Author Manuscript
Author Manuscript
Author Manuscript
Author Manuscript

HHS Public Access
Author manuscript
Diagnosis (Berl). Author manuscript; available in PMC 2016 March 20.

Published in final edited form as:
Diagnosis (Berl). 2014 December ; 1(4): 263–268. doi:10.1515/dx-2014-0034.

Breakdowns in communication of radiological findings: an ethical and medico-legal conundrum

Leonard Berlin, MD, FACR,
Department of Radiology, Skokie Hospital, 9600 Gross Point Rd., Skokie, IL 60076, USA, Lberlin@live.com; and Rush University and University of Illinois, Chicago, IL, USA

Daniel R. Murphy, and
Houston VA Center for Innovations in Quality, Effectiveness and Safety, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX, USA; and Section of Health Services Research, Department of Medicine, Baylor College of Medicine, Houston, TX, USA

Hardeep Singh
Houston VA Center for Innovations in Quality, Effectiveness and Safety, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX, USA; and Section of Health Services Research, Department of Medicine, Baylor College of Medicine, Houston, TX, USA

Abstract

Communication problems in diagnostic testing have increased in both number and importance in recent years. The medical and legal impact of failure of communication is dramatic. Over the past decades, the courts have expanded and strengthened the duty imposed on radiologists to timely communicate radiologic abnormalities to referring physicians and perhaps the patients themselves in certain situations. The need to communicate these findings goes beyond strict legal requirements: there is a moral imperative as well. The Code of Medical Ethics of the American Medical Association points out that “Ethical values and legal principles are usually closely related, but ethical obligations typically exceed legal duties.” Thus, from the perspective of the law, radiologists are required to communicate important unexpected findings to referring physicians in a timely fashion, or alternatively to the patients themselves. From a moral perspective, radiologists should *want* to effect such communications. Practice standards, moral values, and ethical statements from professional medical societies call for full disclosure of medical errors to patients affected by them. Surveys of radiologists and non-radiologic physicians reveal that only few would divulge all aspects of the error to the patient. In order to encourage physicians to disclose errors to patients and assist in protecting them in some manner if malpractice litigation follows, more than 35 states have passed laws that do not allow a physician’s admission of an error and apologetic statements to be revealed in the courtroom. Whether such disclosure increases or

This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 License.

Correspondence to: Leonard Berlin.

Conflict of interest statement
Competing interests: The funding organization(s) played no role in the study design; in the collection, analysis, and interpretation of data; in the writing of the report; or in the decision to submit the report for publication.

Author contributions: All the authors have accepted responsibility for the entire content of this submitted manuscript and approved submission.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

decreases the likelihood of a medical malpractice lawsuit is unclear, but ethical and moral considerations enjoin physicians to disclose errors and offer apologies.

Keywords

case law; communication; disclosure; malpractice; medical ethics; radiology

Introduction

Communication breakdowns remain a problem in radiology, and malpractice litigation is not infrequently a result. A companion paper discusses the causes and potential solutions to communication breakdown [1]. An American College of Radiology (ACR) survey conducted in 2013 disclosed that 23% of all radiologists were involved in at least one failed communication malpractice lawsuit, 49% were not, and 28% did not respond. According to the Physician Insurers Association of America (PIAA), communication errors in radiology are among the top five reasons radiologists are sued for medical malpractice [2]. In 2010, a large professional liability company reported that missed and delayed diagnoses were often attributed to missing information, i.e., information that existed at the time of service but was not available to physicians when they needed it to make diagnostic decisions. One of the major information gaps was delayed communication of radiological data [3]. When malpractice attorneys were asked to cite the primary reason patients pursued a medical malpractice lawsuit in a survey, more than 80% pointed to communication issues. The survey also found that patients were most satisfied when they felt fully informed about their medical condition and tests results, and that patients are more likely to sue their physician if they believed that the physician failed to keep them informed.

The emergence of “duty to notify” providers of abnormal findings

Historically, the radiologist’s duty to communicate results did not extend beyond dictating and signing written reports. As a matter of courtesy and good medical practice, the radiologist might decide to telephone the referring physician if the findings seemed to warrant immediate treatment, but this was neither mandated nor was there any requirement to document the process [4]. Malpractice litigation alleging a radiologist’s failure to communicate was rare, even at a time before electronic report transmission was common, when reports were often not delivered for one to two days after the study was completed. A review of medical malpractice litigation in the Chicago area between 1975 and 1995 revealed that communication was an issue in only 1.5% of lawsuits involving diagnostic radiology [5]. Elsewhere, however, the number of legal actions against radiologists claiming failure to properly communicate diagnoses seemed to be rising [6]. Indeed, in 1990, communication breakdowns were contributory in more than 15% of radiology malpractice liability lawsuits in New York State [6, 7].

In 1990, the *ACR Bulletin* alerted readers to “a new kind of legal action” which held radiologists responsible for ensuring that abnormal findings (especially those concerning for cancer) were “received and understood” by the referring provider [6]. However, the nation’s courts had long before taken firm positions on the subject [8]. As early as 1971, a federal

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

court in Indiana ruled that a radiologist was negligent for failing to directly communicate radiographic results to a referring physician. The radiologist had been on duty on Christmas Day and had noted a fracture on skull radiographs obtained on a patient earlier in the morning. The radiologist dictated his interpretation but the report did not reach the referring physician for 3 days, resulting in serious patient injury and a malpractice lawsuit. The Court ruled that the radiologist should have "foreseen" that normal channels of communication would be delayed because of the Christmas holiday, and therefore should have initiated verbal communication with the referring physician [9].

In 1979, an Ohio Appellate Court found that a radiologist had a duty to verbally communicate to a family physician the fact that a 4-year-old patient had sustained an elbow fracture. The emergency department physician interpreted the films as normal, but on the next day a radiologist found a fracture of the distal humerus. The radiologist dictated the report, but due to a breakdown in communication that was never fully explained, neither the family physician nor the parents of the child were made aware of the fracture for 2 months. The Court stated [10]:

> Communication of a diagnosis so that it may be beneficially utilized may be altogether as important as the diagnosis itself …. In certain situations, direct contact with the treating physician is necessary.

A New Jersey Appellate Court reached similar conclusions in 1987 [11]. Similar sentiments were voiced by an Arkansas Appellate Court in 1989 in a case that involved a radiologist's failure to directly communicate to the attending physician the fact that an endotracheal tube had been dislodged, leading to a patient's cardiac arrest [12].

The advent of screening mammography also changed traditional thinking. Whereas in a traditional referral, the referring physician suspected an abnormal finding and actively awaited test results, radiologists were now being asked to interpret mammograms on asymptomatic patients who were being referred merely for screening purposes and presumed to be healthy. The stage was thus set for radiology reports containing unexpected abnormal findings to go unnoticed.

In 1991 ACR issued its first *Standard for Communication: Diagnostic Radiology*. It stated [13]:

> Some circumstances…may require direct communication of unusual, unexpected, or urgent findings to the referring physician in advance of a formal written report…. The timeliness of direct communication should be based upon the immediacy of the clinical situation.

As the number of radiologic examinations has increased every year throughout the nation, it is no surprise that there has been a corresponding increase of medical malpractice litigation generated by the failure of patients to receive reports of their radiologic examinations. Although some of these lawsuits have been directed at the referring physician, many others have in addition, or instead, involved radiologists [14].

Author Manuscript
Author Manuscript
Author Manuscript
Author Manuscript

The emergence of direct reporting of radiology results to patients

The practice of communicating radiographic findings to the referring physician, and not to the patient, was established early in the field of radiology. In 1916, the *American Journal of Roentgenology* published the following statement [15]:

> The roentgenologist being a consulting diagnostician should reveal his findings only to the attending physician or surgeon who has referred the case to him, and not to the patient….

Today, however, direct communication of radiologic findings between radiologist and patient has been espoused by the courts if not radiologists themselves [16]. In 1991, a federal appeals court in the state of Washington ruled that a radiologist had a duty to directly inform a patient that his chest radiographs were suggestive of sarcoidosis [17]. Shortly thereafter, similar rulings by the Supreme Court of Mississippi [18] and a New Jersey Appellate Court echoed similar conclusions [19].

The ACR 1999 revision of its *ACR Standard for Communication: Diagnostic Radiology* for the first time introduced the concept of direct communication to the patient and recommended this type of communication when immediate treatment is indicated and the referring physician cannot be reached [20]. The Joint Commission also emphasized direct communication with patients, issuing new Standards that became effective July 1, 2001, requiring hospitals to inform patients and their families of outcomes of medical tests and care [21].

Several recent state appeals court decisions have strengthened the trend toward direct communication between radiologist and patient. A 2008 decision rendered by the Virginia Supreme Court focused on a medical malpractice lawsuit filed by the family of a woman who died of a pulmonary embolism [22]. The woman had undergone a doppler sonography of her right lower leg that was promptly and correctly interpreted by the radiologist as disclosing a deep vein thrombosis. The radiologist attempted to telephone the report to the referring physician but, after encountering some delay with the physician's telephone answering system, decided simply to fax the report instead. The referring physician did not read the faxed report, and 2 days later the patient died of a pulmonary embolism. The lawsuit against the referring physician was settled out of court, but the malpractice case against the radiologist proceeded to trial. At the conclusion of the trial, the jury returned a verdict in favor of the radiologist. However, the plaintiff appealed, resulting in a reversal of the jury decision. The Virginia Supreme Court ruled that the radiologist's breach of the standard of care – namely, his failure to directly communicate with either the referring physician or the patient – initiated the chain of events that led to the patient's death, and was sufficient to impose liability [22]. An Arizona Supreme Court decision not only expressed similar sentiments but also went even further by specifying that a radiologist has a duty to communicate abnormalities directly to a patient if the referring physician was unavailable [23].

The concept of direct communication between radiologist and patient moved into the public and legislative arenas in 1992 when the U.S. Congress enacted the *Mammography Quality*

Standards Act (MSQA). One of the Act's provisions, which became effective in 1999, stated [24]:

> Each facility shall send each patient a summary of the mammography report written in lay terms within 30 days of the mammographic examination. If assessments are "suspicious" or "highly suggestive of malignancy," the facility shall make reasonable attempts to ensure that the results are communicated to the patient as soon as possible.

Many referring physicians initially reacted with displeasure although the controversy quickly subsided. Prior to enactment of the MQSA, a 1997 PIAA-ACR survey had disclosed that a substantial percentage of malpractice lawsuits filed against radiologists were brought by women who claimed they had not been informed that their mammograms had been interpreted as showing findings suspicious for carcinoma [25]. Implementation of the MQSA has virtually eliminated those types of lawsuits. It is intuitive to believe that direct reporting to patients of results of all radiographic examinations would similarly reduce, if not eliminate, all litigation alleging failure of communication.

Further contributing to the momentum toward direct communication between radiologist and patient was legislation introduced to the General Assembly of the State of Pennsylvania in 2008. Titled the "The Patient Test Result Information Act," the proposed bill would require any provider of diagnostic imaging services to send a written copy of the results directly to the patient within 10 days of transmitting the report to the referring physician [26]. Similar legislation has recently been introduced in the New Jersey legislature. At the time of this writing, the future of this legislation has yet to be determined.

In summary, radiologists must remember that it is the patient to whom they owe a duty to serve. It is the patient who sustains injury if a radiologist breaches that duty. Direct communication of radiologic findings between the radiologist and the patient on whom a radiological examination has been performed is the surest way to discharge that duty.

The emerging role of disclosure and apology

A common thread in most medical negligence claims is the patient's perception that the physician did something wrong [27]. From an ethical perspective, there seems to be a clear consensus that a radiologist is obliged to promptly apprise a patient of any mistakes made while performing or interpreting a radiologic study [28–30]. However, in practice many physicians are reluctant, or refuse, to inform patients of errors. One report found that only 24% of house staff physicians who had made serious medical mistakes actually informed the involved patient or patient's family about them [31]. In another of European physicians, 70% of respondents indicated that physicians *should* provide details of such an event, but only 32% would actually disclose the details of what happened [32]. This is strikingly similar to estimates of patients who identified themselves as having experienced a medical error, only about one-third of whom reported that the error was disclosed to them [30].

Physicians are reluctant to admit mistakes in light of several concerns, including the perceived harm that would be incurred by losses of professional standing, referrals,

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

admitting or clinical privileges, preferred provider status, and even licensure [33]. Perhaps a more compelling reason for silence is the perception that a confession of error might provoke medical malpractice litigation [34, 35]. These fears are somewhat substantiated. For instance, 62% of patients in a survey endorsed the right to expect that their doctors will not make errors [30]. However, 64% said that they would want the physician to be reprimanded by an authority for making errors, and 39% wanted the doctor to be punished for committing errors by having their medical license either suspended or revoked. Fifty percent of the public believe that suspending a physician's medical license is an effective way to reduce medical errors [30]. A substantial percentage of such patients likewise believe that malpractice litigation is warranted [36]. One survey revealed that 83% of patients felt they should be compensated financially for any injury they sustained as a result of a physician's error [36].

The desire to avoid legal involvement by choosing to ignore an adverse event from communication error must be tempered by myriad compelling ethical and legal considerations that call for complete disclosure. The Code of Medical Ethics of the American Medical Association states [37]:

> It is a fundamental ethical requirement that a physician should at all times deal honestly and openly with patients. Patients have a right to know their past and present medical status and to be free of any mistaken beliefs concerning their conditions. Situations occasionally occur in which a patient suffers significant medical complications that may have resulted from the physician's mistake or judgment. In these situations, the physician is ethically required to inform the patient of all the facts necessary to ensure understanding of what has occurred.… Concern regarding legal liability which might result following truthful disclosure should not affect the physician's honesty with a patient.

The question of whether errors committed by physicians *should* be disclosed to patients affected by them is no longer debatable. Legal opinions, regulations of federal and state agencies, mandates of the Joint Commission and policies of professional organizations, all favor complete disclosure by the physician of all facts and information relevant to a patient's health, including complications of medical procedures and iatrogenic errors and injuries [28, 29, 38, 39]. However, the question of what physicians should and should not say to patients as part of the disclosure of an error warrants further discussion.

The legal term "extrajudicial admission" is defined as a statement made voluntarily by an individual outside the courtroom or legal proceeding that is against one's own interest. Such admissions can be considered as evidence by a judge or jury [40]. The legal literature is replete with cases in which physicians have, in essence, acted as expert witnesses against themselves by having voluntarily "confessed" to patients who have sustained an adverse event. Fear that an apology offered by a physician could be used as incriminating evidence against the physician in court has prompted states to take legislative action that provide legal immunity to expressions of apology or regret [39]. While most state apology-immunity laws protect statements expressing sympathy from admissibility, they do not protect statements that admit fault [41].

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Although expressing of sympathy without admitting responsibility may offer some legal protection, this practice may ultimately backfire. Surveys of patients suggest that a full or authentic apology that expresses both sympathy for the patient's injuries and acceptance of responsibility for those injuries often leads to forgiveness, a more favorable view on settlement offers [41] and possibly decreased inclination to pursue malpractice litigation [42]. On the other hand, partial or "botched" apologies, those that did not include admission of wrongdoing, were seen by patients as being no better, or possibly even worse, than not offering any apology. Partial apologies did not consistently convey to recipients that the offender had accepted responsibility or had regretted his or her behavior, and thus generated considerably more anger.

Will a physician's authentic apology reduce the likelihood of an injured patient's filing a medical malpractice lawsuit? Research studies [43] have found that apologies to patients subjected to medical errors help deter legal action. These studies have also shown that payments in medical malpractice litigation are often higher if an error has not been disclosed and an apology given. Moreover, there is no published evidence to suggest that more open disclosure of errors and rendering of apologies dramatically increases liability. A recent survey found that 99% of parents wanted physicians to tell them about an error involving their children, no matter the severity [44]. Although 36% indicated that they were less likely to seek legal action if they were informed of the error by the physician, it is noteworthy that 63% of the parents stated that disclosure by the physician that a *serious* error had been committed would not change the likelihood of their undertaking legal action.

Many medical facilities, such as the University of Michigan, have achieved a reduction in malpractice expenses by implementing programs in which physicians and hospital management not only work together to disclose errors, but also to admit fault and offer compensation. These medical facilities report a reduction in dollars paid to claimants and associated legal expenses, and possibly the number of malpractice lawsuits [45]. Admissions of fault and offers of compensation do seem to decrease defense and court costs, as well as the average compensation paid to patients for a given injury. However, whether these types of programs decrease other adverse consequences affecting doctors who have made medical errors, enumerated earlier, has not been documented. Furthermore, facilities that have instituted the "divulge – admit – compensate" programs are those at which all medical malpractice expenses are paid by a single entity. Physicians are employed by the medical facility and thus there is little or no conflict of interests between the physicians and the facility. In most hospitals in the United States, however radiologists and non-radiologic physicians are independent contractors. Hospitals have professional liability insurance underwritten by one carrier, radiologists may have insurance underwritten by another carrier, and other physician groups may have insurance underwritten by even yet another carrier. Under this scenario, there are bound to be differences of opinion regarding strategies and tactics, making it difficult, if not impossible, to bring the various potential co-defendants and their insurers together to effect a unified position.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Summary

Adverse events related to communication will inevitably occur, some of which are unforeseeable. Over the last two decades, the legal system has gradually redistributed the responsibility for ensuring successful communication of imaging results, particularly abnormal results where patient harm is likely, to both the radiologist and the ordering clinician. In instances where communication breakdowns do occur and errors result, virtually all patients want to be fully informed and want their physician to apologize for any error the physician has committed. However, some patients remain intolerant of such errors and may be inclined to initiate some kind of punitive action against the erring physician. At the same time, most physicians acknowledge that they should disclose and express sorrow to patients in the wake of an error, but decline to do so for fear of punitive action. Thus, the current patient and physician cultures interact to keep the physician disclosure rates low. Despite some hopeful findings, disclosures of and apologies for errors continue to pose a legal and ethical conundrum for most physicians. Nevertheless, physicians are ethically and professionally bound to divulge errors to patients and should work with hospital risk management personnel or a representative of the professional liability insurance carrier for guidance on managing future communications about the incident. We must honor and continue to respect and adhere to medicine's centuries old basic tenet – First do no harm, [and may we add,] disclose and apologize if inadvertently we do inflict harm.

Acknowledgments

Research funding: This project is supported by the VA Health Services Research and Development Service (CRE 12-033; Presidential Early Career Award for Scientists and Engineers USA 14-274), the Agency for Health Care Research and Quality (R01HS022087), the VA National Center of Patient Safety and in part by the Houston VA HSRD Center of Innovation (CIN 13-413).

Employment or leadership: None declared.

Honorarium: None declared.

References

1. Murphy DR, Berlin L, Singh H. Communication breakdowns and diagnostic errors: a radiology perspective. Diagnosis. 2014; 1:253–261.
2. PIAA Data Sharing Reports. Rockville, MD: Physician Insurers Association of America; 2003.
3. Cambridge, MA: CRICO/RMF Strategies Emergency Medicine Leadership Council White Paper; 2011. Optimizing Physician-Nurse Communication in the Emergency Department: Strategies for Minimizing Diagnosis-Related Errors. Available at: https://www.rmf.harvard.edu/~/media/Files/_Global/KC/PDFs/ed_white_paper_min_diagnosis_errors.pdf [Accessed Jun 4, 2014]
4. Berlin L. To telephone or not to telephone: how high is the standard? AJR Am J Roentgenol. 1992; 159:1335–1339. [PubMed: 1442411]
5. Berlin L, Berlin JW. Malpractice and radiologists in cook county, IL: trends in 20 years of litigation. AJR Am J Roentgenol. 1995; 165:781–788. [PubMed: 7676967]
6. Liston SE. A new type of cancer lawsuit is emerging. ACR Bulletin. 1990; 46:14.
7. Schwinger HN. Liability problems in radiology communications exist. ACR Bulletin. 1990; 46:33.
8. Kline TJ, Kline TS. Radiologists, communication, and resolution 5. Radiology. 1992; 185:909. [PubMed: 1438787]
9.

Keene v Methodist Hospital. 324 F Supp 233(Ind 1979).

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

10.

Phillips v Good Samaritan Hospital. 416 NE2d 646(OH App 1979).

11.

Jenoff v Gleason. 521 A2d 1323(NJ Super Ct App Div 1987).

12.

Corteau v Dodd. 733 SW2d 436(Ark 1989).

13. ACR Standard for Communication: Diagnostic Radiology. Reston, VA: American College of Radiology; 1991.
14. Ginsberg MD. Beyond the viewbox: the radiologist's duty to communicate findings. The John Marshall Law Review. 2001; 35:359.
15. Am J Roentgenol. 1916; 3:593.
16. Berlin L. Are radiologists contracted by third parties to interpret radiographs liable for not communicating results directly to patients? Am J Roentgenol. 2002; 178:27–33. [PubMed: 11756081]

17.

Daly v United States of America. 946 F2d 1467(9th Cir 1991).

18.

Meena v Wilburn. 603 So2d 866(Miss).

19.

Ranier v Frieman. 682 A2d 1220(NJ App 1996).

20. American College of Radiology. Standards 2000–2001. Reston, VA: American College of Radiology; 2000. ACR standard for communication: diagnostic radiology; p. 1-3.
21. Standards RI.1.2.2: patient rights and organization ethics. Oakbrook Terrace, IL: Joint Commission on Accreditation of Healthcare Organizations; 2000.

22.

Williams v Le.662 SE2d 73(Ariz 2004).

23.

Stanley v McCarver. 92 P3D 849(Ariz 2004).

24. Ohrt H, Berlin L, Trought W, Gagnon J. Radiology & ethics: communicating radiologic examination results directly to patients. ACR Bulletin. 1998; 54:17–19.
25. Physician Insurers Association of America and American College of Radiology. Practice standards claims survey. Rockville, MD: Physician Insurers Association of America; 1997.
26. Patient Test Result Information Act; H.R. 2434, 110th Congress; 2008. Available at: http://www.legis.state.pa.us/CFDOCS/Legis/PN/Public/btCheck.cfm?txtType = PDF&sessYr=2007&sessInd=0&bill-Body=H&billTyp=B&billNbr=2434&pn=3958
27. Murphy JB. Benefits and challenges of informed consent. Mayo Clin Proc. 2008; 83:272–273. [PubMed: 18315991]
28. Applegate WB. Physician management of patients with adverse outcomes. Arch Intern Med. 1986; 146:2249–2252. [PubMed: 3778057]
29. Witman AB, Park DM, Hardin SB. How do patients want physicians to handle mistakes? A survey of internal medicine patients in an academic setting. Arch Intern Med. 1996; 156:2565–2569. [PubMed: 8951299]
30. Blendon RJ, DesRoches CM, Brodie M, Benson JM, Rosen AB, Schneider E, et al. Views of practicing physicians and the public on medical errors. N Engl J Med. 2002; 347:1933–1940. [PubMed: 12477944]
31. Wu AW, Folkman S, McPhee SJ, Lo B. Do house officers learn from their mistakes? J Am Med Assoc. 1991; 265:2089–2094.
32. Vincent JL. Information in the ICU: are we being honest with our patients? The results of a European questionnaire. Intensive Care Med. 1998; 24:1251–1256. [PubMed: 9885876]

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

33. Wu AW, Cavanaugh TA, McPhee SJ, Lo B, Micco GP. To tell the truth: ethical and practical issues in disclosing medical mistakes to patients. J Gen Intern Med. 1997; 12:770–775. [PubMed: 9436897]
34. Berlin L. Malpractice Issues in radiology: consequences of being accused of malpractice. Am J Roentgenol. 1997; 169:1219–1223. [PubMed: 9353431]
35. Gallagher TH, Waterman AD, Ebers AG, Fraser VJ, Levinson W. Patients' and physicians' attitudes regarding the disclosure of medical errors. J Am Med Assoc. 2003; 289:1001–1007.
36. Mazor KM, Simon SR, Yood RA, Martinson BC, Gunter MJ, Reed GW, et al. Health plan members' views about disclosure of medical errors. Ann Intern Med. 2004; 140:409–418. [PubMed: 15023706]
37. AMA Code of Medical Ethics, 2010–2011 Edition. Chicago IL: American Medical Assoc; 2010.
38. Berlin L. Reporting the "missed" radiologic diagnosis: medicolegal and ethical considerations. Radiology. 1994; 192:183–187. [PubMed: 8208934]
39. Berlin L. Malpractice issues in radiology. Admitting mistakes. AJR Am J Roentgenol. 1999; 172:879–884. [PubMed: 10587115]
40. Taft L. Apology and medical mistake: opportunity or foil. Annals Health L. 2005; 14:55.
41. Robbennolt JK. Apologies and legal settlement: An empirical examination. Mich L Rev. 2003; 102:460.
42. Cohen JR. Toward candor after medical error: the first apology law. Harvard Health Policy Review. 2004; 5:21–24.
43. Gallagher TH, Levinson W. Disclosing harmful medical errors to patients: a time for professional action. Arch Intern Med. 2005; 165:1819–1824. [PubMed: 16157824]
44. Hobgood C, Tamayo-Sarver JH, Elms A, Weiner B. Parental preferences for error disclosure, reporting, and legal action after medical error in the care of their children. Pediatrics. 2005; 116:1276–1286. [PubMed: 16322147]
45. Kachalia A, Kaufman SR, Boothman R, Anderson S, Welch K, Saint S, et al. Liability claims and costs before and after implementation of a medical error disclosure program. Ann Intern Med. 2010; 153:213–221. [PubMed: 20713789]