The Malpractice Liability of Radiology Reports: Minimizing the Risk

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Abbreviation: ACR = American College of Radiology

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The art and science of interpreting radiologic examinations, an ability that is acquired over years of training, is on display in every radiology report. It is vital that these reports be crafted so as to both reflect the radiologist’s expertise and capability and eliminate any factors that might result in unintended harm to the patient. Unfortunately, a deficient report may result in legal action against the radiologist; thus, a thorough understanding of the litigious potential of the language used in radiology reports is crucial. It is important that ambiguous vocabulary, undefined modifiers, double negatives, and generalizations be avoided. Errors in radiology reports may result from inappropriate terminology, transcription mistakes, or deficient or inadequately documented communication. Critical findings that may have an immediate impact on patient management must be promptly communicated to the referring physician and such communication fully documented. A meticulous and well-written report is the best way for radiologists to care for their patients. In addition, a well-worded report can be the deciding factor in a successful defense against a malpractice claim. Understanding the legal implications of radiology reports will enable radiologists to develop strategies for avoiding malpractice suits.

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Introduction

The practice of radiology involves constant communication with patients and referring physicians. The ability to interpret radiologic examinations—which is both an art and a science—is acquired over years of clinical training and practice. The distillation of this effort is contained in every report. A radiology report is the final work product, the essence of radiologists’ abilities, which patients and referring physicians use to judge their competence. Thus, it is of the utmost importance that radiology reports be crafted not only to reflect radiologists’ expertise and capability, but also to eliminate any factors that might result in unintended harm. The gravest consequence of a faulty report is harm to the patient. Awareness of the possible flaws of a radiology report will help minimize this risk. A secondary consequence is that a deficient report may result in legal action against the radiologist, so that developing an understanding of the litigious potential of the language used in the report is crucial.

In this article, we discuss medical malpractice in terms of its meaning, history, and relationship to radiology; the elements of a good radiology report; pitfalls in radiology reporting; the pros and cons of tailoring reports to the appropriate referrer; and the advantages and disadvantages of structured reports and a standardized radiology lexicon.
TEACHING POINTS

- Poorly worded or ambiguous radiology reports may result in negligence on the part of the interpreting radiologist or may lead to errors by referring physicians that result in potential harm to the patient.
- When communicating important findings, the radiologist should avoid sending texts or voice mails containing confidential patient information, which may amount to a violation of the Health Insurance Portability and Accountability Act.
- When a follow-up study is crucial for further evaluation, the study should be strongly and unequivocally recommended, regardless of the referring clinician’s preference. In a court of law, the radiologist is deemed the expert who is ultimately responsible for obtaining the most appropriate study.
- In a court of law, the radiologist is required to make a note in his or her report if a study is unable to answer the clinical query. The clinician is not expected to be aware of the limitations of every radiologic study.
- When in doubt, it is better—at least from a legal perspective—to use simple, basic language and terminology in a report; after all, the jury is composed of 12 nonmedical people.

Medical Malpractice

Meaning
Medical malpractice is defined as professional negligence, whether by omission or commission, by a health care provider in which the provided treatment falls below the accepted standard of practice in the medical community and causes injury or death to the patient. A malpractice claim arises when a patient or a surviving family member believes that improper medical care has resulted in bodily harm. For a physician to be found liable for medical malpractice, four elements must be established (1):

2. Breach of the standard of care (ie, a negligent act by the physician). In radiology, such negligence encompasses errors in interpretation, communication, and reporting, as well as (interventional) procedural errors.
3. Proximate or legal cause (injury to the plaintiff-patient as a result of negligence). “But for” the act (or negligence) of the physician, an injury would not have occurred.
4. Damages (injury to the patient for which he or she is eligible for compensation under the law). In the current medicolegal climate, almost every injury entitles the patient to a settlement.

In a malpractice claim, the burden of proof lies with the plaintiff-patient, who is responsible for providing evidence that establishes all the elements of malpractice by a preponderance of the evidence (“more likely than not”).

History
The word malpractice originates from the Latin term mala praxis. This term was coined by Sir William Blackstone, a British legal scholar, in his 1765 book Commentaries on the Laws of England (2). Blackstone defined mala praxis as neglect or unskilful management by a physician.

However, the earliest writings on medical responsibility can be traced back to 2030 BC, when the Code of Hammurabi established rules and laws governing the practice of medicine (3). According to the Code of Hammurabi, medical errors were punishable as criminal offenses. Many of the punishments were severe, such as cutting off the hands of a negligent surgeon.

The first medical malpractice suit in the United States occurred in 1794. In Cross v Guthrey, the plaintiff claimed that the defendant had performed surgery on his wife in a most unskilful, ignorant, and cruel manner, causing his wife to die. The judge ruled the defendant to be in breach of contract and awarded the plaintiff a sum of 40 English pounds (4).

The first radiologic malpractice suit in the United States was tried before the Minnesota Supreme Court in 1904. In Henslin v Wheaton, the plaintiff sued the physician for burns to his back sustained as a result of radiography. Judge Brown ruled, “This is the first case involving alleged negligence in applying recently discovered X-rays. . . . No rule of care in such cases has been laid down. . . . The rule applicable to the care and skill required of physicians towards their patients in other cases applies” (5).

Malpractice in Radiology
Increasingly, radiologists are assuming new roles in patient care. In the traditional practice of a bygone age, radiologists were service providers for referring physicians, who only infrequently relied on radiologists’ services to formulate diagnoses. Today’s radiologists work in several capacities: as diagnosticians with a tremendous impact on clinical management; as interventionalists with an expanding repertoire of procedures; and, at times, even as primary care physicians who are expected to discuss results with patients. However, the increasing complexity of the practice of radiology has resulted in new medicolegal pitfalls. According to a recent nationwide U.S. survey by Whang et al (6), error in diagnosis is the most common cause for radiology malpractice suits, followed by inadequate communication of important findings to the referring physician or clinician who is caring for the patient, and failure to recommend additional testing. The greatest number of these lawsuits involve mammography or interventional radiology.
Errors in radiology reports may result in lawsuits for many different reasons. Inappropriate wording and unsuitable terminology may lead to incorrect impressions, resulting in patient mismanagement. Transcription errors may completely alter a report, even if the error is limited to a single word. For example, “No evidence of acute appendicitis” may be erroneously transcribed as “Evidence of acute appendicitis,” potentially resulting in unnecessary surgery. The importance of proofreading one’s reports cannot be overestimated. Inadequate communication or even insufficient documentation of appropriate communication (including suitable recommendations) in the final report may result in grievances. Poorly worded or ambiguous radiology reports may result in negligence on the part of the interpreting radiologist or may lead to errors by referring physicians that result in potential harm to the patient.

Magnitude of the Problem
According to a study by the Physician Insurers Association of America covering the years 1995–2002, although radiologists account for only 3.6% of the U.S. physician population, they rank sixth overall in the number of malpractice suits in which physicians have been named as defendants (7). According to Jena et al (8), each year approximately 7% of radiologists will face a lawsuit. In a recent article in Radiology, Baker et al (9) estimated that the likelihood of a radiologist being the defendant in at least one lawsuit is 50% by 60 years of age. Approximately 60% of claims against radiologists result in payment to the plaintiff, with the average award being a little over $400,000 (9). Although the number of medical malpractice suits filed in the United States each year is actually declining, those that are litigated successfully or settled out of court are resulting in higher damage awards. Thus, there is escalating fear of litigation among radiologists.

Elements of a Good Radiology Report
It is generally accepted that a good radiology report consists of a comprehensive format, appropriate content, accurate terminology, definitive language, a concise differential diagnosis, meaningful impressions, and effective communication.

Comprehensive Format
According to the American College of Radiology (ACR), a radiology report should include demographics, relevant clinical information, clinical issues, comparison studies and reports, procedures and materials, potential limitations, findings, and overall impression (10).

Appropriate Content
Referring physicians in hectic clinical practices may not have time to read radiology reports thoroughly; therefore, a meticulous yet concise report is a medical necessity. In a busy radiology practice, proofreading may often be overlooked; over time, this can lead to errors, especially when transcription errors are not identified. At best, this may lead to an embarrassing conversation with an irate clinician, who points out the error—which could easily have been avoided in the first place.

Abbreviations have made their way into our linguistic repertoire. Nonetheless, use of nonstandard abbreviations should be avoided to preclude ambiguity. In most cases, significant misinterpretation by referring physicians can be avoided by noting the contextual implications of an abbreviation. However, it can be frustrating for the referring clinician to spend time trying to decipher the meaning of a nonstandard abbreviation. Similarly, numeric dating should be avoided to prevent errors related to alternate dating systems. For example, “8/3” means August 3 in the United States but may mean March 8 elsewhere.

Most radiologists prefer using the present tense and the active voice. Although the use of parentheses may not be considered graceful, appropriate use enables the radiologist to convey meanings concisely. It is important to include pertinent negatives (eg, to convey the absence of necrosis or abscess formation in acute pancreatitis), which occasionally may have huge implications for patient management.

Throughout radiologists’ training, the importance of making comparisons with old studies is constantly emphasized. However, a few radiologists make comparisons but neglect to mention them in their reports. Mentioning comparison studies is critical. It is not sufficient to merely compare; comparisons must be documented with relevant references to prior studies throughout the report.

Accurate Terminology
There are several words and phrases used in radiology reports that do not convey any clear meaning but can be used against the radiologist in a court of law. Some of these words and phrases are so ingrained in our vocabulary that eliminating their use is virtually impossible unless constant vigilance is applied. Categories of language to be avoided include the following:

1. Ambiguous “hedge” vocabulary. These words and phrases are either superfluous to the overall message in the report or open to interpretation by the reader. Examples include overt,
obvious, apparent, possible, borderline, doubtful, suspected, indeterminate, no definite, no gross, evidence of, no significant, probable, vague, nonspecific, and equivocal.

2. Modifiers (ie, “quantitative” adjectives) without predefinition. Examples include small, moderate, large, significant, prominent, some, somewhat, mild, and severe. These words and phrases should be used only if there are clear definitions in the literature regarding their meaning (eg, the definitions of mild, moderate, and severe grades of osteoarthritis according to the Kellgren-Lawrence grading system for osteoarthritis of the knee).

3. Double negatives.

4. Generalizations. These phrases convey no useful meaning (eg, benign or malignant neoplastic process).

Effective Communication
One of the key criteria for evaluation of a radiologic study is effective communication. It is in the patient’s best interest that the radiologist promptly inform the clinician taking care of the patient about findings that may immediately alter management. As mentioned earlier, lack of adequate communication is the second most common reason for litigation. In an ACR survey, 25% of respondents acknowledged being involved in at least one lawsuit involving failure of communication (11).

Prompt verbal communication with the referring clinician is essential in cases involving (a) acute or potentially life-threatening findings, (b) an incidental finding that will immediately influence patient management or is wholly unexpected, or (c) nondiagnostic radiologic evaluation (eg, use of a suboptimal contrast material bolus for computed tomography [CT] performed for pulmonary embolism) that may necessitate immediate further evaluation.

In today’s electronic age, timely communication is facilitated by the availability of several commercial products that transmit communication electronically and document acknowledgment by the referring physician. Nevertheless, in the authors’ experience, these products are rarely as valuable as an actual conversation with the patient’s health care provider. Such a conversation not only helps maintain a good relationship with the referring physician, but may also be useful in providing the radiologist with additional information for guidance. When communicating important findings, the radiologist should avoid sending texts or voice mails containing confidential patient information, which may amount to a violation of the Health Insurance Portability and Accountability Act (HIPAA).

Communication is a joint responsibility that is shared by radiologists and referring clinicians. The referring clinician is also legally responsible for attempting to obtain the final report of a study that he or she has ordered. In a court of law, however, the referring clinician’s failure to obtain a report does not necessarily relieve the radiologist of the duty to promptly communicate findings.

The following common law cases (past court rulings that may be used to help adjudicate future cases) are pertinent to communication.

1. Merriman v Toothaker (12), a case of delayed treatment of a cervical spine fracture due to failed communication. A Washington State appellate court ruled, “The community medical standards would require telephone communication to [the ER physician] by [the radiologist] of the X-ray diagnosis. . . . Because of the serious implications of the report, a personal contact was required to ensure prompt action.”

2. Courteau v Dodd (13), which involved a radiologist’s failure to communicate in a timely manner. The Arkansas Supreme Court declared, “When a patient is in peril of his life, it does him little good if the examining doctor has discovered his condition unless the physician takes measures and informs the patient, or those responsible for his care, of that fact.”

3. Keene v Methodist Hospital (14), a case involving a radiologist who dictated a radiology report that raised suspicion for a skull fracture but who failed to communicate the findings. A federal court in Indiana ruled, “The radiologist was negligent. . . he knew that there would be a delay in the transcription of his report. . . . When the radiologist noted the possibility of a serious injury, due care would have required that he telephone his report to the attending physician.”

Direct Communication with the Patient
In the pre-Mammography Quality Standards Act (MQSA) era, direct communication of mammographic results to patients was considered inadvisable, mainly due to fears of breakdown of the patient-physician relationship, which eventually proved to be unfounded. The mandate of the MQSA to directly communicate mammographic findings to the patient virtually eliminated medical malpractice suits that alleged a failure to communicate abnormal results of mammographic examinations (15).

The ACR recommends direct communication with the patient if the radiologist is unable to contact the referring physician regarding a vital finding. Indeed, courts in several states have ruled that there is a legal obligation (“duty”) to do so.
Pertinent common law cases include the following:

1. Daly v United States of America (16), in which a Washington State court ruled that a radiologist had a duty to directly inform a patient that results of chest radiography indicated sarcoidosis: “The radiologist should have notified [the patient] of the abnormality. This duty is hardly burdensome and recognizes that those who place themselves in the hands of a person held out to the world as skilled in a medical profession...justifiably have the reasonable expectation that the expert will warn of [radiographic abnormalities] of which he is cognizant due to his peculiar knowledge of his specialization.”

2. Betesh v United States of America (17), in which a federal appeals court in the District of Columbia held a radiologist liable because he failed to communicate findings at routine chest radiography to a patient who later died of Hodgkin disease: “A physician has a duty to disclose what he has found and to warn the examinee of any finding that would indicate that the patient is in danger and should seek further medical evaluation and treatment...[The radiologist] owed a duty of care to [the patient] and breached this duty when he failed to notify him of his abnormal X-ray.”

There may be a time in the near future when Dr Berlin’s question, “Has not the time come to communicate results of all radiologic examinations directly to patients?” may be rendered rhetorical (18).

Pitfalls in Reporting
In this section, we discuss a variety of possible reporting pitfalls, including definitive versus inclusive language, follow-up recommendations, use of disclaimers, suboptimal studies, addenda, missed diagnoses at prior comparison studies, interpretation of old studies, and consultations and sources.

Definitive versus Inclusive Language
The fine line between complete certainty and overconfidence is difficult to tread. A generally accepted solution is to list the top differential diagnoses and favor the one that is most likely given the constellation of findings—as, for example, in this descriptive text taken from an actual radiology report: “Multiple cavitary lesions in the lungs. Given the patient’s past medical history of head and neck cancer, this is most likely metastatic squamous cell carcinoma. Other etiologies like Wegener’s disease, septic emboli and cavitating pneumonia are less likely.” In so doing, the radiologist can avoid equivocality without sacrificing thoroughness. In the event of a lawsuit, he or she has addressed the pertinent medicolegal issues while still producing a clinically meaningful report.

Follow-up Recommendations
According to ACR criteria, one of the key features of a good report is the inclusion of appropriate follow-up recommendations (10). Occasionally, referring physicians may feel strongly pressured to order tests that they deem unnecessary. One of the strategies used to reduce this pressure is the inclusion of phrases such as “follow-up study may be helpful,” “when appropriate,” and so on. From a medicolegal perspective, these phrases are ambiguous and are best avoided. When a follow-up study is crucial for further evaluation, the study should be strongly and unequivocally recommended, regardless of the referring clinician’s preference. In a court of law, the radiologist is deemed the expert who is ultimately responsible for obtaining the most appropriate study.

Use of Disclaimers
The use of disclaimers is not protective in the event of a lawsuit. An error in interpretation resulting in injury can result in a legal battle, irrespective of the use of disclaimers. Moreover, it may be difficult to explain to a jury exactly how these disclaimers (which are often based on studies in a sample population) pertain to individual cases.

For example, the disclaimer “10%–15% of cases of breast cancer are missed on mammograms” may give rise to questions such as “How did you arrive at the 10%–15% range?” and “Have there been any studies at your hospital to see if your target population matches the study sample population?” Nevertheless, disclaimers can be helpful in specific clinical situations; for example, if a clinician orders a head CT scan to rule out meningitis, it may be beneficial for the radiologist to point out in his or her report that imaging studies cannot rule out meningitis with certainty. In a court of law, the radiologist is required to make a note in his or her report if a study is unable to answer the clinical query. The clinician is not expected to be aware of the limitations of every radiologic study.

Suboptimal Studies
Oftentimes, a phrase regarding the suboptimal nature of a study is included in the radiology report, without alluding to the extent to which this renders adequate interpretation impossible. It is important not only to mention the reason why the study is inadequate, but also to suggest how to rectify the problem if the limitation hampers
meaningful interpretation. For example, it is not sufficient to state that evaluation for pulmonary embolism is suboptimal due to poor contrast opacification secondary to bolus timing and motion artifact. A recommendation for a repeat study (with improved bolus timing and possible sedation to avoid motion artifact) within a definite time frame must be made. However, if the limitation of the study does not involve the region of interest, it may be sufficient to simply mention the limitation and reason without recommending follow-up (eg, if the upper abdomen is obscured by artifact at chest CT performed to rule out pulmonary embolism).

Addenda
An addendum is a description of revisions made to an earlier signed document. Addenda are used in certain situations; for example, (a) if the referring physician was unavailable at the time of dictation and was contacted later; (b) if new clinical information alters the original interpretation; or (c) if an error in the original interpretation was subsequently discovered.

It is legal to dictate an addendum as long as it is dated, timed, and signed. Addenda should record the date and time of the updated dictation. The supplemental report should begin with the statement, “This addendum supersedes the prior report dated [date].” The initial interpreter should dictate the addendum; if this person is unavailable, redictating the report and informing the initial interpreter at the earliest opportunity regarding the addition or correction is acceptable. In such instances, it is preferable to dictate the entire report, including the addition, since legally speaking, dictation of even a part of a report indicates ownership of the entire report.

Missed Diagnoses at Prior Comparison Studies
Approximately 4% of radiologic interpretations rendered by radiologists in their daily practice contain errors (19). Although most of these errors are minor and have no clinical consequences, a few more serious errors cause harm to patients and may result in medical malpractice suits. Many harmful effects can be avoided if errors are corrected with sufficient promptness. Thus, the best course of action to take upon discovery of an error on a previous report is as follows:

1. Inform the interpreting radiologist, who can then dictate an addendum.

2. If it is not possible to inform the interpreting radiologist, dictate the current study, noting the abnormality but without making specific reference to the abnormality on the old study unless doing so is absolutely crucial. For example, instead of “A 10-mm spiculated right upper nodule is noted that was present on the prior study, where it measured 5 mm, and the nodule has grown to its present dimensions in the 6-month interval between the studies,” a preferred statement might be “A 10-mm spiculated right upper nodule has grown from 5 mm on the prior study.” Although these statements may not differ vastly in terms of overall meaning, the second statement avoids drawing too much attention to the missed finding, but without being evasive.

3. Make note of the case if a platform like eRADPEER is available.

The case of Coody v Barraza (20) underscores the importance of avoiding terminology that might indict the radiologist, who missed a finding on a previous study.

A Mrs Coody was diagnosed with ovarian cancer, which went into remission in July 1995 after chemotherapy.

In April 1999, Dr J. M. Barraza interpreted an abdominopelvic CT scan and concluded that there was no evidence of active disease or pelvic adenopathy.

In November 1999, Dr H. Hollenberg reviewed a subsequent abdominopelvic CT scan, interpreting a 1.5 × 2-cm oval area of soft-tissue attenuation anterior to the right iliac artery as a metastatic lymph node. He also noted that the questionable lymph node seen in April now appeared slightly smaller in size.

The court ruled in favor of Mrs Coody, despite the fact that a medical review panel and four of five expert witnesses concluded that the interpretation of the abdominopelvic CT scan by Dr Barraza clearly met the accepted standard of care for a radiologist.

This outcome highlights the importance of being cautious when reporting perceived errors on prior comparison studies.

Interpretation of Old Studies
At times, and for various reasons, an unddictated old study may need to be interpreted and dictated at a later date. This is acceptable as long as the report is prefaced by a statement to the effect that “the study obtained on [date] is presented for interpretation on [date].”

Direct communication of critical findings is still essential. If this is not possible, it must be noted in the report along with the reason for noncommunication.

Consultations and Sources
Occasionally, a radiologist may consult with his or her colleagues for a second opinion regarding a doubtful finding or diagnosis. Colleagues who were consulted should be named in the report.
Although this may not offer protection from litigation, it strengthens the radiologist’s defense against a malpractice claim. In addition, books and articles that were used as references should be quoted.

The term curbside consultation has been used in the ACR practice guidelines to represent an interpretation that does not result in a “formal” report but is used to make treatment decisions (10). The transient nature of such a discussion, which frequently takes place outside the reading room, may preclude immediate documentation. Suboptimal viewing conditions without comparison studies or adequate patient history make curbside consultation inherently risky. Moreover, oftentimes the referring clinician’s documentation may be the only written record of the communication. The ACR recommends that interpreting physicians document these interpretations. Doing so is also prudent from a legal perspective: Memory may not serve as a reliable record in court.

Pros and Cons of Tailoring Reports to the Appropriate Referrer
Increasingly, nonphysician health care personnel are ordering radiologic tests. A radiology report must be dictated in a language that is easy to understand. Some authors have even suggested writing in a style that could be understood by the average high school graduate. However, one runs the risk of insulting a more experienced and specialized practitioner. One way to avoid this potential pitfall is by identifying the target reader beforehand and tailoring the report accordingly. When in doubt, it is better—at least from a legal perspective—to use simple, basic language and terminology in a report; after all, the jury is composed of 12 nonmedical people.

Advantages and Disadvantages of a Structured Report
Structured reports created with standardized templates are gaining popularity, especially among trainees. Advantages of structured reports include (a) uniformity and improved communication with referring providers, (b) improved data mining and peer review process, (c) lesser likelihood of pertinent information being omitted by the radiologist, and (d) facilitation of the drawing of attention to critical findings. Disadvantages include (a) potential decrease in productivity due to radiologists’ not keeping their eyes on the images while assessing templates (the so-called eye dwell problem), (b) possible unsuitability of a report for complicated cases or cases in which a single disease entity affects multiple organs, and (c) possible lengthening of a report in a “normal” case.

Advantages and Disadvantages of a Standardized Radiology Lexicon (RadLex)
RadLex® is a proposed unified language of radiology terms for standardized indexing and retrieval of radiology information resources that was developed by the Radiological Society of North America (21). The advertised features of RadLex include the following:

1. Imaging protocols and picture archiving and communication system display formats can be specified by using vendor-independent language.
2. Speech recognition can be improved by including descriptions linked to the body site imaged and the modality used.
3. Decision support tools can automatically retrieve case-relevant information in real time (eg, checklists of image features to be sought; information from PubMed, the Internet, and proprietary decision support databases).

Disadvantages include the following:

1. Although it is an attractive project, the enormity of the undertaking makes universal adoption difficult.
2. Standardized reporting templates and RadLex are “best practice” initiatives but have not been nationally accepted and cannot be considered the standard of care.
3. Radiologists develop “styles of dictation” over several years of training. Adopting a new system may result in a learning curve that compromises the accuracy of reports.
4. The difficulty of use may distract radiologists from image interpretation.

However, these are merely logistical problems; no specific legal problems are anticipated with use of standardized templates or RadLex.

Conclusion
A meticulous and well-written report is the best way for radiologists to care for their patients. Furthermore, a well-worded report can be the deciding factor in a successful defense against a malpractice action. Even if a radiologist identifies all the findings and makes a brilliant diagnosis, deficient reporting and communication of the information can result in a medicolegal debacle. In today’s contentious society, there is no escaping the practice of defensive medicine. This article is intended to help readers develop an understanding of the legal implications of radiology reports and to help radiologists develop strategies for avoiding malpractice suits.

References
14. Keene v Methodist Hospital, 324 F Supp 233 (Ind 1971).