory) ❑ 2 (Fair) ❑ 1 (Poor)		❑ 100% ❑ 80% ❑ 60% ❑ 40% ❑ 20% ❑ 0%

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