Status of current medicolegal reform in the United States: a neurosurgical perspective

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OBJECTIVE There are approximately 85,000 lawsuits filed against medical practitioners every year in the US. Among these lawsuits, neurosurgery has been identified as a “high-risk specialty” with exceptional chance of having medical malpractice suits filed. Major issues affecting the overall medicolegal environment include tort reform, the formation of medical review panels, the increasing practice of defensive medicine, and the rising costs of medical insurance. In this study, the authors provide a concise update of the current medicolegal environments of the 50 states and provide a general guide to favorable and unfavorable states in which to practice neurosurgery.

METHODS Data were acquired related to state-by-state medical review panel status, noneconomic damage caps, economic damage caps, and civil suit filing fees. States were placed into 5 categories based on the status of their current medicolegal environment.

RESULTS Of the 50 states in the US, 18 have established a medical review panel process. Fifteen states have a mandatory medical review process, whereas 3 states rely on a voluntary process. Thirty-five states have tort reform and have placed a cap on noneconomic damages. These caps range from \$250,000 to \$2,350,000, with the median cap of \$465,900. Only 8 states have placed a cap on total economic damages. These caps range from \$500,000 to \$2,350,000, with the median cap of \$1,050,000. All states have a filing fee for a medical malpractice lawsuit. These costs range from \$37 to \$884, with the median cost for filing of \$335.

CONCLUSIONS Medicolegal healthcare reform will continue to play a vital role in physicians’ lives. It will dictate if physicians may practice proactively or be forced to act defensively. With medicolegal reform varying greatly among states, it will ultimately dictate if physicians move into or away from certain states and thus guide the availability of healthcare services. A desirable legal system for neurosurgeons, including caps on economic and noneconomic damages and availability of medical review panels, can lead to safer practice.

<https://thejns.org/doi/abs/10.3171/2020.8.FOCUS20616>

KEYWORDS medicolegal; medical review panel; tort reform; neurosurgery

THERE are approximately 85,000 lawsuits filed against medical practitioners every year in the US.¹ Among these lawsuits, neurosurgery has been identified as a “high-risk specialty” with an exceptional chance of any given neurosurgeon having medical malpractice suits filed against them.^{2,3} Although data from the National Practitioner’s Data Bank show that there has been a steady downward trend in medical malpractice payments since 2000,⁴ medical liability and fear of malpractice claims have led to many negative sequelae for practitioners in the American medical system. These include the practice of defensive medicine, fear of call coverage, and ultimately burnout and career changes. Major

issues affecting the overall medicolegal environment include tort reform, the formation of medical review panels, the increasing practice of defensive medicine, and the rising costs of medical malpractice insurance. In this study, we provide a concise update of the current medicolegal environments of the 50 states and provide a general guide to favorable and unfavorable states in which to practice neurosurgery.

Methods

Data were acquired related to state-by-state medical review panel status, noneconomic damage caps, econom-

ABBREVIATIONS AED = antiepileptic drug.

SUBMITTED July 2, 2020. **ACCEPTED** August 24, 2020.

INCLUDE WHEN CITING DOI: 10.3171/2020.8.FOCUS20616.

ic damage caps, and civil suit filing fees. Information was retrieved through state medical board websites as well as a Google search of “medical legal reform mechanisms, ‘Name of State.’” Data were taken from .gov websites when possible to ensure the most up-to-date information in a realm of law that is rapidly evolving. States were placed into 5 categories based on the status of their current medical legal environment. These categories were Excellent, Very Good, Good, Fair, and Poor. “Excellent” is defined as a state that has the presence of a medical review panel and a cap on both noneconomic and economic damages. “Very Good” is defined as a state that has the presence of a medical review panel and a cap on noneconomic damages. “Good” is defined as a state that either has the presence of a medical review panel but the absence of caps on noneconomic and economic damages or the absence of a medical review panel with caps on both noneconomic and economic damages. “Fair” is defined as a state that has the absence of a medical review panel and the presence of a cap on noneconomic damages. “Poor” is defined as a state that has the absence of a medical review panel as well as the absence of caps on noneconomic or economic damages. Because the cost of filing a medical malpractice lawsuit may be a deterrent, these data were collected and used to rank states who otherwise have comparable data in the other categories. For comparisons between groups, one-way ANOVA with a Tukey post hoc test was used, and results were considered significant if $p < 0.05$.

Results

Of the 50 states in the US, 18 have established a medical review panel process. Fifteen states have a mandatory medical review process, whereas 3 rely on a voluntary process. Thirty-five states have tort reform and have placed a cap on noneconomic damages. These caps range from \$250,000 to \$2,350,000 with the median cap of \$465,900. Only 8 states have placed a cap on total economic damages. These caps range from \$500,000 to \$2,350,000 with the median cap of \$1,050,000. All states have a filing fee for a medical malpractice lawsuit. These costs range from \$37 to \$884 with the median cost for filing of \$335.

Below we provide a detailed, alphabetical list of individual state statutes and relevant updates. For a more easily comparable list of all states ranked from best to worst for medicolegal environment, see Table 1. In addition, Fig. 1 shows a map depicting each of the states categorized according to their current medicolegal status.

Alabama

The state of Alabama currently does not have a medical review panel process. There is a cap on noneconomic damages, which was set in 2018 in accordance with Alabama Code Title 6, Civil Practice § 6–5–544, at \$400,000. There is no limit on economic damages.

Alaska

The state of Alaska currently has a mandatory medical review panel process if the two parties are unable to arbitrate. There is a cap on noneconomic damages set

at \$250,000; however, the cap is raised to \$400,000 for cases that involve severe impairment resulting in higher than 70% disability or wrongful death. There is no limit on economic damages.

Arizona

The state of Arizona currently has no medical review panel process. There is no limit on noneconomic or economic damages. The Arizona Constitution states that no law shall be enacted limiting the amount of damages to be recovered for causing death or injury to a person.

Arkansas

The state of Arkansas currently has no medical review panel process. There is no limit on noneconomic or economic damages. In 2018, a suggested cap of \$500,000 on noneconomic damages was voted down.

California

The state of California currently has no medical review panel process. There is a cap on noneconomic damages of \$250,000. The cap on noneconomic damages was set in 1975 and has remained unchanged. There is no limit on economic damages.

Colorado

The state of Colorado currently has no medical review panel process. There is a cap on noneconomic damages set at \$300,000. Additionally, there is a cap on economic damages set at \$1,000,000.

Connecticut

The state of Connecticut currently has no medical review panel process. There is no cap set on noneconomic or economic damages.

Delaware

The state of Delaware currently has a mandatory medical review panel process. It does not have a cap for noneconomic or economic damages.

Florida

The state of Florida currently has no medical review panel process. There is a cap on noneconomic damages set at \$500,000. This cap is raised to \$1,000,000 for wrongful death. The cap on noneconomic damages was set in 2003, deemed unconstitutional by the Florida Supreme Court in 2017, and reinstated by the Florida House Civil Justice Committee in 2019. There is no cap set on economic damages.

Georgia

The state of Georgia currently has no medical review panel process. There is a cap on noneconomic damages set at \$350,000. The noneconomic damages cap is raised to \$700,000 if more than one facility is liable. A total cap is set at \$1,050,000, which includes all economic and noneconomic damages.

TABLE 1. Summary of the current medicolegal reforms in the US

Category & State	Medical Review Panel	Economic Damages Cap	Noneconomic Damages Cap	Civil Suit Filing Fee	Approx Cost of Medical Malpractice Ins*
Excellent					
Louisiana	Yes	\$500,000	\$500,000	\$201	\$53,021
New Mexico	Yes	\$600,000†	\$600,000†	\$132	\$74,900
Indiana	Yes	\$1,800,000	Providers liable for first \$500,000	\$157	\$59,214
Nebraska	Yes	\$2,250,000†	\$2,250,000†	\$335	\$20,720
Virginia	Yes; voluntary	\$2,350,000†	\$2,350,000†	Varies by county & case type	\$65,791
Alaska	Yes	Unlimited	\$250,000; \$400,000 (>70% disability or wrongful death)	\$400	\$54,188
Very good					
Montana	Yes	Unlimited	\$250,000	\$400	\$82,125
Kansas	Yes; voluntary	Unlimited	\$325,000	\$400	\$35,807
Idaho	Yes	Unlimited	\$357,210	\$221	\$34,353
Hawaii	Yes	Unlimited	\$375,000	\$315	\$47,076
Utah	Yes	Unlimited	\$450,000	\$400	\$63,046
Michigan	Yes	Unlimited	\$465,900	\$150	\$64,680
Maine	Yes	Unlimited	\$500,000	\$400	\$50,077
Massachusetts	Yes	Unlimited	\$500,000	\$195	\$104,140
Wisconsin	Yes	Unlimited	\$750,000	\$265	\$24,950
Good					
Colorado	No	\$1,000,000 total damages	\$300,000	\$400	\$47,075
Georgia	No	\$1,050,000 total damages	\$350,000; \$700,000 (if >1 facility)	\$400	\$76,028
New Hampshire	Yes; voluntary	Unlimited	Unlimited	\$400	\$78,683
Delaware	Yes	Unlimited	Unlimited	\$85	\$92,219
Wyoming	Yes	Unlimited	Unlimited	\$70	\$70,073
Fair					
South Carolina	No	\$1,050,000†	\$350,000	\$165	\$56,418
Iowa	No	Unlimited	\$750,000	\$400	\$35,906
Texas	No	Unlimited	\$250,000	\$400	\$47,991
California	No	Unlimited	\$250,000	\$370 (<\$25K cases); \$435 (>\$25K cases)	\$42,482
Ohio	No	Unlimited	\$350,000	\$37	\$64,398
Oklahoma	No	Unlimited	\$350,000	\$232.14	\$49,883
Nevada	No	Unlimited	\$350,000	\$400	\$78,259
Alabama	No	Unlimited	\$400,000	\$400	\$41,737
Missouri	No	Unlimited	\$450,000; \$700,000 for catastrophic injury	\$400	\$57,885
North Dakota	No	Unlimited	\$500,000	\$95	\$30,299
North Carolina	No	Unlimited	\$500,000	\$150	\$59,592
West Virginia	No	Unlimited	\$500,000	\$200	\$93,081
South Dakota	No	Unlimited	\$500,000	\$400	\$25,572
Mississippi	No	Unlimited	\$500,000	\$400	\$43,398
Oregon	No	Unlimited	\$500,000	Varies‡	\$50,131
Florida	No	Unlimited	\$500,000; \$1,000,000 in wrongful death	\$400	\$124,139
Tennessee	No	Unlimited	\$750,000	\$284.50	\$40,980
Maryland	No	Unlimited	\$830,000	\$185	\$120,425

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TABLE 1. Summary of the current medicolegal reforms in the US

Category & State	Medical Review Panel	Economic Damages Cap	Noneconomic Damages Cap	Civil Suit Filing Fee	Approx Cost of Medical Malpractice Ins*
Poor					
Arizona	No	Unlimited	Unlimited	\$73	\$72,202
Minnesota	No	Unlimited	Unlimited	\$75	\$23,266
Washington	No	Unlimited	Unlimited	\$110	\$56,471
Arkansas	No	Unlimited	Unlimited	\$165	\$40,674
New York	No	Unlimited	Unlimited	\$210	\$128,006
Illinois	No	Unlimited	Unlimited	\$334	\$100,645
Connecticut	No	Unlimited	Unlimited	\$360	\$131,060
Vermont	No	Unlimited	Unlimited	\$400	\$49,857
Kentucky	No	Unlimited	Unlimited	\$400	\$62,272
Pennsylvania	No	Unlimited	Unlimited	\$400	\$97,250
New Jersey	No	Unlimited	Unlimited	\$400	\$99,615
Rhode Island	No	Unlimited	Unlimited	\$400	\$125,805

Approx = approximate; Ins = insurance.

* Data on neurosurgery malpractice insurance rates were not immediately available. However, the field of obstetrics and gynecology (OB/GYN) ranks similarly to neurosurgery in terms of high risk level and amount of malpractice payments awarded annually;³ thus, OB/GYN malpractice rates for 2018 were listed for reference.¹⁶

† Combined cap for economic and noneconomic damages.

‡ Oregon civil court fee: \$172 if < \$10K; \$283 for \$10K to < \$50K; \$594 for \$50K to < \$1 million; \$884 for \$1 million to < \$10 million; \$1178 for ≥ \$10 million.

Hawaii

The state of Hawaii currently has a mandatory medical review panel process. There is a cap on noneconomic damages set at \$375,000. There is no cap set on economic damages.

Idaho

The state of Idaho currently has a mandatory medical review process. There is a cap on noneconomic damages set at \$357,210 as of 2019 (the cap on noneconomic damages is adjusted annually for inflation). There is no cap set on economic damages.

Illinois

The state of Illinois currently has no medical review panel process. The cap on noneconomic damages of \$500,000 per physician and \$1,000,000 per hospital was overturned in 2010 with *Lebron v Gottlieb Memorial Hospital*. There is now no cap on noneconomic or economic damages.

Indiana

The state of Indiana currently has a mandatory medical review panel process. Providers are liable for the first \$500,000 of noneconomic damages. There is a cap on economic damages set at \$1,800,000.

Iowa

The state of Iowa currently has no medical review panel process. There is a cap on noneconomic damages set at \$750,000. This cap was raised from \$250,000 in February

2020. The cap on noneconomic damages does not apply in the case of wrongful death. There is no cap on economic damages.

Kansas

The state of Kansas currently has a voluntary medical review panel process. There is a cap on noneconomic damages set at \$325,000. This cap is set to be raised to \$350,000 on July 1, 2022. There is no cap on economic damages.

Kentucky

The state of Kentucky currently has no medical review process. Medical review panels were initiated in Kentucky in March 2017 and subsequently deemed unconstitutional by the Kentucky Supreme Court in October 2018. There is no cap set on noneconomic or economic damages.

Louisiana

The state of Louisiana currently has a mandatory medical review panel process. There is a cap on noneconomic damages set at \$500,000. Any amount of \$100,000 or more is covered via the Louisiana Patient's Compensation Fund, which acts as a secondary insurance. There is a cap on economic damages set at \$500,000.

Maine

The state of Maine currently has a mandatory medical review panel process. There is a cap on noneconomic damages set at \$500,000. There is no cap set on economic damages.

FIG. 1. Status of current medicolegal environment in the US. Color-coded geographical map of the US depicting the current medicolegal status category of each state as indicated by state color. Categories include Excellent (blue), Very Good (green), Good (yellow), Fair (orange), and Poor (red). Created using mapchart.net. CC BY-SA 4.0 (<https://creativecommons.org/licenses/by-sa/4.0/>).

Maryland

The state of Maryland currently has no medical review panel process. There is a cap on noneconomic damages set at \$830,000. This cap is set to raise \$15,000 annually. There is no cap set on economic damages.

Massachusetts

The state of Massachusetts currently uses a medical review panel process. There is a cap set on noneconomic damages of \$500,000. There is no cap on economic damages.

Michigan

The state of Michigan currently uses a mandatory medical review panel process. The current cap on noneconomic damages was increased in 2019 from \$280,000 to \$465,900 to adjust for inflation. There is no cap on economic damages.

Minnesota

The state of Minnesota currently has no medical review panel process. There are no caps set on economic or noneconomic damages. However, any cases asking for more than \$100,000 require a special hearing.

Mississippi

The state of Mississippi currently has no medical review panel process. There is a cap on noneconomic damages set at \$500,000. There is no cap on economic damages.

Missouri

The state of Missouri currently has no medical review panel process. There is a cap on noneconomic damages of \$450,000 that is increased to \$700,000 in the event of catastrophic injury. There is no cap on economic damages.

Montana

The state of Montana currently uses a mandatory medical review panel process. There is a cap set on noneconomic damages at \$250,000. There is no cap on economic damages.

Nebraska

The state of Nebraska currently uses a mandatory medical review panel process. There is a cap on combined economic and noneconomic damages set at \$2,250,000.

Nevada

The state of Nevada currently has no medical review panel process. There is a cap set on noneconomic damages at \$350,000. There is no cap on economic damages.

New Hampshire

The state of New Hampshire currently uses a voluntary medical review panel process. There is no cap set on noneconomic or economic damages.

New Jersey

The state of New Jersey currently has no medical review panel process. There is no cap set on noneconomic or economic damages.

New Mexico

The state of New Mexico currently uses a mandatory medical review panel process. There is a cap on total economic and noneconomic damages of \$600,000 and the healthcare provider's responsibility is capped at \$200,000.

New York

The state of New York currently has no medical review panel process. There is no cap set on noneconomic or economic damages.

North Carolina

The state of North Carolina currently has no medical review panel process. There is a cap on noneconomic damages set at \$500,000. There is no cap set on economic damages.

North Dakota

The state of North Dakota currently does not have a medical review panel process. There is a cap on noneconomic damages set at \$500,000. Although there is no formal economic damage cap, any economic damages award greater than \$250,000 may be challenged by the defendant and reviewed for reasonableness in the court. The defendant must persuade the court that the dollar amount does not reasonably reflect the injured patient's economic losses.

Ohio

The state of Ohio currently does not have a medical review panel process. It places a cap on noneconomic damages of \$250,000 or up to three times the plaintiff's perceived economic damages, with an overall maximum or \$350,000 per plaintiff or \$500,000 per case if there is more than one plaintiff.

Oklahoma

The state of Oklahoma currently does not have a medical review panel process. It caps noneconomic damages at \$350,000. There is no cap on economic damages.

Oregon

The state of Oregon currently does not have a medical review panel process. It caps noneconomic damages at \$500,000 per plaintiff or \$1,000,000 per case if the malpractice caused certain permanent and/or catastrophic injuries.

Pennsylvania

The state of Pennsylvania currently does not have a medical review panel process. It does not cap economic or noneconomic damages.

Rhode Island

The state of Rhode Island currently does not have a medical review panel process. It does not cap economic or noneconomic damages.

South Carolina

The state of South Carolina currently has no medical review panel. There is a cap on noneconomic damages of \$350,000. The total damages, including noneconomic and economic, cannot exceed \$1,050,000.

South Dakota

The state of South Dakota currently has no medical review panel process. It caps noneconomic damages at \$500,000. There is no cap on economic damages.

Tennessee

The state of Tennessee currently has no medical review panel process. It caps noneconomic damages at \$750,000. This cap may be extended to \$1,000,000 for death or catastrophic damage. There is no cap on economic damages.

Texas

The state of Texas currently does not have a medical review panel process. It caps noneconomic damages to \$250,000, with the provision to extend this to \$500,000 if spanning two institutions with neither institution paying more than \$250,000. There is no cap on economic damages.

Utah

The state of Utah currently uses a medical review panel process. It caps noneconomic damages at \$450,000 but does not cap economic damages.

Vermont

The state of Vermont does not have a medical review panel process. It does not cap economic or noneconomic damages.

Virginia

The state of Virginia currently has a voluntary medical review panel process. It caps total economic and noneconomic damages at \$2,350,000 overall. This cap is increased by \$50,000 each year for inflation.

Washington

The state of Washington does not have a medical review panel process. It does not cap economic or noneconomic damages.

West Virginia

The state of West Virginia currently has no medical review panel process. It has a noneconomic damage cap of \$250,000 for less severe injuries that is expanded to \$500,000 in the case of death or catastrophic injury. There is no cap on economic damages.

Wisconsin

The state of Wisconsin currently uses a mandatory medical review panel process. It places a cap on noneconomic damages of \$750,000 but has no cap on economic damages.

Wyoming

The state of Wyoming currently has a mandatory medical review panel process. However, it places no cap on economic or noneconomic damages.

Statistical Analyses

To test whether malpractice cost is different between states categorized according to the status of their current medicolegal environment, statistical analyses were used to determine that there is no significant difference between the means of any pair of groups, including “excellent” versus “poor” ($p = 0.27$). This result implies that malpractice cost does not necessarily correlate with a better or worse medicolegal environment, and further reiterates the need to examine all factors independently when assessing the risks versus benefits of practicing in each state.

Illustrative Case

The need for a safe and standardized medicolegal environment cannot be overstated. To illustrate the importance of medicolegal reform, we present a lawsuit from the state of Florida.

In 2001, a neurosurgeon performed a craniotomy for resection of a benign mass causing obstruction of the ventricles. The patient was placed on an antiepileptic drug (AED) for postoperative seizure prophylaxis. On discharge home, despite prophylaxis, the patient had a postoperative seizure. The emergency medical technicians responded; however, they failed to secure the patient’s airway and she subsequently developed a brain injury due to a lack of oxygen. Although three neurosurgeons had agreed that surgery should be performed, the patient’s lawyers successfully argued that the surgery was unnecessary. Additionally, citing that the fact that the neurosurgeon not checking AED levels prior to discharge was the root cause of her injury, a jury awarded the patient \$16 million as compensation.⁵

Several key facts should be highlighted in this case. First, this case occurred prior to tort reform in Florida. In 2003, Florida was successful in setting a cap on noneconomic damages at \$500,000, which increased to \$1,000,000 in the case of wrongful death or permanent vegetative state. The Florida Supreme Court ultimately deemed this cap unconstitutional in 2017; however, the Florida House Civil Justice Committee subsequently reinstated the cap in 2019.^{6,7} Also, a recent Cochrane review demonstrated no consistent evidence to suggest that preventative AED treatments are effective in reducing the number of seizures that occur postsurgery.⁸ From a neurosurgeon’s perspective, this case highlights the fact that a case that any of us could be involved in might lead to what seems a harsh and perhaps unreasonable punishment.

Discussion

Healthcare reform in the US is an ever-evolving topic. Recently, tort reform and the legality of medical review panels have been the highlights of these discussions. Tort reform involves placing a cap on the amount of noneconomic damages, including pain and suffering, that may be

awarded as a result of a medical malpractice suit. Medical review panels are pretrial assessments of the validity of a medical malpractice suit. These panels are used to decrease the burden of frivolous lawsuits on the courts. Kosty et al.⁹ showed the effectiveness of these panels in a review of the medical review process of Louisiana from 2008 to 2017. Louisiana has the highest number of malpractice suits filed per capita in the US at 44.1 per 100,000. Despite this high number of lawsuits, Louisiana ranks 40th for average payout at \$28,465. Furthermore, no neurosurgeon has had to go to trial in the 10 years of this study. This is due primarily to the removal of frivolous lawsuits and settling of valid lawsuits prior to trial.⁹

Neurosurgery has a high risk of malpractice claims due to the innate nature of the field. Many surgeries come with significant risk in an aging population with significant medical comorbidities. Elsamadicy et al.¹⁰ analyzed closed malpractice claims against neurosurgeons between 2003 and 2012, which illustrates this risk. They found that 2131 claims were filed against neurosurgeons within this time frame. Twenty-eight percent of these claims resulted in payment to the plaintiff, with the single largest payout being \$5,600,000.¹⁰ Furthermore, Jena et al. showed that neurosurgeons have a 19.1% annual risk of facing a medical malpractice claim.³ Not surprisingly, frivolous lawsuits and increased premiums for insurance are the most common reasons cited by neurosurgeons for early retirement or restricting their practice to safer surgeries.^{11,12}

The practice of defensive medicine as a deterrent for medical malpractice claims has been on the rise. The cost of this defensive medicine in the US is approximately \$45–\$55.6 billion annually.^{13,14} This astronomical cost is primarily due to the cost of diagnostic or therapeutic tests that often will not change the treatment algorithm the treating physician will use. Recently there has been a push for tort reforms throughout the US. Although this has helped to decrease the overall number of malpractice claims, it has not led to a significant change in the practicing of defensive medicine.¹⁵ Legislative change limiting liability is also often difficult to get enacted due to the sympathetic nature of significant legitimate malpractice cases and the power of the medical malpractice attorney lobbyists.

Conclusions

Medicolegal healthcare reform will continue to play a vital role in physicians’ lives. It will dictate if physicians may practice proactively or continue to be forced to act defensively. With medicolegal reform varying greatly among states, the presence or absence of tort reform, medical review panels, and filing fees may be a significant factor in where a physician practices their trade. This is likely to be even more true for neurosurgeons given the intrinsically risky nature of our practice and the corresponding high medical malpractice insurance rates. This factor may contribute to whether a particular state has an abundance or shortage of neurosurgeons, leading to significant access consequences. A desirable legal system for neurosurgeons, including caps on economic and noneconomic damages and availability of medical review panels, can lead to safer practice.

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Disclosures

The authors report no conflict of interest concerning the materials or methods used in this study or the findings specified in this paper.

Author Contributions

Conception and design: LeFever, Menger, Kosty, Guthikonda. Acquisition of data: LeFever, Demand, Kandregula, Vega. Analysis and interpretation of data: LeFever, Demand, Kandregula, Vega, Trosclair. Drafting the article: LeFever, Demand, Kandregula, Vega, Hobley, Paterson. Critically revising the article: LeFever, Vega, Paterson, Trosclair. Reviewed submitted version of manuscript: LeFever, Trosclair. Approved the final version of the manuscript on behalf of all authors: LeFever. Statistical analysis: LeFever, Trosclair. Administrative/technical/material support: LeFever, Trosclair. Study supervision: LeFever, Menger, Kosty, Guthikonda.

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