

EPILEPSY DRIVING LAWS: SEIZING FICTION OVER FACT?

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I. INTRODUCTION

Close your eyes and imagine that you are playing baseball with your brother on a hot summer day, enjoying the warmth of childhood innocence that accompanies being seven. After an hour, you take a water break and notice that your brother loses all motor function and cognitive awareness, becoming entirely unresponsive. You scream out for your parents, frightened and confused, unable to make sense of the incident unfolding in front of you. Even when you later learn that your brother had a seizure, precipitated by his epilepsy, you still have difficulty understanding the gravity of his diagnosis. For my family, epilepsy typified our lives for two decades. And although the neurologist outlined the educational and health challenges that my brother would face, nothing could have prepared us for the much more pervasive harms of stigma, misinformation, and state-sanctioned discrimination.

Epilepsy, defined as two or more unprovoked seizures, imposes a lifetime of hardship.¹ After a diagnosis, individuals must make immediate and fundamental lifestyle changes, often at the expense of their earning capacity, societal involvement, education, and mental health.² These lifestyle changes range from dietary restrictions to avoiding locations with seizure triggers.³

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¹ *Seizing Life: Epilepsy . . . It's Complicated*, CURE EPILEPSY (Apr. 24, 2019) (downloaded using Spotify) (interviewing Dr. Marcuccilli about the impact just one seizure can have on a person's life).

² *Id.*

³ *The Curious Case of Epileptic Seizures: What Triggers a Seizure?*, PA. MED. (Aug. 19, 2019), <https://www.pennmedicine.org/updates/blogs/neuroscience-blog/2019/august/surprising-epilepsy-seizure-triggers> [<https://perma.cc/V9UV-D2PT>] (noting potential seizure triggers include stress and anxiety, excessive alcohol or drug use, hormonal changes, and dozens of others. The most common seizure trigger, however, is a missed dose of antiepileptic medication.).

The nature of the disease becomes especially concerning in terms of education and employment. For example, when choosing a college, your brother must consider: (1) how far your family can drive him to and from school, (2) access to public transportation, (3) proximity to neurologist appointments, and (4) the school's legal and social climate.⁴ His top ten choices are suddenly dwindled to one or two.

Perhaps most importantly, despite epilepsy's commonality, it remains the target of misinformation, stigma, ill-guided religiosity—subjecting those who suffer from the disease to state-sanctioned torture, involuntary sterilization, and violent exorcisms.⁵ The few states that have committed to better understanding epilepsy and to repealing many of its discriminatory laws remain in the minority.⁶ And even *those* states are hesitant to seriously address the shortcomings of its Epilepsy Driving Laws (EDLs).⁷

That stagnation is concerning because driving is an important aspect of life and socioeconomic engagement, especially for the 45% of Americans without access to public transportation.⁸ It is central to individuality.⁹ The Supreme Court in *Saenz v. Roe*¹⁰ recognized travel as a fundamental right.¹¹ But driving is a privilege, and without that privilege, the ability to obtain an education or a job, as well as to develop important social relationships, is

⁴ The federal government provides a series of protections for individuals with epilepsy within Title II of the Americans with Disabilities Act and the Rehabilitation Act of 1973, with which states must comply, but the breadth of this law is limited. Thus, states are charged with filling the gaps with state legislation, but most fail to do so, especially in the employment context. See *Discrimination by State and Local Government Agencies and the Federal Law*, EPILEPSY FOUNDATION OF AMERICA, https://www.epilepsy.com/sites/core/files/atoms/files/StateGovDiscrADA_updated%2012.2014_0.pdf [https://perma.cc/4QQF-626E] (last visited May 7, 2023).

⁵ OWSEI TEMKIN, *THE FALLING SICKNESS: A HISTORY OF EPILEPSY FROM THE GREEKS TO THE BEGINNINGS OF MODERN NEUROLOGY* (The John Hopkins Univ. Press 2d. ed. rev. 1971); see Buck v. Bell, 274 U.S. 200 (1927).

⁶ California recently updated its epilepsy driving laws to align better with the controlling opinions within the medical and scientific communities. *State Driving Laws Database*, EPILEPSY FOUNDATION OF AMERICA [hereinafter *Driving Laws Database*], <https://www.epilepsy.com/lifestyle/driving-and-transportation/laws> [https://perma.cc/Q58B-PSFK] (last visited May 8, 2023) (Select “California” from the drop-down menu and then select “get info.”).

⁷ The model driving rules put out by the National Committee on Uniform Traffic Laws and Ordinances have not been updated since 2000. UNIF. VEHICLE CODE & MODEL TRAFFIC ORDINANCE (NAT'L COMM. UNIF. TRAFFIC LAWS & ORDINANCES 2000). The American Academy of Neurology, the American Epilepsy Society, and the Epilepsy Foundation of America formed a partnership to modernize these laws in 1992, but state legislatures have been silent. Katrina E. Lutfy, Note, *On the Road Again: Revisiting State Laws That Unreasonably Restrict Drivers with Epilepsy and Burden the Physicians Who Treat Them*, 51 LOY. U. CHI. L.J. 1127, 1149 (2020).

⁸ *Public Transportation Facts*, AM. PUB. TRANSP. ASS'N, <https://www.apta.com/news-publications/public-transportation-facts/> [https://perma.cc/3S9R-YA36] (last visited May 8, 2023).

⁹ See TEMKIN, *supra* note 5.

¹⁰ *Saenz v. Roe*, 526 U.S. 489 (1999).

¹¹ In *Saenz*, Justice Stevens described the right to travel as “a virtually unconditional personal right, guaranteed by the Constitution to us all.” *Id.* at 498 (quoting *Shapiro v. Thompson*, 394 U.S. 618, 643 (1969)).

limited.¹² Moreover, it can suppress access to quality medical treatment because individuals are unable to travel long distances for neurologist visits, which is an issue because many regions are without a neurologist.¹³

State legislators must take due care in narrowly constructing these laws to extend no further than necessary to ensure driver safety because interferences of this magnitude should be reserved for situations in which public safety is most likely in jeopardy. Dr. Michael Gruenthal, an epileptologist and a Director on the Epilepsy Foundation of Kentuckiana America Board of Directors and former member of the Epilepsy Foundation of America (hereinafter “Epilepsy Foundation”) Professional Advisory Board, says these laws are “not based on scientific data, but based on opinion,” and if these laws are to stand, they must accurately represent the safety concerns surrounding drivers with epilepsy.¹⁴

Part I of this Note offers an overview of epilepsy, including its causes, symptoms, treatments, and types. It then explores the history of the disease, analyzed through philosophical, medical, and socio-economic lenses. Part II introduces modern EDLs by discussing the seven most common tenets of these laws. Part III categorizes the laws into three groups (strict, moderate, and progressive) based on those seven tenets.

Finally, Part IV outlines the solution, which revisits the modern EDLs and encourages the adoption of incremental revisions within the states’ existing regulatory frameworks. The solution proposes using Medical Advisory Boards (MABs) and treating physicians to foster a better alignment between the laws and modern data and understanding of epilepsy. Moreover, it pushes for a legal distinction between the many types of epilepsy and the consideration of mitigating factors.

II. BACKGROUND

Despite epilepsy’s long history and commonness, it remains misunderstood, even by medical professionals.¹⁵ Thus, before moving into a discussion on EDLs, this section defines seizures and epilepsy, breaks down the various types of epilepsy by frequency and effect, includes a brief

¹² See Allan Krumholz, *Driving Issues in Epilepsy: Past, Present, and Future*, 9 EPILEPSY CURRENTS 31, 33 (2009).

¹³ Gillian B. White, *Stranded: How America's Failing Public Transportation Increases Inequality*, THE ATLANTIC (May 16, 2015), <https://www.theatlantic.com/business/archive/2015/05/stranded-how-americas-failing-public-transportation-increases-inequality/393419/> [<https://perma.cc/8R9P-98DD>].

¹⁴ Telephone Interview with Michael Gruenthal, Director, Epilepsy Foundation of Kentuckiana, (Jan. 26, 2022) [hereinafter Dr. Gruenthal].

¹⁵ *Id.*

overview of diagnosis and treatment, and then provides a summary of the history of epilepsy within the legal context.

A. *Seizures v. Epilepsy*

The brain is comprised of neurons that direct bodily functions through the transmission of electrical signals,¹⁶ a process that is typically precise and predictable.¹⁷ But when that process is disrupted and the neurons fire rapidly and uncontrollably, a seizure occurs, earning seizures the epithet “electrical storm” because the misfirings look like lightning strikes.¹⁸ The symptoms most often associated with seizures are a manifestation of that abnormal brain activity.¹⁹ Epilepsy is a chronic neurological disorder that is typified by recurrent and unprovoked seizures; diagnosis requires two or more unprovoked seizures within twenty-four hours, or one seizure and a 60% or greater chance of recurrence.²⁰ Thus, if someone has only one seizure or multiple seizures that were provoked by some precipitating factor, he or she does not have epilepsy.²¹ Additionally, the effects of epilepsy are typically greater than that of a seizure because the former has “neurobiological, cognitive, psychological, and social consequences.”²² Stated differently, epilepsy is *more* than a seizure.²³

All human beings have a seizure threshold, which is the minimal electrical charge required to induce a seizure.²⁴ It is somewhat like a track hurdle, with a seizure occurring when that hurdle is overcome.²⁵ Those with epilepsy simply have a lower threshold that makes seizure activity more likely.²⁶ Thus, the average person has the potential to experience a seizure even though they are not predisposed to have one.²⁷ There are also certain external factors that can lower that threshold and make such an occurrence more likely: drug use, head trauma, illness (e.g., high fever), etc.²⁸

¹⁶ Beth Stivers, Director of Education, Epilepsy Foundation of Kentuckiana, Seizure Smart Training at Morehead State University (Mar. 6, 2019).

¹⁷ *Id.*

¹⁸ DAVID C. SPENCER, NAVIGATING LIFE WITH EPILEPSY 12 (Lisa M. Shulman, ed., 2017).

¹⁹ *Id.*

²⁰ Press Release, *International League Against Epilepsy Announces Epilepsy: A New Definition* (Apr. 15, 2014), <https://www.epilepsy.com/article/2014/4/revised-definition-epilepsy> [<https://perma.cc/B2C9-K3W5>].

²¹ SPENCER, *supra* note 18, at 13.

²² *Id.*

²³ Unlike a seizure, epilepsy has the potential to affect the individual’s memory, mood, bodily functions, and most importantly, how they operate within society, on a continuous basis. *Id.*

²⁴ Ross A. Dunne & Declan M. McLoughlin, *Electroconvulsive Therapy and Therapeutic Neuromodulation*, in CORE PSYCHIATRY 617, 617 (6th ed. 2012).

²⁵ *Id.*

²⁶ *Id.*

²⁷ *The Curious Case of Epileptic Seizures*, *supra* note 3.

²⁸ *Id.*

Thus, epilepsy, and seizures more generally, are more common than one may think; one in ten people will have a seizure in their lifetime and one in twenty-six will develop epilepsy.²⁹ There are currently 65 million individuals with epilepsy worldwide, and 3.4 million within the United States, making it more common than autism, cerebral palsy, Parkinson's, and multiple sclerosis—combined.³⁰ Some predict that number to be exponentially higher when accounting for those individuals who choose not to report their condition or to seek treatment.³¹ Regardless, epilepsy is one of the most common neurological disorders in recorded history.³² Reportedly, many prominent historical figures suffered from epilepsy, including Socrates, Aristotle, Napoleon Bonaparte, and Vincent Van Gogh.³³

But not all seizures are the same, as there are over forty different types that vary in terms of their ictal and post-ictal symptoms.³⁴ Experts place the types into two broad categories: (1) generalized and (2) partial.³⁵ Generalized seizures affect the entire brain at the outset and typically cause a loss of consciousness, while partial seizures begin in one part of the brain and may not lead to a loss of consciousness.³⁶ Partial seizures are further categorized as either simple or complex.³⁷ Simple-partial seizures last less than ninety seconds and do not cause a loss of consciousness, while complex-partial seizures can last anywhere from one to ten minutes and can cause staring, automatisms, confusion, and even amnesia.³⁸ For a succinct breakdown by type, refer to tables 1.1 and 1.2.

²⁹ See *supra* text and accompanying notes 20–21.

³⁰ *Who can Get Epilepsy*, EPILEPSY FOUND. OF AM., <https://www.epilepsy.com/what-is-epilepsy/understanding-seizures/who-gets-epilepsy#:~:text=Seizures%20and%20epilepsy%20are%20more,may%20be%20at%20greater%20risk.> [<https://perma.cc/25D9-TAGV>] (last visited Jan. 6, 2023).

³¹ See Lisa Schlein, *Stigma Keeps People with Epilepsy from Seeking Treatment*, WORLD HEALTH ORG. (June 22, 2019, 7:07 AM), <https://www.voanews.com/a/stigma-keeps-people-with-epilepsy-from-seeking-treatment/4969568.html> [<https://perma.cc/R873-42X2>] (“The World Health Organization says millions of people with epilepsy are reluctant to seek treatment because of the stigma attached to their ailment, leading to the premature death of many.”).

³² *Epilepsy*, WORLD HEALTH ORG. (Feb. 9, 2022), <https://www.who.int/news-room/factsheets/detail/epilepsy> [<https://perma.cc/6Z9X-8LCC>].

³³ SPENCER, *supra* note 18, at 28.

³⁴ The ictal period refers to the seizure itself while the post-ictal period is that period between the end of the seizure and when the person “returns to baseline.” Some types of seizures produce lasting effects during that post-ictal period. Waleed Abood & Susanta Bandyopadhyay, *Postictal Seizure State*, NCBI (July 16, 2021), <https://www.ncbi.nlm.nih.gov/books/NBK526004/> [<https://perma.cc/UG9K-HFSE>]; Stivers, *supra* note 16.

³⁵ SPENCER, *supra* note 18, at 15–18.

³⁶ *Id.* at 16, 24–28.

³⁷ *Id.* at 16–17.

³⁸ *Types of Seizures*, JOHN HOPKINS MED., <https://www.hopkinsmedicine.org/health/conditions-and-diseases/epilepsy/types-of-seizures> [<https://perma.cc/WJ4Y-M8DQ>] (last visited May 8, 2023).

B. *Diagnosis and Treatment*

Most cases are diagnosed based on clinical features supported by an electroencephalogram (EEG), a diagnostic test that measures the patient's brain waves to detect abnormalities.³⁹ Physicians can also use CAT scans, bloodwork, and simple observation, but these methods are not as common.⁴⁰ Treatment begins after an abnormal result if the physician finds a strong likelihood of unprovoked seizure recurrence.⁴¹ Antiepileptic drugs are the most common treatment method, and the more radical methods, such as brain surgery and vagus nerve stimulators, are reserved for the 30% of cases where medication fails to control the epilepsy.⁴² However, those alternative treatment methods require the physician to pinpoint the location of the abnormal brain activity, which is impossible in the vast majority of cases.⁴³

After someone is diagnosed, they are referred to a neurologist, a doctor that specializes in brain disorders.⁴⁴ Patients in more serious cases may be urged to consult an epileptologist, which is a neurologist who has pursued an additional one or two years of sub-specialty training in epilepsy.⁴⁵ There is a shortage of these specialists, however, so 33% of Americans with epilepsy will be treated by general physicians, or not at all.⁴⁶ Studies suggest that 75% of individuals in low income countries will never receive the epilepsy care and treatment they need.⁴⁷

C. *History of Epilepsy*

Epilepsy was the first neurological disorder recorded, documented in Mesopotamia by the Babylonians who thought it was inflicted by evil

³⁹ SPENCER, *supra* note 18, at 95.

⁴⁰ *Id.* at 102–20 (referencing dozens of other methods of testing used for epilepsy diagnosis, including, but not limited to, brain imaging, intracranial EEGs, single photon emission computed tomography, etc.).

⁴¹ *Epilepsy*, MAYO CLINIC, <https://www.mayoclinic.org/diseases-conditions/epilepsy/diagnosis-treatment/drc-20350098> [<https://perma.cc/L4SU-RXQ2>] (last visited May 8, 2023).

⁴² *Medical Management of Epilepsy*, JOHNS HOPKINS MED., <https://www.hopkinsmedicine.org/health/conditions-and-diseases/epilepsy/medical-management-of-epilepsy> [<https://perma.cc/5WSQ-UBA6>] (last visited May 8, 2023).

⁴³ Stivers, *supra* note 16 (“In about 70% of people with epilepsy, the cause is not known.”).

⁴⁴ *Diagnosis*, EPILEPSY FOUND. OF AM., <https://www.epilepsy.com/diagnosis> [<https://perma.cc/CUJ9-XAAU>] (last visited May 8, 2023).

⁴⁵ *Id.* (“For routine treatment of epilepsy, it is usually not necessary to see an epileptologist. A consultation may be needed in certain circumstances, such as counseling about pregnancy and childbirth and when seizures are not controlled.”).

⁴⁶ *Id.*

⁴⁷ *Epilepsy*, *supra* note 32.

spirits.⁴⁸ Spiritual explanations persisted until the 18th century as the public ostracized individuals with epilepsy from society and denied them equal opportunities.⁴⁹ Hippocrates was the first to classify the affliction as a brain disorder and to dispel the idea that its origins were divine.⁵⁰ Epilepsy derives from the Greek word “epilambanien,” meaning to “seize, take hold of, or attack.”⁵¹ It was not until the mid 1960s, when Dr. John Hughlings Jackson began connecting bodily functions to portions of the brain, that society and the medical community unanimously recognized seizures as naturally occurring.⁵²

However, it took even longer for treatment to be taken seriously.⁵³ Dr. Jackson persistently advocated for those with epilepsy and pushed for individualized assessments, believing treatment began with identifying where the seizure originated in the brain.⁵⁴ Previously, treatment involved inhumane treatments surrounding religious practices, such as exorcisms, forced consumption of human blood, and being shoved through openings in stones and trees during the seizure.⁵⁵

D. Stigma, Prejudice, and Discrimination

Although epilepsy is no longer considered a spiritual defect, people with epilepsy still suffer stigma because of their condition. Stigma is a lack of knowledge and understanding, from which prejudice and discrimination flow.⁵⁶ Stigma causes both discrete and overt discrimination,⁵⁷ mostly taking the form of employment discrimination and restrictions on societal engagement within this context.⁵⁸

Treating epilepsy is akin to fighting a war on two fronts. The first is the realm of medicine where novel scientific advancements have altered the

⁴⁸ TEMKIN, *supra* note 5, at xi.

⁴⁹ *Id.*

⁵⁰ *Id.* at 4–5.

⁵¹ S.J. Baloyannis, *Epilepsy: A Way from Herodotus to Hippocrates*, 28 EPILEPSY, ART & HIST. 303, 305 (2013).

⁵² MACDONALD CRITCHLEY & EILEEN A. CRITCHLEY, JOHN HUGHLINGS JACKSON: FATHER OF ENGLISH NEUROLOGY 76 (1998).

⁵³ *Id.*

⁵⁴ *History of Neuroscience: John Hughlings Jackson*, NEUROSCIENTIFICALLY CHALLENGED, <https://neuroscientificallychallenged.com/posts/history-of-neuroscience-john-hughlings-jackson> [https://perma.cc/UVN3-PJ8E] (last visited May 8, 2023).

⁵⁵ Mia Tuft & Karl O. Nakken, *Epilepsy as Stigma—Evil, Holy, or Mad?*, LIFE IN MED. (Dec. 9, 2014), <https://tidsskriftet.no/en/2014/12/epilepsy-stigma-evil-holy-or-mad> [https://perma.cc/FW3D-E6JH].

⁵⁶ Graham Thornicroft et al., *Stigma: Ignorance, Prejudice, or Discrimination*, 190 BRITISH J. OF PSYCHIATRY 192, 192 (2007) (“The term stigma refers to problems of knowledge (ignorance), attitudes (prejudice) and behavior (discrimination).”).

⁵⁷ Elaine Wyllie & Becky Tilahun, *Relieving the Stigma of Epilepsy*, U.S. NEWS & WORLD REP. (Nov. 7, 2019), <https://health.usnews.com/health-care/for-better/articles/relieving-the-stigma-of-epilepsy>.

⁵⁸ *See id.*

efficacy of epilepsy treatment.⁵⁹ The second is the realm of public opinion, a “darker world of superstition and prejudice,” that has managed to resist change.⁶⁰ Some doctors believe that epilepsy stigma persists because those with epilepsy do not talk about their condition publicly due to the fear of societal backlash.⁶¹ Other experts attribute stigma to the failure of advocacy organizations to educate the public.⁶² Whatever the reason, the effects of stigma are severe.⁶³ It causes stress and anxiety for those experiencing discrimination, and in more severe instances, depression and suicidal ideations—as the suicide rate for individuals with epilepsy is 22% higher than the general population.⁶⁴ Importantly, it also incentivizes individuals to conceal their condition and avoid treatment.⁶⁵

The Epilepsy Foundation, International League Against Epilepsy (ILAE), and other advocacy organizations have mobilized educational campaigns to combat stigma.⁶⁶ For example, the Epilepsy Foundation instituted an advocacy program that lobbies state and federal legislators.⁶⁷ And the Epilepsy Foundation of Kentuckiana facilitates “Bounce out the Stigma,” a program providing children with epilepsy an opportunity to be around other similarly situated individuals to mitigate feelings of inferiority experienced from stigma.⁶⁸ Further, the ILAE has recently employed a social media campaign that posts informational flyers on popular social media sites like Twitter and Facebook.⁶⁹ A lot of work remains, but these efforts have produced some successes.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² See Hanneke M. de Boer, *Epilepsy Stigma: Moving from a Global Problem to Global Solutions*, 19 SEIZURE 630, 630 (2010) (“The history of epilepsy can be summarized as 400 years of ignorance, superstition and stigma, followed by 100 years of knowledge, superstition and stigma.”).

⁶³ *Id.*

⁶⁴ Niu Tian et al., *Suicide Among People with Epilepsy: A Population-Based Analysis of Data from the U.S. National Violent Death Reporting System*, 61 EPILEPSY & BEHAV. 210, 213 (2016).

⁶⁵ Bowers, *supra* note 61.

⁶⁶ *Take Action*, EPILEPSY FOUND. OF AM., <https://www.epilepsy.com/about-us/advocacy/get-involved-advocacy/take-action> [<https://perma.cc/SR5V-6R4H>] (last visited May 8, 2023) (This is a dynamic webpage in which the viewer can learn more about the dozens of advocacy projects being currently employed by the Foundation and other organizations.).

⁶⁷ *Id.*

⁶⁸ *Bounce Out the Stigma Basketball Program*, EPILEPSY FOUNDATION OF KENTUCKIANA, <https://www.efky.org/bounce-out-the-stigma-basketball-camp.html> [<https://perma.cc/Y5FT-V7VU>] (last visited May 9, 2023) (Bounce Out the Stigma is a multi-day basketball camp for children with epilepsy, begun by ‘Mighty Mike’ Simmel, a Harlem Wizards basketball player with epilepsy.).

⁶⁹ Press Release, International League Against Epilepsy, *Raising Epilepsy Awareness and Decreasing Stigma Against Epilepsy Using Social Media and Sensation Campaigns* (Nov. 10, 2019), <https://www.ilae.org/regions-and-countries/regions/ilae-north-america/global-health-database/raising-epilepsy-awareness-and-decreasing-stigma-against-epilepsy-using-social-media-and-sensitisation-campaigns> [<https://perma.cc/25YX-HE5M>].

E. Legal History of Epilepsy

Unsurprisingly, the stigma discussed above permeated the minds of legislators and judges throughout the past two centuries, and stigma is much more dangerous when held by those with the power to alter the legal rights of those with epilepsy. Unfortunately, epilepsy has received negative treatment in both legislation and jurisprudence over the past two centuries.⁷⁰ This section offers two prominent examples: (1) the Americans with Disabilities Act of 1990 (ADA) and (2) *Buck v. Bell*.

1. Americans With Disabilities Act of 1990 (ADA)

Congress passed the ADA intending to prevent disability discrimination in employment, government work, public accommodations, commercial facilities, transportation, and telecommunications.⁷¹ The ADA arises most often in the employment context.⁷² The Act prevents discrimination in “recruitment, hiring, promotions, training, pay, social activities, and other privileges of employment.”⁷³ It also limits what questions potential employers may ask during the recruitment process.⁷⁴

Unfortunately, not all disabilities qualified for protections under the original ADA.⁷⁵ It only extended to persons suffering from a physical or mental impairment that substantially limited their major life activities, a person who had a recorded history of such an impairment, or someone that was viewed by others as suffering from such an impairment.⁷⁶ But the statute did not define the covered disabilities, leaving it to judicial interpretation.⁷⁷ Subsequent judicial decisions further limited its applicability as explained below by Jeanne Carpenter, attorney and former President of the Epilepsy Foundation:

⁷⁰ See *Buck v. Bell*, 274 U.S. 200 (1927); see also Americans with Disabilities Act of 1990, 104 Stat. 327 (1990).

⁷¹ Jeanne Carpenter, *The Impact of the Americans with Disabilities Amendments Act on Persons with Epilepsy*, THE EPILEPSY LEGAL DEF. FUND, <https://epilepsyode3.prod.acquia-sites.com/sites/default/files/atoms/files/Impact%20of%20the%20ADAAA%20short%20summary.pdf> [<https://perma.cc/5BKP-ELK5>] (last visited May 8, 2023).

⁷² *Id.*

⁷³ *A Guide to Disability Rights Law*, U.S. DEP'T OF JUST. C. R. DIV. (Feb. 2020), <https://www.ada.gov/cguide.htm> [<https://perma.cc/F7QF-W4BF>].

⁷⁴ *Id.*

⁷⁵ Americans with Disabilities Act of 1990, 104 Stat. 327 (1990).

⁷⁶ *Id.*

⁷⁷ Carpenter, *supra* note 71.

In 1999, the Supreme Court ruled that, in determining whether a person's impairment is covered as a disability under the ADA, the effects of medication and other "mitigating" measures (such as prosthetic limbs or hearing aids) on that impairment must be considered. And in 2002, the Supreme Court ruled that in order to be protected from discrimination, an individual's disability must severely restrict or prevent him or her from engaging in major life activities such as walking, working or breathing. Based on these rulings, courts around the country have thrown out 90 percent or more of epilepsy-related discrimination cases, finding that persons with epilepsy whose condition is controlled with medication are too functional, and therefore, do not have a disability covered under the ADA.⁷⁸

Carpenter went on to explain that, in most instances, an employer could refuse to hire someone on the basis of their epilepsy, and the individual would be without protection or legal recourse.⁷⁹

Hope seemed to be on the horizon in 2008 when President Bush enacted the "ADA Amendments Act" (ADAAA), which exponentially increased the number of people with epilepsy covered under the ADA.⁸⁰ The ADAAA still required that the disability substantially limit one's life activities, but (1) medication or treatment adaptations⁸¹ are no longer considered, (2) the "severely restrict" test was overturned because it was too high a standard, and (3) dormant conditions (e.g., controlled epilepsy) are covered if the condition substantially limits life activities when active.⁸²

2. Involuntary Sterilization

Most viewed epilepsy as a psychological disorder until the 1970s, thinking it could be cured through counseling and sedation.⁸³ Thus, individuals with epilepsy were sent to psychiatric institutions, usually against their will.⁸⁴ This became common practice around 1896, the same time that eugenics policies took hold in America due to the teachings of British

⁷⁸ *Id.*

⁷⁹ *See id.*

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² *Id.*

⁸³ Tuft & Nakken, *supra* note 55.

⁸⁴ *Id.*

scholar, Sir Francis Galton.⁸⁵ But what began as marriage laws⁸⁶ and public interest campaigns⁸⁷ transitioned into legislators and judges playing God. By 1909, thirty-three states had involuntarily sterilized individuals deemed unworthy of procreation,⁸⁸ focusing on those held within psychiatric institutions.⁸⁹

The Supreme Court in *Buck v. Bell*⁹⁰ upheld involuntary sterilizations in a nine-to-one decision.⁹¹ Justice Holmes, author of the majority opinion, believed that sterilization was necessary for public health.⁹² He championed it as a means for societal preservation, stating:

It is better for all the world, if instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes.⁹³

In 1942, *Skinner v. Oklahoma*⁹⁴ presumably halted this practice but not before the states had sterilized 70,000 Americans.⁹⁵ However, historians predict that the practice continued well into the 1970s, targeting minority groups.⁹⁶ For example, the Government Accountability Office believes that 25–50% of Native Americans were involuntarily sterilized from 1970 to 1976.⁹⁷

⁸⁵ *Eugenics*, HIST. (Nov. 15, 2017), <https://www.history.com/topics/germany/eugenics> [<https://perma.cc/X8A6-EV5N>].

⁸⁶ Connecticut made it illegal in 1896 for individuals with epilepsy to get married. *Id.*

⁸⁷ Conventions were held to promote the theory of eugenics, and “pedigree registries” were created by prominent businessmen, such as the founder of Kellogg’s. *Id.*

⁸⁸ *Id.*

⁸⁹ Priti Patel, *Forced Sterilization of Women as Discrimination*, 38 PUB. HEALTH REV. 15 (2017), <https://publichealthreviews.biomedcentral.com/articles/10.1186/s40985-017-0060-9> [<https://perma.cc/X2W9-SCGZ>].

⁹⁰ *Buck v. Bell*, 274 U.S. 200, 207 (1927).

⁹¹ Trevor Burrus, *The United States Once Sterilized Tens of Thousands—Here’s How the Supreme Court Allowed It*, CATO INST. (Jan. 27, 2016), <https://www.cato.org/commentary/united-states-once-sterilized-tens-thousands-heres-how-supreme-court-allowed-it> [<https://perma.cc/SM6M-N9NY>].

⁹² *Buck*, 274 U.S. at 207.

⁹³ *Id.*

⁹⁴ *Skinner v. Oklahoma*, 316 U.S. 535 (1942).

⁹⁵ Fresh Air, *The Supreme Court Ruling that Led to 70,000 Forced Sterilizations*, NPR (Mar. 7, 2016), <https://www.npr.org/sections/health-shots/2016/03/07/469478098/the-supreme-court-ruling-that-led-to-70-000-forced-sterilizations> [<https://perma.cc/MHS3-7USU>].

⁹⁶ *Id.*

⁹⁷ *Eugenics*, *supra* note 85.

F. *The Foundations of EDLs*

EDLs, as they currently stand, have persisted for decades, resisting the growing field of scientific knowledge surrounding epilepsy and the public information campaigns employed by the aforementioned institutions.⁹⁸ In 1992, there appeared to be progress when a task force of epilepsy organizations⁹⁹ proposed a series of amendments to these laws, but the proposed legislation gained little traction within the legal community.¹⁰⁰ This section begins with an overview of state power and then introduces the seven most common tenets of EDLs.

1. Police Power and Transportation Legislation

The Founders sought to create a system of government that divided power between one centralized federal government and multiple state governments.¹⁰¹ Thus, in drafting the Constitution, they reserved control over matters of local concern to the states.¹⁰² Within those reserved powers¹⁰³ is the police power, which allows state legislatures to draft laws for the health, safety, morals, and welfare of its citizens, inherently including driving laws.¹⁰⁴ Thus, a uniform standard adopted at the federal level is unconstitutional – changes must be made on a state-by-state basis. State legislatures work closely with state transportation agencies, such as the Department of Motor Vehicles, to draft, implement, and enforce these laws.¹⁰⁵

2. Variability in EDLs

Like most areas of state power, EDLs vary substantially from state to state, reflecting the different societal values in each state and region.¹⁰⁶ This

⁹⁸ See *supra* notes 68–69 and accompanying text.

⁹⁹ Membership included the American Academy of Neurology, American Epilepsy Society, and Epilepsy Foundation of America. See Lufty, *supra* note 7, at 1148.

¹⁰⁰ See *id.*; see also June M. Sullivan, *Physicians as Gatekeepers for Society: Confidentiality of Protected Health Information Versus Duty to Disclose At-Risk Drivers*, 16 HEALTH LAW. 20 (2003).

¹⁰¹ See THE FEDERALIST NO. 45 (James Madison).

¹⁰² *Id.*

¹⁰³ U.S. CONST. amend. X (referring to those powers not explicitly granted to Congress under the Constitution. The Tenth Amendment establishes that any powers not specifically delegated to the federal government under the Constitution belong to the states.).

¹⁰⁴ See *Berman v. Parker*, 348 U.S. 26, 32 (1954) (“Public safety, public health, morality, peace and quiet, law and order – these are some of the more conspicuous examples of the traditional application of the police power to municipal affairs.”).

¹⁰⁵ *Transportation Law*, LAWINFO, <https://www.lawinfo.com/resources/transportation-law/> [https://perma.cc/QTT9-84DQ] (last visited May 9, 2023).

¹⁰⁶ See *infra* Figure 2.1.

is problematic for many reasons. First, inconsistency makes it difficult for physicians treating out-of-state patients to stay updated on the law where the patient lives.¹⁰⁷ For example, a Missouri physician treating a patient from Arkansas could face civil liability in Arkansas for failure to report the patient's seizures to the DMV if the patient causes a wreck. Missouri grants immunity to physicians in the same circumstances.¹⁰⁸ Second, individuals with epilepsy may have difficulty understanding the law, leading to unintentional violations. For example, in Kentucky, someone who has been seizure-free for three months is permitted to drive. However, that same driver would violate West Virginia law where twelve months seizure-free are required in order to drive.¹⁰⁹ Thus, a state-by-state model rule is necessary to lessen the burden placed on both practitioners and patients.¹¹⁰

3. Seven Common Components of EDLs

Although EDLs are highly variable, most states follow similar structures. This section outlines the seven tenets currently addressed within every state's EDLs.

a. Location and Wording of the Laws

EDLs are not stand-alone statutes.¹¹¹ Rather, each EDL is a collection of multiple statutes that implicate the actions of both drivers with epilepsy and the physicians that treat them.¹¹² Moreover, most of the statutes do not expressly mention epilepsy.¹¹³ Instead, they group epilepsy within the broader category of cognitive impairments, treating it synonymously with a number of other physical and mental disabilities.¹¹⁴ Also, the statutes are typically broad and delegate authority to the DMV, which may not rely on a Medical Advisory Board (MAB).¹¹⁵ Thus, driving laws in most jurisdictions come from DMV policy and other administrative regulations.

This understandably causes confusion among drivers and physicians alike, especially for patients who move states and physicians who treat

¹⁰⁷ See Lutfy, *supra* note 7, at 1150.

¹⁰⁸ Driving Laws Database, *supra* note 6 (Select "Missouri" and "Arkansas" from the drop-down menus and then select "compare.").

¹⁰⁹ *Id.* (Select "Kentucky" and "West Virginia" from the drop-down menus and then select "compare.").

¹¹⁰ See *supra* notes 101–04 and accompanying text.

¹¹¹ See Lutfy, *supra* note 7, at 1150.

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ See Stacy L. Rilea, *Crash Risk of Drivers with Physical and Mental (P&M) Conditions and Changes in Crash Rates Over Time*, STATE OF CAL. DMV (2017), <https://www.dmv.ca.gov/portal/uploads/2021/11/s6-252.pdf>; see also N.Y. VEH. & TRAF. § 502(8)(d)(ii) (2020).

¹¹⁵ See, e.g., NEB. REV. STAT. § 60-4, 118(3) (2020).

patients from multiple states. In an attempt to alleviate some of this concern, the Epilepsy Foundation put together a comprehensive database where one can easily locate the EDLs within each state.¹¹⁶ But the database offers incomplete information for states that operate upon the discretion of an agency rather than a blanketly applicable law. It is also difficult to predict how the law is actually applied since states rely on specific facts of each case.

b. Seizure-Free Period

All fifty states and the District of Columbia (D.C.) require an individual to be seizure-free for a certain period of time before driving.¹¹⁷ Thirty-eight states and D.C. set that seizure-free period by statute: twelve states impose a three-month period, twenty-one impose a six-month period, and five states and D.C. impose a one-year period.¹¹⁸ The remaining twelve states allow the DMV to set the seizure-free period, which can be done on a case-by-case basis.¹¹⁹ Once the applicable period ends, the individual must submit physician certification warranting that the driver has satisfied the seizure-free requirement and is otherwise fit to drive.¹²⁰

Seizure-free periods are the most accurate predictor of crash risk posed by drivers with epilepsy, with the risk decreasing each month the individual goes without a seizure.¹²¹ Historically, requiring a twelve month seizure free period was the most common driving restriction as it is estimated to prevent 80% of epilepsy related crashes.¹²² But on average, 50% of the affected persons will never again crash.¹²³ Stated differently, if 100 people with epilepsy lost their license for twelve months, 50 of them theoretically pose no additional driving risk as compared to the general population. Alternatively, a three-month seizure-free period, as proposed by the Epilepsy Foundation, prevents 50% of epilepsy related crashes while affecting only 25% of drivers with no increased crash risk.¹²⁴

But in reality, compliance with shorter seizure-free periods is more likely, in turn preventing more seizure-related crashes than lengthier time periods.¹²⁵ Allan Krumholz, Professor of Neurology at the University of

¹¹⁶ *Driving Laws Database*, *supra* note 6 (Users may select a state from the drop-down menu and click “get info” to receive a comprehensive breakdown and citations to its epilepsy driving laws.).

¹¹⁷ *Id.* (See author-created Figure 2.1, as there is not an updated list of state EDLs available.).

¹¹⁸ *Id.*

¹¹⁹ *See, e.g.*, IDAHO CODE § 49-326(1)(c)(1) (2020).

¹²⁰ *See, e.g.*, N.Y. VEH. & TRAF. § 502(8)(d)(ii) (2020).

¹²¹ Krumholz, *supra* note 12, at 31.

¹²² *Id.* at 32.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.* at 32–33.

Maryland School of Medicine, opined that drivers with epilepsy are more likely to ignore longer seizure-free periods, thus diluting its public safety value.¹²⁶ Krumholz points to two state studies,¹²⁷ both of which found that the crash rate for those with epilepsy is lower in states with three-month periods than those with six or twelve-month periods.¹²⁸

c. Mitigating and Aggravating Factors

Half of the states correctly recognize that not all cases pose the same crash risk and thus allow for deviation from the set seizure-free period, if appropriate.¹²⁹ Some states give broad discretion to the DMV to decide,¹³⁰ while others enumerate the considerable factors by statute.¹³¹ Also, many of those states offer limited licenses, allowing an individual to drive prior to the expiration of the seizure-free period, with certain restrictions.¹³² For example, if an individual's seizures are nocturnal (only occurring at night), D.C. will grant them a daytime license.¹³³ This goes both ways, though. The state can also impose an upward deviation from the set time period.¹³⁴

d. Mandatory Physician Reporting and Liability

Physicians may report their patient's seizure activity to the DMV if they believe that they are unable to drive safely, but six states statutorily require disclosure.¹³⁵ Of the forty-four states that do not require disclosure, eleven

¹²⁶ *Id.* (“More permissive restrictions (i.e., shorter seizure-free intervals), although potentially increasing an individual's risk of a seizure-related crash, may actually reduce the cumulative crash risk posed by epilepsy on the whole, as it promotes better compliance with legal driving restrictions among all people with seizures.”).

¹²⁷ Joseph F. Drazkowski et al., *Seizure-Related Motor Vehicle Crashes in Arizona Before and After Reducing the Driving Restriction from 12 to 3 Months*, 78 MAYO CLINIC PROC. 819, 821 (2003); G.L. Krauss et al., *Risk Factors for Seizure-Related Motor Vehicle Crashes in Patients with Epilepsy*, 52 NEUROLOGY 1324, 1328 (1999).

¹²⁸ *See id.*

¹²⁹ *See infra* Table 2.1.

¹³⁰ South Dakota allows for a departure from its 6- to 12-month seizure-free period if the DMV finds it reasonable in that specific instance. It is typically determined by looking at the recommendations of medical professionals. S.D. CODIFIED LAWS §§ 32-12-46, 32-12-36, 32-12-37 (2020).

¹³¹ For example, Arizona allows for a departure from the three-month seizure-free period if the seizure: (1) was the result of a medication change, (2) was an isolated incident with a small chance of recurrence, (3) was nocturnal, or (4) occurred after a prolonged aura. ARIZ. ADMIN. CODE § 17-4-506(D) (2020).

¹³² *Id.*

¹³³ D.C. allows for the licensure of an individual with epilepsy if “the seizures are nocturnal seizures and clearly documented to occur only at night.” D.C. Mun. Regs. tit. 18 § 106.9 (2020).

¹³⁴ This traditionally relates to the actions of the patient, such as a refusal to adhere to a medication or treatment regimen. *See* 540 MASS. CODE REGS. 24.06(2) (2020).

¹³⁵ *See, e.g.*, DEL. CODE ANN. tit. 24, § 1763 (2020) (“Every physician attending or treating persons who are subject to losses of consciousness due to disease of the central nervous system shall

permit civil liability against physicians who fail to report seizure activity when a crash results.¹³⁶ The remaining states expressly immunize physicians from civil liability in these circumstances.¹³⁷

Physicians vehemently oppose both mandatory reporting and physician liability because it creates an environment of policing rather than treatment.¹³⁸ In a study conducted by the American Academy of Neurology, 13% of respondents felt that mandatory reporting degraded their relationship with their physician, and it incentivized the future concealment of their seizures.¹³⁹ Dr. Gruenthal opined that:

[t]he majority of physicians believe [mandatory reporting] is a mistake, as it causes patients to not be as forthcoming. That is already an issue, and this just further exacerbates that fact. Driving is central to everyday life, and public transportation is minimal, so it is a very real concern that patients will hide their seizure activity so that they will not lose driving privileges.¹⁴⁰

Dr. Gruenthal stated that physician liability is no better, as it still breaks down the physician-patient relationship and does not make the public, or patient, any safer.¹⁴¹

Dr. William Robertson, a pediatric neurologist at the University of Kentucky, shared these beliefs, finding mandatory physician reporting an unnecessary degradation of the doctor-patient relationship that does not make the patient any safer.¹⁴² He went on to say:

What if I take them off of their existing medication, which has adequately controlled their seizures, to try another with less side effects and they have a seizure as a result? That is not their fault, and I will put them back on the original medication and seizure

report within 1 week to the Division of Motor Vehicles the names, ages and addresses of all such persons unless such person's infirmity is under sufficient control to permit the person to operate a motor vehicle with safety to person and property.").

¹³⁶ Those states include Alabama, Alaska, Arkansas, Hawaii, Idaho, Massachusetts, Mississippi, Nebraska, Ohio, Tennessee, and Virginia. See *infra* Table 2.1. *Driving Laws Database*, *supra* note 6.

¹³⁷ Press Release, American Academy of Neurology, *Mandatory Reporting of Seizures Can Have Negative Impact* (Apr. 2, 2003), <https://www.aan.com/PressRoom/home/PressRelease/133> [<https://perma.cc/27S5-XFK2>].

¹³⁸ See generally *id.*

¹³⁹ *Id.*

¹⁴⁰ Dr. Gruenthal, *supra* note 14.

¹⁴¹ *Id.*

¹⁴² Telephone Interview with William Robertson, MD, Pediatric Neurologist, (Feb. 14, 2022) [hereinafter Dr. Robertson].

recurrence will be unlikely. Under a mandatory reporting jurisdiction, I would have to report that.¹⁴³

Several comparative analyses have been conducted between mandatory and optional reporting jurisdictions, and the former has no fewer epilepsy related crashes than the latter.¹⁴⁴ Moreover, every state requires patients to report their condition to the DMV, negating the need for physicians to do the same.¹⁴⁵ Both Dr. Robertson and Dr. Gruenthal believe physicians will report the condition if necessary—even without a legal mandate.¹⁴⁶

e. Periodic Medical Updates

All states except Nebraska and New Hampshire reserve the right to request from the treating physician or the patient a medical report that outlines the patient's treatment status and fitness to drive.¹⁴⁷ The reports may be requested by the DMV on an as-needed basis,¹⁴⁸ or the frequency of the reports may be set statutorily.¹⁴⁹ The production of such report is a requirement each time someone applies for or renews their license.¹⁵⁰

f. Utilization of a Medical Advisory Board

A Medical Advisory Board (MAB) is comprised of medical professionals and is tasked with: (1) establishing medical standards for licensure and (2) reviewing individual cases to discern whether the license applicant can safely drive.¹⁵¹ MABs serve a predominantly advisory role, although some states allow the board to arbitrate licensure decision appeals.¹⁵² MABs work closely with the DMV and aid in more complex situations that necessitate specialized expertise.¹⁵³

¹⁴³ *Id.*

¹⁴⁴ Richard S. McLachlan et al., *Impact of Mandatory Physician Reporting on Accident Risk in Epilepsy*, 48 *EPILEPSIA* 1500–05 (2007), construed in *Compulsory Physician Reporting of Epilepsy Might not Reduce Risk of Motor Vehicle Accident*, 3 *NAT. REV. NEUROL.* 422, 422 (2007).

¹⁴⁵ Krumholz, *supra* note 12, at 31.

¹⁴⁶ Dr. Robertson, *supra* note 141; Dr. Gruenthal, *supra* note 14.

¹⁴⁷ Bowers, *supra* note 61.

¹⁴⁸ See, e.g., FLA. ADMIN. CODE ANN. r. 15A-5.004(2) (2020).

¹⁴⁹ See D.C. Mun. Regs. tit. 18, § 106.8 (2020); see also KY. REV. STAT. ANN. § 186.411(1) (LexisNexis 2020).

¹⁵⁰ *Driving Laws Database*, *supra* note 6.

¹⁵¹ See Kathy H. Lococo et al., *Medical Review Practices for Driver Licensing, Volume 3: Guidelines and Processes in the United States*, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN. (Apr. 2017).

¹⁵² See, e.g., FLA. ADMIN. CODE ANN. r. 15A-1.0195 (2020).

¹⁵³ Lutfy, *supra* note 7, at 1189.

g. Right to Appeal

All states allow an individual to appeal a licensing decision, but the process varies from state to state—both in terms of the general procedural requirements and the reviewing entity.¹⁵⁴ For example, in Kentucky, an individual appeals the decision to the circuit court in the county where the individual lives, but they must wait ninety days.¹⁵⁵ Alternatively, in Nevada, the individual can appeal immediately to the DMV, but they must do so within thirty days.¹⁵⁶

III. ANALYSIS

Though every state recognizes the need for some level of precautionary driving restrictions, state EDLs are highly variable, and very few are based on full and complete scientific understanding and data. Rather, they are the products of faulty statistical analysis that overestimates the risk that drivers with epilepsy pose. This section discusses the data on which states have unjustly relied, introducing the fallacies in data analysis. It then breaks up state EDLs into three categories based on the degree of regulation. Finally, it compares some state EDLs to those employed by other countries.

A. Statistical Data Supporting Existing EDLs

Although driving is recognized as only a privilege, it is a practical necessity because it dictates one's socio-economic opportunities. State legislatures indisputably recognize that fact, but they view EDLs as a necessary tool in ensuring the safety of both the person with epilepsy and others on the road.¹⁵⁷ This is premised on studies that show drivers with epilepsy have a higher crash rate than the general population.¹⁵⁸ For example, the California DMV found that people with physical and mental disorders, specifically mentioning epilepsy, cause sixteen to forty-nine crashes per 100 drivers, while that of the general population is only seven crashes per 100 drivers.¹⁵⁹ Similarly, a federal study found that the crash rate for drivers with epilepsy is 1.13 to 2.16 times higher than the general population.¹⁶⁰

¹⁵⁴ *Driving Laws Database*, *supra* note 6.

¹⁵⁵ KY. REV. STAT. ANN. § 186.411(5) (LexisNexis 2020).

¹⁵⁶ NEV. ADMIN. CODE § 483.320 (2020).

¹⁵⁷ *Driving Laws Database*, *supra* note 6.

¹⁵⁸ Rilea, *supra* note 114, at 2–5.

¹⁵⁹ *Id.*

¹⁶⁰ William C. Chen et al., *Epilepsy and Driving: Potential Impact of Transient Impaired Consciousness*, 30 EPILEPSY BEHAV. 50, 50 (Jan. 2014), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4098969/> [<https://perma.cc/8SC4-XN7Q>].

But this data is rooted in flawed statistical analysis that fails to represent the true risks posed by drivers with epilepsy.

1. Deficiencies in the Data

The studies finding epilepsy to pose a statistically significant risk contain four fatal flaws. First, epilepsy is grouped with other physical and mental disorders when collecting crash data.¹⁶¹ For example, the California study consolidated the crash rates for all disorders that cause a lapse of consciousness, such as alcoholism, drug addiction, Alzheimer's, and epilepsy.¹⁶² Dr. Julian Waller of the California Department of Public Health conducted his own study and found that epilepsy accounts for 20% or less of the crashes within the category in which it was placed.¹⁶³ Also, with alcohol alone causing 35% of fatal car crashes in California, any disorder coupled with drinking and driving is likely to be skewed and statistically inconclusive.¹⁶⁴ Thus, the study fails to show that epilepsy causes a greater number of crashes, only indicating that general lapses of consciousness cause more crashes.

Second, although the exact percentage is unclear, some individuals refuse to report their epilepsy and continue to drive without incident, which the studies do not take into account.¹⁶⁵ Research indicates that nearly half of those with epilepsy do not report their condition to the DMV.¹⁶⁶ That failure to report could be from fear of losing driving privileges, a lack of awareness that the individual suffered a seizure,¹⁶⁷ or stigma.¹⁶⁸ Regardless, statisticians must operate upon the presumption that only a fraction of the data is available and control for that deficiency or there will be—and is—an overestimation of the risk.

¹⁶¹ See Lutfy, *supra* note 7, at 1189.

¹⁶² Julian A. Waller, *Chronic Medical Conditions and Traffic Safety: Review of the California Experience*, 273 NEW ENG. J. MED. 1413, 1418 (1965).

¹⁶³ *Id.*

¹⁶⁴ Lena Borrelli, 2022 *Drunk Driving Statistics*, BANKRATE (July 26, 2021), <https://www.bankrate.com/insurance/car/drunk-driving/> [<https://perma.cc/8ZHG-CYF2>].

¹⁶⁵ Krumholz, *supra* note 12, at 31 (“Studies indicate that approximately half of all drivers do not report their epilepsy to regulators, as required.”).

¹⁶⁶ *Id.*

¹⁶⁷ Some types of epilepsy, mainly those originating in the left hemisphere of the brain, lead to prolonged confusion and amnesia that prevents the individual from realizing that they had a seizure. See generally Jorge G. Burneo, *The Real Truth Behind Seizure Count*, 8(4) EPILEPSY CURRENTS 92–93 (July 2008), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2442148/> [<https://perma.cc/QE5S-D5SJ>].

¹⁶⁸ Epilepsy is still heavily stigmatized, causing many not to recognize the signs of the disease. Many are diagnosed with behavioral disorders rather than epilepsy. *Id.*

Third, most studies group together all types of seizures those with epilepsy can experience, irrespective of the mental and physical effects.¹⁶⁹ For example, simple-partial seizures involve partial bodily symptoms and no resulting lapse of consciousness, but they are grouped with generalized tonic-clonic seizures, which result in convulsions, amnesia, and other serious bodily dysfunction.¹⁷⁰ With such a stark difference in type, it defies logic to regulate all types identically. Studies must demarcate on that basis to ensure an accurate conclusion. Otherwise, the laws risk over-inclusivity.¹⁷¹

Fourth, most states fail to distinguish between car crashes caused by a seizure and those that merely involving someone with epilepsy.¹⁷² One study found that of those crashes attributed to seizure, only 11–20% were actually caused by a seizure.¹⁷³ In the other incidences, the crash involved someone with epilepsy but was caused by alcohol, distracted driving, or some other similar impairment.¹⁷⁴

2. Actual Crash Rate for Drivers with Epilepsy

The studies that have accounted for the stated deficiencies have unanimously concluded that the crash rate for drivers with epilepsy is only slightly higher than that of the general population, with some finding no heightened risk at all.¹⁷⁵ Elinor Ben-Menachem, a Professor of Neurology and Epilepsy at the Institute for Clinical Neurosciences in Sweden, found only 0.25% of all crashes were attributable to a seizure.¹⁷⁶ Another study found an even lower correlation of 0.04%.¹⁷⁷ To put that into perspective, Dr. Ben-Menachem estimates the average person will encounter a crash resulting from a seizure once every 4,000 years.¹⁷⁸

¹⁶⁹ Maryland, D.C., and a few other states consider the effects of the seizure, but only Utah specifically draws a line of demarcation between seizure types: general v. partial. See UTAH ADMIN. CODE r. 708-7-10(2)(A–K) (2020).

¹⁷⁰ See, e.g., KY. REV. STAT. ANN. § 186.411(1) (2020).

¹⁷¹ See Kathryn Kramer, *Shifting and Seizing: A Call to Reform Ohio's Outdated Restrictions on Drivers with Epilepsy*, 22 J.L. & Health 343, 363 (2009).

¹⁷² See Krauss, *supra* note 127.

¹⁷³ *Id.*

¹⁷⁴ *Id.*

¹⁷⁵ S. Hasegawa et al., *Epilepsy and Driving: A Survey of Automobile Accidents Attributed to Seizure*, 45 J. PSYCH. & NEUROLOGY 327, 328 (June 1991), <https://pubmed.ncbi.nlm.nih.gov/1762211/> [<https://perma.cc/W9KB-D8GS>].

¹⁷⁶ Elinor Ben-Menachem, *Toward a More Pragmatic View of Driving and Epilepsy*, 4 EPILEPSY CURRENTS 133, 133 (2004) (“The annual risk of being in an accident for an average driver in a private car is 10%, and 0.25% of all accidents are related to seizures.”).

¹⁷⁷ Drazkowski, *supra* note 127, at 821 (“Approximately 0.04% of crashes were associated with seizures.”).

¹⁷⁸ Ben-Menachem, *supra* note 175, at 133.

3. Crash Risk from Other Impairments

As outlined in preceding sections, individuals with epilepsy have their driving privileges suspended at a significantly greater rate than individuals with other cognitive or physical impairments.¹⁷⁹ This is despite the fact that a fatal car crash is twenty-six times more likely to occur from some other cause than epilepsy.¹⁸⁰ Alcoholism is a notable example, which is 156 times more likely to cause a crash than a seizure.¹⁸¹ Moreover, 35% of alcoholics are repeat DUI offenders, but the license revocation period for a DUI is less than that for a seizure, despite the fact that 25–50% of individuals with epilepsy who are barred from driving will never have a seizure behind the wheel.¹⁸²

It is unclear why epilepsy is singled out when it poses only a slightly higher crash risk than the general population and an exponentially lesser chance than other disorders and impairments. At best, it is the product of faulty statistical analysis, and at worst, it is evidence of unconstitutional discrimination.¹⁸³

B. Classification of State EDLs

To simplify the following analysis and to provide the reader with a succinct understanding of each state's approach, this section classifies each state's EDLs into one of three categories: (1) progressive, (2) intermediate, or (3) strict. Classification is determined by the degree to which the state's EDLs depart from scientific findings and expert opinions regarding the seven tenets discussed above. This section focuses on the following factors: (a) the degree of degradation to the doctor-patient relationship through the imposition of mandatory reporting or physician liability, (b) the length of the seizure-free period, and (c) the burden placed on the individual with epilepsy in both procuring and maintaining a license.¹⁸⁴

¹⁷⁹ See *supra* notes 176–177.

¹⁸⁰ Puja Appasaheb Naik et al., *Do Drivers with Epilepsy Have Higher Rates of Motor Vehicle Accidents than Those Without Epilepsy*, 47 EPILEPSY & BEHAV. 111, 112 (June 2015).

¹⁸¹ *Id.*

¹⁸² Alex Kopestinsky, *18 Drunk Driving Statistics That Will Make You Sober*, POL'Y ADVICE (Mar. 23, 2023), <https://policyadvice.net/insurance/insights/drunken-driving-statistics/> [<https://perma.cc/H87Q-FESE>] (“One of the leading problems is that around 50% to 75% (i.e., one-third) of all drivers convicted or arrested of drunk driving are repeat offenders and drive on a suspended license.”).

¹⁸³ This Note does not focus on the constitutionality of EDLs, but Kathryn Kramer, in her article titled *Shifting and Seizing: A Call to Reform Ohio's Outdated Restrictions on Drivers with Epilepsy*, provides a persuasive argument as to why the over and under-inclusiveness of Ohio's EDLs make them unconstitutional under the Equal Protection Clause of the 14th Amendment. Kramer, *supra* note 171.

¹⁸⁴ This factor looks specifically at the criteria for licensure in the aggregate and the continuing duty to submit periodic medical reports.

These classifications are referenced throughout the remainder of the Note. Each state's classification can also be found in Figure 2.1.¹⁸⁵

1. Progressive

There are fifteen progressive states¹⁸⁶ that (1) have a seizure-free period from zero to three months, (2) eradicated mandatory physician reporting, (3) immunize their physicians from civil liability, and (4) allow for deviations from the seizure-free period.¹⁸⁷ For example, in Illinois, an individual can drive following a seizure whenever their physician and a reviewing MAB member believes they can do so safely.¹⁸⁸ Moreover, Illinois immunizes physicians from civil suit no matter the circumstance.¹⁸⁹ Colorado also uses a scientific approach to driving with epilepsy, as well as cognitive disorders in general, with no set seizure-free period and great weight given to physician recommendations.¹⁹⁰

But progressive states still fall short on three points. First, these states are discretionary in application, meaning the DMV and MAB have unfettered discretion in how they treat drivers with epilepsy.¹⁹¹ Luckily, most of these agencies have chosen to adopt standards that closely align with the opinions of medical professionals and statistical data, but there is no statutory mandate.¹⁹² For example, Rhode Island does not have a set seizure-free period and encourages physician input, but in practice, physicians tend to impose an eighteen-month seizure-free period.¹⁹³ Without binding statutory

¹⁸⁵ See *infra* Figure 2.1.

¹⁸⁶ The progressive states include Kentucky, Vermont, Connecticut, Maryland, Indiana, Louisiana, Illinois, Wisconsin, Minnesota, North Dakota, Montana, Wyoming, Colorado, Utah, and Arizona. See *infra* Figure 2.1.

¹⁸⁷ Some states leave the consideration of other factors to the discretion of the DMV or MAB while others statutorily outline what other factors may be considered as a deviation. For example, if an individual's seizures are adequately documented as nocturnal and only occur when the person is asleep, many states will allow them to drive. See, e.g., ARIZ. ADMIN. CODE § 17-4-506(D) (2020).

¹⁸⁸ ILL. ADMIN. CODE tit. 92, § 1030.16(1).

¹⁸⁹ 625 ILL. COMP. STAT. ANN. 5/6-910 (2020) ("No member of the Board, medical practitioner, clinic, hospital, or mental institution, whether public or private, shall be liable or subject to criminal or civil action for any opinions, findings, or recommendations, or for any information supplied to the Secretary of the Board, regarding persons under review, or for reports required by this act, except for willful and wanton misconduct.").

¹⁹⁰ See COLO. REV. STAT. § 42-2-112(1) (2020).

¹⁹¹ See, e.g., COLO. REV. STAT. § 42-2-112(1) (2020) ("In order to determine whether any licensed driver or any applicant for a driver's license is physically or mentally able to operate a motor vehicle safely upon the highways of this state, the department is authorized, pursuant to this section and upon the adoption of rules concerning medical criteria for driver licensing, to seek and receive a written medical opinion from any physician, physician assistant, or optometrist licensed in this state. Such written medical opinion may also be used by the department in regard to the renewal, suspension, revocation, or cancellation of drivers' licenses pursuant to this article.").

¹⁹² See, e.g., WIS. ADMIN. CODE Trans. § 112.10(3)(e) (2020).

¹⁹³ *Driving Laws Database*, *supra* note 6 (Select "Rhode Island" from the drop-down menu and then select "get info.").

language, EDLs remain fluid in application, influenced widely by popular opinion.

Second, variability is a dangerous byproduct of discretion. Specifically, discretion injects a degree of ambiguity into the law, as its applicability differs according to circumstances and decision makers.¹⁹⁴ Thus, it can be difficult for drivers with epilepsy to adhere to an ambiguous law, and they are often fearful to pursue treatment since it is unclear how the law might apply in their specific circumstance.¹⁹⁵ Third, most progressive states still treat all types of epilepsy alike regardless of symptoms, effects, cause, etc.¹⁹⁶ Ideally, these states will adopt black letter standards that draw a line of demarcation between the types of seizures, specifically looking at the ictal and post-ictal symptoms most prominent with that type of seizure and whether it would affect one's ability to drive safely.

2. Intermediate

Fifteen states and the District of Columbia (D.C.) are included in the intermediate classification.¹⁹⁷ This second classification is difficult to discern because these states' laws differ significantly. Ultimately, it is composed of states with a seizure-free period from zero to six months that contain one other provision that makes licensure more difficult, and states with six to twelve-month periods with no other provision that make licensure more difficult.¹⁹⁸ An extra provision could be periodic medical updates that exceed once per year, a cumbersome appellate process, tendency to grant upward departures, etc.

Two notable examples are Michigan and Maine. Michigan is classified as intermediate because it uses a seizure-free period of six months.¹⁹⁹ Alternatively, Maine is classified as intermediate, even though it employs a three-month seizure-free period, because the Secretary of State may extend the seizure-free period up to two years if deemed necessary.²⁰⁰

Intermediate EDLs are not so different from those classified as progressive, differing mostly in regard to the seizure-free period. This

¹⁹⁴ *See id.*

¹⁹⁵ *See generally* Krumholz, *supra* note 12, at 31.

¹⁹⁶ Maryland is of the few states that consider simple-partial seizures that do not affect consciousness to be a mitigating circumstance, but it is still only discretionary. MD. CODE REGS. 11.17.03.04(E)(2)(e)(ii) (2020).

¹⁹⁷ Intermediate states include: Washington, New Mexico, South Dakota, Kansas, Oklahoma, Texas, Michigan, Iowa, Maine, New Hampshire, New York, D.C., North Carolina, South Carolina, Georgia, and Florida. *See infra* Figure 2.1.

¹⁹⁸ Provisions that make licensure more difficult include mandatory physician reporting, physician liability, periodic medical updates that exceed once per year, and judicial appeals instead of inter-agency appeals.

¹⁹⁹ MICH. ADMIN. CODE r. 257.854 (2020).

²⁰⁰ 29-250-003 ME. CODE R. § 2 (2020).

distinction is even further blurred when considering that most progressive states have open-ended statutory language, so its application may closely mirror that of intermediate or strict states. Thus, the process for change will look similar.

3. Strict

The third classification includes twenty states²⁰¹ that (a) have a seizure-free period longer than one year, either by statute or practice, (b) fail to immunize treating physicians from civil liability, (c) impose mandatory physician reporting, regardless of seizure-free period, or (d) have a seizure-free period of more than three months *and* one other provision that makes licensure more difficult. For example, Arkansas uses a statutory seizure-free period of one year, without exception, and does not immunize its physicians.²⁰² This also includes Rhode Island, which, as discussed above, imposes a lengthy seizure-free period of up to eighteen months.²⁰³

States that retain physician civil liability or mandatory reporting are automatically classified as strict.²⁰⁴ Requiring a physician to go against the interest of the patient and report to the DMV leads to the unnecessary degradation of the doctor-patient relationship, as emphasized by Dr. Robertson.²⁰⁵ Thus, because of the low utility and high risk of harm, imposition of mandatory reporting and/or physician liability automatically characterizes an EDL as strict.

C. Comparison to Other Countries

Epilepsy is a reality for millions across the globe with scores of countries dealing with the same problems of stigma and misinformation. The situation has produced dozens of international informational campaigns by the Epilepsy Foundation, World Health Organization, and ILAE.²⁰⁶ Despite those efforts, most countries have adopted EDLs that closely parallel those used in the United States with a few notable exceptions.

²⁰¹ Strict states include: Alaska, California, Nevada, Oregon, Idaho, Nebraska, Missouri, Arizona, Mississippi, Tennessee, Alabama, Ohio, West Virginia, Virginia, Pennsylvania, New Jersey, Delaware, Rhode Island, Massachusetts, and Hawaii.

²⁰² 006-05-039 ARK. CODE R. § 2-27-16-907 (2020).

²⁰³ See *supra* note 193 and accompanying text.

²⁰⁴ Throughout my interviews with Dr. Gruenthal and Dr. Robertson, they both made a point to condemn mandatory reporting and physician liability, as these practices put them in a policing role against their patients. The two echoed the sentiments of many within the medical community that such laws deter treatment, incentivize seizure concealment, and have been established to not work. As a result of those interviews and further research, I reorganized the above categories to include states that maintain either of these laws in the strict category.

²⁰⁵ Dr. Robertson, *supra* note 141.

²⁰⁶ See *supra* note 68 and accompanying text.

First, whether by federal design or local deference, most international countries have national EDLs.²⁰⁷ Thus, whether the driver lives in Alsace or Brittany, Burgundy or Corsica, the same French law applies.²⁰⁸ Second, seizure-free intervals tend to be longer, ranging anywhere from six to twenty-four months.²⁰⁹ Dozens of countries also reserve the right to extend that period depending on the circumstances.²¹⁰ Finally, most developed countries tend to tailor their driving laws to the seizure, not the epilepsy. Stated differently, the seizure-free period and reporting requirements depend on the type of seizure, not the mere fact of its occurrence.²¹¹ The following solution for U.S. states attempts to distinguish among the types of seizures similar to the system already used in Europe and other developed countries.²¹²

IV. SOLUTION

Epilepsy poses a small and predictable increased risk of harm on the road compared to the general population and a much smaller risk than dozens of other chronic conditions that do not garner driving restrictions.²¹³ Thus, although the government's interest in driver safety is reasonable, it does not justify the current restrictions in place for drivers with epilepsy. Rather, these laws must be amended to conform with modern data and science, specifically in the context of medical advisory boards, lengthy seizure-free periods, mitigating and aggravating circumstances, and mandatory physician reporting and liability.

A. Medical Advisory Board

MABs are an important mechanism of a state's regulatory apparatus with more than 60% of states using some MAB form.²¹⁴ But MABs are loosely regulated and irregularly involved, serving a purely advisory role. States must modify their MABs to cement the role of medical professionals in licensure decisions pertaining to medical disqualifications.

²⁰⁷ Australia, Canada, and Mexico appear to be the only countries without nationally uniform EDLs. Winnie W. Ooi & José A. Gutrecht, *International Regulations for Automobile Driving and Epilepsy*, 7 J. TRAVEL MED. 1, 2–3 (Mar. 8, 2006), <https://academic.oup.com/jtm/article/7/1/1/1856526> [<https://perma.cc/U35W-VNNV>]. A national EDL is not an option in the United States under the doctrine of reserved powers. *See supra* notes 103–05 and accompanying text.

²⁰⁸ *See id.*

²⁰⁹ Hopkins & A. Appleton, *Epilepsy: The Facts*, INT'L BUREAU FOR EPILEPSY: DRIVING REGUL. TASK FORCE (2008), <https://www.ibe-epilepsy.org/driving-regulations-task-force-2/> [<https://perma.cc/UWF3-5X5D>].

²¹⁰ *Id.*

²¹¹ Ooi & Gutrecht, *supra* note 207.

²¹² *Id.*

²¹³ Krumholz, *supra* note 12, at 31–32.

²¹⁴ *See* Lufty, *supra* note 7, at 1157.

1. Structure and Role of the Medical Advisory Board

First, states must reorganize their MABs to have binding authority in licensure decisions rather than its typical advisory role and include at least one epileptologist in the decision-making process.²¹⁵ Every state maintains some form of advisory board, comprised of physicians and optometrists, that aid the DMV in reviewing licensure applications and revocations.²¹⁶ Thus, this proposal requires only slight modifications.

a. Epileptologist

All state MABs should include at least one epileptologist, for all epilepsy-related licensure decisions. Epilepsy is a complex disorder that remains misunderstood by many, even non-specialty physicians. Dr. Gruenthal attributes this to epilepsy's dynamic scientific landscape and its continuous advancements in treatment and understanding which make it difficult for non-specialty physicians and neurologists to stay abreast.²¹⁷ As a result, general physicians *play it safe* regarding epilepsy diagnosis and treatment, believing inaction to be more dangerous than overaction.²¹⁸ This does not pass blame, though; it is unreasonable to expect physicians to spend all of their time understanding only one of the many diseases they treat daily.²¹⁹ Epileptologists, on the other hand, have dedicated their careers to the study and treatment of epilepsy, so their inclusion in licensure decisions would ensure the necessary knowledge and understanding.

That proposal likely triggers three critiques. First, critics will take issue that epilepsy is given special treatment in terms of MAB membership. Epilepsy *is* given special treatment, but as long as epilepsy is singled out, extra procedural safeguards are necessary. If diabetics, who are proven to pose the same or slightly higher crash risk than those with epilepsy,²²⁰ garner

²¹⁵ “An epileptologist is a neurologist who specializes in caring for people with epilepsy. They have completed an additional one or two years of subspecialty training in epilepsy care.” Morgan deBleecourt, *Do I Need an Epileptologist*, DUKE HEALTH, <https://www.dukehealth.org/blog/do-i-need-epileptologist> [<https://perma.cc/NY8U-3M4H>] (last visited May 8, 2023).

²¹⁶ See generally U.S. Dep’t of Transp., *Strategies for Medical Advisory Boards and Driver Licensing Review*, NAT’L HIGHWAY TRAFFIC SAFETY ADMIN. (Jan. 2006), <https://rosap.nhtl.bts.gov/view/dot/1971> [<https://perma.cc/HZV8-SE7T>].

²¹⁷ Dr. Gruenthal, *supra* note 14.

²¹⁸ *Epilepsy: Can it be Misdiagnosed*, SANA (Sept. 21, 2020), <https://sanacounseling.ca/blog/epilepsy-can-it-be-misdiagnosed> [<https://perma.cc/46QZ-E8P4>].

²¹⁹ Dr. Gruenthal, *supra* note 14. (“General physicians and neurologists take care of a wide variety of diseases and disorders, making it difficult to keep up with all epilepsy-specific literature.”).

²²⁰ Krumholz, *supra* note 12, at 31–32.

equal discrimination and penalization under the law, MAB membership of an endocrinologist should follow.²²¹

Second, some less populous states do not have a board certified epileptologist, making it nearly impossible for the state to appoint an epileptologist to their MAB.²²² If so, that state should appoint either (a) an out of state epileptologist or (b) a neurologist with at least five years' experience treating epilepsy. The former is preferred, but the latter would suffice. The second option is qualified by an experience requirement because being a neurologist is insufficient; treating physicians are better endowed with an ability to look past the data, considering the implications of their decisions to those with epilepsy.²²³ But the statute should be clear that an epileptologist is required with exceptions in rare circumstances.

Third, the solution presupposes one integral point: that an epileptologist would volunteer for this position, which is a significant time commitment. A volunteer is even less likely to be a physician maintaining a medical practice.²²⁴ Dr. Robertson suggests that all qualified physicians rotate their service, with each physician serving on the MAB for a certain number of cases a year.²²⁵ Alternatively, he proposed a blanket imposition of a three-month seizure-free period and the epileptologist triggered on appeal.²²⁶ If a state faces this issue, every attempt should be made to adopt the requirements laid out above as the appellate process is burdensome and time consuming. The latter could be sufficient, however, in a state with reasonably efficient appellate procedures.

b. Binding Authority

State MABs should have binding authority in licensure decisions involving medical disqualifications (e.g., epilepsy, dementia, and other cognitive impairments). In most states, the DMV has the final say on licensure decisions, as well as discretion in referring a specific case to the MAB for review.²²⁷ But the DMV is not obligated to adopt the MAB's recommendations.²²⁸ Thus, denial can come from an individual with no training or knowledge of the condition that led to the disqualification. Moreover, many states permit recommendations from any one member of the

²²¹ Nine states currently include an endocrinologist on their MAB. Lococo, *supra* note 150, at 451–53.

²²² Dr. Gruenthal, *supra* note 14.

²²³ *Id.*

²²⁴ Dr. Robertson, *supra* note 141.

²²⁵ *Id.*

²²⁶ This would require MABs to maintain a non-specialty neurologist in licensure decisions, which nearly all already do. *Id.*

²²⁷ See Lococo, *supra* note 150, at 458–68.

²²⁸ *Id.*

MAB.²²⁹ So even if an epileptologist is mandated, a decision could be made without that physician's input. Thus, MABs should be organized to: (1) have original jurisdiction in all matters regarding medical disqualification, (2) statutorily require the DMV to adopt the recommendations of the MAB, and (3) require input by a majority of the MAB, or a three-person panel if an epileptologist is included on all panels regarding epilepsy disqualification.

2. Walking Back Unfettered Discretion

In theory, a MAB with binding authority and epileptologist membership should suffice to ensure that those with epilepsy are adequately represented and that licensure decisions are not made without medical and scientific considerations. However, in practice, as shown in Rhode Island, unfettered discretion can be the enemy of progress because it does not require strict adherence to scientific data and studies.²³⁰ Thus, although this Note champions the role of a MAB, it does so cautiously. The MAB should be the final arbitrator, but their power should be confined in the following ways.

a. Seizure-Free Period

The seizure-free period should be no more than three months. This thereby protects drivers from rare incidences of a crash without including a large population of individuals with epilepsy who pose no additional risk of harm.²³¹ As stated, a three-month period will prevent 50% of future epilepsy related crashes and only restrict 25% of drivers with epilepsy who will never again crash.²³² Thus, only 50% of the 0.25% of crashes attributable to epilepsy will occur after a three month seizure-free period.²³³ Considering the socio-economic implications of losing the privilege to drive, a three-month period would strike an appropriate balance between safety and individual autonomy.²³⁴

b. Seizure Classifications

The MAB should base licensure decisions on the particular type of seizure at issue, categorizing by frequency, severity, effect, and duration. But

²²⁹ These states are: Connecticut, Delaware, Florida, Georgia, Indiana, Kentucky, Louisiana, Maine, Maryland, Missouri, New Mexico, North Dakota, Pennsylvania, Tennessee, Utah, and Virginia. *Id.*

²³⁰ See *supra* note 193 and accompanying text.

²³¹ Dr. Gruenthal, *supra* note 14 ("If there is to be a seizure-free period at all, it should be no more than three months.").

²³² Krumholz, *supra* note 12, at 32.

²³³ *Id.*

²³⁴ Dr. Gruenthal, *supra* note 14.

with over forty different types of seizures—all with fundamentally different ictal and post-ictal effects—and 3.4 million Americans currently suffering from epilepsy, a case-by-case determination would be difficult.²³⁵ The only feasible way to implement seizure classification into licensure decisions is to “punt that determination to the treating physicians.”²³⁶ Classifications require hours of analysis and sifting through lengthy medical documents, which an MAB cannot do on a consistent basis, both for lack of time and medical knowledge.²³⁷ Because MABs already look to physicians when assessing fitness to drive, this solution would merely formalize a common practice.²³⁸

This is not a perfect solution, as it will necessarily cause high state-by-state variability. It also injects general physicians into the decision-making process to a degree; Dr. Gruenthal explains why that is inevitable:

The majority of people with epilepsy are not treated by neurologists, especially in the more rural states, because there are not enough neurologists in our country. Thus, the majority are treated by primary care doctors who cannot keep up with the literature. Even amongst neurologists, they take care of a wide variety of diseases and disorders, making complete knowledge difficult.²³⁹

But the adoption of substantive and procedural safeguards, discussed in the next section, can mitigate that concern. For example, even if the treating physician mischaracterizes a certain type of seizure, the seizure-free period will never exceed three months. Additionally, any general physician classifications may be reviewed by the MAB’s epileptologist prior to a decision, thereby checking any incidents of gross inaccuracy.

c. Consideration of Mitigating Factors

Third, state EDLs should require the MAB to consider mitigating factors that could justify a deviation from its seizure-free period. Specifically, downward departures of the set period should be granted if the individual’s seizure: (1) did not affect consciousness or motor control, (2) was nocturnal, (3) followed a predictable aura, (4) resulted from an external trigger, which the individual is unlikely to encounter again, (5) was provoked, or (6) was breakthrough. Epilepsy poses only a slightly higher crash risk than the

²³⁵ See *supra* note 30 and accompanying text.

²³⁶ Dr. Gruenthal, *supra* note 14.

²³⁷ *Id.*

²³⁸ *Id.*

²³⁹ *Id.*

general population, so it follows that if the risk is further mitigated, then the three-month seizure-free period is unjustified.²⁴⁰ States should look to California for a model on this point.²⁴¹

i. No Loss of Consciousness or Motor Control

The state's MAB should impose a shorter seizure-free period if the individual's seizures do not affect consciousness and motor control. This is consistent with the previous proposal wherein the MAB reviews the medical assessment from the treating physician and decides whether that specific type of epilepsy necessitates the full three-month period. The epileptologist could further evaluate these considerations methodologically during the MAB's deliberations. Connecticut has successfully implemented a similar framework, requiring the MAB to work with the treating physician prior to final licensure decisions to discern (a) the severity of the symptoms, (b) the functional impairment (e.g., loss of muscle tone or movement), and (c) whether the individual typically suffers muscle spasms or convulsions.²⁴² States will quickly notice that the symptoms and restrictions are naturally segregated by the seizure categories previously discussed.²⁴³

ii. Nocturnal Seizures

Nocturnal seizures do not necessitate an absolute revocation of driving privileges. Also referred to as sleep-related seizures, nocturnal seizures cause "abnormal movement or behavior during sleep."²⁴⁴ Symptoms include convulsions, insomnia, and/or suddenly awakening.²⁴⁵ It is often misdiagnosed as a simple sleep disorder.²⁴⁶ Experts have concluded that up to two-thirds of seizures occur during or immediately before sleep because

²⁴⁰ See *infra* Table 2.1.

²⁴¹ California allows for a deviation if reasonable when considering: (1) [T]he effect of the disorder on the physical and mental abilities which are necessary to safely operate a vehicle; (2) the individual's testimony regarding his disorder and ability to drive; (3) testimony of other individuals of the same; (4) whether the seizure is under control with or without medication; (5) the individual's compliance with a prescribed medical regimen; (6) other medical conditions which may affect the disorder; (7) the individual's driving record; (8) other relevant factors which may affect the individual's ability to safely drive; and (9) a current medical evaluation conducted by a physician. CAL. CODE. REGS. tit. 13, § 110.01 (2020).

²⁴² CONN. AGENCIES REGS. §§ 14-45a-8(a)(1-2), 14-45a-8(g)(1) (2020).

²⁴³ See *infra* Tables 1.2 & 1.3.

²⁴⁴ *Nocturnal Seizures*, JOHNS HOPKINS MED., <https://www.hopkinsmedicine.org/health/conditions-and-diseases/epilepsy/nocturnal-seizures> [<https://perma.cc/2ZX7-R5AB>], (last visited May 8, 2023).

²⁴⁵ Zawn Villines, *Nocturnal Seizures: Everything You Need to Know*, MED. NEWS TODAY (Oct. 31, 2019), <https://www.medicalnewstoday.com/articles/326864#causes> [<https://perma.cc/P5ZP-NL9C>].

²⁴⁶ *Id.*

of the change in the brain's electrical activity during that time.²⁴⁷ And although any seizure can occur at night, there are certain types of epilepsy that manifest only through nocturnal seizures.²⁴⁸ Multiple states have exceptions to the seizure-free period for adequately documented nocturnal seizures.²⁴⁹ In most instances, those states grant the individual a limited daytime license.²⁵⁰

If an individual only has seizures at night, specifically while sleeping, there is no logical or policy-based justification for restricting driving privileges during the day.²⁵¹ Thus, states must follow suit with Georgia, Kansas, and Utah, and provide limited daytime licenses to individuals if their treating physician has certified their seizures to be nocturnal with a minimal chance of daytime occurrence.²⁵² Some states require the documentation to go back two or more years,²⁵³ but six months of documentation would be more than sufficient to establish this exception. The limited license should stand until the individual is able to comply with the other provisions of this solution.²⁵⁴

iii. Predictable Auras

States should consider the presence of predictable auras when making licensure decisions. An aura is a distortion of an individual's ability to see, hear, taste, or touch, indicating that they are about to have a seizure.²⁵⁵ Around 129 A.D., Galen, a Greek physician, described the first documented aura, writing:

I heard the boy say that his condition began in his lower leg and then moved up through the thigh, the groin and side of the chest above the affected thigh up to the neck and then to the head. As soon as [the condition] reached this part, he said that he was no longer aware of himself. When the

²⁴⁷ Daniel Yetman, *Identifying and Treating Nocturnal Seizures*, HEALTHLINE (Dec. 7, 2021), <https://www.healthline.com/health/epilepsy/nocturnal-seizures> [<https://perma.cc/YKK7-35K4>].

²⁴⁸ *Id.*

²⁴⁹ *Driving Laws Database*, *supra* note 6 (This includes, among others, Georgia, Iowa, Kansas, Maryland, Oklahoma, and Pennsylvania).

²⁵⁰ *Id.*

²⁵¹ Dr. Gruenthal, *supra* note 14.

²⁵² GA. CODE ANN. § 375-3-5-.02(2)(c) (2020); KAN. STAT. ANN. §§ 8-245, 8-247(e)(6) (2020); UTAH CODE ANN. § 53-3-304(2)(a) (2020).

²⁵³ *See infra* Table 2.1.

²⁵⁴ For example, the limited license should stand until the individual can go three months without incident. At that time, they shall be granted absolute driving privileges.

²⁵⁵ *What is an Aura in Epilepsy?*, EPSY (Feb. 3, 2022), <https://www.etsyhealth.com/seizure-epilepsy-blog/what-is-an-aura-in-epilepsy> [<https://perma.cc/AY9L-A3YM>].

doctors asked what the movement into the head was like, [another] boy said ... the movement upwards was like a cold breeze.²⁵⁶

Science later corrected Galen's hypothesis that seizures can originate in another part of the body and then travel to the brain,²⁵⁷ but he is credited with the discovery of auras, with the word "aura" coming from the Greek word "breeze."²⁵⁸

It was not until the late 1980s that neurologists began buying into the possibility that seizures could be predicted through auras.²⁵⁹ Now, scientists think the brain begins malfunctioning long before a seizure starts to develop, shown through the "loss of relative independence of processing of information," which some scientists refer to as the "pre-ictal period."²⁶⁰ Leon D. Iasemidis, Professor of Biology and Health at Arizona State University, found that a seizure can be predicted in up to 80% of cases.²⁶¹ That predictability rate, however, likely depends on the type of seizure.²⁶² For example, it is said that 58% of focal seizures have predictable auras while only 13% of generalized seizures do.²⁶³

Maryland offers one option, statutorily enumerating prolonged and predictive auras as a mitigating factor and leaving it to the MAB for consideration.²⁶⁴ However, Maryland does not define what it means by "prolonged" nor what it views as adequately predictive.²⁶⁵ Pennsylvania is slightly clearer, requiring the aura to be accompanied by "sufficient warning."²⁶⁶ MABs should deviate from the seizure-free period if a physician certifies that the applicant has predictable auras, as documented over a six-month period, that gives the driver sufficient notice to pull to the side of the road before the incident.

²⁵⁶ *Roman Medicine: Galen*, EPILEPSY MUSEUM KORK – MUSEUM FOR EPILEPSY AND THE HIST. OF EPILEPSY, <http://www.epilepsiemuseum.com/alt/galenen.html> [<https://perma.cc/8YN2-GPY8>].

²⁵⁷ All seizures originate in the entire or a part of the brain. *Id.*

²⁵⁸ *What is an Aura in Epilepsy?*, *supra* note 256.

²⁵⁹ Leon D. Iasemidis, *Seizure Prediction and Its Applications*, 22 NEUROSURGERY CLINICS OF N. AM. 489, 490 (Oct. 2011).

²⁶⁰ *Id.* at 492.

²⁶¹ *Id.*

²⁶² *Id.*

²⁶³ *What is an Aura in Epilepsy?*, *supra* note 256.

²⁶⁴ MD. CODE REGS. 11.17.03.04(E)(2)(e)(i)–(v) (2020).

²⁶⁵ *See id.*

²⁶⁶ 67 PA. CODE § 83.4.

iv. Seizure Triggers

Limited licenses should be given to individuals if their epilepsy is well-documented to only occur when exposed to an external trigger, and when that trigger can be avoided easily on a consistent basis. A trigger refers to an external stimulus that induces a seizure.²⁶⁷ Examples include sleep deprivation, alcohol and drug use, photosensitivity,²⁶⁸ and anxiety and stress.²⁶⁹ Triggers may occur fairly regularly, and one can have “reflex epilepsy” if the seizures are hyper-specific to certain stimuli.²⁷⁰ Nocturnal seizures are a good example: the seizure only occurs when the individual goes to sleep and the brain’s electrical signals are altered (a trigger).²⁷¹ Some neurologists implore patients to keep a journal over an extended period of time to better identify their triggers.²⁷² Triggers have been studied for centuries, with some theorists believing that when a trigger is identified, seizure recurrence can be predicted with relative certainty.²⁷³ In 2018, Vikram Rao, a neurologist at the University of California-San Francisco, was able to predict 85% of seizures twenty-four hours in advance and 11% seventy-two hours in advance after studying the subjects’ triggers.²⁷⁴

Although Rao’s algorithm has not made its way into the everyday treatment of epilepsy, his work highlights the importance of triggers in the study of epilepsy. It also shows how triggers can play into the determination of fitness to drive. Thus, states should grant a deviation from the seizure-free period on a limited basis if an individual can establish with specificity that their seizures only occur when exposed to certain stimuli which they are able to avoid. For example, if the individual’s seizures only occur after alcohol or drug use, they should be granted a limited license that is conditioned upon an agreement not to consume alcohol or drugs. But there must be a heightened standard of proof because trigger-based predictability is not an exact science, but rather anecdotal. Therefore, a trigger may only be considered if supported

²⁶⁷ See generally Steven C. Schachter et al., *How Serious Are Seizures*, EPILEPSY FOUND. AM. (July 2013), <https://www.epilepsy.com/learn/about-epilepsy-basics/how-serious-are-seizures> [https://perma.cc/8AAR-LFMS].

²⁶⁸ Photosensitivity refers to a flashing of lights that can induce a seizure. It typically requires 8 to 10 flashes (hertz) per second. Dr. Gruenthal, *supra* note 14.

²⁶⁹ Stivers, *supra* note 16.

²⁷⁰ See Schachter, *supra* note 268.

²⁷¹ Yetman, *supra* note 248.

²⁷² See Schachter, *supra* note 268.

²⁷³ See generally Michael Mackay et al., *Seizure Self Prediction: Myth or Missed Opportunity*, 51 SEIZURE 180 (Oct. 2017).

²⁷⁴ Diana Kwon, *Forecasts of Epilepsy Seizures Could Become a Reality*, SCI. AM. (Dec. 18, 2020), <https://www.scientificamerican.com/article/forecasts-of-epilepsy-seizures-could-become-a-reality/> [https://perma.cc/5PA4-HQU4].

by the treating physician, and the correlation between the seizure and the trigger must be documented for at least two years.

Seizure triggers will rarely be a point of consideration for the MAB. Dr. Gruenthal explained that, contrary to popular belief, seizure triggers are quite rare and infrequent.²⁷⁵ Even photosensitivity is unlikely as the flashing light must produce eight to ten flashes/second, which is quite rare to encounter.²⁷⁶ Moreover, most patients identify their specific triggers, such as sleep deprivation or alcohol use, and avoid them anyway.²⁷⁷ Thus, an individual can attribute all of their seizure activity to a specific trigger only in rare circumstances. States should nonetheless allow for such consideration when appropriate; just because it is infrequent does not mean that it is unimportant.

v. Seizure Provocation

A seizure should not justify a revocation of driving privileges if: (a) the seizure was provoked and (b) the provoking cause is promptly addressed. As stated previously, epilepsy is defined as one or more *unprovoked* seizures—that is, seizures that occur in the absence of “precipitating factors.”²⁷⁸ Precipitating factors can include high fever, head trauma,²⁷⁹ missed medication, and stroke.²⁸⁰ Essentially, anything that disrupts the communication between the brain’s nerve cells and the body can provoke a seizure.²⁸¹

A provoked seizure is fundamentally different than an unprovoked seizure (i.e., epilepsy) in a number of ways. First, epilepsy occurs because an individual has a low seizure threshold; their brain has a predisposition that makes an electrical misfiring more likely.²⁸² This happens independently from any type of provocation, and epilepsy is typified by that predisposition rather than the seizure itself.²⁸³ Second, epilepsy generally is much more

²⁷⁵ Dr. Gruenthal, *supra* note 14.

²⁷⁶ In the interview, Dr. Gruenthal spoke of how medical schools still teach that someone with photosensitivity could be induced into a seizure if driving down a country road on a sunny day, with the sunlight flashing through the trees. He went on to say, however, that it is somewhat of an old wives’ tale in that the sunlight will not reach the necessary output per second. *Id.*

²⁷⁷ *Id.*

²⁷⁸ W. Allen Hauser & Ettore Beghi, *First Seizure Definitions and Worldwide Incidence and Mortality*, 49 *EPILEPSIA* 8, 8 (Jan. 2, 2008).

²⁷⁹ Head trauma is often mentioned in regard to epilepsy development in that the trauma alters the brain and causes the individual to develop epilepsy. It can still be a provoking cause, however, if it causes a single seizure without a fundamental alteration of brain functioning. An EEG is the only way to be certain. Dr. Robertson, *supra* note 141.

²⁸⁰ These are a few examples pulled from existing state statutes. See *infra* Table 2.1.

²⁸¹ *Seizures*, MAYO CLINIC, <https://www.mayoclinic.org/diseases-conditions/seizure/symptoms-causes/syc-20365711> [<https://perma.cc/J4W7-MX9P>] (last visited May 8, 2023).

²⁸² See *supra* notes 23–25 and accompanying text.

²⁸³ See *id.*

dangerous for that reason as it is somewhat unpredictable and has a much greater chance of recurrence.²⁸⁴ Alternatively, if a seizure was provoked and medical professionals resolve the cause, a seizure is unlikely to reoccur.²⁸⁵ For example, a seizure can occur due to an acute illness,²⁸⁶ which is cured through other means. Dr. Robertson makes clear that regardless of how many seizures one experiences, it is not epilepsy if it was provoked because the seizure will subside when the cause is addressed.²⁸⁷

Therefore, a provoked seizure should not justify strict adherence to the statutory guidelines because the provocation can be addressed and quickly resolved, lowering the risk of a crash. That same reasoning goes for individuals with epilepsy who have controlled seizures but encounter a provoking factor. For example, physicians often change a patient's anti-epileptic medication, usually in an attempt to control the secondary reactions to the drug.²⁸⁸ If that sudden change in medication causes a seizure, and the individual is promptly put back on the original medication, they should not be barred from driving.

Many states currently include exceptions for provoked seizures, including Arizona, California, Maryland, and Kansas.²⁸⁹ Precipitating factors from those states include: (a) change in medication, (b) nocturnal seizures,²⁹⁰ (c) syncope,²⁹¹ and (d) medically induced seizures.²⁹² Some states also include a catch-all provision, which grants an exception if there has been a single loss of consciousness due to a controllable and predictable factor.²⁹³

The idea of leniency in this regard is no more unreasonable than it is novel. Dozens of states carved out exceptions for provocations predicated on the understanding that seizure recurrence is unlikely when the cause of the seizure is addressed.²⁹⁴ It logically follows that if the risk of a seizure is low,

²⁸⁴ See Schachter, *supra* note 268.

²⁸⁵ See *Seizures*, *supra* note 282.

²⁸⁶ For example, if an individual has a stomach bug and is unable to keep their medication down, an isolated seizure could occur.

²⁸⁷ Dr. Robertson, *supra* note 142.

²⁸⁸ *Id.*

²⁸⁹ See *supra* notes 187, 241, 196; KAN. STAT. ANN. §§ 8-245, 8-247(e)(6) (2020).

²⁹⁰ Some, but not all, neurologists classify nocturnal seizures as provoked seizures, as they do not typically occur minus the change in brain function caused by sleep. Here, it was classified independently since an individual with unprovoked seizures can also experience nocturnal seizures.

²⁹¹ Syncope is a sudden loss of consciousness caused by a drastic change in blood pressure, but it is sometimes classified as a seizure. *Syncope*, CLEV. CLINIC, <https://my.clevelandclinic.org/health/diseases/17536-syncope> [<https://perma.cc/KKT9-395Q>] (last visited May 8, 2023).

²⁹² Every so often, an individual with epilepsy may be required to spend the night in the hospital, where they will be hooked up to an EEG while the physician attempts to induce a seizure. This allows the physician to pinpoint the location of the neurological misfirings, aiding in treatment. Dr. Robertson, *supra* note 141.

²⁹³ D.C. deviates from its seizure-free period if the incident was of "controllable etiology." Stated differently, if the cause of the incident can be controlled, revocation of driving privileges is not needed. D.C. Mun. Regs. tit. 18, § 106.9 (2020).

²⁹⁴ *E.g.*, OKLA. ADMIN. CODE § 595:10-5-9(b)(1)(B) (2020).

the state loses its safety justification for license denial. Thus, all states should follow D.C.'s lead and include a catch-all provision for isolated seizures that are of a "controllable etiology."²⁹⁵ And although I applaud the states who have chosen to statutorily enumerate provocations, that approach is inappropriate in this regard. There are dozens of factors that can provoke a seizure, and more may be discovered as science and treatments advance. Catch all provisions like that in D.C. allow for flexibility to consider the various potentialities.²⁹⁶ Additionally, states are free to institute mandates for the submission of periodic medical reports, whereas the individual has the opportunity to establish that they adhering to medical advice so that another provoked seizure will not occur.

vi. Breakthrough Seizures

For reasons identical to those stated in the preceding section, in that seizure recurrence is unlikely, breakthrough seizures should not constitute grounds for licensure denial. A breakthrough seizure occurs after a minimum of twelve months of being seizure-free.²⁹⁷ But breakthrough seizures are rare, typically occurring as a result of some stressing (or provoking) cause, such as a refusal to take anti-epileptic medication.²⁹⁸ Thus, when the breakthrough seizure is established to have been provoked, the MAB should employ the same system introduced in the preceding section.

vii. Aggravating Factors

It follows that if there are situations that justify a relaxation of the EDL requirements, then there are also situations that justify a stricter application. It is with hesitance that this Note endorses such a policy because it provides an avenue for discrimination and abuse.²⁹⁹ Thus, contrary to the approach for mitigating factors, whatever factors a state believes justifies such stricter treatment should be few and explicitly enumerated, disallowing a rampant application of unfettered discretion in this regard. The following aggravating

²⁹⁵ D.C. does not define controllable etiology, but etiology is defined as "cause," so the regulation is likely referring to a cause which can be addressed and controlled. D.C. Mun. Regs. tit. 18, § 106.9 (2020).

²⁹⁶ D.C. Mun. Regs. tit. 18, § 106.9 (2020).

²⁹⁷ L. J. Bonnett et al., *Risk of a Seizure Recurrence After a Breakthrough Seizure and The Implications For Driving: Further Analysis of The Standard Versus New Antiepileptic Drugs (SANAD) Randomized Controlled Trial*, *BMJ OPEN* 1, 1 (July 10, 2017).

²⁹⁸ Alan B. Ettinger & Radhika K. Adiga, *Breakthrough Seizures—Approach to Prevention and Diagnosis*, 4 *U.S. NEUROLOGY* 40, 41 (June 4, 2011), <https://touchneurology.com/epilepsy/journal-articles/breakthrough-seizures-approach-to-prevention-and-diagnosis/> [<https://perma.cc/W5VH-SQ6J>].

²⁹⁹ See *supra* Part II.D.

factors, as endorsed by the American Academy of Neurology (AAN), should be included: (1) noncompliance with epileptic medication, (2) alcohol or drug abuse in the last three months, (3) increase in seizure activity within the last year or after a seizure-free period, (4) causing a crash resulting from a seizure in the last five years, and (5) structural brain lesions or uncorrectable brain functioning condition.³⁰⁰ Catch-all provisions and discretion should be limited in all respects.³⁰¹

B. Mandatory Physician Reporting and Liability

The six states that maintain a system of mandatory reporting, and the eleven that fail to immunize physicians from civil liability unless they report, must restructure their laws to insulate the physician-patient relationship. Dr. Gruenthal admits that it is difficult to report a patient because physician and patient naturally develop a close relationship and physicians do not want to disrupt patient lives.³⁰² But the government must trust the physician to do the right thing for the safety of their patients and society.³⁰³ Comparative analyses between mandatory reporting jurisdictions and optional reporting jurisdictions found the former reporting no fewer crashes than the latter within the epilepsy community, begging the question of what end these requirements serve.³⁰⁴

The AAN addressed this issue fifteen years ago, highlighting the same problems raised by this Note today.³⁰⁵ The great majority of states have listened, but it is time for a final push to revise the laws of those outlier states. However, there is no reason to reinvent the wheel in this Note, as the AAN proposed a sufficient approach in 2007. That framework (1) supports optional reporting in situations in which public safety has been compromised or it is clear that the individual is unable to safely drive, and (2) expressly immunizes physicians from civil liability, regardless of whether they report, so long as (a) their actions are performed in good faith; (b) the patient is informed of their driving risk; and (c) their actions are well-documented.³⁰⁶

³⁰⁰ D. Bacon et al., *American Academy of Neurology Position Statement on Physician Reporting of Medical Conditions That May Affect Driving Competence*, AM. ACAD. OF NEUROLOGY (Apr. 10, 2007), <https://www.aan.com/globals/axon/assets/9931.pdf> [<https://perma.cc/K7Z5-8H48>].

³⁰¹ It has been well established in preceding sections that discretion, when permitted, bears strict application in this field of law. See *supra* note 193 and accompanying text.

³⁰² Dr. Gruenthal, *supra* note 14.

³⁰³ *Id.*

³⁰⁴ McLachlan, *supra* note 143 (comparing the Ontario and Alberta populations).

³⁰⁵ Bacon et al., *supra* note 301, at 1174.

³⁰⁶ *Id.* at 1177.

V. CONCLUSION

Dr. Marcuccilli, a neurologist at Lurie Children's and Rush Hospital, asked his staff if they could live with only one seizure a year, and most said yes.³⁰⁷ He then asked, but what if I told you that you could not drive for a year, which would necessarily affect your employment, relationships, education, and sense of individuality.³⁰⁸ It is time that EDLs follow suit with other epilepsy related laws and adopt an approach that is better aligned with our increased understanding of the disease and the risks posed by it

³⁰⁷ *Seizing Life: Epilepsy . . . It's Complicated*, *supra* note 1.

³⁰⁸ *Id.*

Table 1.1³⁰⁹

Type	Duration	Seizures Symptoms	Postictal Symptoms
Simple Partial	10-90 seconds	<ul style="list-style-type: none"> No loss of consciousness Sudden jerking Sensory phenomenon 	Possible transient weakness or loss of sensation
Complex Partial	1-10 minutes	<ul style="list-style-type: none"> May have aura Staring Automatisms (e.g., lip smacking, picking at clothes, fumbling) Unaware of environment May wander 	<ul style="list-style-type: none"> - Amnesia of seizure events - Mild to moderate confusion - Sleepy

Table 1.2³¹⁰

Type	Duration	Seizure Symptoms	Postictal Symptoms
Myoclonic	1– 15 seconds; may occur in clusters	<ul style="list-style-type: none"> Brief rapid muscle contractions Usually affects both sides of body Similar to leg jerks while sleeping 	--
Atonic (or Drop Attacks)	1 – 15 seconds; may occur in clusters	<ul style="list-style-type: none"> Abrupt loss of muscle tone Head drops Loss of posture, or sudden collapse Injuries – head gear 	--
Absence (<i>petit mal</i>)	2 – 15 seconds; may occur in clusters	<ul style="list-style-type: none"> Staring Eyes fluttering Automatisms if prolonged 	<ul style="list-style-type: none"> • Amnesia for seizure events • No confusion • Promptly resumes activity
Generalized Tonic-Clonic (<i>grand mal</i>)	1– 10 minutes	<ul style="list-style-type: none"> Sudden cry Fall Rigidity Convulsions 	<ul style="list-style-type: none"> • Amnesia for seizure events • Confusion • Deep sleep

³⁰⁹ Data obtained from the presentation slides that accompanied Beth Stivers Seizure Smart Training at Morehead State University. Stivers, *supra* note 16.

³¹⁰ *Id.*

Figure 2.1³¹¹

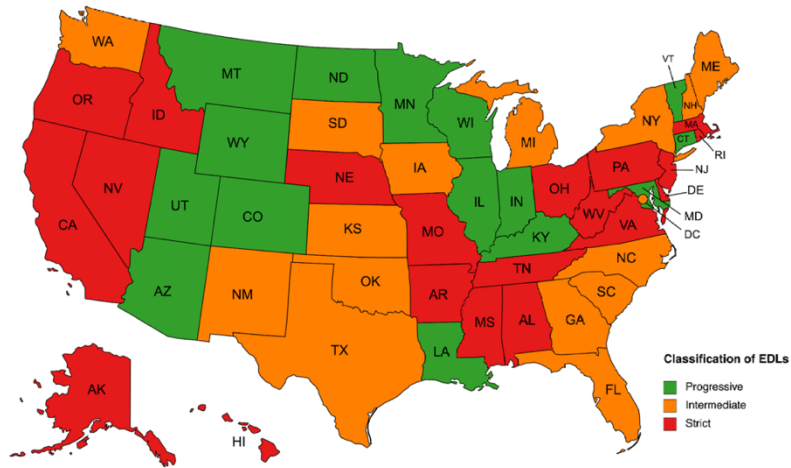


Table 2.1³¹²

State	Seizure Free Period	Exceptions	Periodic Reports	Physician Liability
Alabama	Six Months	Physician recommendation	Discretionary	Not if reported
Alaska	Six Months	None	At discretion of DMV	Yes
Arizona	Three Months	Change in Medicine, Breakthrough, nocturnal, aura	At discretion of DMV	No
Arkansas	One year	Physician recommendation	At discretion of DMV	Yes
California	3-6 months	Considers seven factors and exception if seemingly safe driver	At discretion of DMV	No

³¹¹ Data Obtained from the Epilepsy Foundation’s driving laws database. Driving Laws Database, *supra* note 6.

³¹² Data was obtained from the Epilepsy Foundation’s Driving Laws Database. *Driving Laws Database*, *supra* note 6.

Colorado	None	Physician recommendation	At discretion of DMV	No
Connecticut	None, but usually 3-6 months	Considers a number of factors to address safety, including symptoms	At discretion of DMV	No
D.C.	One Year	First seizure, nocturnal, or change of medication	Annually for five years	No
Delaware	None	None	Annually	No
Florida	Six Months	Physician recommendation	At discretion of DMV	No
Georgia	6 months	Nocturnal	At discretion of DMV	No
Hawaii	6 months	Physician recommendation	At discretion of DMV	Yes
Idaho	None	Physician recommendation	At discretion of DMV	Yes
Illinois	None	Case-by-Case Basis	At discretion of DMV	No
Indiana	None	Physician recommendation	At Discretion of MAB	No
Iowa	Six months	Nocturnal, change in medication, syncope	After six months and then upon renewal	No
Kansas	Six Months	Nocturnal, change in medication, mild symptoms	Annually for three years seizure-free	No
Kentucky	Three Months	None	Upon renewal	No
Louisiana	None	Physician recommendation	At discretion of DMV	No
Maine	3 months-two years	Can be extended if the SoS deems necessary	At discretion of DMV	No
Maryland	Three Months	Medication change, simple partial, auras, patterned nocturnal	At discretion of DMV	No
Massachusetts	Six Months	Can be shortened or extended based on Physician Recommendation	At discretion of DMV	Yes
Michigan	Six Months	Physician recommendation	At discretion of DMV	No
Minnesota	Three Months	First seizure in four years, change in medicine, temporary illness	Discretionary	No

Mississippi	Six Months	No exceptions	At Discretion of MAB	Yes
Missouri	None, but usually 6 months	Physician recommendation	At discretion of DMV	No
Montana	None	Physician Recommendation	At discretion of DMV	No
Nebraska	None	Case-by-Case Basis	None	Yes
Nevada	Three Months	Yes	Annually for three years seizure-free	Unclear
New Hampshire	One year	Physician Recommendation	None	No
New Jersey	Six Months	None	Every Six Months for Two Years	Unclear
New Mexico	Six Months	MAB or Physician Recommendation	At discretion of DMV	No
New York	One year	Discretion of the DMV	At discretion of DMV	Unclear
North Carolina	Six Months	Discretion of Board	At discretion of DMV	No
North Dakota	3-6 months	Physician recommendation, isolated, medically induced	Annually for at least three years	No
Ohio	None	Physician Recommendation	At discretion of DMV	Yes
Oklahoma	Six Months	Medication change, controlled episodes, physician recommendation, isolated or unlikely reoccurrence, nocturnal	At discretion of dep. Of public safety	No
Oregon	Three Months	Unclear, maybe physician recommendation	At discretion of DMV	No
Pennsylvania	Six Months	Nocturnal, aura,	At Discretion of MAB	No
Rhode Island	None, but usually 18 months	Discretionary	At discretion of DMV	No
South Carolina	Six Months	None	At six months, then annually for three years	No
South Dakota	6-12 Months	Physician Recommendation	Every Six Months for a Year	No

Tennessee	6-12 Months	Physician recommendation	At Discretion of MAB	Yes
Texas	Three Months for class C, Five years and no medication for Class A and B	None	At Discretion of MAB	No
Utah	Three months	Nocturnal, change in medication, partial seizures, medically induced	At Discretion of MAB	No
Vermont	None	Physician recommendation	At Discretion of MAB	Unclear
Virginia	Six Months	Yes	At Discretion of MAB	Yes
Washington	Six Months	Yes	At Discretion of MAB	No
West Virginia	Six Months	None	At Discretion of MAB	No
Wisconsin	Three Months	Physician recommendation	At Discretion of MAB	No
Wyoming	None	Discretionary	At Discretion of MAB	Unclear