

Who Stops the Fight?: A Critical Review of Neidecker, John, and Wheelock (2025) on Ringside Physician Stoppage Authority in United States Combat Sports Commissions

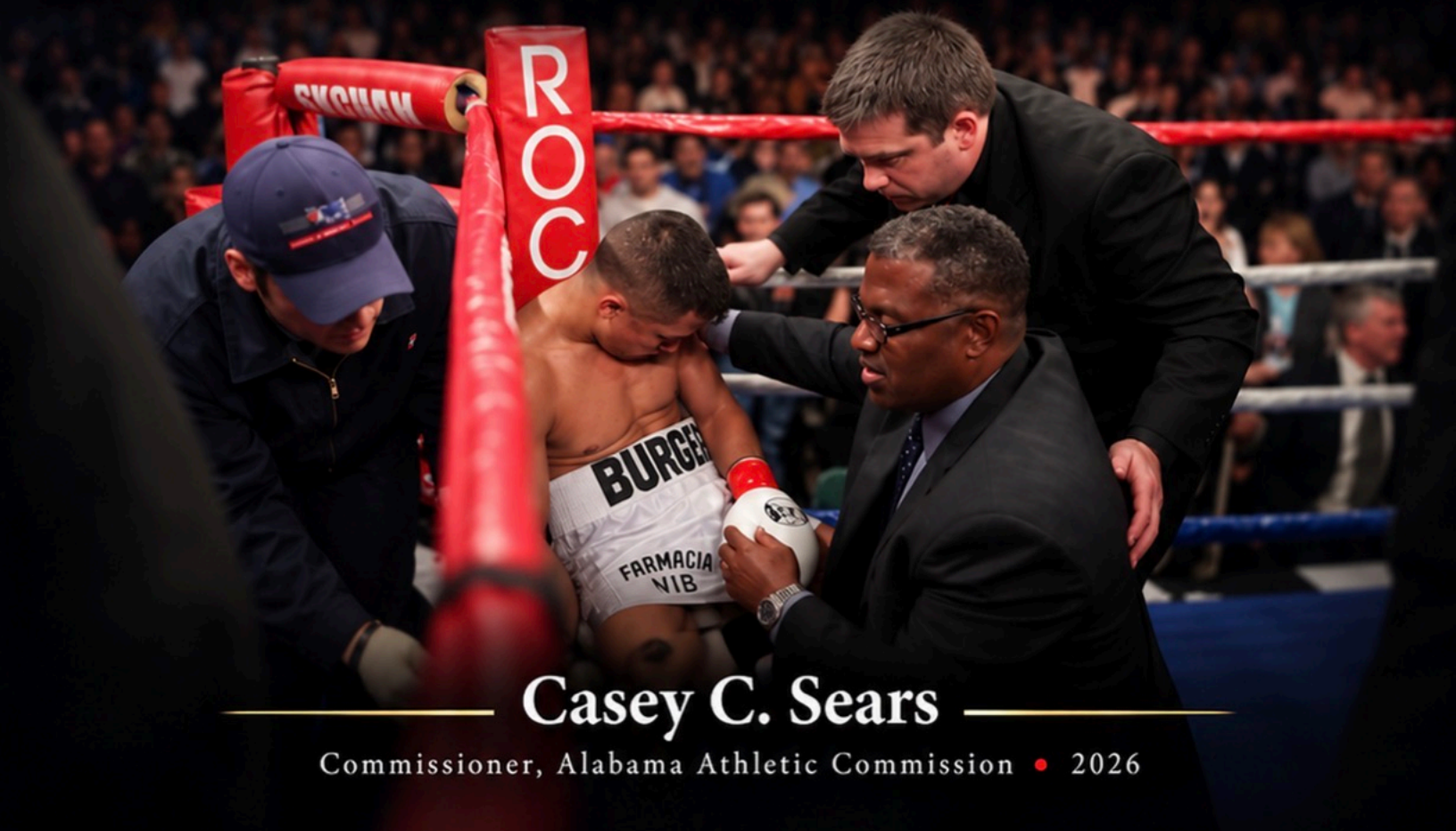
Casey C. Sears

ORCID 0009-0000-6344-1143 (Casey C. Sears)

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WHO **STOPS** THE FIGHT?



Casey C. Sears

Commissioner, Alabama Athletic Commission • 2026

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State Athletic Commissions
Tribal Athletic Commissions
The Association of Boxing Commissions and Combative Sports

Re: Who Stops the Fight? A primary-source census of physician stoppage authority in United States combat sports

Dear Commissioners and Colleagues:

Enclosed is a critical review of the 2025 study by Neidecker, John, and Wheelock on ringside physician stoppage authority, checked against the current statutes and rules of every jurisdiction.

The review finds that the study's classification cannot be relied upon, and that its recommendation, physician authority to stop all fights in all jurisdictions, rests on a premise the evidence does not support.

For 283 years, the decision to end a fight has rested with the official in the ring. Broughton's rules of 1743 placed disputes in the hands of umpires chosen by the principals, and by 1853 the rules of the Prize Ring made the referee's decision "final and strictly binding on all parties," the principle on which American commissions built their rules. A national position statement granting physicians independent authority to stop any fight, at what one member of the Association of Ringside Physicians board has called "the lowest" threshold, would for the first time in those 283 years take that decision from the referee as a matter of policy. It would do so on the strength of a dataset that misclassifies Alabama and at least a dozen other jurisdictions, and it would make the cageside examination decisive at the moment a fighter has every reason to conceal what that examination depends on. A change of that consequence should rest on an accurate record.

I ask each commission to verify its own classification against the provisions cited in Tables 3 and 4, and to defer any rule change, model code, or position statement on stoppage authority until the published classification has been corrected. The complete audit record is published as Supplement S1, <https://doi.org/10.67999/csx.001.s1>.

Respectfully,

Casey C. Sears

Commissioner, Alabama Athletic Commission
Chair, Rules and Procedures Committee
5809 Feldspar Way, Suite 109
Birmingham, Alabama 35244
Phone: (205) 438-6205 | Fax: (205) 438-6193
Editor@searspublishing.net

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Purpose. This white paper integrates the complete 2026 critical review, legal-source audit, and supporting technical record of the 2025 study by Neidecker, John, and Wheelock on ringside physician stoppage authority. All substantive findings, legal-source auditing, coding results, safety analysis, requested corrective actions, scoring matrix, and references are retained, but the material is reorganized around the study under review so that commissions can follow the validity analysis from the article's methods through the fighter-safety consequences. The audit protocol, coding record, source transcriptions, and journal correspondence are published separately as Supplement S1.

Article reviewed: Neidecker J, John T, Wheelock S. Authority of ringside physician to stop fights: prevalence in US combat sports commissions. *J Combat Sports Med.* 2025;7(1):6-8. Available at: <https://ringsidearp.org/wp-content/uploads/2025/11/ARP-Journal-November-2025-v3.pdf>

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Author. Casey C. Sears, Commissioner, Alabama Athletic Commission; Chair, Rules and Procedures Committee. Correspondence: editor@searspublishing.net.

“The physician does not belong in the referee’s chair. A consensus statement from the Association of Ringside Physicians providing a physician with absolute power and control over the outcome of a fight will make me seriously reconsider their commitment to fighter safety and the Alabama Athletic Commission’s continued relationship with the organization.”

— Casey Sears, Commissioner, Alabama Athletic Commission; Chair, Rules and Procedures Committee

Executive Summary

The 2025 study by Neidecker, John, and Wheelock is poorly structured, poorly executed, and its principal conclusions are not supported by the study design, the reported dataset, or the governing primary legal sources. The defects are not peripheral: inconsistent denominators, incomplete coverage, an unsupported temporal inference, an undefined jurisdiction-level construct, informant-based measurement of legal text, and multiple verified classification errors alter the reported national distribution. The study’s recommendation concerns who may terminate a bout and may be used in professional position statements, commission rulemaking, model codes, and legislation. The controlling reason for this review is fighter safety. An inaccurate description of existing law should not become the evidentiary basis for changing a safety-critical allocation of in-bout authority.

Findings of the study review, step by step

Issue	What the article did	Effect on the study’s conclusion
1. Internal consistency	Used different denominators for the same counts and labeled jurisdiction proportions as proportions of states.	The headline percentages are internally inconsistent and cannot be read as one coherent national estimate.
2. Coverage	Excluded four states as lacking commissions without naming them; Vermont and Delaware nevertheless have regulatory text addressing stoppage authority.	The stated target population is undercovered and the reported census is incomplete.
3. Temporal inference	Described the cross-sectional distribution as a “significant shift” without adoption dates or a prior-wave comparator.	The design cannot establish change over time.
4. Measurement validity	Used telephone and e-mail informants to determine the content of statutes and regulations without published primary-source verification.	The instrument measures respondent understanding or practice, not necessarily the law the article claims to classify.
5. Construct and coding	Moved between “ultimate authority,” “directly stop,” “sole arbiter,” and a residual “Mixed” category without a published decision rule.	Direct, binding, advisory, and sport-dependent allocations are collapsed, permitting inconsistent classification.
6. Primary-source verification	Published 23 physician-authority, 21 referee, and 3 sport-dependent jurisdictions.	Alabama alone changes the ordering to 22-22; the full audit finds 13-19 of 47 cells misclassified, and direct physician authority in both sports is supportable in 11 jurisdictions, not 23.
7. Fighter-safety premise	Recommended broader physician stoppage authority as a safety advance.	The review’s disclosure, gatekeeper, role-conflict, and diffusion-of-responsibility evidence challenges the assumption that independent physician termination authority necessarily improves safety.

National verification result. On the full census with statute controlling where statute and rule conflict, physician authority in both sports and referee sole-arbiter authority are tied at 20 jurisdictions each, with 6 sport-dependent jurisdictions and 1 indeterminate jurisdiction. Under no reported verification approach does the article's 23-to-21 ordering reappear, and under no text-based classification does either allocation command a majority.

Why the review is necessary

Neidecker, John, and Wheelock reported that 23 commissions permit a ringside physician to stop any fight, 21 make the referee the sole arbiter, and 3 apply a sport-dependent rule. The article described that distribution as a significant shift and recommended an Association of Ringside Physicians position statement advocating physician authority to stop all fights in all jurisdictions.

The study obtained its classifications through telephone calls and electronic mail to commissions. It did not publish the jurisdiction-level dataset, the wording of the question asked, response dates, respondent roles, a written coding rule, or verification against the statutes and regulations whose content the study purported to measure. Alabama is a verified counterexample: the article classified Alabama as physician authority even though the operative rules state that no one other than the referee may stop a fight and that, in amateur mixed martial arts, the physician may advise but has no authority to stop a fight.

Reclassifying Alabama alone changes the reported 23-to-21 ordering to 22-to-22. The complete audit found errors in both directions. Five jurisdictions credited with physician authority reserve the decision to the referee; five placed outside that category give the physician binding or direct effect; four are sport-dependent in ways the article did not record. The article's construct of direct physician authority in both sports is supportable in 11 jurisdictions, not 23.

Why it matters now

The article is not merely descriptive. It expressly recommends an ARP position statement on stoppage authority. The source report documents a regulatory pathway in which professional consensus statements may be cited in commission rulemaking and in federal or model-code processes. The Senate Commerce Committee advanced S. 5188, the Muhammad Ali American Boxing Revival Act of 2026, on September 16, 2026. The House-passed H.R. 4624 and the Senate legislation described in the source report make the accuracy of fighter-safety evidence a present regulatory concern, not an academic question.

When a short descriptive study becomes evidence for a professional statement or model rule, errors can propagate unless the legal classifications and the safety premise are re-examined before adoption.

The fighter-safety issue

The referee and ringside physician use different information. The referee applies a behavioral criterion continuously from inside the ring: whether the fighter can intelligently defend. The physician conducts an intermittent medical examination that depends in important part on symptoms the fighter reports and on tasks the fighter performs on request.

The review assembles evidence that athletes conceal symptoms when disclosure can remove them from participation, that athletes can manipulate testing used to determine participation, and that shared responsibility can diffuse accountability. The review therefore challenges the assumption that adding independent physician termination authority necessarily improves safety. Its safety analysis favors a model in which a credentialed physician is continuously available, is consulted when injury is suspected, has decisive authority over medical clearance and suspension, and provides mandatory in-bout medical advice while the referee retains the sole in-bout termination decision.

Operational significance for commissions

Reallocating stoppage authority is not merely a change in terminology. It changes the decision procedure used during a bout, the information on which the decision depends, and the distribution of responsibility among officials. It can affect outcomes, purses, rankings, title lineages, referee responsibility, medical interactions, and the standards against which commissions may later be evaluated. For that reason, the national classification and the safety premise require verification before the article is used to support a rule change.

Requested corrective actions

The review requests correction of Alabama's classification and the associated counts; publication of an expression of concern while the jurisdictional data are re-coded from primary legal sources; withdrawal or correction of the map and dataset; revision of statements dependent on the reported ordering or claimed temporal shift; and publication of missing conflicts, funding, and data-availability disclosures. If full re-coding changes the direction of the principal result, the review cites the ICMJE retraction-and-republication framework.

Commissions are encouraged to verify their own jurisdiction against the cited primary sources before relying on the article in rulemaking or testimony. The purpose of that verification is to prevent an incorrect description of existing law from becoming the basis for a change in fighter-safety rules.

Contents and Review Structure

The white paper is organized as a direct review of the 2025 Neidecker, John, and Wheelock study. The main review proceeds from the study's claims, through internal and measurement validity, to the primary-source audit, construct validity, fighter-safety analysis, and requested corrective actions. The quantitative corrections and the jurisdiction scoring matrix follow in the appendices; the complete audit record is published separately as Supplement S1.

Section	Contents
Executive Summary	Conclusion stated first; why the review is necessary now; fighter safety as the controlling concern.
The Study Under Review	Citation, design, reported results, interpretation, and recommendation of Neidecker, John, and Wheelock (2025).
1. Introduction	Scope, objectives, and relevance of stoppage authority.
2. Why the Question Matters Now	Professional position statements, federal and model-code pathways, and rulemaking relevance.
3. The Article Under Review	What the study reports and what it does not report.
4. Internal Validity	Denominators, ordering, exclusions, temporal inference, coding, and reporting deficits.

continued on next page

(continued)

Section	Contents
5. Measurement Validity	Why a survey of informants does not directly measure the content of promulgated law.
6. Alabama: Primary-Source Record	Verified misclassification and its effect on the reported result.
7. Audit of Every Jurisdiction	Primary-source review, concordance, corrected distributions, and error rate.
8. Construct Validity	Direct, binding, and advisory authority; distinctions the article collapses.
9. Fighter-Safety Analysis	Disclosure, testing behavior, gatekeeper effects, role conflict, and diffusion of responsibility.
10-13. Implications, Requested Actions, Limitations, Conclusion	Consequences for the proposed position statement and policy use of the study.
Technical Appendices A-B	Quantitative corrections, three-tier authority taxonomy, and jurisdiction scoring matrix.
References	Complete source list with DOI identifiers presented as full https://doi.org/ URLs.

The Study Under Review

Neidecker J, John T, Wheelock S. Authority of ringside physician to stop fights: prevalence in US combat sports commissions. *J Combat Sports Med.* 2025;7(1):6-8.

Available at: <https://ringsidearp.org/wp-content/uploads/2025/11/ARP-Journal-November-2025-v3.pdf>

Element	Article as published
Study design	Descriptive cross-sectional survey of 46 state athletic commissions and the District of Columbia using telephone calls and electronic mail to request clarification on who holds ultimate authority to stop a bout in boxing and mixed martial arts.
Reported result	23 commissions (49%) physician authority to directly stop any fight; 21 commissions (45%) referee sole arbiter; 3 commissions (6%) sport-dependent.
Interpretation	The article characterized physician authority as a significant shift in the paradigm and as recognition of the physician's role in safeguarding athlete health.
Recommendation	The article recommended that the Association of Ringside Physicians consider a position statement advocating physician authority to stop all types of fights in all jurisdictions, or at minimum collaborative protocols between referees and physicians.

Review Abstract

Background: Neidecker, John, and Wheelock surveyed United States combat sports commissions by telephone and electronic mail and reported 23 jurisdictions with independent physician authority to stop a bout, 21 with the referee as sole arbiter, and 3 sport-dependent; they characterized this as a significant shift and recommended an Association of Ringside Physicians position statement advocating physician authority in all jurisdictions.

Objective: To evaluate the article's validity; audit its classification of every jurisdiction against primary legal sources; and examine the fighter-safety premise of the allocation it advocates.

Methods: Reconstruction of the reported proportions; primary-source coding of current statutes and regulations for the jurisdictions in the article's population and the two excluded states with regulatory text; application of a written three-tier taxonomy (direct, binding, advisory); a verification review with reported agreement statistics; and review of the literature on athlete disclosure, examiner-gatekeeper effects, and diffusion of responsibility.

Results: The article uses inconsistent denominators and mislabels proportions of jurisdictions as proportions of states. Alabama is misclassified; correcting Alabama alone ties the modal categories at 22. On the full census with statute controlling, physician authority in both sports exists in 20 jurisdictions, the referee alone in 20, a sport-dependent allocation in 6, and the text is indeterminate in 1. Direct authority in both sports, claimed for 23 jurisdictions, is supportable in 11. Between 13 and 19 of the 47 cells are misclassified against current text. The primary classification and verification review agreed on 46 of 48 jurisdictions (kappa 0.93).

Conclusion: The article’s principal finding does not survive verification against primary legal sources. Its dataset, map, and claimed shift are unreliable as a basis for policy. The fighter-safety analysis also challenges the assumption that independent physician stoppage authority improves protection, because making the cageside examination dispositive increases the incentive to conceal or manipulate information on which the examination depends.

Keywords: ringside physician; referee; sole arbiter; combat sports regulation; boxing; mixed martial arts; policy surveillance; measurement error; misclassification; athlete disclosure; Muhammad Ali American Boxing Revival Act; correction and retraction.

Complete Critical Review

The sections that follow retain the complete analytical content of the original critical review while reorganizing the presentation around the study, its methods, its findings, and its fighter-safety implications. Large evidentiary tables are relocated to the Technical Appendices for readability.

1 Introduction

The allocation of authority to terminate a bout is the most consequential single provision in any combat sports rule set. Every other safety measure, from pre-bout medical clearance to post-bout suspension, operates before or after the moment at which an athlete who can no longer defend continues to absorb blows. The Unified Rules of Mixed Martial Arts and the Unified Rules of Boxing adopted by the Association of Boxing Commissions and Combative Sports (ABC) place that authority with the referee: “The referee is the sole arbiter of a bout and is the only individual authorized to stop a contest” [2,3]. The ABC’s 2005 Regulatory Guidelines provide in the same sense that “[f]inal authority to stop or continue a bout rests with the referee” [4]. Against this national standard, a number of state legislatures and commissions have conferred on the ringside physician a direct power to terminate, or a power to direct the referee to terminate, while others have left the physician in an advisory role. The distribution of these allocations across jurisdictions had not, before the article under review, been the subject of a published census.

Neidecker, John, and Wheelock attempted such a measurement [1]. Their article, published in the *Journal of Combat Sports Medicine*, the publication of the Association of Ringside Physicians (ARP) [5], reports that 23 jurisdictions confer independent stoppage authority on physicians, 21 designate the referee as sole arbiter, and 3 apply a sport-dependent rule. From that distribution the authors infer “a significant shift in this paradigm” and recommend that the ARP “consider developing a Position Statement advocating for physician authority to stop all types of fights in all jurisdictions,” or, “at a minimum, collaborative protocols between referees and physicians” [1]. The article will be cited to commissions, to legislatures, and in rulemaking. Its accuracy therefore matters beyond the ordinary, and Section 2 sets out why it matters now.

This review has four objectives. The first is to examine the internal consistency of the article's reported figures, which are computed on two different denominators and which rest on an ordering that a single reclassification nullifies. The second is to document, from the primary legal record, that Alabama, the jurisdiction the reviewer serves as Commissioner, is misclassified, and to show what that misclassification reveals about the instrument. The third is to audit every jurisdiction in the article's population, and the two it excluded, against current statutory and regulatory text, and to report the concordance with the article's classification and the distribution that the text supports. The fourth is to examine the safety premise of the article's recommendation, which is that vesting stoppage authority in the physician improves athlete protection. The review shows that the opposite follows, because independent physician authority makes the cageside examination dispositive of the athlete's continued participation, and thereby maximizes the athlete's incentive to misreport the very information on which that examination depends.

The author is a Commissioner of the Alabama Athletic Commission, chairs its Rules and Procedures Committee, and is a listed author of the Alabama rules quoted in Section 6. On August 31, 2026, the author, as Commissioner, requested that the journal correct the article's classification of Alabama (Section 11). The review evaluates the position, defended in Section 9, that the referee should remain the sole arbiter and that the physician's authority should be exercised before and after the bout and, during the bout, through mandatory advice. The audit in Section 7 was conducted under a written decision rule and is reported with its sources, and its complete record is published as Supplement S1, so that any reader may verify or dispute each assignment.

2 Why the question matters now

The relationship between the referee and the ringside physician has been debated in the combat sports medicine literature for years without a published census of the rules that govern it [6]. The article under review supplies the first. Three developments give its numbers a reach that a three-page descriptive study in a society journal would not ordinarily have, and each raises the cost of leaving its errors uncorrected.

2.1 The recommended position statement

The article's principal recommendation is that the ARP "consider developing a Position Statement advocating for physician authority to stop all types of fights in all jurisdictions" [1]. The ARP issues its position statements through peer-reviewed journals, and commissions incorporate them into their rules; Alabama itself makes the ARP/ACSM Certified Ringside Physician credential the condition of medical service at ring or cage side (Section 6.2). A statement on the identification of high-risk combat sports athletes appeared in the *Clinical Journal of Sport Medicine* in 2026 with the article's second author among its authors [7]. The ARP's published position statements address seventeen subjects, from blood-borne infection prevention and concussion to headguard use and skin infection; none addresses stoppage authority [8]. The first author has advocated physician authority to stop bouts since at least 2018, when, as the ARP's Vice-President and lead author of its concussion consensus statement, he described the object of ending bouts on signs of concussion elicited by the physician in the corner, such as a fighter who reports being unable to remember what happened, and the change in culture that adoption would require [9,10]. A position statement built on the article would carry the article's classification, its percentages, and its temporal inference into a document that is cited as authority. If the classification is wrong, the statement inherits the error and lends it the ARP's imprimatur. Section 10 examines the statement's premises; this section examines where the statement would go.

2.2 Federal legislation would give ARP consensus statements a regulatory channel

On March 24, 2026, the House of Representatives passed H.R. 4624, the Muhammad Ali American Boxing Revival Act of 2026, by voice vote, after the Committee on Education and Workforce had ordered it reported by a vote of 30 to 4 on January 21, 2026, and filed its report on February 25 [11,12,13,14]. The bill was received in the Senate on March 25 and referred to the Committee on Commerce, Science, and Transportation. A companion, S. 5188, was introduced by the committee's chairman and Senator Rosen on July 30, 2026 [15,16], and on September 16, 2026, the committee approved S. 5188 by voice vote after adopting a Cruz-Rosen substitute amendment and four further amendments [17]. The text as reported had not been published when this review was completed. Two provisions of the House-passed text bear on this review. First, section 3 amends section 5 of the Professional Boxing Safety Act of 1996 to require that, beginning two years after enactment, the physician continuously present at ringside at every professional boxing match in the United States hold "a certification obtained through a certification program administered by the Association of Boxing Commissions in partnership with the Association of Ring-side Physicians (or any successor organization)" [11]. Second, section 4 adds to section 7 a sense of Congress that "the Association of Boxing Commissions ... in partnership with the Association of Ringside Physicians, is well-positioned to identify policies and practices most conducive to boxer safety and wellbeing," and that the ABC "should, accordingly, publish and maintain" a "model legislative and regulatory code for professional boxing" derived from the most protective state policies, from "rigorous sporting authority guidelines," and from "expert consensus statements from the Association of Ringside Physicians and other sports medicine organizations," together with best practices recommendations and "an annual report card of boxing commission conformance with such model codes and best practices" [11]. The Senate bill as introduced carries the certification requirement, with the alternatives of certification through a state commission or a medical board, and does not carry the model-code provision [15]; whether the reported text retains, adds, or alters either provision cannot be determined until it is printed. Because both texts amend the safety standards of section 5 of the Professional Boxing Safety Act, which apply to every professional boxing match held in the United States, their medical requirements bind every promoter and every commission, not only the unified boxing organizations the bills would create [11,15,18].

Neither text requires a state commission to adopt any ARP protocol, and the Professional Boxing Safety Act reaches professional boxing only; mixed martial arts is outside it. The mechanism is indirect and, for that reason, durable. A consensus statement advocating physician authority to stop all fights would, under the House text, be a source from which the model code is derived; a commission whose rules reserve stoppage to the referee would be reported annually as nonconforming; and every physician the Act would require at ringside would be certified under a curriculum administered in partnership with the organization that issued the statement. The ABC's own instruments already lean in that direction: its referee manual states that "in most jurisdictions, the Ringside Physician may stop the bout" [19], and its Boxer Severity Index page lists "Physician can stop the fight" first among its recommendations to member commissions [20]. At none of these stages will the statement's premises be re-examined. They will be examined, if at all, now, and the article under review is where they rest.

2.3 The article as evidence in rulemaking and legislative settings

Commissions revise their rules under state administrative procedure acts, on notice, with public comment, and on a written record. Legislatures amend athletic commission statutes through committee hearings at which testimony is taken; the House Subcommittee on Workforce Protections took testimony on H.R. 4624 on December 4, 2025 [12], and the Senate committee approved its companion bill on September 16, 2026 [17]. The ABC and the ARP hold annual conferences at which rule changes are proposed and adopted [21]. In each of these settings the article is

the document most likely to be offered as evidence that physician stoppage authority is the prevailing and the safer allocation, because it is the only published census of the allocation, because it is short enough to be read into a record, and because its headline figure, that physicians may stop fights in nearly half of jurisdictions, is the kind of number that travels without its methods. Its authors are positioned to present it: the first author is the ARP's Immediate Past President [22], and the third author is a Commissioner of the Kansas Athletic Commission and has chaired the ABC's MMA Rules Committee [21]. It follows that the article's errors, if uncorrected, will be presented by credible people in the settings where rules are made, and that a commission asked to justify its rules against the article will be arguing against a number rather than a method. The Alabama Athletic Commission has already had occasion to check the article's classification of its own rules. Sections 6 and 7 report what it found.

3 The article under review

The article describes itself as a “descriptive cross-sectional study” [1]. Its stated primary objective was “to evaluate current state athletic commission policies regarding the authority to stop fights, with a focus on whether physicians have independent authority.” The Methods section reads in full: “All 46 states with athletic commissions and the commission of the District of Columbia were contacted using information provided by the Association of Boxing Commissions and Combative Sports. Phone calls and emails were used to request clarification on who holds ultimate authority to stop a bout in both boxing and mixed martial arts (MMA). Responses were tabulated in Excel and used to create a map visualizing the results. Forty-seven jurisdictions responded, yielding a 100% response rate of existing commissions” [1].

The Results section reports that “in 23 US commissions (49%), physicians have the authority to directly stop any fight, while in 21 commissions (45%) the referee is the sole arbiter,” with “3 commissions (6%) where the physician can stop a fight in mixed martial arts but not boxing,” and that “[t]he District of Columbia was omitted from the map, the response of their commission was that referees are the sole arbiter” [1]. The Abstract reports the same counts as “23 states (45.1%),” “21 (41.2%),” and “3 states.” The Discussion states that the sole-arbiter role “persists in 45% of U.S. states,” that “[i]n 49% of states, ringside physicians now hold the authority to directly stop a fight,” and characterizes the latter as “a significant shift in this paradigm” and “a significant recognition of their critical role in safeguarding athletes’ health” [1]. The map at page 7, titled “Can the Doctor Stop the Fight,” colors each state “Yes,”

“No,” “Mixed,” or “No commission”; it does not name the three “Mixed” jurisdictions, and no jurisdiction-level table accompanies it.

The article contains no statement of conflicts of interest, funding, data availability, dates of data collection, the wording of the question asked, the roles of the respondents, or the identity of the four excluded states [1]. Its sole reference is the ABC's 2005 Regulatory Guidelines [4]. The journal's masthead identifies it as “A publication of the Association of Ringside Physicians,” with manuscripts “reviewed by peer reviewer ringside physicians from a broad array of specialties” in “a systematic blinded process” [5]. The first author is identified in the byline as Past President of the ARP, and the ARP lists him as Immediate Past President [22]. The third author is a Commissioner of the Kansas Athletic Commission and has chaired the ABC's MMA Rules Committee [21]. None of these facts is improper. Together they mean that the article's recommendation is addressed by a past president of the ARP, in the ARP's journal, to the ARP, and the absence of a disclosure statement is a reporting deficit under the ICMJE Recommendations, which require authors to declare such interests and journals to publish them [23].

4 Internal validity: denominators, ordering, and coverage

4.1 Two denominators for one dataset

Table 1 reconstructs the article's percentages. The Methods fix the analysis population at 47 (46 states and the District of Columbia). The Results compute on 47: $23/47 = 48.94\%$, $21/47 = 44.68\%$, and $3/47 = 6.38\%$, rounded to 49, 45, and 6. The Abstract reports 45.1% and 41.2% for the same counts, which are $23/51$ and $21/51$: proportions of all fifty states plus the District, including the four jurisdictions the Methods exclude. The Abstract's denominator is therefore inconsistent with the study's own exclusion criterion. The discrepancies are 3.84 and 3.50 percentage points for the first two categories. The Abstract gives no percentage for the third; on 51 it would be 5.88%, against 6.38% on 47, a difference of 0.50 points.

A third inconsistency lies in the Discussion's labels. The 21 sole-arbiter jurisdictions include the District of Columbia, so the count of states in that category is 20. The Discussion's "45% of U.S. states" corresponds to no denominator: $20/46 = 43.48\%$, $20/47 = 42.55\%$, $20/50 = 40.00\%$, $21/46 = 45.65\%$ (which counts the District as a state), and $21/47 = 44.68\%$, the last a proportion of jurisdictions. Likewise "49% of states": $23/46 = 50.00\%$, $23/50 = 46.00\%$, and $23/47 = 48.94\%$, the last again a proportion of jurisdictions. The article's headline percentages are proportions of responding jurisdictions presented as proportions of states.

4.2 The margin of one

The reported ordering (23 against 21) rests on a difference of two. Because reclassification of one jurisdiction between the two modal categories decrements one and increments the other, a single verified misclassification changes the difference by two, to zero. One reclassification equalizes the categories; two reverse the ordering. Section 6 documents one; Section 7 documents misclassifications in both directions.

In a complete enumeration with a 100% response, coverage, sampling, and nonresponse error are zero by construction, and the reported figures are population quantities [24]. No confidence interval attaches to them, and no sampling variability can absorb an error. The only error components that remain are measurement and processing error, and each verified misclassification changes the population quantity directly.

Table 1. The article's reported proportions reconstructed on each denominator, and the distribution corrected for the Alabama misclassification (Section 6).

Classification category	Abstract, as reported	Results and Discussion, as reported	Computed on $n = 47$	Corrected for Alabama ($n = 47$)
Physician holds independent authority	23 states (45.1%) [= $23/51$]	23 (49%); "49% of states"	23 (48.94%)	22 (46.81%)
Referee is sole arbiter	21 (41.2%) [= $21/51$]	21 (45%); "45% of states"	21 (44.68%)	22 (46.81%)
Sport-dependent (MMA but not boxing)	3 states (no percentage) [$3/51 = 5.88\%$]	3 (6%)	3 (6.38%)	3 (6.38%)
Difference between modal categories	2	2	2 (4.26 pp)	0 (0.00 pp)

Note. pp, percentage points. The 21 sole-arbiter jurisdictions include the District of Columbia; the count of states in that category is 20, so neither "45% of U.S. states" nor "49% of states" corresponds to a proportion of states on any denominator.

4.3 The unnamed exclusions

The article excludes “[f]our states ... because they lack athletic commissions” without naming them. The map identifies them by color: Alaska, Montana, Vermont, and Delaware. Two of the four have state regulators with codified allocations of stoppage authority. Vermont regulates professional boxing and mixed martial arts through the Director of the Office of Professional Regulation under 26 V.S.A. chapter 109; the statute provides for boxing that the approved health care provider at ringside “shall advise the referee on the condition of the boxers,” and for mixed martial arts that “[t]he sole arbiter in the ring in a mixed martial arts match shall be the referee” [25]. Delaware regulates professional and amateur boxing and mixed martial arts through the Division of Professional Regulation under 28 Del. C. chapter 1 [26]; its professional mixed martial arts rule provides that “[t]he referee is the sole arbiter of a bout and is the only individual authorized to enter the fighting area at any time during competition to stop a contest except that referee shall stop a bout at the direction of the ringside physician or the Division” [27]. Montana repealed its athletics program in 2019 [28]. Alaska’s statutes still create an athletic commission, but the state’s professional licensing program lists none [29]. Neither Vermont nor Delaware appears on the ABC’s list of commission contacts [30].

The exclusions therefore track the sampling frame, “information provided by the Association of Boxing Commissions and Combative Sports,” and the presence or absence of a state regulator played no part in them. A study whose objective is “state athletic commission policies regarding the authority to stop fights” undercovers its target population when it omits two jurisdictions whose statutes and regulations address that authority in terms. With Vermont and Delaware included, the analysis population is 49.

4.4 An unsupported temporal inference

The Discussion characterizes physician authority as “a significant shift in this paradigm” and describes the sole-arbiter model as one that “persists.” Both assert change over time. The design is a single-wave cross-section that records neither adoption dates nor any prior-wave comparator. It contains no variation by which change could be identified. The inference is unsupported at the reported counts and at any corrected counts.

4.5 An undefined jurisdiction-level code

Three jurisdictions are coded “Mixed” because the physician may stop mixed martial arts bouts but not boxing bouts. The article’s principal variable is coded at the jurisdiction level, and it is undefined for those cases without a stated decision rule. Sport-stratified reporting, with separate distributions for boxing and for mixed martial arts, is defined for every jurisdiction and eliminates the residual category. Section 7 shows that two jurisdictions coded “Yes” belong, on their text, in the sport-dependent category, that four jurisdictions in the article’s “No” and “Mixed” pool are sport-dependent, and that one of those four is sport-dependent in the direction the article’s definition does not admit, with physician authority in boxing and not in mixed martial arts.

4.6 Reporting deficits

The article does not report the question asked (the Methods paraphrase it as “who holds ultimate authority to stop a bout”), the role of the person who answered, the date of each response, the coding rule applied to responses that did not map onto the three categories, or any verification against regulatory text. No jurisdiction-level table is published, so no assignment can be checked without contacting the authors. The map is the only disaggregated output; it omits Hawaii and the District of Columbia, and it does not identify the three “Mixed” jurisdictions in its text. These are the minimum reporting elements for a survey of institutional informants, and their absence is itself a finding about the reliability of the dataset.

5 Measurement validity: coding the content of law by telephone

5.1 What was measured and what was claimed

The article’s variable is the content of promulgated law: for each jurisdiction, whether its rules confer on a ringside physician authority to terminate a bout. Its instrument is a single-informant self-report obtained by telephone or electronic mail. The two are different quantities. A respondent’s answer measures the respondent’s belief about practice on the day of the call; it measures the text only to the extent that the respondent knew the text, understood the question, and answered that question and no adjacent one. Roscoe Pound’s distinction between “law in books” and “law in action” [31] is the gap in which every misclassification reported in Section 7 lies.

The article’s own language drifts across that gap. The Methods describe a question about “ultimate authority.” The Results report that “physicians have the authority to directly stop any fight.” Ultimate authority and authority to stop directly are different constructs. In Alabama, the Chief Inspector “shall have complete authority over each professional contest, match, or exhibition in this state” [32], and the Commission may halt an event; a respondent asked who holds ultimate authority could truthfully answer “the Commission” or, describing a practice in which referees follow medical advice, “the doctor,” without either answer meaning that the physician may terminate a bout. The Results assert the strongest construct on the basis of a question that asked a different one.

5.2 The standards for measuring law

The scientific measurement of statutes and regulations has a literature and a set of standards. Tremper, Thomas, and Wagenaar set out the requirements for legal data in evaluation research [33]. Anderson and colleagues describe a method that “relies on observation of the apparent features of legal texts,” with “the iterative development and refinement of a coding scheme; quality control; and the production of a transparent research protocol and codebook” [34]. Burris and colleagues describe policy surveillance as “the systematic, scientific collection and analysis of laws of public health significance” [35], and Presley and colleagues report Delphi-derived standards for the practice [36]. Hall and Wright describe the analogous discipline for judicial opinions, built on replicable case selection and objective coding of each case [37]. Common to all of these are five elements: coding from primary legal sources; a written protocol and codebook; independent duplicate coding with adjudicated disagreement; a reported measure of inter-rater agreement, conventionally Cohen’s kappa [38,39]; and a currency date for each text. The article reports none of the five. It is a telephone survey presented as a study of policy.

5.3 Why informant error is large in this domain

The provisions at issue are split across statutes, general rules, officials' rules, physician rules, and sport-specific chapters, and they frequently conflict within a jurisdiction (Section 7). Several jurisdictions adopt the ABC Unified Rules, whose sole-arbiter clause they then override, or fail to override, by local text. A commission employee answering a telephone call describes what happens at events. That description is valuable information about practice. The rule itself goes unmeasured. Where the measured quantity is the content of a promulgated rule, the rule is the source of record, and an instrument that never consults it has no defense against error other than the informant's accuracy.

5.4 Alabama as an existence proof

Alabama is the case in which the primary-source record permits certainty what the respondent should have said, because the Alabama Athletic Commission is the respondent and the text is dispositive on its face (Section 6). The provisions state the allocation in both affirmative and negative form, so ambiguity in the law can be excluded as the source of the error. The misclassification arose in the instrument, in the processing of the answer, or in both. That property makes the case an existence proof: it establishes that the classification error rate across the enumeration is non-zero, and that the mechanism generating errors is one the design cannot detect.

A single verified error, discovered through recognition by the affected jurisdiction, is a non-random discovery and supports no estimate of the rate. For k jurisdictions audited against primary sources with zero errors observed, the approximate upper 95% confidence bound on the error rate is $3/k$ [40]; with errors observed, the rate is estimated directly. The audit in Section 7 estimates the rate for every cell of the enumeration.

6 Alabama: the primary-source record

6.1 Statutory basis and structure

The Alabama Athletic Commission is “the sole regulator” of professional boxing and of professional and amateur mixed martial arts, with authority to “direct, manage, control, and supervise all matches, contests, or exhibitions” and to “adopt and enforce rules consistent with this article” [41]. The Commission's rules are codified at Title 165 of the Alabama Administrative Code, in sport-specific chapters for professional boxing (165-X-1), professional mixed martial arts (165-X-2), amateur mixed martial arts (165-X-3), professional and amateur kickboxing (165-X-6 and 165-X-7), and professional bare-knuckle boxing (165-X-8) [32]. Each chapter carries a revision date of October 15, 2022, and each was in force throughout any period in which the article's data could have been collected.

6.2 The operative provisions

Each chapter allocates stoppage authority in terms that admit no other reading. Table 2 sets them out. The professional boxing rule provides: “Stopping a Match. No one other than the referee may stop a fight during or between rounds. The referee shall have the authority to stop a contest at any time if one of the boxers is unable or no longer able to defend himself” (r. 165-X-1-.08(4)(a)). The professional mixed martial arts rule (r. 165-X-2-.08(4)(a)), the kickboxing rules (rr. 165-X-6-.08(9)(a) and 165-X-7-.08(9)(a)), and the bare-knuckle rule (r. 165-X-8-.08(4)(a))

repeat the same two sentences. The amateur mixed martial arts chapter states the allocation twice, first in the officials rule, “No one other than the referee may stop a fight during or between rounds” (r. 165-X-3-.07(1)), and then in affirmative and negative form:

“(17) Stopping a Contest. The referee is the sole arbiter of a bout and is the only individual authorized to enter the fighting area at any time during the competition and authorized to stop a contest. (a) A physician may enter the ring and advise the referee but shall have no authority to stop a fight.” (Ala. Admin. Code r. 165-X-3-.08(17), (17)(a))

The physician’s regulatory functions under Title 165 are examination, evaluation, advice, and suspension. A physician must be present at ringside for every bout and must hold the M.D. or D.O. degree. Every physician licensed as a ringside physician “shall obtain ARP/ACSM Certified Ringside Physician (CRP) certification,” and a physician without the certification “may serve at ring or cage side so long as a minimum of one certified Ringside Physician is present” (r. 165-X-1-.04(2)(n)(1)(ii)) [32].

No physician therefore serves at ring or cage side in Alabama without a certified Ringside Physician present; in the Commission’s practice, which is stated here as practice and forms no part of the coding in Section 7, the certified physician’s determination governs the medical advice given to the referee. Before each bout the referee “will confirm that the ringside physician as well as each judge assigned to the bout is in place at ringside” (r. 165-X-1-.08(4)(c)). During a bout the referee “may a [sic] call a brief time-out and request a physician’s evaluation” of a cut “to determine if the bout shall be allowed to continue” (r.

6.3 Enforcement authority is distinct from officiating authority

Title 165 vests authority over the event, as distinct from the bout, in the Commission. The Chief Inspector “shall have complete authority over each professional contest, match, or exhibition in this state” and “shall ensure that all rules and regulations of the Commission and the Alabama Boxing, Wrestling, and Mixed Martial Arts Act are strictly followed and enforced” (r. 165-X-2-.07(3)); no match “will be allowed to commence or continue” in an arena the Commission-appointed supervisor finds unsafe (r. 165-X-2-.05(3)(b)) [32]. These are enforcement powers exercised under Ala. Code § 41-9-1024(d) [41]. They are the “ultimate authority” of the Methods’ question. They are distinct from the officiating authority to stop a bout in progress, which belongs to the referee alone. A survey question that does not distinguish the two invites exactly the misclassification the article recorded for Alabama.

6.4 Result taxonomies are not grants of authority

Completeness requires notice of two passages that a reader might set against the operative provisions. The professional mixed martial arts chapter lists, among the “Types of Bout Results,” a technical knockout by “1. Referee stops bout; 2. Cage side or ringside physician stops bout; or 3. When an injury as a result of a legal maneuver is severe enough to terminate a bout” (r. 165-X-2-.08(7)(b)), and the kickboxing chapters define a technical knockout as occurring “[w]hen the referee stops the bout, the ringside physician instructs the referee to stop the bout, or an injury resulting from a legal strike is severe enough to terminate a bout” (rr. 165-X-6-.08(11)(c)1. and 165-X-7-.08(12)(c)(1)) [32].

These are classifications of recorded outcomes, and they were carried into Alabama’s rules from the ABC’s Unified Rules, whose “Types of Decisions” list “TKO due to Medical Stoppage ... Doctor Stoppage” in the same document that provides that the referee “is the only individual authorized to stop a contest” [2]. In both documents the operative provision governs. A label describing how a stoppage on medical grounds is recorded cannot confer a power that the provision headed “Stopping a Match” withholds in terms, and the same drafting pattern in the national model

Table 2. Allocation of stoppage authority in the Alabama Administrative Code, Title 165 (rev. October 15, 2022) [32].

Chapter	Rule	Text
165-X-1 Professional boxing	r. 165-X-1-.08(4)(a)	"Stopping a Match. No one other than the referee may stop a fight during or between rounds. The referee shall have the authority to stop a contest at any time if one of the boxers is unable or no longer able to defend himself."
165-X-2 Professional mixed martial arts	r. 165-X-2-.08(4)(a)	"Stopping a Match. No one other than the referee may stop a fight during or between rounds. The referee shall have the authority to stop a contest at any time if one of the mixed martial [sic] artists is unable or no longer able to defend himself."
165-X-3 Amateur mixed martial arts	r. 165-X-3-.07(1); r. 165-X-3-.07(8)(b)	"Referee. No one other than the referee may stop a fight during or between rounds." "The referee shall have the authority to stop a contest at any time if one of the competitors is unable or no longer able to defend himself or herself."
165-X-3 Amateur mixed martial arts	r. 165-X-3-.08(17), (17)(a)	"Stopping a Contest. The referee is the sole arbiter of a bout and is the only individual authorized to enter the fighting area at any time during the competition and authorized to stop a contest. (a) A physician may enter the ring and advise the referee but shall have no authority to stop a fight."
165-X-6 Professional kickboxing; 165-X-7 Amateur kickboxing	rr. 165-X-6-.08(9)(a); 165-X-7-.08(9)(a)	"Stopping a Match. No one other than the referee may stop a fight during or between rounds. The referee shall have the authority to stop a contest at any time if one of the kickboxers is unable or no longer able to defend himself."
165-X-8 Professional bare-knuckle boxing	r. 165-X-8-.08(4)(a)	"Stopping a Match. No one other than the referee may stop a fight during or between rounds. The referee shall have the authority to stop a contest at any time if one bare-knuckle boxer is unable or no longer able to defend himself or herself."
165-X-1 Professional boxing (medical requirements)	r. 165-X-1-.04(2)(n)(1)(ii)	"A ringside physician shall be present at all events." "All 'Ringside' physicians serving ring or cage side shall obtain ARP/ACSM Certified Ringside Physician (CRP) certification." "Physicians not having completed the Ringside Physician Certification shall be licensed as 'Non-Ringside Physicians,' but may serve at ring or cage side so long as a minimum of one certified Ringside Physician is present."
165-X-2 Professional mixed martial arts (officials)	r. 165-X-2-.07(3)	"The Chief Inspector shall have complete authority over each professional contest, match, or exhibition in this state." "The Chief Inspector shall ensure that all rules and regulations of the Commission and the Alabama Boxing, Wrestling, and Mixed Martial Arts Act are strictly followed and enforced."

Note. All provisions were retrieved from the official compilation maintained by the Alabama Legislative Services Agency on September 8, 2026, and cross-checked against the Cornell Legal Information Institute compilation. The rulemaking history shows each quoted rule in its current text since October 15, 2022, except r. 165-X-3-.07, which has been unchanged since its adoption effective January 31, 2014.

rules produces the same result. The review treats the kickboxing formulation ("instructs the referee") as a drafting inconsistency and is identified for consideration by the Rules and Procedures Committee a conforming amendment that aligns the result taxonomies of chapters 165-X-2, 165-X-6, and 165-X-7 with the operative provisions. The existence of the inconsistency reinforces the point of Section 5: a text-based review under a written decision rule identifies and resolves it; a telephone respondent does not know it is there.

6.5 Effect on the reported distribution

On the article's own scheme, Alabama belongs in the referee-as-sole-arbiter category. Table 1 shows the effect. Reclassifying one observation transfers it between the two modal categories, which become equinumerous at 22 and 22 (46.81% each of 47), with the sport-dependent category unchanged at 3 (6.38%). The reported ordering is nullified; no statement conditioned on it survives. The Abstract's report of 23 against 21, the Results' 49% against 45%, and the Discussion's "significant recognition" of a "shift" each require revision. The supportable descriptive statement, on the article's data corrected for this one verified error, is that responding jurisdictions were evenly divided. Section 7 reports what the text of every jurisdiction supports.

7 Audit of every jurisdiction against primary legal text

7.1 Protocol

The audit was conducted in two stages under one decision rule. The first stage covered every jurisdiction the map colors “Yes” other than Alabama: Arizona, Arkansas, California, Idaho, Illinois, Iowa, Kentucky, Louisiana, Massachusetts, Minnesota, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Pennsylvania, South Carolina, Virginia, Washington, and West Virginia, together with the two excluded jurisdictions that have state regulators (Vermont and Delaware) and one jurisdiction coded “No” (Nevada). The second stage covered every remaining jurisdiction in the article’s population: the 22 states the map colors “No” or “Mixed” (Colorado, Connecticut, Florida, Georgia, Hawaii, Indiana, Kansas, Maine, Maryland, Michigan, Mississippi, Missouri, North Carolina, Oklahoma, Oregon, Rhode Island, South Dakota, Tennessee, Texas, Utah, Wisconsin, and Wyoming) and the District of Columbia. Because the article does not name its three “Mixed” jurisdictions in text and the map is its only record of them, the second-stage cells are compared with the article’s coding as a pool of 21 “No” and 3 “Mixed” codes rather than cell by cell (Section 7.9).

For each jurisdiction the current statute and administrative code governing professional boxing and professional mixed martial arts were retrieved from the official state code or legislature site where accessible and otherwise from the Cornell Legal Information Institute, Justia, or other public compilations, with the currency date recorded; the first stage was retrieved between September 1 and September 8, 2026, and the second stage on September 22, 2026. The definitions chapter, the officials’ rules, the physician’s rules, and each sport-specific chapter were read, because the allocation is frequently split across them. Every provision addressing (a) the referee’s authority to stop, (b) the physician’s authority to stop, to direct the referee, or to advise, and (c) entry into the ring during a round was transcribed and, for each decisive provision, checked against a second source where one was available. The District of Columbia’s regulations (19 DCMR chapters 20 through 24) could not be retrieved from the official site or its mirrors in readable form on the retrieval date; the District is carried at the article’s own reported code (referee sole arbiter) and is marked not text-coded.

Each provision was then classified on a three-tier taxonomy (Table 6). DIRECT: the physician may terminate the bout by the physician’s own act. BINDING: the physician’s determination obligates the referee to stop. ADVISORY: the physician may advise or recommend and the referee decides, or the rules state that no one other than the referee may stop. A result taxonomy that lists a physician stoppage as a recorded outcome does not by itself confer authority where an operative provision reserves stoppage to the referee (Section 6.4). Jurisdictions whose boxing and mixed martial arts provisions fell in different tiers were coded SPORT-DEPENDENT, which is the article’s “Mixed” category. Where statute and rule conflicted, both were recorded; the statute was treated as controlling for the concordance judgment, and the conflict was reported, because the rule is the text from which officials work. Where a jurisdiction’s own rule conflicted with unified rules it incorporates by reference, the jurisdiction’s own rule was treated as controlling and the tension reported. A jurisdiction’s “Yes” code was recorded as SUPPORTED if the current text places the physician in the DIRECT or BINDING tier for both sports, CONTRADICTED if the text places the physician in the ADVISORY tier for both sports or corresponds to the article’s “Mixed” category, and INDETERMINATE if the text is internally inconsistent and neither reading is dispositive. Counting the BINDING tier as supporting the code is the reading most favorable to the article; the Results’ phrase “authority to directly stop” would exclude it. Section 7.7 reports both counts.

Two classification passes were maintained for the 48 text-coded jurisdictions. The primary classification applied the written decision rule to the retrieved statutes and regulations. A separate verification review applied the same codebook to the transcribed provisions without reference to the primary assignments. Because both passes relied on the same source selection and transcriptions, full independence is not claimed; the statistics are reported as agreement rather than as independent retrieval. Percent agreement and Cohen's kappa [38,39] are reported at the jurisdiction level (four categories) and at the sport level (four tiers). Every disagreement was resolved under a pre-specified tie-break rule that assigns the physician more authority, the reading most favorable to the article's finding, and every disagreement is listed in Section 7.10. The complete record, with every transcribed provision, source, currency date, both classification passes, and the tie-break log, is published as Supplement S1 and is the record of reference for Tables 3 through 6.

7.2 The “Yes” category: findings

Table 3 reports the first-stage audit. Of the 22 jurisdictions other than Alabama, the code is SUPPORTED by current text in 12 (Arkansas, California, Kentucky, Nebraska, New Jersey, New Mexico, New York, North Dakota, Pennsylvania, South Carolina, Virginia, and Washington), with qualifications noted in the table. It is CONTRADICTED in six: four in which the referee is sole arbiter and the physician advisory in both sports (Iowa, Louisiana, Massachusetts, and Ohio), and two in which the text corresponds to the article's own “Mixed” category (Minnesota and New Hampshire). It is INDETERMINATE in one (Arizona). In three (Idaho, Illinois, and West Virginia) a statute confers authority that the commission's own rules, or the ABC Unified Rules the commission incorporates, withhold; these are recorded as supported by statute with the conflict flagged. With Alabama included, the “Yes” category contains five jurisdictions (21.7% of 23) whose current text places the physician in the advisory tier for both sports, seven (30.4%) whose assignment to the category is contradicted by text, and eleven (47.8%) in which the rule text from which officials work places the physician in the advisory tier for at least one sport or is indeterminate.

Table 3. Audit of the 23 jurisdictions the article coded as conferring physician authority to stop a bout, against current statutory and regulatory text (retrieved September 1-8, 2026). Tiers: DIRECT, physician may terminate by own act; BINDING, physician's determination obligates the referee; ADVISORY, physician advises and the referee decides, or no one other than the referee may stop.

Jurisdiction	Governing text (currency)	Boxing	Mixed martial arts	Concordance with the article's “Yes”
Alabama	Ala. Admin. Code rr. 165-X-1-.08(4)(a); 165-X-2-.08(4)(a); 165-X-3-.08(17)(a) (rev. 10/15/2022) [32]	ADVISORY: “No one other than the referee may stop a fight”	ADVISORY: same; amateur rule: physician “shall have no authority to stop a fight”	CONTRADICTED
Arizona	Ariz. Admin. Code R19-2-D601(P)(1), (P)(2), (R)(2), (G)(1) (through 6/20/2025) [42]	Referee “shall have final authority to stop a bout”; referee “may consult” physician; TKO listed when “[t]he ringside physician stops a bout”; no express grant	Same rule governs all disciplines	INDETERMINATE
Arkansas	17 CAR §§ 225-221(c)(2), 225-213(5) (updated 9/8/2026) [43]	DIRECT by exception: referee is “the only individual, other than the doctor, or a fighter's corner authorized to stop a bout”; doctor's enumerated duty is to “make a recommendation to the referee ... upon referee's request”	Same rules apply (§ 225-601)	SUPPORTED (qualified)

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Table 3 (continued)

Jurisdiction	Governing text (currency)	Boxing	Mixed martial arts	Concordance with the article's "Yes"
California	Bus. & Prof. Code § 18707; 4 CCR §§ 340, 345, 516 (through 6/27/2025) [44]	DIRECT (statute): physician "shall have the authority to stop any contest or match that is conferred upon the referee," "limited to a medically related injury and the physical condition of a contestant"	DIRECT (statute applies to any "contest or match")	SUPPORTED (medical limit)
Idaho	Idaho Code § 54-415(2); IDAPA 24.02.01.002, .609, .611.02 (eff. 7/1/2025) [45]	Statute DIRECT; rules ADVISORY (physician "will give their opinion to the referee before the referee renders a decision"); incorporated ABC rules: referee "only individual authorized to stop"	Same	SUPPORTED by statute; CONTRADICTED by rules (conflict)
Illinois	225 ILCS 105/12(c); 68 Ill. Adm. Code 1370.100(a), (i), 1370.530(b)(1), (b)(3), 1370.630(b), 1370.650(c) (through 6/27/2025) [46]	Statute BINDING ("may direct the referee to terminate"); rules ADVISORY ("sole arbiter"; physician "may recommend"; referee "shall consider"; but 1370.530(b)(1): on the physician's recommendation "the referee shall render the appropriate decision")	Statute BINDING; rules ADVISORY (referee "may consider")	SUPPORTED by statute; CONTRADICTED by rules (conflict)
Iowa	481 Iowa Admin. Code 251.3, 251.7, 251.34; 254.3(7), 254.5(6), 254.6 (IAC 7/9/2025) [47]	ADVISORY: physician "shall advise the referee"; "[t]he referee shall stop a bout when the referee deems it advisable"; physician enters "if asked by the referee"	ADVISORY: match ends when "[t]he referee stops the match"; physician enters "upon the request of the referee"	CONTRADICTED
Kentucky	201 KAR 27:011 § 16(4)(d); 27:016 §§ 10(6), 16(4)(d) (eff. 1/2/2024) [48]	BINDING: "The physician shall order the referee to pause or end a bout"	BINDING; TKO "by the referee or physician stopping the bout"	SUPPORTED (binding)
Louisiana	LAC 46:XI.123(B), 311(C), 701, 721; La. R.S. 4:70 (through 6/20/2025) [49]	ADVISORY: "The referee is the sole arbiter of a bout and is the only individual authorized to stop a contest"; physician "may advise the referee to terminate"	ADVISORY: "Technical knockout by the referee stopping the contest"; general and boxing rules imported	CONTRADICTED
Massachusetts	M.G.L. c. 147 §§ 36, 37; 523 CMR 14.11, 14.14, 15.04, 16.00 (through 6/20/2025) [50]	ADVISORY: "A referee is the sole arbiter of a bout and is the only individual authorized to stop a contest"; physician's duty is to "advise the referee or judges"	ADVISORY/SILENT: referee determines whether to stop for injury; no physician provision in 523 CMR 16.00	CONTRADICTED
Minnesota	Minn. Stat. § 341.25; Minn. R. 2201.0020, 2201.0100; 2202.0700, 2202.1200 [51]	ADVISORY: referee is "the sole arbiter"; incorporated ABC guidelines: "Final authority to stop or continue a bout rests with the referee"	DIRECT: "The referee and ringside physician are the sole arbiters of a contest ... and authorized to stop a contest"	CONTRADICTED (sport-dependent; article's "Mixed")
Nebraska	Neb. Rev. Stat. § 81-8,133; 38 Neb. Admin. Code ch. 2 § 002.12; ch. 5 §§ 002.03, 002.13 (eff. 3/21/2022) [52]	BINDING: "The referee will stop a bout if, in the judgment of either the referee or the attending physician, allowing the bout to continue will unduly jeopardize the health and safety of a contestant"	BINDING (same general rule)	SUPPORTED (binding)

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Table 3 (continued)

Jurisdiction	Governing text (currency)	Boxing	Mixed martial arts	Concordance with the article's "Yes"
New Hampshire	RSA 285:1, 285:18; Box 601.01, 701.01(ar) [53]	ADVISORY: statute: "The sole arbiter in the ring in all fighting sports ... shall be a licensed referee"; incorporated ABC rules and guidelines	DIRECT by rule: "The referee, ringside physician, a commissioner or deputy inspector and the fighter's cornermen shall be authorized to stop a fight" (tension with statute)	CONTRADICTED (sport-dependent; article's "Mixed")
New Jersey	N.J.A.C. 13:46-8.14, 8A.3, 12B.2, 24A.12 (through 6/16/2025) [54]	DIRECT: physician's "decision ... to terminate the contest shall be final and shall not be subject to change by any other official"; championship-match rule 8A.3: referee "is the sole arbiter of a match and is the only individual authorized to stop a contest"	DIRECT: "The referee and ringside physician are the sole arbiters of a bout ... and authorized to stop a contest"	SUPPORTED (rule-level tension)
New Mexico	15.6.5.13 NMAC; 15.6.20.18(C)(2) NMAC [55]	DIRECT between rounds ("may enter the ring between rounds and terminate any match"); BINDING in-round (referee "is required to stop the contest upon the recommendation of the physician"); duties rule 15.6.5.13(A)(5): physician shall "[a]dvice the referee to terminate the match"	DIRECT: "The ring doctor will inspect the fighter and stop the match if the fighter is deemed unable to continue safely"	SUPPORTED (rule-level tension)
New York	Gen. Bus. Law § 1015(7)-(8); 19 NYCRR 208.6, 211.34, 212.13 (through 6/25/2025) [56]	DIRECT (statute): "The physician shall terminate any authorized professional combative sport"; 211.34 uses advisory phrasing ("upon recommendation from the attending ringside physician")	DIRECT: referee and physician "either shall be authorized to stop a contest at any time"	SUPPORTED (rule-level tension)
North Dakota	N.D. Admin. Code 72-02.2-01.1-11(5); 72-02.2-02-10(5) (amended 10/1/2025) [57]	DIRECT: "The physician may enter the ring during a match and terminate the match"	DIRECT (identical sentence)	SUPPORTED
Ohio	Ohio Adm. Code 3773-2-02(B), 3773-2-23(E); 3773-7-05(C)(2), 3773-7-13(A)(3) (eff. 3/1/2026; 3773-2-23 eff. 11/30/2017) [58]	ADVISORY: "Referee is the sole arbitrator of a bout and is the only individual authorized to stop a contest"	ADVISORY: TKO when "[r]ingside physician advises referee to stop bout"	CONTRADICTED
Pennsylvania	5 Pa.C.S. § 704; 58 Pa. Code §§ 3.3(e), 21.11(c)(6), 29.15(b) (through 6/28/2025) [59]	DIRECT (statute: physician may "terminate a bout"); BINDING (rules: physician's decision "shall be conclusive and shall be enforced by the referee")	DIRECT: "The referee and ringside physician are the sole arbiters of a contest ... and to stop a contest"	SUPPORTED (direct by statute, binding by rule)

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Table 3 (continued)

Jurisdiction	Governing text (currency)	Boxing	Mixed martial arts	Concordance with the article's "Yes"
South Carolina	S.C. Code § 40-81-490(1); S.C. Code Regs. 20-8.13(1), 20-12.3(5), 20-27.14(3) (through 6/27/2025) [60]	BINDING: physician "may direct the referee to halt a bout"; "the referee shall be guided by the physician's advice"	BINDING by statute ("boxing" in § 40-81-20 reaches any event in which blows are struck with the arm); rule wording advisory ("[r]ingside physician advises referee to stop bout")	SUPPORTED (binding)
Virginia	18VAC120-40-342(A); 18VAC120-40-411.20(H) (through 8/16/2026) [61]	DIRECT, conditioned: physician "may terminate the bout when, after examination of the boxer and consultation with the referee, he determines that the safety of the boxer is at risk"	DIRECT: "The referee and ringside physician are the sole arbiters of a bout"	SUPPORTED
Washington	RCW 67.08.090(3); WAC 36-12-110(10), 36-14-335(9), 36-14-355(2) (eff. 1/17/2026) [62]	DIRECT (statute): event physician "shall have authority to stop any event"	DIRECT; TKO when "[r]ingside physician stops bout"	SUPPORTED
West Virginia	W. Va. Code § 29-5A-18; 177 CSR 1 §§ 27.4, 33.3; 177 CSR 2 §§ 38.2.c, 55.3 (eff. 7/1/2023) [63]	Statute DIRECT ("the physician may stop the bout"); rule ADVISORY (referee "may ... consult the examining physician on the advisability of stopping"; "the referee is the sole judge as to the ability of a boxer to continue")	BINDING in foul context ("the referee must immediately stop the match"); result label: physician "advises referee to stop bout"	SUPPORTED by statute; CONTRADICTED by boxing rule (conflict)

Note. Currency dates are those displayed by the source consulted. Quotations were transcribed from the cited sources and cross-checked against a second source where available; each is cited so that any reader can check it. The complete audit record, with every transcribed provision and source URL, is published as Supplement S1.

7.3 Jurisdictions whose text contradicts the "Yes" code

Massachusetts. The boxing rule provides: "A referee is the sole arbiter of a bout and is the only individual authorized to stop a contest" (523 CMR 15.04(1)). The statute assigns the physician the duty "to observe the physical condition of the contestants and advise the referee or judges with regard thereto" (M.G.L. c. 147, § 37) and gives the referee "full power to stop the match" (§ 36). The general rules for all unarmed combat provide that "[t]he referee shall determine whether a contest or exhibition should be stopped because of an injury to an unarmed combatant" (523 CMR 14.14) and that "[n]o persons other than the unarmed combatants and the referee may be in the ring or fenced area during a period of unarmed combat" (523 CMR 14.11(1)). The mixed martial arts chapter (523 CMR 16.00) contains no physician provision [50]. The text is current through June 2025 and unchanged since January 2017.

Louisiana. The boxing rule provides: "The referee is the sole arbiter of a bout and is the only individual authorized to stop a contest" (LAC 46:XI.311(C)). The general physician rule provides that "[t]he ringside physician may advise the referee to terminate any contest or exhibition at any time if in the opinion of such physician the health or well-being of any participant would be significantly jeopardized by the continuation of the contest or exhibition" (LAC 46:XI.123(B)). The mixed technique chapter, which governs mixed martial arts, lists among results "[t]echnical knockout by the referee stopping the contest" (LAC 46:XI.721) and imports the general and boxing rules (LAC 46:XI.701). The statute provides that the physician "shall render such advice or service as the commission requests" (La. R.S. 4:70) [49].

Ohio. The boxing rule provides: “Referee is the sole arbitrator of a bout and is the only individual authorized to stop a contest” (Ohio Adm. Code 3773-2-02(B)). The mixed martial arts rule defines a technical knockout as occurring when the “[r]eferee stops bout because contestant can no longer defend themselves” or the “[r]ingside physician advises referee to stop bout” (3773-7-13(A)(3)), and provides that after a foul the referee determines “either from their observation or that of the ringside physician” whether the bout may continue (3773-7-05(C)(2)) [58]. The physician “may enter the ring or cage ... if they feel it’s necessary to examine an injury to a contestant” (3773-2-23(E)); entry and termination are different acts.

Iowa. No provision grants the physician authority to stop. The boxing rules provide that when a contestant claims injury “the referee shall stop the bout and request that the attending physician make an examination” and that the physician “shall advise the referee” (481 Iowa Admin. Code 251.3), that “[t]he referee shall stop a bout when the referee deems it advisable because of the physical condition of one or both of the contestants” (251.34), and that no person other than the contestants and the referee may enter the ring “excepting the seconds between the rounds or the attending physician if asked by the referee to examine an injury to a contestant” (251.7). The mixed martial arts rules list “[t]he referee stops the match” among the ways a match ends, with no physician stoppage (254.6), and require the physician to “advise the referee of the severity of the injury” (254.5(6)) [47].

7.4 Jurisdictions whose text is sport-dependent

New Hampshire. The statute provides: “The sole arbiter in the ring in all fighting sports, bouts or competitions shall be a licensed referee, who shall govern the bout or competition in accordance with rules adopted by the commission” (RSA 285:18), and “fighting sports” is defined to include professional boxing and mixed martial arts (RSA 285:1, III). The professional boxing rule incorporates the ABC Unified Rules of Boxing and the 2005 Regulatory Guidelines (Box 601.01), under which the referee is “the only individual authorized to stop a contest.” The professional mixed martial arts rule, in tension with the statute, provides that “[t]he referee, ringside physician, a commissioner or deputy inspector and the fighter’s cornermen shall be authorized to stop a fight to protect the safety of a fighter” (Box 701.01(ar)) [53]. On the article’s scheme this is “Mixed,” not “Yes.”

Minnesota. The boxing rules define the referee as “the sole arbiter, umpire, judge, or adjudicator of a boxing contest” (Minn. R. 2201.0020, subp. 13) and incorporate the ABC’s 2005 Regulatory Guidelines, under which “[f]inal authority to stop or continue a bout rests with the referee” (Minn. R. 2201.0100); the statute incorporates the Unified Rules of Boxing (Minn. Stat. § 341.25(d)). The mixed martial arts rules provide the opposite: “The referee and ringside physician are the sole arbiters of a contest and are the only individuals authorized to enter the fighting area at any time during competition and authorized to stop a contest” (Minn. R. 2202.0700) [51]. This is “Mixed.”

7.5 An indeterminate jurisdiction

Arizona. The general unarmed combat rule provides that “[t]he referee shall have final authority to stop a bout when in the referee’s opinion a contestant is unfit to continue or otherwise cannot compete” and that in the case of a cut or other injury “the referee may consult with the ringside physician before making a decision” (Ariz. Admin. Code R19-2-D601(P)(1), (P)(2)), yet defines a technical knockout as occurring when “[t]he referee stops a bout” or “[t]he ringside physician stops a bout” (R19-2-D601(R) (2)) and permits the physician to enter the enclosure “when it is deemed medically necessary by the physician” (R19-2-D601(G)(1)) [42]. No provision grants or denies the physician independent authority in terms. Unlike Alabama’s rules, Arizona’s contain no provision that no one other than the referee may stop a bout, so the result taxonomy cannot be subordinated to an operative provision as it is in Section 6.4. The code is unverifiable from the text.

7.6 Statute-rule conflicts

Idaho. The statute provides that “[t]he physician present at the contest or exhibition shall have the authority to stop any contest or exhibition when in the physician’s opinion it would be dangerous for a combatant to continue” (Idaho Code § 54-415(2)). The Commission’s rules provide that when the referee calls the physician in, “[t]he physician will give their opinion to the referee before the referee renders a decision in the matter” (IDAPA 24.02.01.611.02), that “[n]o persons other than the combatants and the referee may be in the ring during the progress of a round” (IDAPA 24.02.01.609), and incorporate by reference the ABC Unified Rules of Boxing and of Mixed Martial Arts, each of which provides that the referee “is the only individual authorized to stop a contest” (IDAPA 24.02.01.002) [45].

Illinois. The statute provides that the physician “may, at any time during the professional or amateur bout, stop the professional or amateur bout to examine a professional or amateur contestant and may direct the referee to terminate the bout” (225 ILCS 105/12(c)). The Division’s rules provide that “[t]he referee shall be the chief official and sole arbiter during all bouts” (68 Ill. Adm. Code 1370.100(a)), that the physician “may recommend the bout be stopped” (1370.100(i)), that in boxing “[t]he physician may recommend that the referee stop the bout, in which case the referee shall render the appropriate decision” (1370.530(b)(1)) and “[a] referee shall consider the decision of the physician” (1370.530(b)(3)), that in mixed martial arts “[a] referee may consider the decision of the physician” (1370.630(b)(3)), and that a technical knockout is recorded when the “[p]hysician advises referee to stop the bout and the referee does so” (1370.650(c)(2)) [46]. The boxing rule in 1370.530(b)(1) can be read as binding the referee once the physician recommends a stoppage; on either reading, the rules and the statute are worded differently.

West Virginia. The boxing statute provides that “[w]henever a participant, in the opinion of the physician, is unable to continue in a boxing match, the physician may stop the bout” (W. Va. Code § 29-5A-18). The boxing rule provides that the referee “may temporarily stop a contest and consult the examining physician on the advisability of stopping the contest in case a contestant appears injured” and that, apart from a second’s signal, “the referee is the sole judge as to the ability of a boxer to continue” (177 CSR 1, §§ 33.3, 27.4). The mixed martial arts rule is binding in the foul context: “If deemed not fit to continue by the referee or cage side physician, the referee must immediately stop the match” (177 CSR 2, § 38.2.c), with the result recorded when the “[c]age side physician advises referee to stop bout” (§ 55.3.b) [63].

In each of these three jurisdictions, the answer a commission official gives by telephone depends on whether the official is describing the statute or the rulebook. The article’s instrument cannot tell which it recorded.

7.7 Concordant jurisdictions, and the tier they occupy

Twelve jurisdictions’ codes are supported by current text. Counted on the higher tier that any controlling provision supports, eight confer direct authority in both sports, subject to the rule-level qualifications noted in Table 3: New York (“The physician shall terminate any authorized professional combative sport if in the opinion of such physician any professional has received severe punishment or is in danger of serious physical injury,” N.Y. Gen. Bus. Law § 1015(7)) [56]; New Jersey (“the decision of the ringside physician to terminate the contest shall be final and shall not be subject to change by any other official,” N.J.A.C. 13:46-8.14(c); “[t]he referee and ringside physician are the sole arbiters of a bout,” 13:46-24A.12)

[54]; Pennsylvania (the physician “may stop any contest or exhibition at any time to examine a participant and to terminate a bout,” 5 Pa.C.S. § 704) [59]; Virginia (18VAC120-40-342(A); 18VAC120-40-411.20(H)) [61]; North Dakota (“The physician may enter the ring during a match and terminate the match if the physician determines the contestant has or may have a serious physical injury,” N.D. Admin. Code 72-02.2-01.1-11(5); 72-02.2-02-10(5)) [57]; Washington (“The event physician present at any contest shall have authority to stop any event when in the event

physician's opinion it would be dangerous to a contestant to continue," RCW 67.08.090(3)) [62]; California ("A physician in attendance at any contest or match pursuant to Section 18705 shall have the authority to stop any contest or match that is conferred upon the referee," Cal. Bus. & Prof. Code § 18707) [44]; and New Mexico (15.6.5.13(B) NMAC; 15.6.20.18(C)(2) NMAC) [55]. Arkansas is supported by an express exception in the referee rule, which makes the referee "the sole arbiter of a bout and ... the only individual, other than the doctor, or a fighter's corner authorized to stop a bout" (17 CAR § 225-221(c)(2)), although the doctor's enumerated duty is to "make a recommendation to the referee as to a contestant's fitness to continue upon referee's request for such opinion" (§ 225-213(5)) [43].

In three, the authority is binding, short of direct: Kentucky ("The physician shall order the referee to pause or end a bout or exhibition if necessary to prevent serious physical injury to a contestant," 201 KAR 27:011 § 16(4)(d); 27:016 § 16(4)(d)) [48]; South Carolina (the physician "may direct the referee to halt a bout if in his opinion the contestant is unable to continue," S.C. Code § 40-81-490(1); "the referee shall be guided by the physician's advice," S.C. Code Regs. 20-8.13(1); and, for mixed martial arts, "[r]ingside physician advises referee to stop bout," 20-27.14(3)(b)) [60]; and Nebraska ("The referee will stop a bout if, in the judgment of either the referee or the attending physician, allowing the bout to continue will unduly jeopardize the health and safety of a contestant," 38 Neb. Admin. Code ch. 2, § 002.12) [52]. In these jurisdictions the physician's judgment obligates the referee to stop the bout, and the referee executes the stoppage.

Two counts are therefore reported. On the higher tier, direct authority in both sports holds for eight of the twenty-three, and for a ninth by exception. On the rule text from which officials work, two of the eight fall out: Pennsylvania's rules make the physician's decision "conclusive" and "enforced by the referee," which is binding rather than direct, and New Mexico's boxing rule binds the referee in-round ("is required to stop the contest upon the recommendation of the physician") and confers direct authority only between rounds, so that the count of jurisdictions whose rules confer direct authority in both sports throughout the bout is six, with a seventh by exception. The article's Results describe all 23 as jurisdictions in which "physicians have the authority to directly stop any fight." On the text, that description holds for eight or nine on the most favorable reading, and for six or seven on the rulebook.

7.8 The excluded jurisdictions and a check on the "No" category

Vermont's and Delaware's provisions are quoted in Section 4.3. On the taxonomy, Vermont is ADVISORY for boxing and reserves the arbiter's role to the referee for mixed martial arts; Delaware is BINDING for professional mixed martial arts and, for professional boxing, adopts "the rules and regulations for the jurisdiction of the approved designated agent" (24 Del. Admin. Code 8800, pt. A, § 1.1), which makes the allocation event-dependent [27]. Neither belongs in a "no commission" category on the article's stated objective.

Nevada, coded "No," was examined in the first stage because it is the jurisdiction most often cited for the sole-arbiter model. The regulation historically cited for that model, NAC 467.682, was repealed, with NAC 467.718, effective December 2022. The current Nevada Rules of Unarmed Combat provide that "[t]he referee is the sole arbiter of a bout" (NRUC 4.140(1)), that "[t]he referee shall determine whether a contest or exhibition should be stopped because of an injury to an unarmed combatant" and "may consult with a ringside physician" in doing so (NRUC 4.220), and assign the physician no stoppage authority (NRUC 4.080) [64]. The "No" code is supported.

7.9 The “No” and “Mixed” categories

Table 4 reports the second-stage audit of the 22 remaining states and the District of Columbia. The article places 21 jurisdictions, including the District and Nevada, in the referee-sole-arbiter category and 3 in the sport-dependent category, and identifies the 3 only by color on the map. The text supports a different distribution. Five of the 22 states confer on the physician authority that binds the referee, or authority to terminate directly, in both sports. In Kansas, the general referee rule and the professional boxing rule provide that “[t]he final authority to determine whether to continue the bout shall rest with the physician” and that “[t]he physician may order the referee to stop the bout” (K.A.R. 128-4-7; 128-6-1) [65]; the third author is a Commissioner of that jurisdiction. In Maine, the physician rules for boxing and for mixed martial arts provide that “[a]n attending physician shall direct the referee to terminate any bout if in the physician’s opinion a boxer has received severe physical injury or is in danger of serious physical injury,” and, in the same terms, “any match” (Code Me. R. 99-650, pt. 2, ch. 9, § 3; pt. 1, ch. 9, § 3) [66]. In Maryland, the senior physician may “[t]erminate a contest at any time after determining that serious injury has occurred or is immediately likely to occur to either contestant” (COMAR 09.14.04.05), and the mixed martial arts referee rule makes the referee, “[o]ther than the senior ringside physician, the only individual authorized to ... [s]top a contest” (COMAR 09.14.16.08) [67]. In Michigan, the statute provides for every unarmed combat contest that if, in the physician’s opinion, “the health or safety of a contestant requires the termination of the contest in which he or she is competing, the physician shall notify the referee and the referee shall terminate the contest” (MCL 338.3657(3)) [68]. In Wyoming, the referee rule for all bouts provides both that “[t]he referee is the sole arbiter of a bout and is the only individual authorized to stop a bout” and that “[t]he physician may order the referee to stop the bout and time shall be called,” with “[t]he final authority to determine whether to continue the bout” resting with the physician (Wyo. Combat Sports Comm’n R. ch. 11, § 4) [69]. Whichever of the article’s two categories these five occupy, the code is contradicted.

Four states are sport-dependent. Georgia’s boxing rule makes the referee “the only person empowered to stop a fight during or between rounds” (Ga. Comp. R. & Regs. r. 85-1-.07), and its professional mixed martial arts rule makes “[t]he referee and ringside physician ... the sole arbiters of a bout and ... the only individuals ... authorized to stop a contest” (r. 85-3-.12) [70]. Texas’s boxing rules confer no stoppage authority on the physician (16 TAC §§ 61.41, 61.46, 61.107), and its mixed martial arts rule provides that “[e]ither the physician or referee can stop the contest” (§ 61.111) [71]. Missouri’s boxing rule provides that a physician who decides a contestant should not continue “should so advise the referee” and that “[f]inal authority rests with the referee” (20 CSR 2040-5.040), while its mixed martial arts rule provides that “[t]he physician may order the referee to stop the bout” (20 CSR 2040-8.180) [72]. These three fit the article’s definition of the “Mixed” category; whether they are the three the map so colors cannot be determined from the article. Utah is sport-dependent in the direction the article’s definition does not admit: its boxing rule provides that “[i]f the physician recommends that the contest should not continue, the referee shall terminate the contest” (Utah Admin. Code R457-1-605(7)), while for mixed martial arts it incorporates the Unified Rules of Mixed Martial Arts approved August 1, 2019, under which the referee is the only individual authorized to stop (R457-1-203) [73].

Thirteen states, and Nevada, place the physician in the advisory tier for both sports. Some do so in terms: Florida (the physician “shall advise the referee that the match should be terminated. In this event, however, the referee is the sole arbiter of the match, and, as such, the referee is the only individual authorized to stop a match,” Fla. Admin. Code r. 61K1-3.004) [74]; Indiana (the physician “shall advise the referee,” Ind. Code § 4-33-22-27(a); the referee is the “sole arbiter of a bout” and “the only individual authorized to stop a bout,” 68 IAC 24-4-8) [75]; Mississippi (“Only the referee can stop a bout, and he/she may consult with the ringside physician,” Miss. Admin. Code tit. 30, pt. 301, r. 1.11(the reviewer)) [76]; North Carolina (the physician “shall advise the referee that the match should be terminated,” 14B NCAC 10 .0412) [77]; Oklahoma (“The referee is the sole arbiter of a bout and is the only indi-

vidual authorized to stop a bout,” OAC 92:10-3-6(a); the physician is “ready to advise the referee,” 92:10-3-10) [78]; Tennessee (“the referee shall be the sole arbiter of the professional contest”; “the ringside physician shall advise the referee to terminate or continue the contest,” Tenn. Code Ann. § 68-115-404) [79]; Wisconsin (“The referee shall be the sole arbiter of the contest and may consult a physician,” Wis. Stat. § 444.12) [80]; Hawaii (physicians “shall observe the physical condition of the contestants and advise the referee,” Haw. Rev. Stat. § 440-21; “[t]he referee shall stop the contest,” §§ 440-19(e), 440E-17(e)) [81]; and South Dakota (“The referee is the sole arbiter of a bout and is the only individual authorized to stop a bout,” S.D. Admin. R. 20:81:04:04) [82]. Others do so by incorporating the Unified Rules, which they do not override: Colorado (mixed martial arts, 4 CCR 740-1, r. 1.10; boxing rule 1.8(M) gives the referee the power to stop and admits the physician “if asked by the referee”) [83], Connecticut (“The referee shall be the sole arbitrator of the bout and is the only official that may stop a bout at any stage,” Regs. Conn. State Agencies § 29-143j-36a(c), with the Unified Rules adopted by § 29-143j-2a) [84], Oregon (OAR 230-080-0111; 230-140-0390) [85], and Rhode Island (230-RICR-30-30-1, § 1.3; 230-RICR-30-30-6, § 6.3) [86]. Two of these carry rule-level tensions that the tie-break rule did not reach: Connecticut’s referee rule lists, among the circumstances in which the referee may stop, that “[t]he combat area physician has determined after examination that the bout be stopped,” and its mixed martial arts result rule records a technical knockout “[w]hen the combat area physician ends the bout”; Tennessee’s boxing rule provides that “[t]he referee shall promptly terminate a bout and declare a ‘technical knockout’ if ... [h]e or she is advised to do so by the ringside physician” (Tenn. Comp. R. & Regs. 0145-02-14), a rule that binds the referee although the statute makes the referee sole arbiter. The District of Columbia was not text-coded (Section 7.1).

Because the article’s cell codes for this pool are known only in aggregate, the discordance is bounded rather than counted. The five physician-authority states are discordant with both of the article’s categories, and Utah is discordant with both because its sport-dependence runs the wrong way; at least six of the 24 cells are therefore misclassified. If the three states the map colors “Mixed” are Georgia, Missouri, and Texas, the discordance is six; if they are three of the referee-only states, Georgia, Missouri, and Texas are misclassified as well and the discordance is twelve. The article’s classification of this pool is wrong in between 25.0% and 50.0% of its cells.

Table 4. Audit of the 22 states and the District of Columbia that the article coded as referee-sole-arbiter or sport-dependent, against current statutory and regulatory text (retrieved September 22, 2026). Tiers as in Table 3; the category is the text-based category of Section 7.1.

Jurisdiction	Governing text (currency)	Boxing	Mixed martial arts	Text-based category
Colorado	4 CCR 740-1, rr. 1.8(D), (M), 1.10, 1.15 (current Secretary of State compilation; incorporated Unified Rules of MMA eff. 11/1/2024) [83]	ADVISORY: “The contest may be stopped at any time by the referee”; “The licensed physician may enter the ring if asked by the referee”	ADVISORY: Unified Rules of MMA adopted by reference; physician enters “if asked by the referee”	REFEREE
Connecticut	Regs. Conn. State Agencies §§ 29-143j-2a, 36a, 39a, 68a, 73a (as filed with the Secretary of the State; § 2a current through 6/16/2025) [84]	ADVISORY: “The referee shall be the sole arbitrator of the bout and is the only official that may stop a bout at any stage”; circumstance (5): “The combat area physician has determined after examination that the bout be stopped”; physician “may consult with the referee in order to stop any bout”	ADVISORY: same sections; TKO “[w]hen the combat area physician ends the bout” (result taxonomy)	REFEREE (rule-level tension)

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Table 4 (continued)

Jurisdiction	Governing text (currency)	Boxing	Mixed martial arts	Text-based category
Florida	Fla. Admin. Code rr. 61K1-3.004 (eff. 12/5/2024), 61K1-3.012; Fla. Stat. § 548.046 (2025) [74]	ADVISORY: physician “shall advise the referee that the match should be terminated. In this event, however, the referee is the sole arbiter of the match, and ... the only individual authorized to stop a match”	ADVISORY: chapter 61K1-3 governs boxing, kickboxing, and mixed martial arts	REFEREE
Georgia	Ga. Comp. R. & Regs. rr. 85-1-.07 (eff. 6/9/2024), 85-3-.12 (eff. 7/1/2007) [70]	ADVISORY: “The referee is the only person empowered to stop a fight during or between rounds”; physician evaluates cuts at the referee’s request	DIRECT: “The referee and ringside physician are the sole arbiters of a bout and are the only individuals authorized ... to stop a contest”	SPORT-DEPENDENT
Hawaii	Haw. Rev. Stat. §§ 440-19, 440-21, 440E-16, 440E-17 (2025); Haw. Admin. Rules §§ 16-74-109, -117, -118 [81]	ADVISORY: physicians “shall observe the physical condition of the contestants and advise the referee”; “The referee shall stop the contest when ...”	ADVISORY: “The referee shall stop the contest when, in the referee’s judgment ...”; physicians observe, certify, and examine	REFEREE
Indiana	Ind. Code § 4-33-22-27(a); 68 IAC 24-3-35, 24-4-8, 24-5-8 (through 6/25/2025) [75]	ADVISORY: physician “shall advise the referee”; referee is “sole arbiter of a bout” and “the only individual authorized to stop a bout”	ADVISORY: physician “shall advise the referee”; referee calls time-out to consult or to allow examination	REFEREE
Kansas	K.A.R. 128-4-7, 128-6-1 (amended 12/20/2013), 128-6-4 (amended 4/21/2017) [65]	BINDING: “The final authority to determine whether to continue the bout shall rest with the physician”; “The physician may order the referee to stop the bout”	BINDING: general referee rule 128-4-7 applies to all bouts; physician “shall determine whether the contestant who has been fouled can continue”	PHYSICIAN
Maine	Code Me. R. 99-650, pt. 2, chs. 5, 9; pt. 1, chs. 5, 9 (through 6/25/2025) [66]	BINDING: “An attending physician shall direct the referee to terminate any bout”; referee rule: “exclusive and final authority to stop or continue the bout” (tension)	BINDING: “An attending physician shall direct the referee to terminate any match”	PHYSICIAN (rule-level tension)
Maryland	COMAR 09.14.04.05, 09.14.07.03, 09.14.07.04, 09.14.16.01, 09.14.16.08 (current) [67]	DIRECT: senior physician may “Terminate a contest at any time after determining that serious injury has occurred or is immediately likely to occur”	DIRECT: referee is, “[o]ther than the senior ringside physician, the only individual authorized to ... [s]top a contest”	PHYSICIAN
Michigan	MCL 338.3657(3); Mich. Admin. Code R 339.219, 339.223, 339.223a (through 6/15/2025) [68]	BINDING (statute and rule): “the physician shall notify the referee and the referee shall terminate the contest”; “If the physician recommends that the contestant should not continue, then the referee shall order the contest to end”	BINDING (statute); rule R 339.219: referee “sole arbiter”; R 339.223a silent on the recommendation	PHYSICIAN (statute; rule-level tension)
Mississippi	Miss. Admin. Code tit. 30, pt. 301, rr. 1.11(I), 2.1, 4.5(J) (through 6/12/2025) [76]	ADVISORY: “Only the referee can stop a bout, and he/she may consult with the ringside physician”	ADVISORY: “The referee is the sole arbiter of a fight and is the only individual authorized to stop a contest”	REFEREE

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Table 4 (continued)

Jurisdiction	Governing text (currency)	Boxing	Mixed martial arts	Text-based category
Missouri	20 CSR 2040-4.030, -4.040, -5.040 (eff. 10/30/2024), -8.180 (through 6/16/2025) [72]	ADVISORY: physician “should so advise the referee”; “Final authority rests with the referee”	BINDING: “The physician may order the referee to stop the bout”	SPORT-DEPENDENT
North Carolina	14B NCAC 10 .0406 (amended 1/9/2018), .0412 (through 6/16/2025); N.C. Gen. Stat. § 143-651 [77]	ADVISORY: physician “shall advise the referee that the match should be terminated”; referee may terminate	ADVISORY: same rules; “match” includes mixed martial arts	REFEREE
Oklahoma	OAC 92:10-3-6, 92:10-3-10, 92:10-5-15, 92:10-11-1, -11-8 (official compilation; -3-10 through 6/16/2025) [78]	ADVISORY: “The referee is the sole arbiter of a bout and is the only individual authorized to stop a bout”; physician “ready to advise the referee”	ADVISORY: § 92:10-3-6 excepted for MMA; physician-advises rule applies; TKO “by the referee stopping the contest”	REFEREE
Oregon	OAR 230-080-0111, -0530, -0660; 230-140-0390 (through 6/1/2025) [85]	ADVISORY: Unified Rules of Boxing adopted; “The referee assigned to an event has the power to stop a bout at any stage”	ADVISORY: “the 2019 version of ABC’s Unified Rules of MMA” adopted “notwithstanding contrary provision”	REFEREE
Rhode Island	230-RICR-30-30-1, §§ 1.3, 1.9(E); 230-RICR-30-30-6, §§ 6.3(A), 6.12(F) (eff. 1/4/2022) [86]	ADVISORY: “ABC Unified Boxing Rules” incorporated; referee “may ... request the Physician to examine”	ADVISORY: “ABC Unified Rules of MMA” incorporated	REFEREE
South Dakota	S.D. Admin. R. 20:81:04:04 (eff. 7/28/2014); 20:81:05:21 (eff. 12/18/2017) [82]	ADVISORY: “The referee is the sole arbiter of a bout and is the only individual authorized to stop a bout”	ADVISORY: Unified Rules of Mixed Martial Arts “apply to all mixed martial arts bouts”	REFEREE
Tennessee	Tenn. Code Ann. § 68-115-404 (2024); Tenn. Comp. R. & Regs. 0145-02-.10, -.14; 0145-03-.03, -.11 (through 6/26/2025) [79]	ADVISORY (statute): “the referee shall be the sole arbiter”; physician “shall advise the referee to terminate or continue”; rule BINDING: referee “shall promptly terminate a bout ... if ... advised to do so by the ringside physician”	ADVISORY: referee may “[s]top a contest and consult with the ringside physician”; result taxonomy lists “Doctor Stoppage”	REFEREE (statute; boxing rule conflict)
Texas	16 TAC §§ 61.41, 61.46, 61.107, 61.111 (through 6/27/2025); Tex. Occ. Code ch. 2052 [71]	ADVISORY: referee may stop; physician’s duties are examination and post-bout recommendation; no grant	DIRECT: “Either the physician or referee can stop the contest”	SPORT-DEPENDENT
Utah	Utah Admin. Code R457-1-203, -515, -516, -605(7), -801 (eff. 8/18/2023, amended 2/20/2024; through 6/15/2025) [73]	BINDING: “If the physician recommends that the contest should not continue, the referee shall terminate the contest” (incorporated Unified Rules of Boxing reserve stoppage to the referee)	ADVISORY: “Unified Rules of Mixed Martial Arts, approved August 1, 2019” incorporated	SPORT-DEPENDENT (boxing physician, MMA referee)

continued on next page

Table 4 (continued)

Jurisdiction	Governing text (currency)	Boxing	Mixed martial arts	Text-based category
Wisconsin	Wis. Stat. § 444.12 (2025); Wis. Admin. Code SPS 192.20, 192.21 (through 5/27/2025) [80]	ADVISORY: “The referee shall be the sole arbiter of the contest and may consult a physician”; “The referee is the only official authorized to stop a bout”	ADVISORY: same statute and rules	REFEREE
Wyoming	Wyo. Combat Sports Comm’n R. ch. 11, § 4; ch. 17, § 1 (through 6/13/2025) [69]	BINDING: “The physician may order the referee to stop the bout”; “The final authority to determine whether to continue the bout shall rest with the physician”; also “The referee is the sole arbiter of a bout” (tension)	BINDING: ch. 11, § 4 applies to all bouts	PHYSICIAN (rule-level tension)
District of Columbia	D.C. Code §§ 3-601 to 3-610; 19 DCMR chs. 20-24 (not retrievable in readable form on September 22, 2026) [87]	Not text-coded; article reports referee sole arbiter	Not text-coded	NOT CODED (article: referee)

Note. Currency dates are those displayed by the source consulted. Quotations were transcribed from the cited sources; each is cited so that any reader can check it. Nevada, audited in the first stage, is reported in Section 7.8.

7.10 Agreement between the two classification passes

The primary classification and verification review agreed on 46 of the 48 text-coded jurisdictions (95.8%; Cohen’s kappa 0.93) at the category level, and on 93 of the 96 sport-level tiers (96.9%; kappa 0.95). The two disagreements were Arizona and New Hampshire. For Arizona, the primary classification recorded both sports as INDETERMINATE and the verification review recorded both as ADVISORY, reading the referee’s “final authority to stop” as an operative provision that subordinates the result taxonomy; under the tie-break rule the cell takes the reading more favorable to the article’s “Yes” code, INDETERMINATE. For New Hampshire, the primary classification recorded mixed martial arts as DIRECT on the commission’s rule and the verification review classified the provision as ADVISORY on the ground that the statute’s sole-arbiter clause controls; under the tie-break rule the cell takes the reading with more physician authority, DIRECT, and the jurisdiction remains SPORT-DEPENDENT. Both resolutions leave the article’s cell in the category assigned by the primary classification. The verification review also flagged, without disagreeing on the tier, the rule-level tensions in Connecticut, Maine, Michigan, and Wyoming and the statute-rule conflict in Tennessee that Table 4 records.

7.11 Corrected distributions

Table 5 reports the distribution under successive corrections. Correcting Alabama alone (row 2) equalizes the modal categories. Correcting the “Yes” category on its text while retaining the article’s “No” and “Mixed” codes (row 3) makes the referee category modal by ten, 26 against 16; that row is the result an audit confined to the physician category would report, and it is not the result the census supports. On the full census, with the statute controlling where statute and rule conflict (row 4), physician authority in both sports, direct or binding, exists in 20 jurisdictions and the referee alone in 20, with 6 sport-dependent and Arizona indeterminate; the District of Columbia is

counted as the article reports it. Coded on the rule text from which officials work (row 5), with Arizona, Idaho, and Illinois advisory, West Virginia, Michigan, and Tennessee sport-dependent, and Utah advisory under its incorporated rules, the distribution is 16, 23, and 8. Adding Vermont and Delaware (row 6) yields 20, 21, 6, and 2 on 49. Under no coding does the article's ordering, or its counts, reappear, and under no coding does either allocation command a majority. Figure 1 maps the tiers by sport.

7.12 The error rate and the map

Among the 23 cells in the “Yes” category, five are contradicted by text under the most conservative reading (21.7%) and seven under the article's own three-category scheme (30.4%), with an eighth unverifiable. Among the 24 cells in the “No” and “Mixed” pool, between six and twelve are contradicted (25.0% to 50.0%), with the District of Columbia not text-coded. Among the four “no commission” cells, two are coverage errors (50%). Across the enumeration of 47, between 13 and 19 cells are misclassified (27.7% to 40.4%), and the errors run in both directions: five jurisdictions were placed in the physician category whose text reserves stoppage to the referee, and five were placed outside it whose text gives the physician's determination binding or direct effect. On the text-based coding, of the 49 states shown on the map at page 7, which omits Hawaii, at least 15 and at most 21 are colored incorrectly (30.6% to 42.9%): Alabama, Iowa, Louisiana, Massachusetts, and Ohio (“Yes” to “No”); Minnesota and New Hampshire (“Yes” to “Mixed”); Kansas, Maine, Maryland, Michigan, and Wyoming (“No” or “Mixed” to “Yes”); Utah (“No” or “Mixed” to a category the map does not have); Delaware and Vermont (“No commission” to a coded category); and, depending on which three states the map colors “Mixed,” up to six more among Georgia, Missouri, Texas, and the referee-only states. The map is the article's only disaggregated output, and it is wrong in roughly one cell in three.

8 Construct validity: what “authority to stop” means

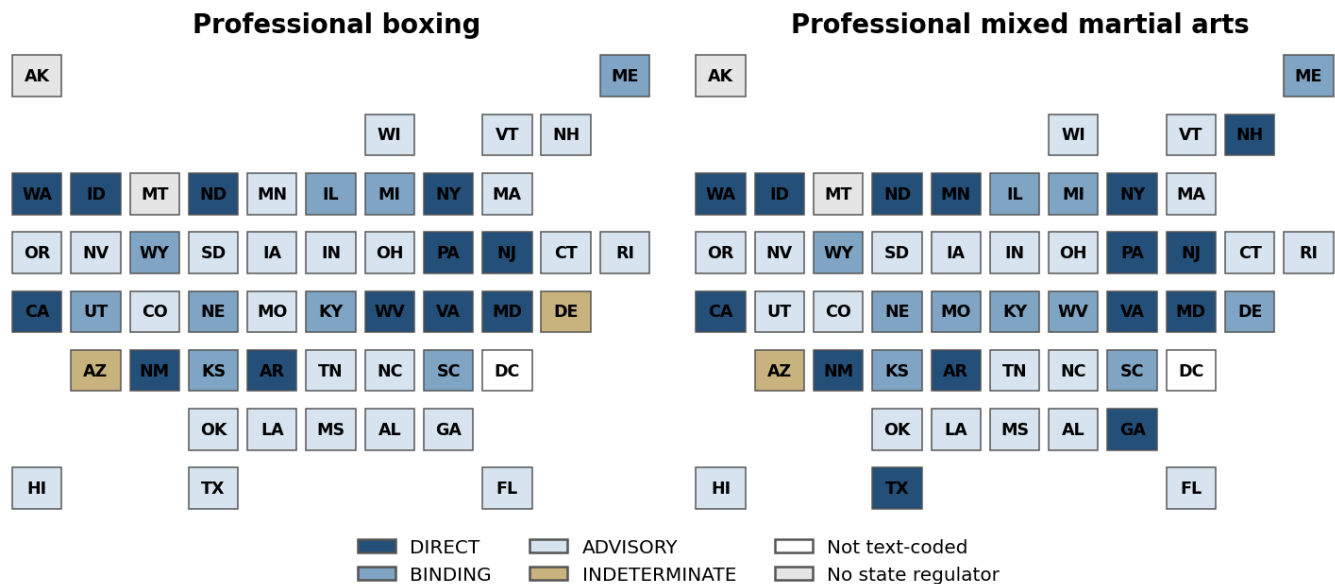
8.1 Three allocations, not two

The article's binary (physician may stop; referee is sole arbiter) collapses at least three regulatory allocations that differ in their operation and in their incentive effects (Table 6). Under a direct allocation (New York, Washington, California, North Dakota, Maryland, and Pennsylvania by statute), the physician terminates the bout by the physician's own act, and in some jurisdictions may enter the ring to do so. Under a binding allocation (Kentucky, South Carolina, Nebraska, Kansas, Maine, Michigan, Wyoming, Delaware, Pennsylvania by rule, and Illinois by statute), the physician's determination is conclusive and the referee must execute it. Under an advisory allocation (Alabama, Massachusetts, Louisiana, Ohio, Iowa, Nevada, Florida, Wisconsin, and the ABC Unified Rules), the physician observes, examines on request or by signal, and advises, and the referee decides. A fourth locus of authority, the commission's power to halt an event or a bout for regulatory reasons (Alabama's Chief Inspector; Delaware's Division; Louisiana's commission; the Illinois Department; Utah's designated Commission member; Florida's commission representative, who cancels a match on the physician's pre-bout determination of unfitness), is separate from all three and is the most plausible referent of the Methods' phrase “ultimate authority.”

Table 5. Distribution of jurisdictions by allocation of stoppage authority under successive text-based corrections. “Physician authority” is the DIRECT or BINDING tier in both sports; “Referee” is the ADVISORY tier in both sports.

Coding	Physician authority	Referee sole arbiter	Sport-dependent	Indeterminate
1. As reported by the article (n = 47)	23 (48.94%)	21 (44.68%)	3 (6.38%)	—
2. Alabama reclassified (Section 6) (n = 47)	22 (46.81%)	22 (46.81%)	3 (6.38%)	—
3. “Yes” category corrected on text (Sections 7.3-7.6); article’s “No” and “Mixed” codes retained; Arizona left in the article’s category (n = 47)	16 (34.04%)	26 (55.32%)	5 (10.64%)	—
4. Full census, statute controlling; District of Columbia as reported (n = 47)	20 (42.55%)	20 (42.55%)	6 (12.77%)	1 (2.13%)
5. Full census, coded on rule text (Arizona, Idaho, Illinois, and Utah advisory; West Virginia, Michigan, and Tennessee sport-dependent) (n = 47)	16 (34.04%)	23 (48.94%)	8 (17.02%)	0
6. Full census, statute controlling, Vermont and Delaware added (n = 49)	20 (40.82%)	21 (42.86%)	6 (12.24%)	2 (4.08%)

Note. Rows 4 through 6 rest on the provisions quoted in Tables 3 and 4 and in Supplement S1. In row 4, direct authority in both sports, the construct the article’s Results claim for all 23 “Yes” jurisdictions, holds in 11 of 47 (23.40%): Arkansas (by exception), California, Idaho (statute), Maryland, New Jersey, New Mexico, New York, North Dakota, Pennsylvania (statute), Virginia, and Washington. If Illinois’s boxing rule is read as binding, Illinois moves to the sport-dependent category in row 5, which becomes 16, 22, and 9, and the ordering is unchanged.

**Figure 1.** Current text-based allocation of authority by sport. DIRECT = physician may terminate by own act; BINDING = physician determination obligates the referee; ADVISORY = physician advises and referee decides.

The distinction between binding and direct allocations has practical consequences. Under a binding allocation the referee remains the visible decision-maker and the physician’s determination is channeled through the official already in the ring; under a direct allocation two persons may end the bout, which raises the coordination and responsibility problems examined in Section 9.8. The article’s Results describe all 23 “Yes” jurisdictions as ones in which “physicians have the authority to directly stop any fight.” Section 7.7 shows that the description holds, on the text, for eight or nine of those 23, and Section 7.11 shows that it holds for 11 of the 47.

Table 6. A three-tier taxonomy of the ringside physician's in-bout authority, with exemplar text from the audited jurisdictions.

Tier	Definition	Exemplar text	Audited jurisdictions (both sports unless noted)
DIRECT	The physician may terminate the bout by the physician's own act, with or without entering the ring.	"The physician shall terminate any authorized professional combative sport if in the opinion of such physician any professional has received severe punishment or is in danger of serious physical injury." (N.Y. Gen. Bus. Law § 1015(7))	New York; New Jersey; Pennsylvania (statute); Virginia; North Dakota; Washington; California; New Mexico; Maryland; Arkansas (by exception); Minnesota, New Hampshire, Georgia, and Texas (MMA only); Idaho and West Virginia (statute only)
BINDING	The physician's determination obligates the referee to stop; the referee executes the physician's decision.	"The physician shall order the referee to pause or end a bout or exhibition if necessary to prevent serious physical injury to a contestant." (201 KAR 27:011 § 16(4)(d))	Kentucky; South Carolina; Nebraska; Kansas; Maine; Michigan; Wyoming; Pennsylvania (rules); New Mexico (in-round); Illinois (statute); West Virginia (MMA rule); Missouri (MMA); Utah and Tennessee (boxing rule); Delaware (MMA; excluded by the article)
ADVISORY	The physician observes, examines on request or by signal, and advises; the referee decides, or the rules provide that no one other than the referee may stop.	"A physician may enter the ring and advise the referee but shall have no authority to stop a fight." (Ala. Admin. Code r. 165-X-3-.08(17)(a))	Alabama; Massachusetts; Louisiana; Ohio; Iowa; Nevada; Colorado; Connecticut; Florida; Hawaii; Indiana; Mississippi; North Carolina; Oklahoma; Oregon; Rhode Island; South Dakota; Tennessee (statute); Wisconsin; Vermont (excluded by the article); Minnesota, New Hampshire, Georgia, Texas, and Missouri (boxing); Utah (MMA); Idaho, Illinois, and West Virginia (rules); Arizona (referee "final authority")

Note. A fourth locus of authority, the commission's power to halt an event or bout for regulatory reasons, is distinct from all three tiers and is not an allocation of officiating authority.

8.2 The national body's documents are not uniform

The ABC's own instruments embed all three tiers. The Unified Rules of Boxing and of Mixed Martial Arts reserve stoppage to the referee [2,3]. The Unified Rules of Professional Kickboxing and of Professional Muay Thai provide that "[t]he referee and/or the ringside physician are the only individuals authorized to stop the contest, as determined by the presiding commission" [88,89]. The Bare-Knuckle Fighting Unified Rules adopted in August 2025 provide that the referee "is the only individual authorized to stop the bout" and, in the same section, that "if a Ringside Physician recommends that a bout be stopped for medical reasons, the Referee must stop the bout" [90], a binding allocation. The ABC Boxing Referee Manual states that "[t]he Referee, and in most jurisdictions, the Ringside Physician may stop the bout" and, on cuts, that "if the ringside physician says stop the bout, then the bout shall be STOPPED" [19], guidance that the Unified Rules of Boxing do not contain. The ABC's Boxer Severity Index page lists "Physician can stop the fight" first among its recommendations to member commissions [20]. A respondent to the article's survey who worked from the referee manual, from the unified rules, or from the recommendations page could give three different answers about the same jurisdiction, each sincerely. The audit found the same pattern inside jurisdictions: Wyoming's referee rule names the referee "the sole arbiter" and "the only individual authorized to stop a bout" and, in the same section, gives the physician "final authority" and the power to "order the referee to stop"; Tennessee's statute makes the referee sole arbiter while its boxing rule obliges the referee to terminate when the physician so advises.

8.3 The “vestige” framing

The article describes the sole-arbiter rule as a vestige of the bare-knuckle era that places referees “at the top of the decision hierarchy, regardless of the presence of medical professionals,” and describes physician authority as “a logical progression.” The history is real. Broughton’s rules of 1743 vested disputes in umpires chosen by the principals [91]; the 1838 rules of the Prize Ring created a referee “to whom all disputes shall be referred” [92]; the 1853 rules made the referee’s decision “final and strictly binding on all parties” [93]. But the ABC’s Unified Rules for the two sports the article studied were adopted in 2001 and amended as recently as August 2025 [2,3], and Nevada re-adopted the sole-arbiter rule in its Rules of Unarmed Combat in 2022 [64]. Utah incorporated the 2019 Unified Rules of Mixed Martial Arts in a rule adopted in 2023 [73], and Oregon adopted the same edition “notwithstanding contrary provision” in its own code [85]. The allocation is a current regulatory choice, made and re-made by bodies with full access to medical professionals, and the burden of showing that it should be abandoned lies with the proponent of change. The article inverts that burden by treating the present standard as inertia.

8.4 Credentialing and authority are separate variables

The article treats physician stoppage authority as an indicator of a jurisdiction’s “recognition of their critical role in safeguarding athletes’ health.” The two are separately promulgated. Alabama, which reserves stoppage to the referee, makes ARP/ACSM Certified Ringside Physician certification the condition of medical service at ring or cage side (Section 6.2). Recognition of medical expertise can be expressed in who is permitted to serve, in what they must know, in what they must do before and after the bout, and in whether the referee must consult them, without being expressed in who may end the bout. An instrument that measures only the last cannot support a claim about the first.

9 The safety argument: why independent physician stoppage authority degrades the cageside examination

9.1 Two decision procedures with two information sets

The referee’s criterion for stopping a bout is behavioral. Under the Unified Rules of Mixed Martial Arts the referee stops the contest “because the combatant IS NOT INTELLIGENTLY DEFENDING HIMSELF/HERSELF” [2]; under Alabama’s rules, “if one of the boxers is unable or no longer able to defend himself” [32]. The criterion is applied to observed performance, continuously, by the one official who is inside the ring for every exchange. It does not depend on anything the athlete says.

The physician’s cageside examination is different in kind. It is brief, it occurs at a break, and its incremental contribution over what the referee has already seen consists largely of elicited information: whether the athlete can see and track a target, answer orientation questions, report symptoms, and cooperate with a rapid neurological screen. Signs that are observable without cooperation (a fixed gaze, ataxia, a deformity, an eye swollen shut) are observ-

able by the referee too. What the physician adds is the athlete's report and the athlete's performance on tasks the athlete controls. The two decision procedures therefore differ in the one property that matters when the athlete has an interest in the outcome: the referee's criterion is immune to the athlete's report, since an athlete who defends intelligently is defending intelligently, whereas the physician's criterion can be manipulated by what the athlete says and does on request.

9.2 Athletes conceal what ends their participation

That athletes conceal symptoms to avoid removal is among the most replicated findings in sports medicine. In McCrea and colleagues' survey of 1,532 high school football players, only 47.3% of those who sustained a concussion reported it, and "motivation not to be withheld from competition" was cited for 41.0% of unreported injuries [94]. Register-Mihalik and colleagues found that only 40% of recalled concussion events were disclosed [95]. Among 214 former collegiate athletes recalling a concussion, 33.2% reported not disclosing at least one, and the most common motivation, at 78.9%, was "did not want to leave the game/practice" [96]. Among 454 professional Canadian football players, 82.1% of those who believed they had been concussed did not seek medical attention at least once, and not wanting to be removed from a game was among the leading reasons [97]. Kroshus and colleagues documented pressure from coaches, teammates, fans, and parents to continue playing after a head impact [98].

The reviews agree with the primary studies. A review of 30 studies organized the reasons for nondisclosure across intrapersonal, interpersonal, environmental, and policy levels [99]. A systematic review of 26 studies of adolescent athletes found that every study documented failure to disclose, that the wish to remain in the game was among the barriers to disclosure, and that concussion education did not appear to deter under-reporting [100]. A systematic review of 24 studies of high school and collegiate athletes identified the fear of losing current or future playing time among the major barriers [101]. A meta-analysis of 12 studies found that athletes who continued to play or delayed reporting recovered more slowly and carried higher symptom burdens than those who reported at once or were removed from play [102]; the cost of concealment falls on the athlete who conceals.

The finding holds in combat sports. In the Professional Fighters Brain Health Study, 21% of 257 licensed professional fighters "endorsed concealing symptoms of head injury from medical providers and coaches"; approximately 40% reported returning to training or competition the same day a head injury was sustained; fewer than six in ten reported that they "usually" or "always" trusted ringside medical providers; and approximately 28% reported fewer head injuries in their careers than the number of knockouts and technical knockouts on their professional records [103]. Among mixed martial arts, boxing, kickboxing, and Muay Thai athletes, self-diagnosis was the most used method of concussion assessment (79%), and a majority of the professional athletes surveyed returned to full practice within a week of a concussion diagnosis [104]. Heath and Callahan found high subjective concussive symptom ratings in mixed martial arts athletes, "with many of them waiting only a brief time after such incidents to return to competition" [105]. The ARP's own consensus statement on concussion observes that "when there has been a tragic outcome in the ring, it is often revealed that the combat sports athlete suffered a head injury in training that was not divulged to the physician" [106].

In this respect the combat sports athlete resembles every other athlete, with one difference: the stakes of disclosure are highest in the ring. A professional fighter who is stopped loses the bout, the win bonus, ranking, and future purses, and may be suspended. There is no substitution, no return next quarter, and no next play. Everything the fighter has trained for is decided in the exchange with the examiner.

9.3 Athletes manipulate the instruments as well as the interview

The incentive reaches the tests, not only the questions. Athletes deliberately underperform on baseline neurocognitive testing so that a post-injury score will not register a decline, a practice the literature calls sandbagging, and they do it to protect their return to play. In a study of 75 collegiate athletes instructed to lower their scores without triggering the validity indicators of the most widely used platform, eight succeeded [107]. In a randomized trial, half of the purposeful sandbaggers escaped every embedded indicator [108]. Among 83 collegiate football players tested at baseline, half failed at least one validity indicator, and invalid performance rose with the athlete's incentive to do poorly, with risk ratios of 1.3 to 4.0 against a comparison group whose incentive ran the other way [109]. Among 6,346 high school athletes, 47% produced baseline scores flagged as sandbagging [110], and a systematic review found that the platform's embedded indicators miss roughly one in five examinees instructed to underperform [111]. Instructed sandbagging of the King-Devick test by healthy volunteers, a rapid sideline task of the same kind as a cageside vision check, nearly doubled test times relative to best effort [112].

At cageside the direction of manipulation is reversed, since the fighter wants to appear intact rather than impaired, and the reversal makes the manipulation easier: a fighter asked to track a finger, count fingers, or answer orientation questions is asked for effort, and effort is what the fighter has come to give. The point is not that fighters are dishonest. It is that a test whose result depends on the examinee's cooperation measures the examinee's cooperation, and cooperation follows incentive. Under a rule that makes the physician's examination the end of the bout, the examination measures how much the fighter wants to continue, which is already known.

9.4 The examiner as gatekeeper

When the examiner holds the power to end the examinee's participation, the examinee conceals from the examiner. This is documented wherever it has been measured. Among 3,765 aircraft pilots, 56.1% reported healthcare avoidance behavior "due fear for losing their aeromedical certificate," 45.7% had sought informal medical care, and 26.8% "misrepresented/withheld information on a written healthcare questionnaire for fear of aeromedical certificate loss" [113]; the pattern replicated across United States and Canadian pilots [114]. Among airline pilots screened anonymously, 12.6% met the threshold for depression and 4.1% reported suicidal thoughts within the preceding two weeks, and the authors concluded that hundreds of pilots were "managing depressive symptoms perhaps without the possibility of treatment due to the fear of negative career impacts" [115]. Nearly 40% of physicians reported reluctance to seek care for a mental health condition because of concerns about licensure [116]. Among soldiers returning from Iraq and Afghanistan, only 23% to 40% of those who screened positive for a mental disorder sought care, with concern about stigma a principal barrier [117].

The effect has been measured with the instrument held constant. When 1,712 soldiers completed the routine post-deployment health assessment and, at the same time, an anonymous survey carrying the same questions, reporting of depression, post-traumatic stress disorder, and suicidal ideation was two to four times higher on the anonymous form, and one in five of those who screened positive said they were uncomfortable answering the routine form honestly [118]. Among United Kingdom personnel who had deployed to Iraq, allocated alternately to an anonymous or an identifiable questionnaire, probable post-traumatic stress disorder was reported nearly three times as often on the anonymous form (4.8% against 1.7%) [119]. Among police officers who completed identical screening instruments for their employer and, anonymously, for an independent body, only 76% of symptoms were declared to the employer, and the officers with the most severe symptoms under-reported the most; the authors observed that adjusting cut-off values cannot correct under-reporting that scales with severity [120]. The Army's routine health

reassessment identified only one in seven of the soldiers who reported suicidal ideation on an anonymous survey [121]. In each comparison the questions were the same. The only variable was who would learn the answer and what would follow from it.

In each of these settings the examiner is a physician or acts for one, the examination is clinical, and the consequence of candor is removal. The examined population responds by avoiding the physician, seeking care elsewhere, and misrepresenting. The aviation literature is the closest analog to the ringside setting, because the aeromedical examiner is precisely a physician vested with certification authority, and the measured effect of that authority is a population that withholds or misrepresents to its physicians at a rate of one in four on written questionnaires. The cageside examination under a physician-authority rule is the identifiable form.

9.5 The consequence for the physician's information

Put the findings together. The physician's cageside examination depends on elicited information and on the athlete's performance on tasks the athlete controls. The athlete conceals elicited information, and manipulates performance, in proportion to the consequence of the result. Vesting termination authority in the physician makes the examination dispositive and thereby sets the consequence at its maximum. The allocation the article advocates therefore degrades the physician's information at the moment the physician is asked to act on it. The physician with authority to stop the bout receives a censored signal; the physician without that authority receives a less censored one; and the official whose criterion does not depend on the signal at all, the referee, is unaffected either way.

This is a structural claim about incentives. It says nothing about the character of fighters. A fighter who claims to see when unable to is responding rationally to a rule that makes the answer the end of the night. The way to obtain honest answers is to make the answer matter less to the outcome, which the advisory allocation does, and to base the outcome on what the fighter cannot fake, which the referee's criterion does.

9.6 The physician's threshold, the physician's instrument, and what physicians stop

The ARP's own writers state the physician's decision rule in terms that maximize the incentive described above. Nitin K. Sethi, a member of the ARP's board who serves as chief medical officer of the New York State Athletic Commission, has written that "the doctor's threshold of stopping a fight should be the lowest" [122]. The rule is medically defensible and behaviorally self-defeating: a fighter who knows that the person conducting the examination will stop the bout on the slightest doubt has every reason to leave that person with no doubt.

The examination itself has no validated form for the setting. The sideline tool endorsed by the Amsterdam consensus statement rests on symptom self-report and cooperative performance and is not designed to be completed in the interval between rounds [123]. In a video analysis of slap-fighting bouts, assessments of possible concussion by referees and by ringside physicians each lasted about sixteen seconds, and the physician permitted continuation in five of the eleven cases the physician assessed [124]. Ringside physicians describe their stoppage decisions as varying with specialty and "comfort level" [125], and the ARP's president, explaining why a severe laceration in a championship bout was allowed to continue, listed among the questions to be asked whether the fight was competitive and whether the fighter was "still in it" [126]. Those are the referee's questions. When the medical decision incorporates them, the physician is officiating; when it excludes them, the physician is deciding on the fighter's report.

What physicians stop is instructive. In a twelve-year cohort study comparing 220 professional mixed martial arts bouts ended by physician stoppage with 220 bouts that were not, more than 90% of the physician stoppages were for facial injury and 80% for lacerations [127]. A laceration is the injury the referee sees as well as the physician, and it is the injury for which every advisory allocation already provides a physician's examination at the referee's call. The concussive injury that the article's recommendation is meant to address is the one for which the physician's incremental information is elicited from the fighter; and the one for which, in a retrospective video review of 60 professional boxing and mixed martial arts bouts, non-physician raters trained to recognize concussion agreed with physician raters at high rates on the number of concussions each fighter sustained [128]. The same review found that the physician raters would have stopped 24 of the 60 bouts sooner than the official stoppage. That is an argument for earlier stoppage on observed signs and for training referees to recognize them; it is not an argument for a different decision-maker, because the raters were watching video, not examining fighters, and their judgments rested on the observed signs that are the referee's criterion. Rule changes that enlarged the referee's competencies in boxing, including the standing count, the outclassed rule, and medical stops, are among the measures a scoping review credits with reducing injury rates [129]. The visible signs of concussion are visible to a trained referee. What the referee lacks under a physician-authority rule is not the ability to see them but the undivided duty to act on them.

9.7 Role conflict and the clinical relationship

The sports medicine ethics literature has examined at length the dual loyalty of the physician who serves both the athlete and an institution with an interest in the athlete's participation [130,131,132,133,134]. Devitt and McCarthy describe "a doctor-patient-team triad" in which "the team's priority can conflict with or even replace the doctor's primary obligation to player well-being" [133]; Testoni and colleagues describe physicians who "must balance" the athlete's autonomy against "paternalistic decision making in determining whether an athlete may compete safely" [131]. Partridge observes that a concussion rule imposed by a governing body adds a fourth party to the triad without resolving the conflict inside it [135]. A reform proposal for the National Football League, from Cohen, Lynch, and Deubert, rests on separating the physician who treats the player from the physician who evaluates the player for the club [136]; Rothstein, endorsing it, identifies the essential principle as the severing of treatment from evaluation [137]. Sethi has raised the corresponding questions for combat sports medicine [138]. The physician-authority model does the opposite of what that literature recommends. It fuses in one person the physician who treats the fighter, the physician who evaluates the fighter, and the official who ends the contest on the strength of what the fighter discloses, and it makes the evaluation dispositive. A clinical relationship cannot be built across that conflict. The finding that fewer than six in ten professional fighters usually or always trust ringside medical providers [103] is the expected result.

The cost of the conflict is not confined to the cageside examination. The same physician conducts the pre-bout examination, at which undisclosed training injuries are the recognized precursor of ring fatalities [106], and the post-bout examination, at which the decision to transport and the length of suspension depend on candid symptom reporting. A fighter who has learned that the doctor is the person who stops fights has learned what to tell the doctor before and after them too.

9.8 Shared authority and diffusion of responsibility

Where two officials may stop the bout, each may defer to the other. Darley and Latané's experiments established that "the presence of other bystanders reduced the individual's feelings of personal responsibility and lowered his speed of reporting": 85% of subjects who believed they alone knew of an emergency reported it, against 31% of those who believed four others were present [139]. A meta-analysis of 105 effect sizes confirmed the effect and found it attenuated, but not eliminated, in dangerous situations [140]. The effect has been described in clinical settings, where "individuals can underperform in circumstances of shared accountability" [141,142]. Later work has refined the mechanism. Sharing a decision reduces the regret, punishment, and stress that attach to its outcome, and people seek shared decisions for that reason [143]; in three experiments, participants who acted on advice felt, and were judged, less responsible for the outcome than those who acted alone, and greater use of advice reduced responsibility further [144]; and the bystander effect returns when the need to act is common knowledge among the bystanders [145], which is the condition of two officials watching the same fighter. A formal analysis of decision mechanisms concludes that when a decision is shared between two agents, the only mechanism free of diffusion is one in which a single agent decides unilaterally [146]. That mechanism is the sole-arbiter rule.

In the ring, a referee who sees a physician examine a fighter and permit the bout to continue has received what reads as medical clearance; a physician who sees a referee permit an exchange to continue has received what reads as officiating clearance. The advisory allocation does not abolish the effect, since a referee who follows advice shares responsibility with the adviser, but it leaves the act with one official whose duty the rules state without condition, and neither official can point to the other as the one who could have stopped it. Under a direct allocation the act itself is divisible, and divided responsibility is diminished responsibility.

The timing literature gives the effect a scale, and the scale should be read for what it measures. In 844 UFC bouts, contested under the Unified Rules with the referee as sole arbiter, the mean interval between a knockout strike and match stoppage was 3.5 seconds, during which losers absorbed on average 2.6 additional head strikes, and in the 30 seconds before a technical knockout losers sustained on average 18.5 strikes, 92.3% of them to the head [147]. Those figures are referee latency under the model this review defends. They show that the margin within which a stoppage protects the athlete is measured in seconds and in single blows, and that a lag already exists when one official holds the undivided duty to act. Dividing the act between two officials adds to that lag; it does not subtract from it. The margin leaves no room for two officials to look at each other.

9.9 A documented illustration

On June 14, 2026, at UFC Freedom 250, the event staged at the White House and reported under that name, Ilia Topuria fought Justin Gaethje under the ABC Unified Rules. Between the third and fourth rounds, according to contemporaneous reports, Topuria told his corner and the cageside physician that he could not see; the physician recommended that the referee stop the fight; Topuria "protested and walked back his comments"; and "[a] quick, fighter standard vision check was performed by the doctor, and the fight was allowed to continue" [148]. The referee conferred with the promotion's medical director before the fight resumed [149]. The executive officer of the California State Athletic Commission, who was present, later described the exchange: "He absolutely wanted to continue. He did not want to end that fight" [149]. Gaethje won by corner stoppage at the end of the fourth round. The following day Topuria issued a statement addressed to his opponent: "You took the sight from the right eye in the first round, and by the end of the second, from the left too" [148].

The episode is not offered as a case in which the advisory allocation performed well. It did not. The physician's first judgment, on the fighter's own report, was that the bout should end; the referee, who under the Unified Rules held the undivided authority to stop it and whose criterion does not depend on anything the fighter says, allowed it to continue after a conference with the promotion's physician; and the bout was ended by the corner, not by either official. Two failures are visible, and the review concedes both. The first is the failure the review is about: the fighter's report to the physician reversed within a minute under the pressure of its consequence, the vision check that followed depended on the fighter's cooperation, and the fighter's account after the bout contradicted the account given during it. Had the physician held sole authority to stop, the fighter's incentive to retract would have been identical or greater, and the physician's decision would have rested on the same manipulated report. The second is a failure of application, not of allocation: a referee under an undivided duty did not act on observable signs and instead sought clearance from a third party, which is the diffusion described in Section 9.8 occurring inside a sole-arbiter rule. What would have protected the fighter in the fourth round was the referee's performance-based criterion, applied by the official who held it. That the official did not apply it is an argument for training, for excluding promoters' physicians from the officiating conference, and for holding referees to the criterion; it is not an argument for making the fighter's answers the end of the bout, because in this episode the fighter's answers were the part of the record that could not be trusted.

9.10 The Alabama model as designed

Alabama's rules allocate medical authority across the event. Before the bout, the physician examines and may withhold clearance. At the bout, a physician must be at ringside for every contest, a CRP-certified physician must be present whenever any physician serves at ring or cage side, the referee must confirm the physician is in place before calling for the bell, the referee may call time and request the physician's evaluation, and the physician "may enter the ring and advise the referee" [32]. During the bout, the referee "shall have the authority to stop a contest at any time if one of the boxers is unable or no longer able to defend himself," and no one else may. After the bout, the physician examines, treats, and suspends. The Chief Inspector holds "complete authority" over the event, and the referee officiates under that supervision. Medical expertise is placed where it is decisive, upstream in clearance and downstream in suspension, and where it is advisory, at the break, it is required to be present, credentialed, and heard. The fighter, examined by a physician who cannot end the night, has no reason to lie to that physician, and the referee, whose decision rests on what the fighter does and never on what the fighter says, is the official the fighter cannot deceive.

9.11 Objections

Four objections deserve answers. The first is that the physician sees medical danger the referee cannot. Under the advisory allocation the physician's observation reaches the referee as advice, the physician may enter and advise, and the referee's authority to stop is unconditioned; nothing in the allocation prevents medical knowledge from ending a bout. The question is who bears the decision and whose information the decision depends upon. The second is that referees are subject to pressure from promoters and crowds. So are physicians, who in a number of jurisdictions are appointed or compensated by the promoter [32,49]; a physician who stopped a championship mixed martial arts bout on cuts in 2019 reported threats to his safety afterward [150]; and the episode in Section 9.9 involved a promotion's medical director conferring with the referee before the fight resumed [149]. Independence is secured by commission appointment, training, and discipline of both officials; moving the decision from one official to the other secures nothing. The third is that a binding allocation, in which the physician directs and the referee executes, preserves medical authority while keeping the decision visibly with the referee. It also preserves

the incentive problem, because the examination remains dispositive, and it divides accountability. The ARP's own 2019 consensus statement describes the binding variant as one in which the referee remains the sole arbiter "but instructed to stop the fight on medical grounds at the ringside physician's request" [106], a description that concedes the referee's arbitral role while making the physician's request conclusive. The fourth is that the physician is a trained clinician and the referee is not. Non-physicians trained to recognize the observable signs of concussion agreed with physicians at high rates when both watched the same bouts [128], and Alabama requires a CRP-certified physician at ring or cage side, requires the referee to confirm before the bout that the physician is in place, and permits the referee to call time for the physician's evaluation. That objection is an argument for referee training and mandatory consultation, both of which the advisory allocation provides; it is not an argument for making the fighter's answers to the physician the end of the bout. The review's position is that the advisory allocation, with a mandatory physician presence, a duty to consult where injury is suspected, and an unconditional referee duty to stop a fighter who can no longer defend, is the allocation under which the physician's information is least corrupted and the decision is most reliable.

10 Implications for the recommended position statement

The article recommends that the ARP "consider developing a Position Statement advocating for physician authority to stop all types of fights in all jurisdictions," or, "at a minimum, collaborative protocols between referees and physicians" [1]. The alternative, collaborative protocols, is compatible with the advisory allocation defended in Section 9; the recommendation examined here is the position statement. The ARP's published position statements do not address stoppage authority [8]. The recommendation rests on three premises: that commission rules have shifted toward physician authority; that the shift reflects recognition of medical expertise; and that physician authority improves athlete safety. Sections 4 through 7 show that the first premise is unsupported by the article's design and contradicted by the primary record: the census finds the two allocations equinumerous, a majority for neither, and direct authority in both sports in 11 jurisdictions of 47. Section 8.4 shows that the second premise does not follow from the first. On the third, the article's own Conclusion states that "[f]uture research should explore the impact of these regulations on fighter outcomes," which is to say that the outcome evidence does not yet exist, and Section 9 gives reasons to expect the effect to run the other way. A position statement issued on these premises would commit the ARP to a regulatory allocation on the strength of a dataset that the affected jurisdictions can show to be wrong, and, under the House-passed text of H.R. 4624, would supply a source for a national model code and an annual report card of commission conformance (Section 2.2). No statement should issue until the current allocation of authority has been measured by published methods and the safety question has been studied instead of assumed.

11 Requested actions

The standards are settled. The ICMJE Recommendations provide that "[h]onest errors are a part of science and publishing and require publication of a correction when they are detected," that "[p]ervasive errors can result from a coding problem or a miscalculation and may result in extensive inaccuracies throughout an article," that where such errors "do not change the direction or implications of the results, interpretations, and conclusions of the article, a correction should be published," and that "retraction with republication can be considered in cases where honest error (e.g., a misclassification or miscalculation) leads to a major change in the results, interpretations,

or conclusions” [151]. The COPE retraction guidelines provide that editors “can decide to retract a publication if they no longer have confidence in the results and conclusions reported in the paper,” including where there are “[i]ndications that the findings are unreliable because of ... major error (eg, miscalculation or experimental error),” and that a correction instead of a retraction is appropriate where “correction would sufficiently deal with the errors or concerns raised, provided that the main results and conclusions are not unduly affected by the correction” [152]. Where reliability is in doubt pending further information, the same guidelines contemplate an expression of concern [152]. Both bodies require that a retracted article remain available and be linked to the notice; in the words of COPE’s guidance on retraction with republication, “the original article should not be removed or replaced, but should be retained and linked to” [152,153].

The errors documented here are of the kind the ICMJE describes: a coding problem (misclassification of at least 13 jurisdictions and two exclusions) and a miscalculation (percentages on two denominators, labeled as proportions of states). Their effect is not confined to a small part of the article, and the main results are affected: the Alabama correction alone eliminates the reported ordering, and the census replaces the reported distribution with one in which neither allocation leads. A change in the direction of the principal result is the condition under which the ICMJE contemplates retraction with republication instead of correction, and it is the condition under which COPE’s proviso for correction, that “the main results and conclusions are not unduly affected,” is not met. The developments described in Section 2 make the timing of the remedy material: a correction published after a position statement has issued, or after a model code has been derived from it, corrects a record that has already been acted upon.

The record of the request to date is as follows. On August 31, 2026, the author, writing as Commissioner and Chair of the Rules and Procedures Committee, requested by electronic mail that the journal correct Alabama’s classification on page 7 of the article, including the map titled “Can the Doctor Stop the Fight,” and review and correct all associated data derived from that classification, including the aggregate counts and percentages and the related statements in the Abstract, Results, and Discussion; the request asked for confirmation that the matter had been received and referred for review and for information on the journal’s process for issuing a correction. The journal’s Executive Editor replied the same day: “The editor stated that the authors would be contacted to the authors and the points would be addressed the points you brought up. Please feel free to reach out with any further concerns or questions at any time” (G. Velasco, MD, Executive Editor, Journal of Combat Sports Medicine, email communication to the author, August 31, 2026). No further communication from the journal or the authors had been received when this review was completed, September 22, 2026. The correspondence is reproduced in Supplement S1.

The author accordingly requests that the Journal of Combat Sports Medicine:

- (i) publish a corrigendum reclassifying Alabama from the physician-authority category to the referee-as-sole-arbiter category in the Abstract, Results, Discussion, and the map at page 7; revising the affected counts to 22, 22, and 3 and the corresponding proportions to 46.81%, 46.81%, and 6.38% of 47; and conforming the Abstract’s percentages to the analysis population stated in the Methods;
- (ii) publish an expression of concern pending re-coding of every jurisdiction from primary legal sources under a written protocol, with a published codebook, the statutory or regulatory citation supporting each assignment, independent duplicate coding with a reported inter-rater statistic, a currency date for each text, and sport-stratified results;
- (iii) withdraw the map and dataset until re-coded, and republish them with the jurisdiction-level table;
- (iv) revise every statement conditioned on the superseded ordering, including the characterization of a “shift” and of a “significant recognition,” and remove the temporal inference that the design cannot support;
- (v) publish the disclosures of conflicts of interest, funding, and data availability that the published article omits;

(vi) if re-coding confirms that the direction of the principal result changes, retract and republish under the ICMJE procedure instead of issuing a correction.

The author further requests that the ARP defer any position statement on stoppage authority until the journal has acted on these requests, and that any such statement, if issued, disclose its reliance on the article and the status of the article's correction. The Commission's documentation of the Alabama entry is available to the journal and to the authors on request, and the audit record underlying Tables 3 through 6 is published as Supplement S1.

12 Limitations of this review

The audit measured text, which is what the article set out to measure: its stated objective was "to evaluate current state athletic commission policies regarding the authority to stop fights." A respondent describing practice may have answered honestly, but an honest description of practice is not a measurement of law, and the article reported it as one. Every decisive quotation was checked against a second source where one was available, and every quotation is cited so that any reader can check it. Law changes; the currency dates recorded in Tables 3 and 4 fix the date to which each finding speaks, and pending measures in Pennsylvania and Massachusetts had not been enacted at the time of writing. The District of Columbia was not text-coded because its regulations could not be retrieved in readable form from the official site on the retrieval date; it is carried at the article's reported code, and no finding in Section 7 depends on it. The article's cell codes for the 21 "No" and 3 "Mixed" jurisdictions are known only from a map that does not name them, so the concordance for that pool is reported as a bound. The verification review was not an independent retrieval because it used the same transcribed source record as the primary classification. The agreement statistic therefore measures consistency in application of the codebook to the cited provisions. The legislative record described in Section 2 is current as of September 22, 2026; the text of S. 5188 as reported by the Senate committee on September 16 had not been published by that date, and it or any later amendment may change the text quoted. The author's interests are stated in Section 1 and in the Declarations. The Alabama findings and the audit rest on quoted text; the safety argument in Section 9 rests on the combat sports literature where it exists and on the most closely analogous examiner settings where it does not, and it is reported separately because it answers a different question.

13 Conclusion

The article's central finding is wrong, and it is wrong because of how it was produced. Its quantitative finding does not survive the correction of one verified error, and its dataset and map do not survive a census of the text. The instrument that produced them, a telephone survey of institutional informants with no verification against text, is not a method for measuring the content of law, and Alabama's rules, which state the allocation in both affirmative and negative form, show that the instrument fails even where the law is unambiguous. Measured from the text, the two allocations the article ranked are equinumerous: twenty jurisdictions give the physician's determination direct or binding effect in both sports, twenty reserve the decision to the referee, six divide it by sport, and the construct the article claimed for twenty-three, a physician who may directly stop any fight, is supportable in eleven. Between a quarter and two fifths of the article's cells are misclassified, in both directions. There is no majority to announce and no shift to announce it with. The recommendation the article builds on its finding, a position statement advocating physician authority to stop all fights in all jurisdictions, rests on an allocation of authority that has not been measured and a safety premise that has not been tested, and it is positioned to be acted upon: by

the ARP, to which the article addresses it, and, if H.R. 4624 is enacted in its House form, by a model code and an annual report card derived from ARP consensus statements. On the evidence that does exist, athletes conceal from examiners who can remove them, athletes manipulate the tests on which their participation depends, examinees misrepresent to physicians who hold certification power, and shared authority diminishes responsibility. A rule that makes the cageside examination dispositive makes the fighter's answers worthless at the moment they matter most. The referee's question, whether the fighter can still defend, is the one question the fighter's answer cannot decide. That is why Alabama asks it, and why in Alabama the referee alone answers it.

Declarations

Conflicts of interest: The author is a Commissioner of the Alabama Athletic Commission, Chair of its Rules and Procedures Committee, and a listed author of the Alabama rules cited. The reviewer has publicly advocated the referee-as-sole-arbiter model. On August 31, 2026, the author, as Commissioner, requested that the Journal of Combat Sports Medicine correct the article's classification of Alabama (Section 11).

Funding: None.

Data availability: Every legal provision quoted is cited to a public source with a currency date. The complete audit record (transcribed provisions, sources and URLs, currency dates, both classification passes, agreement statistics, the tie-break log, and the correspondence with the journal) is published as Supplement S1, <https://doi.org/10.67999/csx.001.s1>, and is available at <https://searspublishing.net/reviews/csx-001/supplement-s1/>.

Ethics: Not applicable; no human participants were involved.

Appendix A. Quantitative Corrections and Authority Taxonomy

A.1 Quantitative corrections

Coding	Physician authority	Referee sole arbiter	Sport-dependent	Indeterminate
Article as reported (n=47)	23 (48.94%)	21 (44.68%)	3 (6.38%)	-
Alabama corrected (n=47)	22 (46.81%)	22 (46.81%)	3 (6.38%)	-
Full census, statute controlling (n=47)	20 (42.55%)	20 (42.55%)	6 (12.77%)	1 (2.13%)
Full census, rule text (n=47)	16 (34.04%)	23 (48.94%)	8 (17.02%)	0
Full census + Vermont/Delaware (n=49)	20 (40.82%)	21 (42.86%)	6 (12.24%)	2 (4.08%)

A.2 Three-tier authority taxonomy

Tier	Definition	Operational meaning
DIRECT	Physician may terminate the bout by the physician's own act.	Independent termination authority.
BINDING	Physician determination obligates the referee to stop.	Referee executes a medically conclusive decision.
ADVISORY	Physician advises or recommends; referee decides.	Medical consultation without independent in-bout termination authority.

Appendix B. Jurisdiction Scoring Matrix

Abbreviations: D = DIRECT; B = BINDING; ADV = ADVISORY; IND = INDETERMINATE; PHYS = physician authority in both sports; REF = referee sole arbiter; S-D = sport-dependent. Asterisks denote tie-break resolutions described in the audit record.

Jurisdiction	Article code	Boxing	MMA	Final category	Concordance	Qualification
Alabama	Yes	ADV	ADV	REF	CONTRADICTED	
Arizona	Yes	IND	IND	IND*	INDETERMINATE	code unverifiable from text
Arkansas	Yes	D	D	PHYS	SUPPORTED	qualified: direct by express exception
California	Yes	D	D	PHYS	SUPPORTED	medical limit
Idaho	Yes	D	D	PHYS	SUPPORTED	by statute; contradicted by rules (conflict)
Illinois	Yes	B	B	PHYS	SUPPORTED	by statute; contradicted by rules (conflict)
Iowa	Yes	ADV	ADV	REF	CONTRADICTED	
Kentucky	Yes	B	B	PHYS	SUPPORTED	binding
Louisiana	Yes	ADV	ADV	REF	CONTRADICTED	
Massachusetts	Yes	ADV	ADV	REF	CONTRADICTED	
Minnesota	Yes	ADV	D	S-D	CONTRADICTED	sport-dependent; article's "Mixed"
Nebraska	Yes	B	B	PHYS	SUPPORTED	binding
New Hampshire	Yes	ADV	D	S-D*	CONTRADICTED	sport-dependent; article's "Mixed"
New Jersey	Yes	D	D	PHYS	SUPPORTED	rule-level tension
New Mexico	Yes	D	D	PHYS	SUPPORTED	rule-level tension
New York	Yes	D	D	PHYS	SUPPORTED	rule-level tension
North Dakota	Yes	D	D	PHYS	SUPPORTED	
Ohio	Yes	ADV	ADV	REF	CONTRADICTED	
Pennsylvania	Yes	D	D	PHYS	SUPPORTED	direct by statute, binding by rule
South Carolina	Yes	B	B	PHYS	SUPPORTED	binding
Virginia	Yes	D	D	PHYS	SUPPORTED	
Washington	Yes	D	D	PHYS	SUPPORTED	
West Virginia	Yes	D	B	PHYS	SUPPORTED	by statute; contradicted by boxing rule (conflict)
Nevada	No	ADV	ADV	REF	SUPPORTED	"No" code supported
Vermont	No commission	ADV	ADV	REF	COVERAGE ERROR	excluded as "no commission"; text codes REFEREE
Delaware	No commission	IND	B	IND	COVERAGE ERROR	excluded as "no commission"; text is event-dependent (boxing), binding (MMA)
Colorado	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with "No"; discordant if colored "Mixed"

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(continued)

Jurisdiction	Article code	Boxing	MMA	Final category	Concordance	Qualification
Connecticut	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Florida	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Georgia	No/Mixed pool	ADV	D	S-D	CONDITIONAL	concordant only if the map’s “Mixed”
Hawaii	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Indiana	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Kansas	No/Mixed pool	B	B	PHYS	CONTRADICTED	discordant with both “No” and “Mixed”
Maine	No/Mixed pool	B	B	PHYS	CONTRADICTED	discordant with both “No” and “Mixed”
Maryland	No/Mixed pool	D	D	PHYS	CONTRADICTED	discordant with both “No” and “Mixed”
Michigan	No/Mixed pool	B	B	PHYS	CONTRADICTED	discordant with both “No” and “Mixed”
Mississippi	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Missouri	No/Mixed pool	ADV	B	S-D	CONDITIONAL	concordant only if the map’s “Mixed”
North Carolina	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Oklahoma	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Oregon	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Rhode Island	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
South Dakota	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Tennessee	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Texas	No/Mixed pool	ADV	D	S-D	CONDITIONAL	concordant only if the map’s “Mixed”
Utah	No/Mixed pool	B	ADV	S-D	CONTRADICTED	sport-dependent in the direction the article’s definition does not admit
Wisconsin	No/Mixed pool	ADV	ADV	REF	CONSISTENT	with “No”; discordant if colored “Mixed”
Wyoming	No/Mixed pool	B	B	PHYS	CONTRADICTED	discordant with both “No” and “Mixed”
District of Columbia	No	—	—	not coded	NOT CODED	carried at the article’s reported code

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