

# A National WestlawNext Database Analysis of Malpractice Litigation in Radiation Oncology

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Although litigation involving radiation oncologists was infrequent and most verdicts were in favor of defendants, many cases resulted from claims of excessive radiation, unnecessary radiation, and a failure to refer and/or order appropriate tests.

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**A**rise in medical malpractice insurance premiums and malpractice claims has brought the issue of medical malpractice to the forefront of medicine over the past few decades.<sup>1</sup> The VA has more than tripled the number of legal settlements it has made over the past 5 years, and it has paid more than \$871 million in medical malpractice settlements over the past decade.<sup>2,3</sup> Legislation by the federal and state governments in the U.S., collectively referred to as tort reform, has been passed to curb the rate at which malpractice claims are filed; to set caps on noneconomic damages, such as pain and suffering; to control the effect of these claims on insurance premiums; and to prevent the delivery of negligent and harmful medical care.<sup>1</sup>

An observed high prevalence of medical malpractice claims has significant consequences within the clinical setting and has given rise to the practice of defensive medicine.<sup>4-8</sup> Even the perceived threat of possible tort action may lead to aberrant practice behaviors. These defensive medical practices may include excessive testing, unnecessary referrals to other physicians or health facilities, or even refusal to treat particular patients.<sup>4,9-11</sup> Furthermore, physicians devote valuable time and energy engaging in lawsuits rather than in delivering quality care to their patients.<sup>12</sup>

The increasingly litigious environment has discouraged physicians from practicing medicine, leading to earlier retirement, geographic relocation, and restriction of scope of services, all limiting patients' access to health care.<sup>13</sup> One such figure reported in 2008 found that

in the U.S., defensive medicine costs can total nearly \$56 billion.<sup>14</sup> Radiation oncology is generally considered a medium-to-low risk specialty for litigation.<sup>15,16</sup> Its average annual indemnity payment in 2006 was \$276,792 and has increased at a rate of \$1,500 per year, ranking it fifth among 22 specialty groups.<sup>16</sup> Studies revealed that the practice of defensive medicine is not strictly limited to the U.S. and has been reported in other countries.<sup>6,17-20,21</sup>

A recent study by Jena and colleagues found that nearly 10% of oncologists face a malpractice claim annually, the 10th highest among the specialties surveyed.<sup>22</sup> Malpractice within the field of radiation oncology has been previously discussed in the literature.<sup>16,23,24</sup> There are limited data that examine the basis for these claims, the resulting jury verdicts, and the subsequent indemnity payments associated with claims.<sup>24,25</sup>

In this study, the authors sought to describe radiation oncology malpractice claims over the past 30 years. It is hoped that this study will not only help traditional oncologists in particular, but also all other practitioners who might be included as co-defendants to be more aware of the common causes of action that plaintiffs have been using to sue.

## METHODS

This public and online study did not involve human subjects research and accordingly did not require institutional review board approval. The WestlawNext (Thomson Reuters, New York) online legal database was used to search retrospectively for state and federal

jury verdicts and settlements related to radiation oncology and medical malpractice. The database is a collection of several thousand search engines that can locate court dockets, jury verdicts, and settlements compiled by attorney-editors. Local cases and claims that were dismissed prior to proceeding to trial or that were settled out of court were not available. All cases in the database were considered and provided this study's sample size, spanning from January 1, 1985, to December 31, 2015.

Given the boolean search functionality integrated into the Westlaw database, search parameters included "radiation oncology" and "medical malpractice" to yield the greatest number of cases (n = 223). All derived cases were manually reviewed, and files that were duplicates or associated with litigation unrelated to radiation oncology were excluded from analysis (n = 191).

### Analysis

Factors that were collected and considered included the state and county in which the claim was filed, the age and sex of the litigant at the time of malpractice, the year the case was settled, co-defendant specialties, jury verdicts, award payouts, death status of the litigant and the alleged basis for the medical malpractice claim. A lack of informed consent, a failure to treat in a timely manner, a failure to order appropriate tests or to make a timely referral, misinterpretation of a test, excessive radiation, unnecessary radiation, unnecessary surgery, and procedural error all were included as alleged bases for the malpractice claim. Descriptive statistics were then compiled.

### RESULTS

A total of 32 cases were included for analysis (Tables 1, 2, and 3). Anonymized summaries of all 32 cases are provided in the Appendix. The average age of the patient was 54.6 years (range 34-83) and included 17 (54.8%) female and 14 (45.2%) male patients. The cases were distributed across 12 states, with 9 cases (28.1%) in Florida, 4 (12.5%) in New York, and 3 (9.4%) in California. Of 31 cases with available data, 19 suits (61.3%) were brought against 1 or 2 defendants, and 12 (38.7%) had ≥ 3 defendants. Radiation oncologists were defendants in all the cases. Otolaryngologists and orthopedic surgeons were the 2 most com-

TABLE 1

### Demographics and Geographic Distribution of Malpractice Litigation Related to Radiation Oncology, 1985-2015 (N = 32)

Characteristics	Cases
Defendant gender, No. (%) <sup>a</sup>	
Male	14 (45.2)
Female	17 (54.8)
Age, mean, y <sup>b</sup>	54.6 (range 34-83)
Geographic distribution, No. (%)	
Alabama	2 (6.3)
California	3 (9.4)
Florida	9 (28.1)
Georgia	1 (3.1)
Illinois	2 (6.3)
Massachusetts	2 (6.3)
Minnesota	2 (6.3)
New Jersey	3 (9.4)
Nevada	1 (3.1)
New York	4 (12.5)
Pennsylvania	2 (6.3)
Texas	1 (3.1)

<sup>a</sup>Data were unavailable for 1 case.

<sup>b</sup>Data were unavailable for 17 cases.

monly named co-defendants, each named in 9.4% of cases.

Excessive radiation (n = 11, 34.4%), unnecessary radiation (n = 8, 25%), and a failure to refer and/or order appropriate tests (n = 9, 28.1%) were the 3 most commonly alleged causes of malpractice. A lack of informed consent was implicated in less than one-seventh of cases (4; 12.5%). In 7 (21.9%) cases, the patient passed away.

Between 1985 and 2015, decisions were made in radiation oncologists' favor in more than half of the cases. The jury ruled for the plaintiff in 11 (34.4%) cases and for the defendant in 17 (53.1%) cases. Settlements were reached in 4 (12.5%) cases, with a mean payout of \$1,476,775. Cases that proceeded to trial had a mean payout of \$4,744,219. Payouts ranged from \$25,000 to \$16,000,000.

### DISCUSSION

A physician's duty is to provide medical care within the standard of care. In the courtroom, a radiation oncologist is judged on what a "reasonably prudent" radiation oncologist would do in similar circumstances.<sup>26</sup> The plaintiff must

**TABLE 2**  
**Number and Specialty of Defendants of**  
**Malpractice Litigation Related to Radiation Oncology**

Defendants, No. <sup>a</sup>	Cases, No. (%)
1	7 (22.6)
2	12 (38.7)
3	6 (19.4)
4	3 (9.7)
5	2 (6.5)
6	1 (3.2)

  

Specialty/Physicians	Cases, No. (% relevant to specialty)
Radiation oncology	32 (100)
Radiology	1 (3.1)
Hematology/oncology	2 (6.3)
Ear, nose, and throat	3 (9.4)
Pathology	1 (3.1)
Oncology	2 (6.3)
Urology	1 (3.1)
Orthopedic surgery	3 (9.4)
General surgery	1 (3.1)
Cardiothoracic surgery	1 (3.1)
Primary care	2 (6.3)
Internal medicine	1 (3.1)
Emergency	1 (3.1)
Breast surgery	1 (3.1)
Dentist	1 (3.1)
Dermatology	1 (3.1)
Maxillofacial surgery	1 (3.1)

  

Specialty/Nonphysician	Cases, No. (%)
Medical physics	1 (3.1)
Hospital system	9 (28.1)
Medical practice	13 (40.6)

<sup>a</sup>Data were unavailable for 1 case.

establish the standard of care for the patient's specific diagnosis with evidence, which is often accomplished through expert testimony. A physician is deemed negligent when deviating from this standard of care. The plaintiff must establish 4 factors to be awarded compensation for medical negligence: (1) the physician owed a professional duty to the patient such as the doctor-patient relationship; (2) the physician breached this duty or failed to meet the standard of care; (3) proximate cause—the breach of duty by the physician directly caused the patient's injury; and (4) the patient experienced emotional and/or physical damage while in the care of the physician.<sup>27</sup>

#### Reasons for Malpractice Claims

The WestlawNext search revealed 3 top theories of breach of standard of care: excessive ra-

diation, unnecessary radiation, and a failure to refer and/or order appropriate tests. As a result, these theories can be interpreted as medical malpractice law in evolution. In other words, the courts still may be laying groundwork to clarify these theories.

However, a more cynical interpretation of why these 3 top theories of breach of standard of care were seen would note the practice of using expert witness testimony as “hired guns” in the U.S. legal system. Plaintiff attorneys know that use of expert witnesses can increase the attorney's billable hours during the discovery phase and can decrease the likelihood that the case would be thrown out as lacking merit. Nevertheless, when the claim eventually does go to trial, it may lack merit, but not before plaintiff and defense attorneys complete many hours of work. This use of the legal system for financial gains can potentially confound the true reasons why the search resulted in these 3 top theories of breach of standard of care.

A lack of informed consent was not a major issue and was cited only in 4 (12.5%) cases as the cause of alleged malpractice. This finding was reassuring, as informed consent is an important issue that reinforces the physician-patient relationship and enhances patient trust. Previous studies found a perceived lack of informed consent as a basis for a malpractice claim in more than 34% of otolaryngology cases, 25% of cranial nerve surgery cases, and 39% of facial plastic surgery cases.<sup>28-30</sup> Perhaps the physician patient discussion in radiation oncology may be different compared with that of surgery, as treatments in radiation oncology are guided by large clinical trials, and patients are often referred after discussions with other specialty providers, such as surgeons and medical oncologists. Improving patients' understanding of their radiation treatment plans is important in reducing malpractice claims relating to informed consent, and recent studies have identified areas where patient education can be improved.<sup>31,32</sup>

#### Settlements

Although settlements were reached in a minority of cases, the monetary value of jury verdicts favoring the plaintiff were 3-fold higher than those of out-of-court settlements. Specifically, cases that were settled had a mean payout of \$1,476,775, which sharply contrasts with

cases that proceeded to trial and a mean payout of \$4,744,219. The highest jury award to the plaintiff was \$16,000,000, involving a case where it was determined that a double dose of radiation was delivered to a patient's shoulder. In a simple risk-reward analysis, this suggests that radiation oncologists should consider settling out of court if a malpractice guilty verdict seems possible. However, given the retrospective nature of the analysis, only limited conclusions can be drawn regarding the effectiveness of such a strategy.

Regardless, cases that were settled or judged on the plaintiff's behalf were for a much higher value in radiation oncology compared with indemnity payment claims data in other high-risk specialties (emergency medicine, general surgery, obstetrics and gynecologic surgery, and radiology).<sup>33</sup> It is important to highlight the magnitude of real and perceived harm that can be associated with radiation oncology. Regarding perceived harm, the public may lack an understanding of how radiation works. Interestingly, even though the perceived harm may be misplaced, the real harm is still there. Unlike other specialties where some errors can be reversed (ie, if heparin is mistakenly administered, its effects can be reversed by protamine sulfate), once radiation is delivered, it is not reversible. The harm is permanent and can cause disability.

Settlements are often lower in legal cases due to insurance policy limitations, the time line of award payout (settlement funds are paid more rapidly, as verdict awards are dependent on the conclusion of the case), and the inherent risk that an appeals court may overturn a verdict or reduce the amount of the award.<sup>34</sup> For all the radiation oncology cases that proceeded to trial, more than half (53.1%) of the cases were in favor of the physician (Table 3). While this is positive news for radiation oncologists, it is still lower than the national average of 75% of malpractice verdicts in favor of the physician.<sup>34,35</sup> In contrast, 65% of colorectal surgery cases resulted in a verdict in favor of the physician.<sup>36</sup>

### Geographic Locations

The concentration of cases in a few states in this analysis is likely due to a combination of factors, including the distinct legal climates in individual states and the geographic unequal distribution of radiation oncologists across the

TABLE 3

### Medicolegal Analysis, Verdict, and Payouts of Radiation Oncology Malpractice Litigation

Reasons for Litigation	Cases, No. (%)
Failure to refer/order appropriate tests	9 (28.1)
Failure to diagnose in a timely manner	5 (15.6)
Death of the defendant	7 (21.9)
Failure to treat	6 (18.8)
Excessive radiation	11 (34.4)
Unnecessary radiation	8 (25)
Misinterpretation of test(s)	1 (3.1)
Lack of informed consent	4 (12.5)
Procedural error	2 (6.3)
Unnecessary surgery	1 (3.1)
<b>Jury Verdicts</b>	
Defendant	17 (53.1)
Plaintiff	11 (34.4)
Settlement	4 (12.5)
<b>Payouts<sup>a</sup></b>	
Range	\$25,000-\$16,000,000
Plaintiff, mean	\$4,744,219
Settlement, mean	\$1,476,775

<sup>a</sup>Data were unavailable for 1 case.

country. For instance, California's Medical Injury Compensation Reform Act of 1975 caps limited pain, suffering, inconvenience, physical impairment, disfigurement, and other noneconomic and nonmedical damages in malpractice to \$250,000.<sup>37-39</sup> Because of this cap, plaintiffs and their attorneys may be more hesitant to file a suit.

Radiation oncologists also remain concentrated in highly populated metropolitan health service areas, likely due to the attractiveness of academic centers, the large patient base required to sustain a practice, and the large capital investment needed to obtain the radiation equipment and staff resources to establish practices.<sup>40-42</sup>

### Evolving Malpractice Theories

Zaorsky and colleagues used a similar methodology to this study.<sup>24</sup> However, the distinction between this study and the Zaorsky study is that the latter attempted to use medical malpractice cases to draw conclusions on the validity and utility of quality assurance programs, specifically the Accreditation Program for Excellence (APEX) and the Radiation Oncology Incident Learning System (RO-ILS).<sup>43-45</sup>

The APEX/RO-ILS systems report only errors and faults, and medical malpractice is based on different sets of variables, such as legal theories, litigation procedures, plaintiff/defense zealotry, and the judicial system of inclusion and exclusion of cases in the docket. It is not possible to control for these confounding variables. This study, in contrast to the Zaorsky study, distills the essence of medical malpractice in radiation oncology and draws conclusions to advance the theories of recovery of monetary damage.

### Limitations

The WestlawNext database is a comprehensive source for outcomes and details in malpractice litigation and draws from multiple legal sources, but there are limitations to acknowledge. This study is a retrospective analysis and is limited by the inherent bias associated with its design. As noted in previous studies,<sup>28,46</sup> some jurisdictions may include only cases reported by attorneys on a voluntary basis with the purpose of predicting future outcomes and awards.<sup>47</sup> Settlements may be underrepresented in this study. Out-of-court settlements often are not filed with state or federal courts and thus do not become part of the public record. The level of detail in jury verdicts in this database also is heterogeneous, and each case has different details and varying depths emphasized.

A better source of settlements and plaintiff verdict awards may be the National Practitioner Data Bank (NPDB), an electronic repository created by the U.S. Congress. It contains information on medical malpractice payments and certain adverse actions related to health care practitioners, entities, providers, and suppliers. However, the reports are confidential and not available to the public.

This study had a low number of cases ( $n = 32$ ), but the information provided is impactful given there is a lack of access to a better source. For instance, insurance companies provide claims data, but the data have been criticized because insurers may be biased in determining which data to release. As discussed previously, the NPDB is not available for public review. Therefore, it is uncertain how many of the medical malpractice cases the WestlawNext database captures.

Based on the discussion with multiple medical malpractice lawyers practicing in various ju-

risdictions across the country and law school reference librarians, there is a concurrence that about 70% to 90% of claims are not taken on by plaintiff attorneys because of lack of merit or for procedural legal reasons, such as when there is no standing or when the statute of limitations has expired. Of the 10% to 30% claims that proceed to trial, about 90% result in a confidential settlement. Moreover, the court can render an order or an opinion. If it is an order, the case is never recorded. If it is an opinion, the case still may not be included in the WestlawNext database. Only cases that are on appeal, with controversy, proceed through the state and federal appellate system; judges still can decide whether to publish the results from these cases. Depending on jurisdiction, these factors result in 20% to 92% of opinions not being published for any given year. However, opinions that are marked for publishing should be included in the WestlawNext database with negligible omissions and errors. The percentage of published cases in WestlawNext database of all claims could very well be only 1% to 5%.

Nevertheless, the WestlawNext database covers a large geographic area and is a comprehensive source of litigation information. The authors selected WestlawNext over other online legal databases (ie, Bloomberg Law, LexisNexis, VerdictSearch) due to its reputation, quality of case entries, and ease of navigation. WestlawNext is well known among lawyers and legal professions, and it has been validated through previous studies in other medical fields such as general surgery and its subspecialties,<sup>36,48</sup> otolaryngology,<sup>28,46,47,49</sup> ophthalmology,<sup>50</sup> urology,<sup>51</sup> dermatology,<sup>52</sup> and plastic surgery.<sup>53</sup>

### CONCLUSION

Litigation involving radiation oncologists were infrequent, and most verdicts were in favor of defendant radiation oncologists. Excessive radiation, unnecessary radiation, and a failure to refer and/or order appropriate tests were noted in most cases. Settlements were reached in the minority of cases, although mean payouts were more than 3 times less in these cases compared with jury verdicts. An increased awareness of radiation oncology malpractice litigation has the potential to improve physician-patient relationships and provide insight into the situations and conditions that commonly lead to litigation within the radiation oncology field.



## APPENDIX

## Summaries of Radiation Oncology Malpractice Cases (Plaintiff Is Patient Unless Specified)

Years	Primary Categories	Plaintiff/Patient Allegations	Monetary Award or Settlement
1988	Lack of informed consent	Patient (decedent) was not made aware of the risk for radiation myelitis from radiation therapy	yes
1990	Failure to order appropriate test or refer	Radiation oncologist negligently prescribed the use of radiation equipment, which was inappropriate for the type of treatments required	yes
1992	Unnecessary radiation	Misdiagnosis of cervical mass led to unnecessary radiation treatments and destruction of salivary glands	yes
1994	Excessive radiation	Radiation oncologist was negligent in the administration of the radiation therapy for vaginal cancer, causing radiation damage	no
1996	Unnecessary radiation	Radiation oncologist recommended unnecessary radiation therapy for bursitis following a hip arthroplasty, which led to further medical complications including an eventual graft procedure	no
1998	Lack of informed consent	Radiation oncologist performed inappropriate radiation therapy and failed to obtain informed consent; radiation therapy led to radiation necrosis and surgical excision of ear	no
2000	Excessive radiation; unnecessary radiation	Misdiagnosis of metastatic cancer of the brain with unnecessary and excessive radiation to the whole brain, causing irreversible and diffuse cerebral dysfunction with a lengthy neurologic deterioration over several months, resulting in death	yes
2001	Failure to order appropriate test or refer	Physicians, including radiation oncologist, failed to refer patient to medical oncologist following surgical and radiation treatment of breast cancer; patient was not seen by medical oncologist and died from recurrence	no
2002	Excessive radiation; unnecessary radiation	Medical professionals failed to properly diagnose hip condition, negligently recommending and performing excessive radiation treatment, which led to unspecified injuries	yes
2002	Failure to treat in timely manner	Radiation oncologist, who treated patient for prostate cancer, prescribed prednisone which caused diabetic hyperosmotic state (from undiagnosed diabetes) and subsequent medical complications leading to above-knee amputation and permanent cognitive impairment	yes
2003	Failure to treat in timely manner	Radiation oncology physicians gave inadequate treatment of unspecified cancer	no
2004	Failure to diagnose in timely manner; failure to treat in timely manner	Administration of antithrombotic treatment failed following graft surgery, resulting in further medical complications and below-knee amputation	no
2004	Failure to order appropriate test or refer	Radiation oncologist failed to perform test for tumor markers and refer to a medical oncologist	yes
2004	Procedural error	Double dose of radiation was given to treat breast cancer, which led to radiation burns, loss of use of right arm, lung damage, and permanent disfigurement; hospital admitted error was made	yes
2005	Excessive radiation	Radiation oncologist administered excessive radiation for prostate adenocarcinoma, which led to radiation necrosis, pain, and permanent injury to penis and urethra	no
2006	Excessive radiation	Excessive radiation from treatment of laryngeal cancer led to radiation necrosis and death	no

## APPENDIX

## Summaries of Radiation Oncology Malpractice Cases (Continued)

Years	Primary Categories	Plaintiff/Patient Allegations	Monetary Award or Settlement
2006	Lack of informed consent	Oncologist failed to predict the severity of the adverse effects of radiation therapy for breast cancer	no
2006	Procedural error	Radiation oncologist administered radiation treatment to wrong side of head following postsurgical removal of actinic cell carcinoma	yes
2007	Excessive radiation	Excessive radiation for treatment of squamous cell carcinoma caused an abscess to develop in vulva of neovagina (transgender) and led to removal of neovagina; plaintiff additionally developed bladder spasms, which led to removal of bladder	no
2007	Failure to order appropriate test or refer	Radiation oncologist and surgeon failed to test lymph nodes for metastasis prior to treatment for breast cancer	yes
2009	Excessive radiation	Negligent placement of radiation balloon treatment led to radiation necrosis and subsequent corrective surgeries	no
2009	Excessive radiation	Radiation oncologist administered excessive radiation following an excision surgery for squamous carcinoma of the neck	no
2009	Failure to treat in timely manner	Team of physicians, including radiation oncologist, failed to properly treat breast cancer and failed to communicate to coordinate care	yes
2009	Unnecessary radiation	Radiation therapy for endometrial cancer was recommended despite not being a good candidate; radiation oncologist administered radiation therapy when safer and more appropriate treatment options were available; treatment led to radiation-induced small bowel obstruction and radiation-induced anemia diagnoses	no
2010	Failure to order appropriate test or refer; unnecessary radiation	Radiation oncologists failed to biopsy pancreas before performing radiation therapy; patient had pancreatitis rather than pancreatic cancer, which had been misdiagnosed by previous physicians	no
2010	Failure to order appropriate test or refer	Surgeon failed to refer to a medical oncologist in addition to radiation oncologist who administered treatment to patient following surgery, and the radiation oncologist was named co-defendant in lawsuit	no
2010	Failure to order appropriate test or refer	Radiation oncologist failed to order computed tomography scan to determine severity of laryngeal cancer before treatment	yes
2012	Excessive radiation	Too much radiation was given for skin-cancer patient after late-onset complication (ulcer) arose	no
2013	Excessive radiation	Radiation oncologist administered excessive radiation to jaw area while treating tongue cancer and failed to take into account patient's history of previous facial radiation treatment; plaintiff developed jaw necrosis and underwent numerous subsequent jaw surgeries	no
2013	Failure to order appropriate test or refer	Radiation oncologist chose to treat acoustic neuroma with fractionated stereotactic radiotherapy (FSR) when it was too large to be treated with FSR; radiation oncologist failed to refer patient to neurosurgeon in timely manner after complications occurred after treatment	yes
Not available	Failure to order appropriate test or refer; excessive radiation	Radiation oncologist failed to protect the spinal cord and calculate the amount of radiation reaching spinal cord during radiation therapy to treat Hodgkin disease, resulting in quadriplegia	yes
Not available	Failure to treat in timely manner	Radiation oncologist administered inadequate dose of radiation for head and neck cancer, which led to recurrence and terminal condition	yes

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## AUTHOR DISCLOSURES

The authors report no actual or potential conflicts of interest with regard to this article.

## DISCLAIMER

The opinions expressed herein are those of the authors and do not necessarily reflect those of *Federal Practitioner*, Frontline Medical Communications Inc., the U.S. Government, or any of its agencies.

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