

**Association of Ringside Physicians**

# **Journal of Combat Sports Medicine**

**Volume 1, Issue 2  
October 2019**

## Editor-in-Chief, Editorial Board



**Nitin K. Sethi, MD, MBBS, FAAN** is a board certified neurologist with interests in Clinical Neurology, Epilepsy and Sleep Medicine. After completing his medical school from Maulana Azad Medical College (MAMC), University of Delhi, he did his residency in Internal Medicine (Diplomate of National Board, Internal Medicine) in India. He completed his neurology residency from Saint Vincent's Medical Center, New York and fellowship in epilepsy and clinical neurophysiology from Weill Cornell Medical Center, New York. Dr. Sethi is a Diplomate of the American Board of Psychiatry and Neurology (ABPN), Diplomate of American Board of Clinical Neurophysiology (ABCN) with added competency in Central Clinical Neurophysiology, Epilepsy Monitoring and Intraoperative Monitoring, Diplomate of American Board of Psychiatry and Neurology (ABPN) with added competency in Epilepsy, Diplomate of American Board of Psychiatry and Neurology (ABPN) with added competency in Sleep Medicine and also a Diplomate American College of Sports Medicine (ACSM)/Association of Ringside Physicians (ARP) and a Certified Ringside Physician. He is a fellow of the American Academy of Neurology (FAAN) and serves on the Board of the Association of Ringside Physicians. He currently serves as Associate Professor of Neurology, New York-Presbyterian Hospital, Weill Cornell Medical Center and Chief Medical Officer of the New York State Athletic Commission.

# Editorial Staff

## **Susan Rees, Senior Managing Editor**

Email: [srees@reesgroupinc.com](mailto:srees@reesgroupinc.com)

Susan Rees, The Rees Group President and CEO, has over 30 years of association experience. Currently the Executive Director of the American Osteopathic Academy of Sports Medicine, American Society for Veterinary Clinical Pathology, and the Society for Psychophysiological Research, Susan spent 12 years with the Credit Union National Association (CUNA & Affiliates) as the director of their educational publishing division. Susan has an extensive background in association management, marketing and regulatory affairs, as well as print and electronic publishing. She is also an award-winning video producer, having produced educational videos and films for the financial training market. Susan spent two years with Forbes Inc., publisher of Forbes magazine as an international acquisitions editor in the book publishing division. At Forbes, Susan worked with businesses and associations to produce books, manuals, web sites and online learning tools for general retail sales distribution, or distribution through the business or association. Susan holds a Bachelor of Arts Degree in Communications and a Master of Science Degree in Education from the University of Wisconsin-Madison. She has been President and CEO of TRG since 2000.

## **Lisa M. Nelson, Senior Managing Editor**

Email: [lnelson@reesgroupinc.com](mailto:lnelson@reesgroupinc.com)

Lisa Nelson has worked in association management for over 30 years; the past 28 years with The Rees Group. She is currently the Managing Director of the Society for Clinical and Medical Hair Removal, but spent much the last 25 years working with association publications. She is the former Managing Editor for the *Journal of Cardiopulmonary Rehabilitation* and the *Annals of Behavioral Medicine*, and continues to edit and write for several association newsletters.

# Table of Contents

Letter from the Editor ..... 7

Nitin K. Sethi, MD, MBBS, FAAN

A Retrospective Analysis of Professional Boxing Fight Outcomes in the United States  
During a 6-Month Study Period in 2017 ..... 8

George Velasco, Medical Student; John Neidecker DO, FAOASM, ATC;  
Donald Muzzi, MD; Nitin K Sethi, MD, MBBS, FAAN

Ringside Physician Malpractice Coverage Survey: What Do We Know? ..... 11

Matthew J. Pautz, DO, JD

Editorial: Can Boxing Be Made Safer? ..... 19

Nitin K. Sethi, MD, MBBS, FAAN

## From the Editor's Desk

---

It gives me great pleasure to bring to you the second issue of the ARP's *Journal of Combat Sports Medicine*. The first issue was well received and I would like to acknowledge and thank our two Senior Editorial Managers, Lisa Nelson and Susan Rees, for their hard work. They have worked tirelessly to bring this Journal to life.

In this issue, Velasco and coauthors present a retrospective analysis of professional boxing fight outcomes in the United States during a 6 month study period. The authors conclude that variability in KO/TKO rates between states may be a result of variability in pre-fight licensing requirements for fighters in boxing commissions between different states and make a call for further research and implementation of interventions aimed at guiding licensure of fighters deemed to be at higher risk for injury.

Dr. Pautz reports the results of a survey he conducted on ringside physician malpractice coverage. It makes for a fascinating read and shall help to improve ringside physicians understanding of differing jurisdictions' policies for indemnification.

The recent tragic deaths of two boxers has once again raised a cry for a ban on combat sports, and boxing in particular. There is a timely commentary on how boxing can be made safer. We welcome your feedback on this issue and invite suggestions for making the ARP's *Journal of Combat Sports Medicine* a valuable resource for you and your colleagues.

Nitin K Sethi, MD, MBBS, FAAN

# A RETROSPECTIVE ANALYSIS OF PROFESSIONAL BOXING FIGHT OUTCOMES IN THE UNITED STATES DURING A 6-MONTH STUDY PERIOD IN 2017

George Velasco, Medical Student, American University of the Caribbean  
(Corresponding Author: george.a.velasco@gmail.com)

John Neidecker DO, FAOASM, ATC, Campbell University School of Osteopathic Medicine

Donald Muzzi, MD, University of Minnesota-Duluth School of Medicine

Nitin K Sethi, MD, MBBS, FAAN, New York-Presbyterian Hospital, Weill Cornell Medical College

WORD COUNT: 1145

KEY WORDS: boxing; knockout; technical knockout; concussion; injury; licensing

AUTHOR CONTRIBUTIONS: GV: data abstraction, writing. JN: methodology, data analysis. DM: methodology. NS: writing

DISCLOSURES: NKS serves as the Chief Medical Officer of the New York State Athletic Commission.

ACKNOWLEDGEMENTS: Special thanks to Sanjay Menon, MD, for assistance with data abstraction.

---

## Abstract

Boxing losses that occur via knockout (KO) or technical knockout (TKO) are associated with greater neurological damage and higher rates of mortality. The objective of this study was to identify combatants within a population of active boxers at greater risk for morbidity and mortality by analysis of prior fight win-loss records. In this study, all records for professional boxing fights taking place in the United States during a 6-month period during 2017 were reviewed using data from BoxRec (boxrec.com). A total of 1,690 fights were included in this analysis and data such as fighter records and outcomes were recorded in order to try to identify individuals who may be at greater risk for morbidity and mortality based on their prior fight win-loss records. This study's preliminary analysis of the data set revealed that there

was variability in the proportion of KO or TKO outcomes between different states where fights took place, fighters with 30+ losses were less likely to lose via KO/TKO than they were by judges' decision outcome, and winless fighters were more likely to lose by KO or TKO, with over 75% of fighters with a record of 0 wins and 4 losses (n=16) losing their fight by KO or TKO outcome. Based on the findings in this study, guidance should be given to boxing commissions regarding licensure of vulnerable fighters and matchmaking of vulnerable fighters. Further research could identify additional vulnerable subgroups.

## Background

Prior studies have suggested that boxing losses which occur via knockout (KO) or technical knockout (TKO) are associated with greater neurologi-

cal damage and higher rates of mortality among professional boxers. Baird et al. (2010) studied boxing mortalities that occurred between 1950 and 2007.<sup>1</sup> According to the fight records they analyzed, 64% of boxing mortalities were associated with KO outcomes and 15% of boxing mortalities were associated with TKO outcomes. The objectives of this study are: to identify subgroups within our patient population at greater risk for morbidity and mortality, to identify clinically significant vulnerable groups that would benefit from further study and analysis, and ultimately to make evidence-based recommendations and guidance regarding licensing, suspensions, and surveillance to protect boxers at greatest risk for disabling outcomes.

## Methods

Professional boxing fight records from BoxRec were reviewed for all boxing fights that took place in the United States during a 6-month period from July 1, 2017 to December 31, 2017. BoxRec (boxrec.com) is a website dedicated to holding updated records of professional boxers, both male and female. The objective of the site is to document every professional boxer and boxing match from the instigation of the Queensberry Rules up to the present time. Fights ending in a draw or non-contest ruling were excluded from this data analysis. Data were collected regarding fight date, location, weight class, sex, fighter names, win-loss records of the participants, and final outcome of the fight (i.e., KO, TKO, judges' decision, etc.) and entered into a computer spreadsheet document for analysis. The analyses described in this paper are an initial preliminary analysis of the comprehensive data set.

## Results

A total of 1,690 professional boxing fights in the United States between July 1, 2017 and December 31, 2017 were included in the analysis. 46.5% (n=786) of fights ended in a judges' decision outcome, 35.1% (n=594) ended in TKO, 18.1% (n=306) ended in KO, 0.2% (n=4) ended in a participant disqualification outcome. Preliminary sub-

group analysis revealed variability in the proportion of KO or TKO outcomes between different states where fights took place. For example, 67.1% of bouts in North Carolina ended in a TKO/KO outcome, while 38.5% of bouts in Nevada ended in a TKO/KO outcome. Future analysis of this data subset will look at KO/TKO outcome rates across all states. A subgroup analysis was done on the subgroup of all fighters who had 30 or more losses on their professional record, in order to see if there was a relationship between large numbers of losses and TKO/KO outcomes. For the subgroup of fighters with 30+ losses (n=56), 60.7% of them lost their fights via judges' decision outcome. This showed that compared to the overall data set, fighters in the 30+ losses subgroup were actually less likely to lose by TKO/KO in their next fight. A subgroup analysis was done with subgroups of winless fighters. For winless fighters the following are the win-loss records and percentage of KO/TKO losses for that subgroup, respectively: 0-0 63%, 0-1 80%, 0-2 69.6%, 0-3 72.9%, 0-4 75.1%, 0-5 75%, 0-6 58.3%, 0-7 62.5%, 0-8+ 62.5%. Winless fighters were more likely to lose by KO or TKO, with over 75% of fighters with a record of 0 wins and 4 losses (n=16) losing their fight by KO or TKO outcome.

## Conclusions

Variability in KO/TKO rates between states may be a result of variability in pre-fight licensing requirements for fighters in boxing commissions between different states, signaling the need for further research and implementation of interventions aimed at guiding licensure of fighters deemed to be at higher risk for injury. Boxers with greater than 30 losses on their record did not exhibit an increased likelihood of KO/TKO loss in their next fight, but still may incur significant cumulative injury and neurological damage over the course of their career. An extreme example, which was not one of the fighters in our data set, is retired boxer Reggie Strickland <https://boxrec.com/en/proboxer/4741>. Strickland finished his career with a record of 66 wins and 276 losses but did not have a single TKO/KO loss in the last 6 years of his 18-year career. He did have 26 TKO/KO losses

during the first 12 years of his career. It may be the case that fighters who have accumulated many losses and still box professionally have self-selected for a boxing style that reduces the likelihood of TKO/KO outcome in their later career but may have accumulated significant TKO/KO outcomes early in their career. Winless boxers were at increased likelihood for losing by KO/TKO with winless fighters who had four losses on their record losing by KO/TKO more than 75% of the time in our study. Therefore, it would be prudent to monitor and identify winless boxers early in their career who may be at greatest risk for successive losses via TKO/KO. Such fighters warrant additional scrutiny during the licensing process and increased surveillance. The data collected during this study provides a base for conducting future research and analysis to further identify vulnerable groups or valuable metrics for guiding licensing requirements of combat sports participants. Future analysis could examine other variables collected during our study such as weight class, sex, and number of years of professional boxing experience. Additionally, it would be worthwhile to conduct further analysis of inter-commission variability in TKO/KO outcomes.

#### *References*

1. Baird et al. Mortality resulting from head injury in professional boxing. *Neurosurgery*. 2010 Nov;67(5):1444-50

# RINGSIDE PHYSICIAN MALPRACTICE COVERAGE SURVEY: WHAT DO WE KNOW?

Matthew J. Pautz, DO, JD, Western University of the Health Sciences, Pomona, CA  
(Email: drpautz@oicsurgeon.com)

WORD COUNT: 3570

KEY WORDS: Ringside medicine, liability, indemnification, sovereign immunity, gross negligence, combat athletes, athletic commissions,

CONTRIBUTIONS: MJP conducted and reviewed survey and composed initial draft. NR edited language to make the paper more readable and useful to the average (non-lawyer) ringside physician.

DISCLOSURES: Neither author has any conflicts and receives no financial benefit from performing the survey or publishing this paper.

---

## Background

Professional combat sports can be dangerous, and seriously injured athletes and associated medical malpractice lawsuits are not entirely uncommon. But there is longstanding confusion regarding the indemnity provided by each state's athletic commission for the physician working professional combat sports events. There are a few reasons for this. One reason is logistic: there are several jurisdictions, with each of their commissions having to follow varying rules, regulations, and bylaws. A given jurisdiction's legal climate and volume of fights play roles in this and differ from jurisdiction to jurisdiction. Lastly, important malpractice liability legal terminology is not only relatively foreign to most physicians, but deferentially ignored by most non-legal personnel as unpalatable. Making things more complicated is that differing jurisdictions often have vague or unclear assurances of levels of indemnification.

To better assess ringside physicians' understanding of differing jurisdictions' policies for indemnification, a survey by the Association of Ringside Physicians (ARP) was given to their physician membership. One of the most striking findings was the level of misunderstanding about legal terminology and procedures used to sue ringside physicians for malpractice. This survey forms the foundation for the following discussion, with the purpose of improving ringside physician and commission understanding of this area of medicolegal practice.

## Materials/Methods

A questionnaire comprised of 17 questions and 2 optional questions was sent to 132 physician members of the ARP. The questionnaire inquired as to the following:

1. Demographics including the jurisdiction and the specialty of the physician.

2. Whether the physician had malpractice insurance coverage for state-sponsored events.
3. Who provided that coverage (including indemnity provided by their state commission)?
4. Limits and exclusions of the policy as well as premiums paid.
5. Whether the policy had to be used.
6. If the physician was satisfied with their current carrier.
7. Questions regarding the relationship of malpractice/indemnity relative to the number of events worked, and what it would take for that physician to work more ringside events.

Optional questions included the name of the malpractice carrier and physician.

## Results

The survey generated a response rate of 33% (43 out of 132 questionnaires were returned), which is an about average response rate for an internal survey. The total number of returned surveys is low, likely limiting the power of the questionnaire. Nonetheless, given the relatively small community of physicians active in ringside medicine, the authors feel it's reasonable to extrapolate the results to the more general populace of ringside physicians.

Of note, 20% of respondents' practices involved primary care (family practice, general practice, internal medicine and pediatrics). Ten percent (10%) of respondents listed sports medicine or physical medicine and rehabilitation as their specialty practices. Three percent (3%) listed their specialties as subspecialties of internal medicine (cardiology, gastroenterology, etc.). Five percent (5%) of respondents were surgical specialists, including orthopedics, general or ENT surgery. Only 3% of respondents claimed emergency medicine as their specialty and 2% responded "other", which included psychiatry (Figure 1).

Only 16 of 50 states/jurisdictions were represented, leading to data from 32 percent of the country. Physicians responding from seven states comprised two-thirds of all responses, including Oklahoma (14%), New York (14%), California (12%), Florida (9%), Texas (9%), and Indiana (7%). This likely reflects states most active with combat sport events (Figure 2).

When asked, 26 of 43 (60%) responded that they are currently covered for sanctioned amateur events. But this question did not specify between the different combat sports, and if additional or separate coverage was needed or obtained. For example, USA Boxing covers amateur boxing events, but many ringside physicians may not be aware of this, and there is a stark contrast here between amateur boxing and MMA. There is no national sanctioning body such as USA Boxing for MMA. Some states offer indemnity for sanctioned amateur MMA events, while others do not at all. All these different scenarios would fall under this question (Figure 3).

For professional events, 30 of 43 (70%) claimed indemnification (Figure 4). While most respondents reported indemnification by their state commission, the first evidence of significant confusion was that respondents from the same state gave differing answers to the question. Only 12 of 43 respondents (28%) claimed to carry a separate policy rider for ringside events (with the average policy limits of \$1 million/\$3 million), at an average premium of approximately \$7,200 (Figure 5). This number is likely inaccurate, either due to a poorly worded question or lack of understanding on the part of the respondents. This can also be inferred from the wide variety of answers given from "I don't know", and dollar amounts ranging from \$3,000 - \$25,000. The range of answers may also be a misunderstanding of total amount of malpractice premium versus the intended cost of the additional rider policy. Even more interesting is that 3 of 43 respondents were apathetic to the cost of the policy, one answering "don't know and can't afford". If indeed, as most respondents believe that the state commission indemnifies their

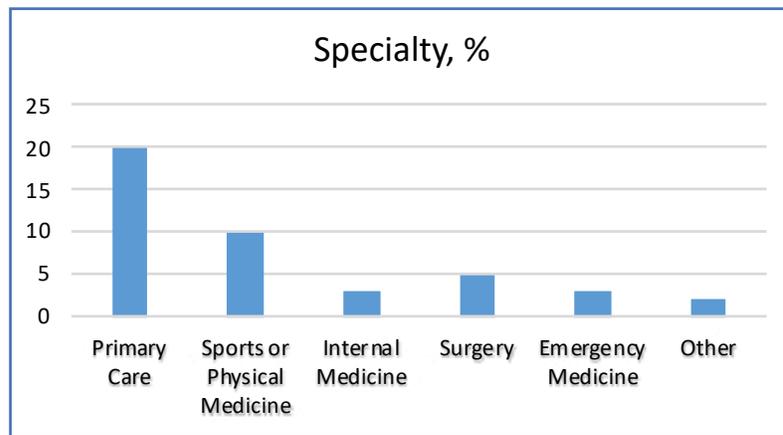


Figure 1: What is your primary subspecialty?

work, this may be a tremendous waste of resources on the part of the ringside physician. Additionally, only three claims were made against the respondents (all from one case), with one respondent claiming the state commission provided malpractice defense and the other two did not.

The overall satisfaction rate of the respondents with their indemnification/malpractice coverage was 3.6/5, revealing slightly more satisfied than dissatisfied. Those citing USA Boxing were all satisfied with their coverage for the event (Figure 6).

Following the previous line of questioning and seeing such high premiums paid for malpractice coverage, 37 of 43 (86%) responded affirmatively, said they would be interested in a discounted rate if one could be obtained by the ARP, for example, and 20 of 43 (47%) said that lack of adequate coverage limits the physician's willingness to work some combat sport events. It follows then,

that when asked if increased remuneration would change their minds regarding coverage of additional events, 76% of the respondents answered in some form of the affirmative (Figure 7). The general consensus appears to be what makes financial sense, in that physicians are willing to work at little profit from the events, but the remuneration received should at least equal the additional malpractice premiums required (Figure 8).

### Discussion

Like many surveys, these results do not hold much analytical power in deriving actionable data. Some highlights, however, can be derived from the results of the survey, especially when compared with documented cases and written legislation. The breadth of specialties represented in the survey are varied and, apart from formal sports medicine training, no specialty training covers all the potential injuries and illnesses common to combat

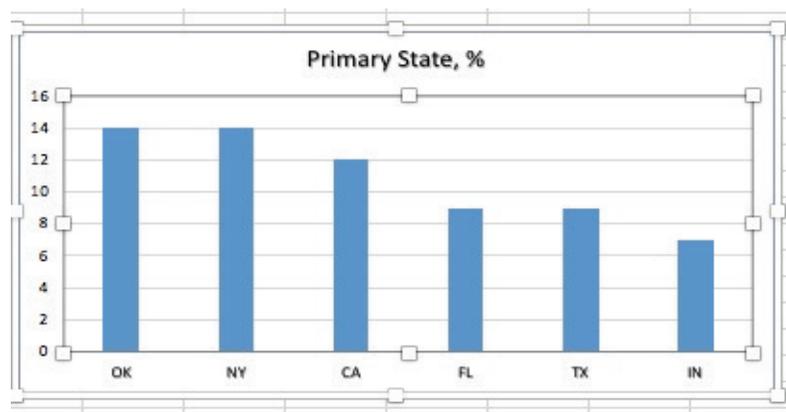


Figure 2: In what state do you currently cover most of your events?

### Covered for Sanctioned Amateur Events, %

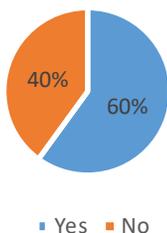


Figure 3: Are you currently covered by malpractice insurance for AMATEUR combat sporting events?

### Covered for Sanctioned Professional Events, %

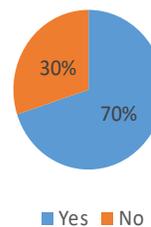


Figure 4: Are you currently covered by malpractice insurance for PROFESSIONAL combat sporting events?

sports. To better care for our athletes and better protect ourselves financially, it is incumbent upon all of us to continue our education into those areas where our primary specialties do not adequately prepare us in caring for these athletes.<sup>2,4</sup>

The other shortcomings of this study are a result of the natural misunderstanding between the medical profession and the legal profession. The level of confusion and subsequent avoidance and resignation regarding a ringside physicians' indemnification from their state commission has led to contradictory answers from members in the same state athletic commission. We believe the solution to better understanding of one's liability in caring for these athletes lies in understanding the language "the other side" uses, and how it can be manipulated in their favor. This requires an understanding of important legal concepts seldom, if ever, taught in medical school and never fully explained to or understood by the average practicing physician.<sup>3,5,6,14</sup>

The first legal concept that must be understood by physicians performing services for larger organizations is that of *Respondeat Superior* ("let the master answer"). This is the legal concept in which the employer (in olden days "master") could be held liable (with certain exceptions) for the actions of their employees (in olden days "servants"). It could be assumed that the origins of this concept were benign and meant to discourage employers from ordering their employees to perform tortious acts,

themselves escaping liability and the aggrieved receiving little or no compensation from the underpaid employee. Today this concept is more often used to find the "deep pockets" so that successful litigation results in a higher collectible verdict on behalf of the plaintiff (and therefore their attorney), with usually no restitution to the aggrieved defendant if found not liable. This applies to most of us as ringside physicians – that is, if we are considered employees of a given jurisdiction sanctioning the combat event.

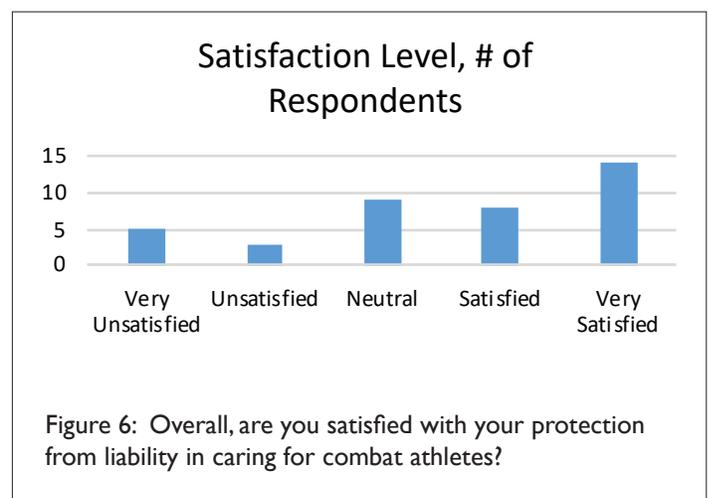
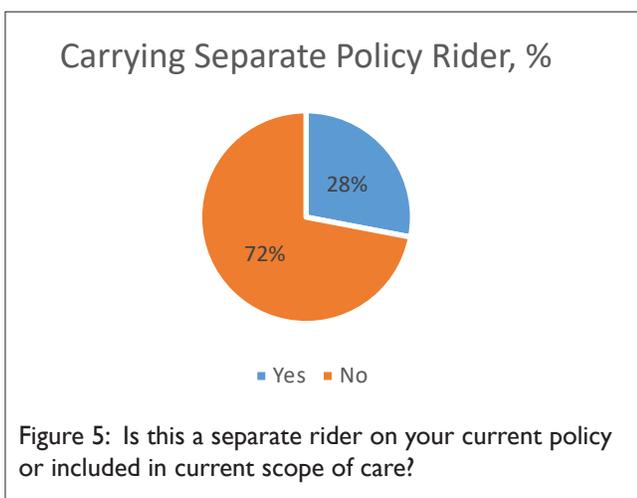
This leads to another important concept known as *Sovereign Immunity*.<sup>7</sup> Again, in medieval common law the concept of sovereign immunity meant that one could not sue the king, since every action he performed was legal by its very nature and sanctioned by his inherent authority from God. Today, the concept is more firmly rooted in the sense that if one sues the state, they are actually suing themselves and merely taking the tax dollars of other citizens of that state since the state, itself, has no money. There are exceptions, however, to municipalities and individual state officials, under certain circumstances.<sup>10</sup> In recent years, however, the federal government has passed the Federal Tort Claims Act (FTCA), and many states have followed, allowing, with permission, individuals to sue the state as a whole for certain aggrievements. The state is the ultimate "deep pocket" and would likely be the primary defendant in a potential malpractice case at a ringside event; however, there

are certain scenarios in which the state would claim sovereign immunity but allow the individual physician to remain as the sole defendant in a potential malpractice case.<sup>12</sup> So, the natural question a ringside physician has, as to when they may be solely on the hook for a claim of malpractice during a ringside event, can be answered by the most common answer to nearly every legal question: “it depends...”.

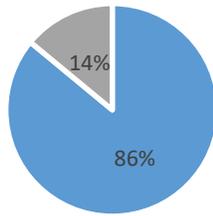
One important distinction here is between the concepts of Gross Negligence and Ordinary Negligence. If a physician’s treatment falls so far below the level of care that it was done either recklessly, maliciously, or with intent of great bodily harm, these acts of gross negligence will not be subject to sovereign immunity and the physician will likely stand to answer for his or her acts. Even acts of “ordinary negligence”, to which physicians are held in the majority of cases and merely means that our level of conduct fell below that of the standard of care of an ordinary physician practicing the same specialty elsewhere in the nation, can lead to the physician bearing the sole burden if certain circumstances and actions occur. Keep in mind, the people that must be convinced that a physician breached their level of care to the unarmed combatant is left to the decision, generally, of a panel NOT composed of your peers. This could occur at the level of an “administrative hearing” or during an actual Constitutional Article III court civil trial. The difference will be discussed in later sections of this article.

The most important factor in determining whether your state’s athletic commission provides indemnity for your actions as a ringside physician are the statutes, regulations, and bylaws that govern that state’s athletic commission. Each jurisdiction has their own specific language. Every ringside physician needs to research, read, and seek legal advice regarding the language, because the statutes and regulations are written “by lawyers, for lawyers” and would make as much sense to us as an operative report would to a lay person. Some organizations such as USA Boxing make it quite clear that the language cannot be interpreted “creatively” by an ambitious plaintiff’s attorney. That organization, in its bylaws, states clearly that all acts of physicians carrying for athletes under the USA Boxing banner will have malpractice coverage provided for them, should litigation arise.<sup>8</sup> The Nevada State Athletic Commission, although having a different stance, at least has the courtesy of making the language clear, and in its bylaws, states the ringside physician “must provide their own malpractice insurance”.<sup>13</sup> Most states are not as courteous and provide language that would give the uninitiated reason to think they were covered and need not provide their own malpractice coverage, while even the most inept attorney could find ways around the weakly worded statutes because “it depends...”.<sup>9,11</sup>

One example of this misleading notion of indemnity comes from the State of Missouri, and was sent to us under the guise that the Missouri Office



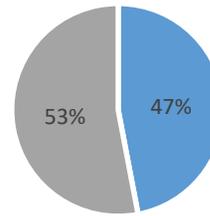
Interested in ARP Discounted Rate, %



■ Affirmative ■ No

Figure 7: If ARP membership could obtain coverage for its members at a discount, would you be interested?

Limited by Lack of Coverage, %



■ Affirmative ■ No/No Response

Figure 8: Does the lack of adequate coverage limit your willingness to work some combat sport activities?

of Athletics indemnifies its ringside physicians and is attached.<sup>9</sup> At the beginning of the second paragraph, the Chief Counsel of the Missouri Division of Professional Registration assures the physicians that they are “subject to the protection of legal representation from the Office of the Attorney General and Legal Expense Funds for matters arising from the performance of their official duties as ringside physicians at the Office of Athletic Events”. If this were where the memorandum ended, it would be satisfactory. But the following paragraph makes clear the language carries little weight, it continues: “the protection of the Legal Expense Fund and representation by the Office of the Attorney General do not extend to acts of negligence by ringside physicians performing their duties for the office of athletics or in any events outside of their service as per diem employees...”. Again, one must appreciate the Chief Counsel’s

frankness and easily-understood wording in a single memorandum to the ringside physicians that work for the Missouri Office of Athletics. Most states are much more difficult to interpret.

California, home of the largest number of combat sports events in the nation, is much more difficult to interpret. Its stance on indemnification was much more difficult to find and, although it has been the topic of discussion for the Medical Advisory Committee of the California State Athletic Commission (CSAC) for at least the last 7 years, has not been codified into a single, easily-interpretable position.<sup>15</sup> Yet, most California ringside physicians believe the State of California does, indeed, indemnify them for work done under the banner of CSAC. Further complicating this issue is the implication that “affiliate organizations” (such as CAMO, IKF, USFL, and other amateur and pro-

Swayed by Increased Remuneration, % of Respondents

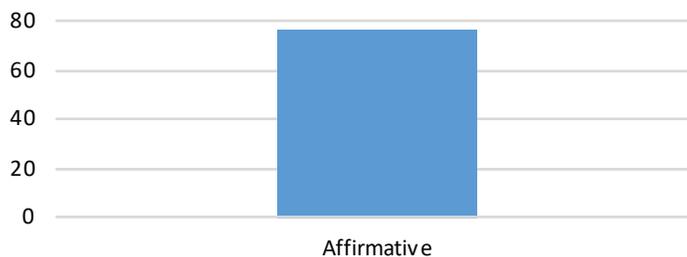


Figure 8: Would additional remuneration change your mind (regarding your willingness to work some combat sport activities)?

fessional fight organizations) provide sovereign immunity when, in fact, they cannot as they are not official state organizations. Even among a highly trained group such as ringside physicians, word-of-mouth transmission of erroneous information can occur in widespread fashion.

The authors reviewed the California Business and Professions Codes, as well as CSAC bylaws and other sources used to determine indemnification.<sup>16</sup> Upon careful review the codes provided the type of indemnification a skeptical physician would expect: “it depends...”. The codes do not clearly state that malpractice coverage will be provided such as with USA Boxing, nor are they as brutally honest as the Nevada State Athletic Commission, requiring all ringside physicians to carry their own policy. Rather, vaguely-worded statements explain that the State would most likely protect the physician from tort action. Acts of gross negligence or even acts of ordinary negligence could be processed through an administrative hearing of CSAC, in which the organization would allow the physician to bear complete liability if it was determined that the physician acted “outside of the course and scope” of their duties as a ringside physician. It is not difficult to imagine any act resulting in the harm of an unarmed combatant athlete (viewed through the eyes of a sympathetic panel or jury) as one of negligence and, therefore, falling outside of the course and scope of their duties, leaving them solely liable for that harm. Bylaws and statutes are often written purposely vague so clever attorneys can use them to determine what the “reasonable person” would conclude. While the legal concept of “reasonableness” is a time-tested one, here it applies to “what they can make a jury think”.

This is not all negative news, however. Almost all promoters require the combatant to sign a release of liability form, prior to participating in the combat support event. These forms can be used to protect the ringside physician from claims of negligence as the athlete acknowledges they are participating in an “abnormally dangerous event” and they hold harmless the promoters, officials, and physicians for damage sustained during the

event. However, the problem here is that states vary into what degree they honor such waivers. In Illinois, for example, one cannot “sign away” liability.

Additionally, and conversely, if the physician carries a separate malpractice policy the same vague statutes and codes could be used to protect the physician. Another technique, not generally advocated, is that the physician becomes what attorneys call “judgment-proof”. If the physician is not indemnified by the state, carries no malpractice coverage for working ringside events, and has little attachable real assets, there is little to no incentive for an attorney to bring a tort case against that physician since, as they say, “you can’t get blood from a turnip”. Again, this is not a recommended approach for any ringside physician.

Changes in the current system that would attract more physicians to work these events, encourage current ringside physicians to cover more events, and support the growth of the sport should be advocated. Simple suggestions would include re-writing states athletic commission statutes to offer more clarification and state explicitly whether the state will indemnify the physician or whether they must carry their own malpractice policy. Another relatively easy solution would be to, as expressed in our study, increase the remuneration paid to the ringside physicians to at least cover the increased cost of malpractice policies. More creative solutions could include using the collective bargaining power of our national organization of the Association of Ringside Physicians to negotiate with malpractice carriers for inexpensive policies covering these events.

## **Conclusions**

While few analytical conclusions can be drawn from a small study such as this, a few significant conclusions can be drawn. These include the following: there is significant variance as to state indemnification; there is a great deal of confusion regarding state indemnification; and many ringside physicians are likely going without proper

malpractice liability coverage for events. There are a few bottom lines here for ringside physicians that work events other than USA Boxing. First, ringside physicians should investigate firsthand or through legal counsel if their state provides indemnification. Ringside physicians should not take someone's "word of mouth" advice on this. Second, ringside physicians should investigate firsthand, through legal counsel or a liability insurance broker, if their policy currently includes combat sports event coverage, and, if so, if it covers professional events or only amateur. Third, if there is any question that remains about state indemnification or liability policy coverage, the ringside physician should consider an additional policy rider.

### References

1. "Malpractice coverage for ringside physicians survey": Pautz, Rizzo, N.; 1/16/19. PDF file.
2. "Corona v. State". Court of Appeal, Fourth District, Division 2, California.; Ray CORONA, Sr. et al., Plaintiffs and Appellants, v. STATE of California et al., Defendants and Respondents. No. E044951. Decided: October 23, 2009; <https://caselaw.findlaw.com/court-of-appeal/1499963.html>
3. "Appendix 1: State Licensure and Liability Policy for Volunteer Physicians". [http://www.mbc.ca.gov/Publications/malpractice\\_insurance\\_appendix.pdf](http://www.mbc.ca.gov/Publications/malpractice_insurance_appendix.pdf), AMA publication, 2007.
4. "D.C. Medical Malpractice Lawsuit Alleges Ringside Physician's Medical Negligence Resulting in Boxer's Brain Injury". <https://www.medicalmalpracticelawyers.com/d-c-medical-malpractice-2/d-c-medical-malpractice-lawsuit-alleges-ringside-physicians-medical-negligence-resulted-boxer-brain-injury/>; 5/23/2017.
5. "Official Bout Contract, Approved by the West Virginia Athletic Commission". <https://athleticcommission.wv.gov/SiteCollectionDocuments/Official%20Bout%20Contract%20-%20Fillable%20Form.pdf>; 12/27/2018.
6. "Release and Waiver of Liability, Assumption of the Risk and Indemnity Agreement and Consent to Medical Treatment", PDF document. <https://www.state.sd.us/eforms/secure/eforms/E2381v1-SDACWaiver-Form.pdf>; accessed 2/4/2019.
7. CA Title 1, section 818.9: DIVISION 3.6. CLAIMS AND ACTIONS AGAINST PUBLIC ENTITIES AND PUBLIC EMPLOYEES [810 - 998.3]; [http://leginfo.legislature.ca.gov/faces/codes\\_displaySection.xhtml?sectionNum=818.9.&lawCode=GOV](http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=818.9.&lawCode=GOV)
8. Sanchez, A. USA Boxing Local & National Events Ringside Physician Information, PDF file; [www.teamusa.org](http://www.teamusa.org), 2/2018.
9. Ledgerwood, S. "Memorandum: Attorney Client Privileged Communications". Division of Professional Registration, State of Missouri, PDF file; 1/19/2019.
10. Suk, M. Sovereign immunity principles and application in medical malpractice. *Clin Orthop Relat Res* 2012;470(5):1365-1369.
11. State of Missouri Rules of Department of Insurance, Financial Institutions and Professional Registration, Division 2040, Office of athletics, Chapter 8-Mixed Martial Arts: <https://www.sos.mo.gov/cmsimages/adrules/csr/current/20csr/20c2040-8.pdf>; Accessed 2/4/2019.
12. Matthiesen, Wickert&Leher, S.C., "State Governmental Liability in All 50 States". <https://www.mwl-law.com/wp-content/uploads/2013/03/STATE-GOVERNMENTAL-LIABILITY-IN-ALL-50-STATES-CHART-GLW-00211981.pdf>, 12/18/2018.
13. Nevada State Athletic Commission: Ringside Physician: <http://boxing.nv.gov/uploadedFiles/boxingnvgov/content/Licensing/RINGSIDE%20PHYSICIAN.pdf>; Accessed 2/4/2019.
14. Commonwealth of Virginia, Martial Arts and Professional Wrestling Advisory Board: Statutes Title 54.1, Chapter 8.1, <http://www.dpor.virginia.gov/uploaded-files/mainsite/content/boards/boxing/a511-41regs.pdf>, 9/7/2016.
15. CSAC, Advisory Committee on Medical and Safety Standards Meeting Agenda, Sunday, April 10, 206, PDF file; <https://www.dca.ca.gov/csac/meetings/materials/20161216.pdf>, Accessed 2/4/2019.
16. Cornejo, S.: Assistant Executive Office, CSAC. "Ringside Physicians." Message to Dr. Pautz. 2/28/2019. E-mail with attachment: Legal Opinion. Ringside Physicians Liability and Indemnification 2017.pdf

### Can boxing be made safer?

Nitin K Sethi, MD, MBBS, FAAN

Department of Neurology, New York-Presbyterian Hospital, Weill Cornell Medical Center  
New York, NY, U.S.A. (Email: sethinitinmd@hotmail.com)

WORD COUNT: 1061

KEY WORDS: : combat sports; boxing; MMA; neurological injuries.

AUTHOR CONTRIBUTIONS: NKS conceived and drafted the manuscript

STUDY FUNDING: No targeted funding reported.

DISCLOSURES: NKS serves as Associate Editor, *The Eastern Journal of Medicine*. He also serves as Chief Medical Officer of the New York State Athletic Commission (NYSAC). The views expressed are his and do not necessarily reflect the views of the NYSAC.

---

The recent tragic deaths of two boxers has once again raised a cry for a ban on combat sports and boxing, in particular. Dr. Hauser, in an article in the *Annals of Neurology* said, “The medical, and especially the neurology, community has an obligation to do more. We need to spread the word that brain bashing is not a socially acceptable spectator sport, ...we should forcefully counter articles in the medical literature taking the position that closer medical supervision could obviate the need for a ban, or even worse that consenting adults have the ethical right to maim each other if they choose to do so”.<sup>1</sup> Dr. Hauser’s viewpoint is not an isolated fringe sentiment; rather, it is shared by various medical associations and societies, nearly all of whom at some point or another have called for a ban on boxing (Table 1). Different types of acute traumatic brain injuries (TBI) have been reported in boxing including but not limited to concussion (traumatic amnesia), subdural hematoma (SDH), epidural hematoma (EDH), subarachnoid hemorrhage (SAH), intraparenchymal hemorrhage (IPH), diffuse axonal injuries (DAI), diffuse brain contusions without associated hemorrhage, dissection of vertebral/carotid artery with SDH being the major cause of boxing related mortality. While ethical issues surrounding boxing have and continue to be passionately debated, the sport is here to stay and the passion and love for “the

Sweet Science” is shared by millions around the world. Hence a more realistic goal for ringside physicians should be to help make this sport as safe as possible.

So, can boxing be made safer? Arguments to the affirmative include suggestions such as making head gear mandatory in both amateur and professional boxing; using better/safer head gear in amateur events; using better designed mouth guards; reducing the number of rounds; restricting blows to the head and only allowing body shots; restricting the number of fights per year per boxer; longer mandatory suspension after knockout (KO) and technical knockout (TKO); and better medical screening and supervision prior to, during, and after fights. However, many of these suggestions would change the very nature of the sport and are not acceptable to the boxing community and the sports governing bodies. There are also valid counter-arguments including that no head gear, however well-designed, shall be perfect and that force will still be transmitted across to the brain; no screening is perfect; and finally but most importantly, that no amount of boxing is good for the brain and there is no difference if a boxer fights 4 vs. 10 rounds or 4 fights in his professional career vs. 40.

Table I

Association	Position
American Medical Association (2007)	<ul style="list-style-type: none"> <li>• Recommends that until boxing is banned, head blows should be prohibited</li> </ul>
American Academy of Pediatrics (1997)	<ul style="list-style-type: none"> <li>• Opposes boxing as a sport for any child, adolescent, or young adult</li> </ul>
Australian Medical Association (2007)	<ul style="list-style-type: none"> <li>• Opposes all forms of boxing; recommends the prohibition of all forms of boxing for people younger than 18 y</li> </ul>
British Medical Association (2007)	<ul style="list-style-type: none"> <li>• Opposes amateur and professional boxing; calls for complete ban on boxing; recommends banning boxing for those younger than 16 y</li> </ul>
Canadian Medical Association (2002)	<ul style="list-style-type: none"> <li>• Recommends that all boxing be banned in Canada</li> </ul>
World Medical Association (2005)	<ul style="list-style-type: none"> <li>• Recommends that boxing be banned</li> </ul>

While boxing can never be made completely safe, I feel it can be made safer than what it is today. For this to occur though first and foremost the culture needs to change. The words “No más” (Spanish for “No more”) gained boxing notoriety when Sugar Ray Leonard fought Roberto Durán on November 25, 1980. At the end of the eighth round, Durán turned away from Leonard towards the referee and quit by apparently saying, “No más!” Durán’s stature as a boxer was never the same again after uttering those two simple words. Over the years, the boxing culture has evolved to one of never saying, “No más”. The fighter’s mentality is never to quit no matter what the circumstances. This culture needs to change. There should be no shame in saying “no más”. Boxers and cornermen should be encouraged to voice medical concerns to the medical staff in attendance and not to be hostile to them when they step up on the canvas to have a closer look at the fighter or enquire about how he feels. The initial signs of TBI are frequently quite subtle and wholly subjective such as headache, dizziness, nausea, blurred vision, con-

fusion, and disorientation. By the time objective signs such as gross motor instability (GMI), pupil asymmetry, and obvious change in the level of consciousness appear, the TBI is well evolved. At that time all that can be accomplished ringside is to emergently transport the injured boxer to the emergency department of the nearest Level I trauma center for urgent evacuation of the SDH or in advanced cases where herniation is imminent; a decompressive hemicraniectomy. The procedure, while life-saving, frequently leaves the boxer with significant neurological deficits for the rest of his or her life.

Education needs to be the foundation stone on which all other efforts to help make boxing safer need to build upon. Every boxer, cornerman, and referee needs to be educated about concussion and TBI, it’s at times subtle, clinical presentation and rapid evolution before they step into the ring. This education needs to be made mandatory and a prerequisite for licensure. In the same vein, it should be mandatory for all ringside physicians to have

documentation of continued medical education in combat sports medicine, especially as it pertains to concussion/TBI evaluation and management. Development and implementation of standardized concussion/TBI evaluation and management protocols, better screening to identify high risk combatants with the aid of advanced neuroimaging techniques, addressing aggressive and unhealthy weight cutting practices and the dangers posed by using performance enhancing drugs can help make the sport safer.

Yes, boxing can be made safer. The combat sports medical community owes this to the fighters and their families who entrust us with their most valuable possession of health when they step into the ring under the bright lights to fight. The time to make boxing safer is now, not tomorrow!

#### *References*

1. Hauser SL. Beaten into action: a perspective on blood sports. *Ann Neurol.* 2012;72(3):A4-5. doi: 10.1002/ana.23743.
2. Sethi NK. Can boxing be made safer? Yes but the culture needs to change. <https://www.athletesquarterly.com/makeboxingsafer/> (last accessed on August 19th, 2019)