



CSU
College of Law Library

Et Cetera

Volume 72

Article

3-24-2024

Ohio's Failure to Protect Motorcyclists' Heads: A Law Enforcement Perspective

B. Thomas

Follow this and additional works at: <https://engagedscholarship.csuohio.edu/etcetera>



Part of the [Fourth Amendment Commons](#), [Law Enforcement and Corrections Commons](#), and the [State and Local Government Law Commons](#)

[How does access to this work benefit you? Let us know!](#)

Recommended Citation

B. Thomas, *Ohio's Failure to Protect Motorcyclists' Heads: A Law Enforcement Perspective*, 72 Clev. St. L. Rev. Et Cetera 47 (2024)
available at <https://engagedscholarship.csuohio.edu/etcetera/vol72/iss1/3>

This Article is brought to you for free and open access by the Cleveland State Law Review Home at EngagedScholarship@CSU. It has been accepted for inclusion in Et Cetera by an authorized editor of EngagedScholarship@CSU. For more information, please contact library.es@csuohio.edu.

Ohio's Failure to Protect Motorcyclists' Heads: A Law Enforcement Perspective

B. THOMAS*

ABSTRACT

As a former police officer, the aftereffects of helmetless motorcycle crashes will forever haunt me. This Article will discuss the need for helmet laws for all motorcyclists.

* Author B. Thomas is posting under a pseudonym to protect their identity due to the requirements of their current career. The author would like to thank their family for their love and support.

CONTENTS

I.	PREMISE.....	48
II.	LAWFUL AUTHORITY.....	50
III.	THE COST	52
IV.	THE INJURY	53
V.	HELMET MAKEUP.....	57
	A. Public Outreach	60
VI.	CHANGE OVER TIME.....	61
VII.	CONCLUSION	62

I. PREMISE

Six and a half years and over approximately ten fatal motorcycle crashes are forever burned in my memory. In particular, there are two crashes that I remember well. The first, a bit more recent, was a younger motorcyclist who was wearing a helmet. He was cut off by someone who did not see the motorcycle after turning from a stop sign. The motorcyclist swerved and dropped the motorcycle as it slid down the asphalt. The helmet was significantly damaged, with scratches, scrapes, and bits of asphalt on it. The motorcyclist was not seriously injured, only getting some small scrapes. He did not go to the emergency room. Upon talking to him, he understood that the helmet potentially saved his life and/or reduced injuries.

Another motorcycle crash comes to mind. It is unknown if a helmet would have helped, but unlikely due to the nature of the crash. The motorcyclist failed to maneuver a curved roadway, traveling straight off the road. The motorcycle split into many pieces—the tires, the fender, the engine were in multiple different places. The motorcyclist was fatally injured. The details were very graphic to include legs and head injury—the details are not important. A helmet, however, may have helped to identify the motorcyclist by preserving facial structure. Unfortunately, in this case a close friend of the motorcyclist identified them by the tattoos. The point, a helmet can save a life, but can also protect from overly facial and head injuries.

As a former member of a state police agency, the firsthand perspective of seeing what simply wearing a helmet can do to save a person and the trickling negative effect of failing to do so lie on an unwavering toll of unnecessary. This Article will focus on the Ohio based laws and rules as they apply to the mandatory usage of helmets on motorcycles as it relates to injury, penalty, cost, and comparison to other states.

As of 2021, eighteen states and the District of Columbia had universal motorcycle helmet laws, twenty nine states had laws requiring helmets for certain riders, and three

states, Illinois, Iowa, and New Hampshire did not have any motorcycle helmet laws.¹ As it falls in the state of Ohio, laws are narrated under the Ohio Revised Code.² The following standards are proscribed by the Ohio Revised Code:

Except as provided in division (C)(2) of this section, no person who is *under the age of eighteen years, or who holds a motorcycle operator's endorsement or license bearing a "novice" designation that is currently in effect* as provided in section 4507.13 of the Revised Code, shall operate a motorcycle on a highway, or be a passenger on a motorcycle, unless wearing a United States department of transportation-approved protective helmet on the person's head, and no other person shall be a passenger on a motorcycle operated by such a person unless similarly wearing a protective helmet. The helmet, safety glasses, or other protective eye device shall conform with rules adopted by the director of public safety. The provisions of this paragraph or a violation thereof shall not be used in the trial of any civil action.

No person shall operate a motorcycle with a valid temporary instruction permit and temporary instruction permit identification card issued by the registrar of motor vehicles pursuant to section 4507.05 of the Revised Code unless the person, at the time of such operation, is wearing on the person's head a protective helmet that has been approved by the United States department of transportation that conforms with rules adopted by the director.³

As noted above, Ohio Revised Code section 4507.13(A)(7) gives the definition of a “novice” as being:

A person who is eighteen years of age or older and previously has not been licensed to operate a motorcycle by this state or another jurisdiction recognized by this state. The "novice" designation shall be effective for one year after the date of issuance of the motorcycle operator's endorsement or license.⁴

For mutual understanding within this Article, motorcycles, have the legal definition as that of the Ohio Revised Code, such that a “‘motorcycle’ means every motor vehicle, other than a tractor, having a seat or saddle for the use of the operator and designed to travel on not more than three wheels in contact with the ground, including, but not limited to, motor vehicles known as ‘motor-driven cycle,’ ‘motor scooter,’ ‘autocycle,’ ‘cab-enclosed motorcycle,’ or ‘motorcycle’ without regard to weight or brake horsepower.”⁵

In sum, this Article will explore the effects of having helmet laws, by looking at crash statistics and options for safety. Ultimately, this Article will conclude that Ohio’s lawmakers should pass a helmet law requiring all riders to wear a helmet in the

¹ *Governor’s Highway Safety Association, GHSA*, <https://www.ghsa.org/state-laws/issues/Motorcyclists> (last visited Feb. 13, 2024).

² *Laws, THE OHIO LEGISLATURE*, <https://www.legislature.ohio.gov/laws> (last visited Feb. 13, 2024).

³ OHIO REV. CODE ANN. § 4511.53 (West 2024) (emphasis added).

⁴ OHIO REV. CODE ANN. § 4507.13(A)(7) (West 2024).

⁵ OHIO REV. CODE ANN. § 4511.01(C)(1)–(C)(3)(a) (West 2024).

state in order to protect riders, and to ensure law enforcement has the proper information to make informed, reasonable decisions about potential stops.

II. LAWFUL AUTHORITY

Under Ohio law, a violation of section 4511.53 is a minor misdemeanor,⁶ or in other words, a traffic violation.⁷ A traffic stop carried out by a law enforcement officer is a seizure under the Fourth Amendment of the United States (U.S.) Constitution.⁸

While conducting routine patrol on public roadways, it is not out of norm for police officers to see mass amounts of motor vehicles with a sprinkling of motorcycles, albeit Ohio winters. Those that patrol those roadways, the peace officers,⁹ as well as members of the Ohio State Highway Patrol,¹⁰ have the legal authority and jurisdiction to enforce motor vehicle laws as they operate therein.¹¹

Prior to conducting a stop, as defined above,¹² reasonable, articulable suspicion must be ascertained.¹³ A police officer must focus on a broad, yet convoluted litany of traffic and criminal laws, with a focus is on the above-mentioned motorcycle laws for the state of Ohio. The assessment of standards to conduct a traffic stop for the helmet violations all relate to the statute that the following groups shall not operate a motorcycle unless “wearing on the person's head a protective helmet that has been approved by the United States Department of Transportation that conforms with rules adopted by the director.”¹⁴ The first mandated group includes, *no person under the age of eighteen*.¹⁵ As a former Ohio based law enforcement officer, the nuances of

⁶ OHIO REV. CODE ANN. § 4511.53(E) (West 2024) (“Except as otherwise provided in this division, whoever violates division (B) or (C)(1) or (3) of this section is guilty of a minor misdemeanor.”).

⁷ *Does Speeding Count as a Misdemeanor in Ohio?*, KIRNER & BOLDT CO., L.P.A. (Jan. 20, 2021), <https://www.kirnerandboldt.com/blog/2021/01/does-speeding-count-as-a-misdemeanor-in-ohio/>.

⁸ “A traffic stop of a vehicle and detention of its occupants is a seizure for Fourth Amendment purposes. A routine traffic stop is justified if the police officer has a reasonable suspicion that the occupant is unlicensed or the vehicle is unregistered. The officer does not need a reasonable suspicion of the occupant’s involvement in criminal activities. The reasonable suspicion of criminal activities discovered during the traffic stop may give rise to a legitimate Terry stop.” *Traffic Stop*, CORNELL L. SCH. — LEGAL INFO. INST., https://www.law.cornell.edu/wex/traffic_stop (last visited Feb. 13, 2024); *see also* Terry v. Ohio, 392 U.S. 1, 30–31 (1968).

⁹ OHIO REV. CODE ANN. § 2921.51 (West 2024).

¹⁰ OHIO REV. CODE ANN. § 5503.02(A) (West 2024).

¹¹ *Id.*; OHIO REV. CODE ANN. § 2921.331 (West 2024).

¹² *See* CORNELL L. SCH. — LEGAL INFO. INST., *supra* note 8.

¹³ *Id.*

¹⁴ OHIO REV. CODE ANN. § 4511.53(C)(1) (West 2024).

¹⁵ *Id.*

brain development is out of my knowledge. However, research and studies have consistently shown that the brain continues to mature well past the age of eighteen, upwards of age twenty-five,¹⁶ which leads to the understanding not every person under the age of eighteen will follow this statute, whether by obligation or desire.

Law enforcement officers rely on different resources to ascertain driver's license information, vehicle registration, criminal histories, and other various data fields. To note, Ohio Law Enforcement Automated Data System (LEADS) provides operator's license information, vehicle registration information, and auto alert information on stolen cars.¹⁷

To exemplify the importance of these resources, consider the case of an ever-eager young law enforcement officer, patrolling on a sunny Tuesday afternoon in mid-summer, when they come upon an unknown individual on a motorcycle. The rider, upon first observation is youthful with blonde hair. Knowing the safety of this rider is paramount, the law enforcement officer checks the registration and registered owner of the motorcycle, before conducting a traffic stop. Should the law enforcement officer see the motorcycle is registered to a seventeen-year-old John Doe, with blonde hair and a driver's license photo to match. At minimum, the officer has established reasonable articulable suspicion, such that he may conduct a traffic stop and inquire about the operator's usage of a helmet. The legal precedent for this is found in *Delaware v. Prouse*, 440 U.S. 648 (1979), where the United States Supreme Court held:

[E]xcept in those situations in which there is at least articulable and reasonable suspicion that a motorist is unlicensed or that an automobile is not registered, or that either the vehicle or an occupant is otherwise subject to seizure for violation of law, stopping an automobile and detaining the driver in order to check his driver's license and the registration of the automobile are unreasonable under the Fourth Amendment.¹⁸

However, more often than not, seventeen-year-olds are not registering vehicles in their name. Consider the same situation, but this time, the registered owner comes back as a forty-year-old male, with brown hair. Short of a traffic violation by the unknown operator, the police officer's legal authority to stop that operator becomes null.¹⁹

Putting aside the concerns for the preservation of life, a law enforcement officer must uphold the constitutional rights of those they encounter. Ohio courts have held that "[a] traffic stop constitutes a seizure within the meaning of the Fourth

¹⁶ "Following neuronal proliferation, the brain requires itself from the onset of puberty up until 24 years old, especially in the prefrontal cortex." Mariam Arain et al., *Maturation of the Adolescent Brain*, 9 NEUROPSYCHIATRIC DISEASE AND TREATMENT 449, 452 (2013). "The 'rewiring' process . . . it is not complete until approximately 25 years of age." *Id.* at 451.

¹⁷ *About LEADS*, LEADS, <https://leads.ohio.gov/AboutLEADS> (last visited Feb. 13, 2024).

¹⁸ *Delaware v. Prouse*, 440 U.S. 648, 663 (1979).

¹⁹ *See id.*

Amendment.”²⁰ The same court held, “[h]owever, [that] an investigative stop of a motorist does not violate the Fourth Amendment if the officer has a reasonable suspicion that the individual is engaged in criminal activity.”²¹

The same series of circumstances carries for the “novice” operator, which is the first year of operating a motorcycle, as lawful authority is concerned.²² The point, motorcycle helmet laws, amongst other traffic laws, while contributing to less injury and more safety, are not always enforceable as they stand. From a law enforcement perspective, it is out of their control to watch a helmetless motorcycle operator fail to negotiate just roadway markings, or go headfirst into an object whether it be a tree, a rock, or the ground itself.

Despite what many motorcyclists want you to believe, helmet usage is not only a personal preference, but could be ingrained further into Ohio law. Failing to do so is dangerous, for riders, and for law enforcement.

III. THE COST

Few, if any, appreciate the red and blue lights coming up in their rearview mirror. More often than not, routine traffic stops result in a minor misdemeanor citation. Under the jurisdiction of the Medina Municipal Court, which has jurisdiction for primarily northern cities/townships of Medina County,²³ a traffic violation (not including speeding) carries a fine of \$132.00 to \$162.00.²⁴ Just a short aerial distance to the north, as it fell in 2016, the Berea Municipal Court of Cuyahoga County carried a waiver amount for the traffic fine for a motorcycle safety equipment violation to the tune of \$200.00.²⁵ In comparison, the cost of a full face helmet is less than one traffic infraction fine.²⁶ However, it could be argued a traffic citation is cheaper than a

²⁰ *State v. Hoder*, 9th Dist. Wayne No. 03CA0042, 2004-Ohio-3083, at *5, *citing* *Whren v. United States* 517 U.S. 806, 809–10 (1996).

²¹ *Id.*

²² OHIO REV. CODE ANN. § 4507.13(A)(7) (West 2024).

²³ MEDINA MUN. CT., <https://www.medinamunicipalcourt.org/> (last visited Feb. 13, 2024).

²⁴ *Waiver Schedule*, MEDINA MUN. CT. (2020), <https://www.medinamunicipalcourt.org/wp-content/uploads/2020/10/Waiver-Schedule-New-2020.pdf> (the amount changes depending on who writes your ticket in Medina Municipal Court) (on file with Cleveland State Law Review).

²⁵ *Waiver Schedule*, BEREAMUN. CT. (April 2016), <https://www.bereamunicourt.org/documents/Berea%20Wvr%20Sheet%202016.pdf>.

²⁶ *See Full Face Helmets*, THE HELMET SHOP, https://www.helmetshop.com/Full-Face-Helmets_c_1788-1-1.html (last visited Feb. 13, 2024) (There are many options for less than \$125.00 on this website; for purposes of this Article, any increases in insurance costs due to helmet fines and related infractions are beyond the scope of this author’s expertise and will not be factored in as an additional good reason for helmet usage).

helmet, with the latter costing anywhere between \$60 and \$4,000. JD Power and Associates concluded the average cost of a motorcycle helmet is \$150 to \$200.²⁷

In short, buying and wearing a helmet is not only a good idea but it is cheaper than fines for failing to wear the helmet.

IV. THE INJURY

Between 2018 and August 21, 2023, Ohio had 1,522,587 motor vehicle crashes.²⁸ Of those crashes, 21,476, or 1.4%, involved motorcycles.²⁹

To note, the Ohio Administrative Code instructs all law enforcement agencies in Ohio to include townships, counties, municipal corporations, and other political subdivisions to submit a report of a motor vehicle accident to the Director of Public Safety on the "Ohio traffic crash report".³⁰ In furtherance thereof, a "motor vehicle accident" or "traffic crash," under the same Administrative Rule, means:

any accident arising from the operation or use of a motor vehicle involving a fatality, any personal injury, or property damage in an amount not less than the amount specified in section 5502.11 of the Revised Code, but does not include an accident occurring on private property nor any fatality, personal injury, or property damage directly caused by intentional assault, by theft, by the discharge of a firearm or explosive device, or by natural disaster.³¹

The Ohio Crash Report Procedure Manual defines a fatal crash as "[a]ny injury that results in death within thirty days after the motor vehicle crash in which the injury occurred."³² The Ohio Crash Report Procedure Manual takes references to the Model Minimum Uniform Crash Criteria (MMUCC), as released by the National Highway Traffic Safety Administrative.³³ The MMUCC defines fatalities, as it pertains to traffic crashes, as "[t]he total number of fatalities (motorists and non-motorists) that resulted from injuries sustained as the result of a specific motor vehicle crash. In reporting fatality statistics, a thirty day counting rule is generally used (only deaths that occur within thirty twenty-four hour periods of a crash are counted)."³⁴

²⁷ *Protect Your Head: How Much Does a Motorcycle Helmet Cost*, J.D. POWER, <https://www.jdpower.com/motorcycles/shopping-guides/how-much-does-a-motorcycle-helmet-cost> (last visited Feb. 13, 2024).

²⁸ *Crash Dashboard*, OHIO STATE HIGHWAY PATROL, <https://statepatrol.ohio.gov/dashboards-statistics/ostats-dashboards/crash-dashboard> (last visited Feb. 13, 2024).

²⁹ *Id.*

³⁰ OHIO ADMIN. CODE 4501-31-01 (2023).

³¹ *Id.*

³² OHIO DEPT. OF PUBLIC SAFETY, *Crash Report Procedure Manual*, (Oct. 13, 2011) https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/oh_crashinstruction_10_2011.pdf.

³³ *Id.* at 19.

³⁴ U.S. DEP'T TRANSPORTATION, MMUCC GUIDELINE 32 (5th ed. 2017), https://www.ghsa.org/sites/default/files/publications/files/MMUCC_5thEd_web.pdf.

With reference to Ohio crash statistics previously mentioned, the total number of fatal crashes from 2018 to August 21, 2023, were 5,615 (996; 1,041; 1,154; 1,244; 1,180; and 708 respectively).³⁵ Of those fatal crashes, motorcycle-related crashes contributed to 1,074 (142, 156, 205, 215, 209, and 147 respectively from 2018 to August 21, 2023).³⁶ In summation, 1.4% of motor vehicle crashes in Ohio, contributed to 19.1% of Ohio's motor vehicle crash fatalities for the period specified. Injury based crashes contributed to even larger numbers. For the same time period, Ohio reported 46,557 crashes involving a serious injury and an additional 186,230 crashes involving a minor injury.³⁷ Out of the total serious injury crashes, 5,511 were related to a motorcycle, as well as 8,150 of the total minor injury crashes.³⁸ In comparison to the 19.1% fatalities with motorcycle involvement, of the injury related crashes, motorcycle involvement contributed to 11.9% of serious injuries and 4.1% of minor injury.³⁹ The usage of helmets in these crashes was not readily available, but it stands to reason that helmet usage is higher in the minor injury category than the serious injury one.⁴⁰

In 2021, Ohioans registered 13,290,639 vehicles, 3.1% of which were motorcycle registrations (407,271).⁴¹

Unlike some other states, Ohio at least carries some restrictions on helmet usage.⁴² Unlike Ohio, Illinois has no current helmet legislation.⁴³ In comparison to Ohio's fatal crash data, Illinois reported 1,147 fatal crashes in 2022, 1,210 in 2021, 1,094 in 2020, 938 in 2019, and 951 in 2018, for a total of 5,340.⁴⁴ Of those, motorcyclists were involved in 146 of the fatal crashes in 2022, 167 in 2021, 149 in 2020, 137 in 2019,

³⁵ OHIO STATE HIGHWAY PATROL, *supra* note 28. Between 2018 and final reporting date of August 21, 2023, Ohio had 1,517,532 crashes. *Id.*

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ See *Motorcycle Safety*, CTR. FOR DISEASE CONTROL AND PREVENTION (May 5, 2022), <https://www.cdc.gov/transportationsafety/mc/index.html> (supporting reasoning that helmet usage is higher in the minor injury category than in the serious injury category).

⁴¹ *Ohio Bureau of Motor Vehicles 2021 Facts and Figures - Vehicle Registration*, OHIO BUREAU OF MOTOR VEHICLES (Feb. 22, 2022), https://bmv.ohio.gov/links/bmv_2021-Facts-Figures.pdf.

⁴² OHIO ADMIN. CODE 4501-17 (2023).

⁴³ *Motorcycle Helmet Use Laws*, HIGHWAY LOSS DATA INST. (Feb. 2024), <https://www.iihs.org/topics/motorcycles/motorcycle-helmet-laws-table>.

⁴⁴ *Illinois Fatal Crash Historic Data*, ILL. DEP'T OF TRANSP., <https://apps1.dot.illinois.gov/FatalCrash/historicsnapshot.html> (last visited Feb. 13, 2024).

and 118 in 2018, for a total of 717 since 2018.⁴⁵ In summation, of the fatal crashes reported in Illinois between 2018 and 2022, motorcyclists were involved in 13.4%.⁴⁶

On the contrary, California has a universal helmet law, which reads:

All riders and passengers are required per CVC §27803 to wear a U.S. DOT compliant motorcycle safety helmet when riding a motorcycle, motor-driven cycle, or motorized bicycle. The motorcycle safety helmet must be certified by the manufacturer stating the helmet complies with U.S. DOT Federal Motor Vehicle Safety Standard (FMVSS) 218.⁴⁷

An analysis of 2018 and 2019 crash statistics in California was conducted by the State's Department of Transportation. This study found that in 2019, there were a total of 5,186 fatal crashes and 351,110 drivers involved in injury crashes.⁴⁸ Of those crashes, 499 fatal crashes involved motorcycles and 12,723 of injury crashes. In summation, in 2019, California reported 9.6% of fatal crashes and 3.6% of injury crashes involved motorcycles. In 2018, California reported 5,293 fatal crashes and 360,040 injury related crashes.⁴⁹ Of those motorcyclists were involved in 528 fatal crashes and 13,912 injury related crashes.⁵⁰ In summation, for 2018, California reported 9.9% of fatal crashes and 3.8% of injury related crashes involved motorcycles.⁵¹

The National Highway Traffic Safety Administration (NHTSA) published a report titled the Motorcycle Helmet Use and Head and Facial Injuries, Crash Outcomes in CODES-Linked Data.⁵² The report “examines the relationship between motorcycle helmet use and motorcycle crash outcomes in terms of injury types, hospital charges, and other variables employing data from the Crash Outcome Data Evaluation System (CODES), a program facilitated by the National Highway Traffic Safety

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Preparing to Ride*, CAL. DEP'T OF MOTOR VEHICLES, <https://www.dmv.ca.gov/portal/handbook/motorcycle-handbook/preparing-to-ride/> (last visited Feb. 13, 2024).

⁴⁸ *Table 3A Drivers in Fatal and Injury Crashes and Drivers Who Were at Fault by Type of Vehicle – 2019*, CAL. HIGHWAY PATROL, <https://www.chp.ca.gov/programs-services/services-information/switrs-internet-statewide-integrated-traffic-records-system/switrs-2019-report> (last visited Feb. 13, 2024).

⁴⁹ *Table 3A Drivers in Fatal and Injury Crashes and Drivers Who Were at Fault by Type of Vehicle – 2018*, CAL. HIGHWAY PATROL, <https://www.chp.ca.gov/programs-services/services-information/switrs-internet-statewide-integrated-traffic-records-system/switrs-2018-report> (last visited Feb. 13, 2024).

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Motorcycle Helmet Use and Head and Facial Injuries, Crash Outcomes in CODES-Linked Data*, U.S. DEP'T OF TRANS. & NAT'L HIGHWAY TRAFFIC SAFETY ADMIN. (Oct. 2009), <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/811208> [hereinafter *CODES Study*].

Administration.”⁵³ One relationship examined in the report showed the impact of facial injury in helmet usage.⁵⁴ The report found that, of those not wearing a helmet, 90.8% sustained no facial injury and 9.2% sustained a facial injury.⁵⁵ In comparison, 94.3% of those wearing a helmet did not sustain a facial injury and 5.7% sustained a facial injury.⁵⁶

The NHTSA study also compared the usage of a helmet as it related to traumatic brain injury (TBI). The report compares CODES information from 2003-2005, 78.7% those that did not wear a helmet sustained no TBI while 21.3% sustained a TBI from potential to severe.⁵⁷ In comparison, 14.5% of those that used a helmet sustained the same categories of TBI and 85.5% sustained no TBI.⁵⁸

The study further made conclusions in regard to hospital cost, by utilizing the Abbreviated Injury Scale (“AIS”).⁵⁹ The study found as follows:

As the severity of the head/facial injury increases the median of hospital charges increases thirty-two-fold. The median of hospital charges for motorcyclists without a head or facial injury was \$2,285 while a motorcyclist with an AIS head injury of five or six had median hospital charges of \$73,179. Similarly, median hospital charges increase with TBI severity. Motorcyclists without TBI have a median hospital charge of \$2,461 while motorcyclists with severe TBI have a median hospital charge of \$31,979.⁶⁰

It should be noted that the prices referenced in the AIS were that of the year of 2005.⁶¹ For the year of 2023, the average inflation calculator comparison of the \$31,979 from 2005, is \$50,054.75.⁶² Further, the study found “male motorcyclists were most likely to be in their early 20’s, female motorcyclists were more likely to be between 40 and 49 years old.”⁶³ The study also found “[h]elmet usage also differed by age. Helmeted motorcyclists were more likely to be younger compared to

⁵³*Id.* at 1.

⁵⁴ *Id.* at 27.

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.* at 26.

⁵⁸ *Id.*

⁵⁹ *Id.* at 7.

⁶⁰ *Id.* at 19.

⁶¹ *Id.* at 7.

⁶² *Inflation Calculator*, CALCULATOR, <https://www.calculator.net/inflation-calculator.html?cstartingamount1=31%2C979&cinmonth1=13&cinyear1=2005&coutmonth1=7&coutyear1=2023&calctype=1&x=Calculate#uscpi>, (last visited Feb. 13, 2024).

⁶³ *CODES Study*, *supra* note 52, at 14.

unhelmeted motorcyclists.”⁶⁴ The study suspected the difference in helmet usage by age may be the result of different state laws as they pertain to age.⁶⁵

As previously discussed, helmets are inexpensive. Helmetless motorcycle crashes are not.

V. HELMET MAKEUP

The Snell Foundation sets a standard that is widely accepted in the motorcycle community as a step above the mandated Department of Transportation standards of motorcycle helmets.⁶⁶ The Snell Foundation claims they have “one of the most advanced and busiest helmet testing facilities in the world. Snell's California helmet testing laboratory is the one of the few in the United States accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA).”⁶⁷ Snell further states:

[Helmet testing does not seek to precisely] reproduce real life situations, rather it attempts to define a set of requirements that is analogous to the types of situations that might be encountered while engaged in a prescribed activity. Helmet tests are designed to be repeatable, measurable and include a fixed range of situations a helmet might reasonably encounter. At this point the concern of helmet testing does not include responses of the neck or body as they react with the head during a crash. It is strictly a measurement of how a helmet reacts during an event to protect the wearer's brain.⁶⁸

The following nine testing characteristics were obtained from the Snell Foundation Philosophy and Concepts of Helmet Testing:

1. Impact Test

This test involves a series of controlled impacts where a helmet is positioned on a metal head form and then dropped in a guided fall onto various steel test anvils (Flat, Hemisphere, Kurbstone, Roll bar, Edge or a Horseshoe type) which simulate different impact surfaces. The head forms are instrumented with an accelerometer to measure peak G force or acceleration which is measured in "G" gravitational units. The impact energy (drop height and mass), or how hard the helmets are impacted is unique to each standard. However, in any valid test, if the peak acceleration imparted to the head form exceeds certain threshold value

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Frequently Asked Questions*, SNELL FOUND., <https://smf.org/faq> (last visited Feb. 13, 2024).

⁶⁷ *How Snell Test Helmets*, SNELL FOUND., <https://smf.org/testing> (last visited Feb. 13, 2024).

⁶⁸ *Id.*

(around 260-300 G's, depending on standard and test type), the helmet is rejected.⁶⁹

2. Positional Stability (Roll-Off) Test

A head form is mounted on a stand so that it points face downward at an angle of 135 degrees. The helmet is placed on the head form and the straps and buckles adjusted to obtain a "best fit". A wire rope is hooked to the rear edge of the helmet and brought forward so that its free end runs across the helmet and downward towards the floor. The free end of the rope has a mechanical stop with a 4 kg weight resting on the stop. The weight is raised to a prescribed height and dropped onto the stop. The resulting shock places a rotational load on the helmet. The helmet may be shifted, but must not roll off the head form. Next, the head form is rotated 180 degrees, the helmet adjusted, and tested with the wire rope hooked to the front edge of the helmet and the test is repeated. As in the first case, the helmet may be shifted but must not roll off the head form.⁷⁰

3. Dynamic Retention Test

The helmet is placed on a head form and the chin strap fastened under a device approximating the contour of the jaw. The jaw piece is loaded with a 23 kg weight for approximately one minute. The retention system is tested by simultaneously removing the 23 kg weight and applying a 38 kg mass in an abrupt guided fall. The retention system fails if it cannot support the mechanical loads or if the maximum instantaneous deflection (stretch) of the retention system exceeds 30 mm. Drop heights for the fonts 38 kg mass are different for each standard, however the mechanism and failure criteria are similar for other types of headgear.⁷¹

4. Chin Bar Rigidity Test

The chin bar test applies to full face motorcycle, special application racing and kart racing helmets. The helmet is affixed to a rigid base with the chin bar facing upward. A 5 kg weight is dropped through a guided

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.*

fall to strike the central portion of the chin bar. Maximum downward deflection of the chin bar must not exceed the stated distance.⁷²

5. Shell Penetration Test

The shell penetration test applies to motorcycle, special application racing, kart racing, skiing and equestrian helmets. The helmet is affixed to a rigid base. A 3 kg sharply pointed free 3d models striker is dropped in a guided fall onto the helmet from a prescribed height. The test striker must not penetrate the helmet or even achieve momentary contact with the head form.⁷³

6. Face shield Penetration Test

The face shield penetration test applies to full face motorcycle, special application racing and kart racing helmets. The face shield is affixed to the helmet and shot along the center line in three separate places with an air rifle using a sharp icons soft lead pellet. Pellet speed will be approximately 500 kph. For both types of shield the pellet must not penetrate, and for the racing helmet any resulting "bump" on the inside of the shield must not exceed 2.5 mm.⁷⁴

7. Flame Resistance Test

The flame resistance test applies to special application racing helmets only. The test is conducted using a propane flame of approximately 790 degrees centigrade. The flame is applied to the shell, trim, chin strap and face shield for a specified number of seconds, and any resulting fire must self extinguish within a specified time after flame removal. During the whole process the temperature of the interior lining of the helmet must not exceed 70 degrees centigrade.⁷⁵

8. Frontal Head Restraint Test

Some special application racing helmets are configured with Helmet-M6-Terminals to allow the attachment of the flexible tethers connecting to Frontal Head Restraint devices. These are devices designed to limit the forward motion of the head in frontal impacts. The tethers may bear

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.*

much of the inertial load of the head and helmet potentially reducing the stresses to the wearer's cervical spine and the base of the skull. The apparatus shall provide a means for measuring the combined load applied to the shoulder straps and the load in each tether.⁷⁶

9. Chin Bar Impact Test

The chin bar impact test applies to some special application racing helmets. The helmet is placed in a special cradle which can move downward freely along guide wires or one or more rigid rails delivering its contents to impact against a flat anvil. The cradle with the helmet and head form shall be dropped along the guides such that the chin bar will strike the flat anvil. The shock acceleration at the design center of gravity of the head form shall be measured by means of a tri-axial accelerometer and data recording system. If the impact velocity measurement is 5.5 m/s or more and the peak magnitude of the recorded acceleration of the head form is 275 G or less, the sample shall be deemed to meet the test requirement.⁷⁷

As a former motorcycle owner and current endorsement holder, two local reputable motorcycle equipment stores had verified that Snell helmets are a higher level of safer helmets than standard DOT helmets. For the safety of it, it is not worth a chance to save \$50 for non-Snell based helmets.

A. *Public Outreach*

The State of Ohio, through “Motorcycle Ohio,” a division of the Ohio Traffic Safety Office, created “Saved by the Helmet”, a public recognition program for those involved in injury crashes, who survived due to their usage of a helmet. Motorcycle Ohio makes the following statement:

For more than 30 years, Motorcycle Ohio has provided Ohio’s riders the opportunity to improve their skills and make the roadways safer for all motorists. The state has over 400,000 registered motorcycles, 600,000 endorsed riders, and issues 40,000 motorcycle permits per year. This makes Ohio the 5th largest state in the union per ridership. Yet Ohio averages over 100 motorcycle fatalities per year, with over 4,500 injury crashes occurring on our roadways. Wearing proper riding gear, along with taking a rider education class, are ways that motorcyclist can increase this chances of surviving a crash.⁷⁸

Motorcycle Ohio requires the following criteria in order to be submitted for the membership/award of Saved by the Helmet:

Persons must be nominated within a year of their crash.

The crashes must be verifiable through official state crash records.

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Saved by the Helmet*, OHIO TRAFFIC SAFETY OFF., <https://motorcycle.ohio.gov/information-for-riders/public-programs/saved-by-the-helmet> (last visited Feb. 13, 2024).

Persons must not be cited for serious offenses, including driving under the influence, reckless operation, or those who survived when another individual was killed.

Further, the person must be an Ohio resident holding a valid endorsement or permit at the time of the crash.⁷⁹

Motorcycle Ohio also shares stories of survival. One story is that of Graham Hunter of Clayton, Ohio. Mr. Hunter reports an “Alive Day” of June 19, 2020.⁸⁰ In his story, Mr. Hunter states, “I was traveling north on Interstate 75 in left lane and when attempting to change to the middle lane of traffic and was side-swiped by a car. I was wearing full protective gear and walked out of ER 3 hours later. The crash destroyed my helmet.”⁸¹ As a result of the crash, Mr. Hunter suffered a severe concussion and vertigo.⁸² “Having ridden previously in the United Kingdom, Graham Hunter has been riding in Ohio with an endorsement since 2021.”⁸³

The amount of testing and science that goes into a motorcycle helmet for safety is astounding.⁸⁴ It is unlikely that Snell would put that much effort into making safer motorcycle helmets if they did not believe that protecting heads was of the utmost importance.

VI. CHANGE OVER TIME

According to NHTSA, in 1966, the federal government utilized its influence over states by enacting a universal helmet law “the first universal helmet law was enacted in 1966.”⁸⁵ “Universal helmet laws were in effect in forty-seven states and the District of Columbia by 1975.”⁸⁶ The NHTSA article further states “[a]fter Federal penalties were eliminated in 1975 for States failing to have a universal law, about half the States repealed their laws.”⁸⁷ Finally, “studies of helmet use among motorcyclists indicate that universal helmet use laws are effective in increasing helmet use, which decreased hospital admissions and treatment costs, and lowers insurance claims.”⁸⁸

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *See supra* text accompanying notes 70–80.

⁸⁵ *Universal Motorcycle Helmet Use Laws*, U.S. DEP’T OF TRANS. & NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., <https://www.nhtsa.gov/book/countermeasures/countermeasures/11-universal-motorcycle-helmet-use-laws> (last visited Feb. 13, 2024).

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

The National Library of Medicine, National Center for Biotechnology Information emphasizes the importance of helmet usage.⁸⁹ In the same narration, it states, “in 1966, the National Highway Safety Act (NHSA) was passed with an eye towards decreasing motorcycle-related head injuries and fatalities. The NHSA granted states federal funds to develop programs aimed at improving traffic safety, such as vehicle registration, accident record systems, and traffic control.”⁹⁰ It further narrates those states the only states that adopted the act were able to obtain federal funding for highway safety programs.⁹¹

But this was not the only time the Federal Government influenced state lawmaking by withholding federal funding. The National Institute on Alcohol Abuse and Alcoholism states “[the] Federal Uniform Drinking Age Act of 1984 sets the minimum legal drinking age to 21 and every State abides by that standard.”⁹² In observation of the legal verbiage, 23 U.S.C. § 158 notes the national minimum drinking age with the following:

Fiscal years before 2012.—

The Secretary shall withhold 10 per centum of the amount required to be apportioned to any State under each of sections 104(b)(1), 104(b)(3), and 104(b)(4) [1] of this title on the first day of each fiscal year after the second fiscal year beginning after September 30, 1985, in which the purchase or public possession in such State of any alcoholic beverage by a person who is less than twenty-one years of age is lawful.⁹³

VII. CONCLUSION

It can be argued that the federal mandate requiring motorcyclists to wear a helmet that was rescinded may have contributed to less injury and death than the one currently in place, as it pertains to alcohol. Although it is understood that there is a system of checks and balances that leave the power to the states to create their own legislation, a call for another universal helmet law nationally would be appreciated but not appropriate.

It is apparent in the aforementioned explanations that the State of Ohio would benefit in multiple ways by adopting universal helmet laws. In comparison to California, a state with a much larger population, Ohio has higher percentages of fatalities for motorcycle crashes, even when the motorcyclist is wearing a helmet. Further, the hospital cost, as it pertains to today’s prices, was apparently higher for those that do not use helmets.

⁸⁹ Adam E. M. Eltorai et al., *Federally Mandating Motorcycle Helmets in the United States*, 16 BMC PUB. HEALTH 242 (2016).

⁹⁰ *Id.* at 242.

⁹¹ *Id.*

⁹² *Alcohol Policy*, NAT’L INST. ON ALCOHOL ABUSE AND ALCOHOLISM, <https://www.niaaa.nih.gov/alcohols-effects-health/alcohol-policy> (last visited Feb. 13, 2024).

⁹³ 23 U.S.C. § 158(a)(1)(A). The legislation further changed the withholding to 8% as of 2012. 23 U.S.C. § 158(a)(1)(B).

What is enlightening is helmets are worn more often by younger, rather than older, motorcyclists. There is a suspicion that an over-confidence in experience leads to less desire to use a helmet.

A universal helmet law would allow law enforcement to ascertain the legal authority to stop motorcyclists and enforce the helmet law. Seeing even one fatal motorcycle crash where the rider did not wear a helmet is one more than a person should see in their lifetime. One person not wearing a helmet has an impact on many people, including the families that have to be notified of their loved ones passing, the first responders who may have to see the same images in their heads as motorcycles pass them by at high rates of speeds, and the trauma surgeons who over and over see the same patterns of behavior with no power to control it.

It is the responsibility of the state legislature to review the current limited helmet usage laws in Ohio and work towards a safer solution for the masses. Preservation of life is a focus for many, but the tools to do so are lacking.