Motorcycle Policy and the Public Interest: A Recommendation for a New Type of Partial Motorcycle Helmet Law

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In the U.S., motor vehicle crashes are one of the leading causes of injury-related death accounting for 34,485 deaths in 2009. Of all road traffic fatalities, motorcycle crashes account for 14%, though motorcycles represent less than 1% of all vehicle miles traveled. Compared to automobile drivers, motorcycle riders are 34 times more likely to die in a traffic collision.

Fatal and nonfatal motorcycle crash injuries are largely attributable to head injuries. Helmet use by riders has been demonstrated to decrease these injuries and save approximately five quality-adjusted life years. Nevertheless, helmet nonuse is the most significant factor for death in motorcycle collisions in a global study of motorcycle crashes involving 70 countries.

While motorcycle crash-related deaths and injuries can be reduced by the use of protective helmets, many states have had limited success in implementing or maintaining helmet laws because of political pressure from motorcycle lobbying groups who favor individual rights of motorcycle riders over the public benefits of mandatory helmet laws. We describe the costs of motorcycle crash injuries from unhelmeted riders, suggest that these costs can lead to a framework for a partial motorcycle helmet law that allows for personal choice but provides incentives for helmet use, and relate our experience advocating for such a law in New Mexico.

Legal and Policy Background

There are two types of motorcycle helmet laws in the U.S. Universal laws require all riders to wear a helmet. Partial helmet laws require a subset of riders (younger than 17-21 years old) to wear a helmet. These laws are established by each state. As of 2016, 19 states and the District of Columbia had universal helmet laws, 28 states had partial helmet laws, and 3 states had no helmet law. New Mexico has a partial helmet law applying to riders 17 years old and younger.

The patchwork system of helmet laws in the U.S. follows years of inconsistent federal involvement and shifting federal requirements. Since 1966, various federal laws have tied financial incentives and/or penalties to states’ federal highway funds to encourage passage of universal helmet laws. In the absence of consistently strong federal imperatives, however, state motorcycle helmet laws are often based on how state legislatures respond to data about motorcycle crash injuries and deaths and to arguments focused on individual liberties. Although the authority for state action limiting individual liberty to protect the public’s health was recognized over 100 years ago in Jacobson v. Massachusetts 197 U.S. 1 (1905), public health laws still are often opposed as limiting individual freedoms and exemplifying government paternalism.

Arguments in support of public health laws have resonated best when they involve communicable diseases or environmental factors that affect individuals who are unwillingly exposed (e.g., second hand smoke). When public health issues are framed as

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matters of individual choice, however — such as in discussions about motorcycle helmets — there is often significant resistance.\textsuperscript{15} Despite the tension between individual and collective perspectives, a 2012 poll shows that the majority of Americans support laws that foster road safety:\textsuperscript{16} 82\% of respondents supported requiring motorcycle riders to wear helmets, with 57\% "strongly" supporting this protective policy. There is also abundant epidemiologic data that suggests universal helmet laws significantly increase helmet use and decrease motorcycle crash-related deaths and injuries.

**Efficacy of Motorcycle Helmet Laws**

Motorcycle helmet laws are effective because they lead to high rates of rider compliance in wearing a helmet.\textsuperscript{17} Universal laws are readily enforceable by police officers because non-compliance is readily observable. In states with universal helmet laws, 12\% of fatally injured riders were unhelmeted compared with 64\% in states with a partial helmet law and 79\% in states with no helmet law.\textsuperscript{18} States that have enacted universal laws after no law or a partial law have seen helmet usage increase from 15-60\% to 80-99\% of riders. Overall, when compared with states without a helmet law, states with universal laws have a 22-33\% reduction in motorcycle crash mortality and states with partial laws have a 7-10\% reduction.\textsuperscript{19} In contrast, states that have repealed or weakened helmet laws have experienced significant decreases in helmet use among motorcycle riders and corresponding increases in fatalities and head injury hospitalizations.\textsuperscript{20}

Existing partial helmet laws are not fully effective in protecting the segment of the population they are designed to protect—specifically the young. States with partial laws focused on riders younger than 21 years had a 38\% higher incidence of traumatic brain injury from motorcycle crashes among this population than universal law states.\textsuperscript{21} Mortality rates for motorcycle riders 15-20 years of age are 31\% lower in states with universal helmet laws, while states with partial laws fail to see a reduction in mortality for this age group.\textsuperscript{22} In addition, it is difficult to ensure helmet compliance among this segment of the population since rider age is not easily observable by police officers.

Motorcycle crash injuries and deaths also create societal and economic costs for others. We believe these costs justify a new type of partial motorcycle helmet law that respects individual freedoms, but compensates for societal costs attributable to non-helmet use. Implementation of such a law could potentially increase helmet compliance resulting in fewer motorcycle crash-related injuries and deaths and decreased associated costs.

**Economic Costs of Motorcycle Crash Injuries and Deaths**

In a 13 year study (1994-2006) from a Level II Trauma Center that reviewed 1738 motorcyclists admitted after a crash, 760 riders were unhelmeted.\textsuperscript{23} The unhelmeted riders used more resources, spending more days in the hospital and more days in the intensive care unit. These factors resulted in higher hospital charges per person ($44,744 vs. $31,369), with total excess charges of $9,959,800 for the unhelmeted population over the study period. Fifty-nine percent of the motorcyclists were uninsured, and unhelmeted motorcyclists had an adjusted odds ratio (OR) of 1.4 (95\% confidence interval 1.1-1.7) compared to helmeted riders of being uninsured. Uninsured individuals are more likely to require the public to finance their health care. Another study looking at 9769 motorcycle crash patients (30.8\% unhelmeted) showed that unhelmeted riders were more likely to die (OR 1.72), require a rehabilitation hospital (OR 1.25), or require a nursing home (OR 1.75), all of which have profound financial consequences.\textsuperscript{24} Other studies have shown the uninsured portion of injured unhelmeted motorcyclists to be as high as 60-82\%.\textsuperscript{25}

The differential economic burden of hospital charges between helmeted and unhelmeted injured motorcyclists in police-reported crashes is estimated to be $250,231,734 per year in the U.S.\textsuperscript{26} The economic advantages of being helmeted included sustaining fewer injuries requiring medical attention and having fewer inpatient admissions and lower inpatient costs. This study was unable to evaluate rehabilitation and other post-discharge costs.

Other investigators developed a complex model with several datasets and examined economic costs saved from helmet use (medical and emergency services costs, and household and work productivity losses) in 2010.\textsuperscript{27} Approximately $3 billion were saved by riders wearing helmets in the U.S. and an additional $1.4 billion could have been saved if all riders were helmeted. States with universal helmet laws saved an average of $725 per registered motorcycle from helmet use compared to states with partial helmet laws, which saved $198 per registered motorcycle. New Mexico saved $48 per registered motorcycle from helmet use, reflecting very low helmet compliance in the state.

**Recommendation for a Novel Partial Motorcycle Helmet Law**

The epidemiologic and economic data support consideration of a novel partial motorcycle helmet law that respects individual freedoms and a rider’s “right to choose,” but holds riders responsible for their choices.
by providing incentives to wear a helmet and disincentives to ride unhelmeted.

For example, a state could create two types of motorcycle registrations, each linked to a distinctive reflective license plate. One type would be a “helmet registration,” costing the standard amount and requiring riders to wear helmets. The other type would be a “non-helmet registration” and would allow riding without a helmet. It would cost the standard amount plus a proportional share of the increased costs created by injured unhelmeted motorcycle riders. This fiscal burden can be calculated from economic data\(^2\) as follows. The average cost savings per registered motorcycle from helmet use in states with a universal helmet law ($725) minus the cost savings per registered motorcycle from helmet use in the state without a universal helmet law equals the potential costs per registered motorcycle associated with the lack of helmet compliance that a universal law would provide. For example, in New Mexico this calculation would be $725-$48= $677. A non-helmet registration tied to economic costs for New Mexico would therefore cost $16 (the standard amount)+ $677= $693. To ensure compliance, riders of helmet-registered motorcycles caught driving without a helmet should be subject to a substantial fine. Funds from non-helmet registrations can be used by the state to improve trauma care and brain injury services, support medical examiner diagnosis and surveillance, or provide free or discounted helmets for low-income riders.

While such a proposed helmet law has not been tested elsewhere, the concepts behind it have been tested. Economic costs passed on to consumers through tax and price polices can change behaviors. For example, price increases from increased tobacco excise taxes decrease overall tobacco use, reduce prevalence of tobacco use in adults and young people, induce current users to quit, reduce initiation of tobacco use in young people, and lower consumption of tobacco products among continuing users.\(^3\)

The concept of paying more up front to ride a motorcycle without a helmet is not new. Florida, Michigan, and Texas condition helmet requirements in part on whether riders have an established type or amount of medical insurance coverage.\(^4\) To ride without a helmet in Michigan, for example, riders must be 21, have at least $20,000 of medical insurance and have held a motorcycle license for 2 years or passed an approved safety course.\(^5\) Unfortunately, the $10,000-$20,000 of insurance coverage required to ride unhelmeted in Michigan and Florida does not come close to covering the average hospitalization costs for unhelmeted injured motorcyclists.\(^5\) Nor does it cover costs associated with rehabilitation, long-term care, and support of surviving dependents.

**New Mexico Motorcycle Helmet Legislation Proposed in 2015**

In 2015, public health advocates in New Mexico proposed Senate Bill (SB) 308 to establish the new type of partial motorcycle helmet law described above and characterized it as “Rider’s Choice.” After a lengthy and contentious hearing, the Senate Public Affairs Committee tabled the bill. SB 327, a companion bill to reinstate the universal wearing of motorcycle helmets, was heard at the same time and also tabled. Proponents of the legislation are preparing to re-introduce an updated version of SB 308 in 2017.

**Future Reframing of the Novel Law**

How public health policies and laws are perceived is related to how they are framed.\(^7\) Given the frequently vocal opposition to motorcycle helmet legislation,
effective framing is essential to achieving the broad support necessary for policy change. Framing must both bolster support from existing public health advocates and engage individuals not historically invested in public health efforts.

In contrast to the often data-heavy messages of public health, cognitive scientists have explained that policies must be situated within moral frameworks to gain traction, because people place more emphasis on their identities — rather than data or economic self-interest — when interpreting political messaging. Identities are based on worldviews that are characterized by values and moral judgments that are largely subconscious and developed primarily through intuition rather than reasoning. Thus, issues must be framed in terms that “carry moral importance” that fit within an audience’s intuitive worldview.

Understanding the primary values underlying U.S. liberal and conservative worldviews is essential to developing an effective frame. The primary values for liberals have been summarized as “caring for victims of oppression,” or “empathy, together with the responsibility and strength to act on that empathy.” Liberals tend to support an active role for government in protecting the public’s health and ensuring access to quality health care for all. Conservatives’ primary values have been described as “[p]reserving [moral] institutions and traditions,” or “[o]bedience to legitimate authority” (including the free market) through “personal responsibility and discipline.” Conservatives emphasize individual control over health-related decisions and support a market-based approach to paying for health care services. However, both perspectives recognize the need to control public spending in health care.

A useful frame for the partial motorcycle helmet bill could be “rider responsibility.” Rather than reinforcing the opposition’s “choice” framework, advocates could emphasize that freedom in this case comes at a cost and therefore riders must take financial responsibility for their choice: they must either wear a helmet or pay an up-front fee to cover the costs to society associated with the risk of riding without a helmet. This frame emphasizes fairness and personal responsibility, which are core values in the conservative worldview and tied to notions of obedience and morality. The frame also appeals to liberals’ primary value of caring for others and preventing harm.

Conclusion

Motorcycle helmet laws are life-saving, evidence-based, cost-effective public health interventions. The novel partial motorcycle helmet law set forth in this article promotes the public’s health and upholds widely held values of fairness and responsibility, but recognizes and responds to opponents’ primary concern (individual choice). With language that frames the bill to appeal to liberals’ and conservatives’ intuitive moral values, bipartisan support may be possible even in polarized political environments. Appropriate frames may create more political space for issues like this one that are dominated by small but vocal interest groups.

References

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13. See Jones and Bayer, supra note 7.
14. See Wiley et al., supra note 7.
15. See Jones and Bayer, supra note 7.
18. See CDC, supra note 2.
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28. Id.
31. See Jones and Bayer, supra note 7; Riding on seat of bicycle, motorcycle, moped, or ecrict personal assistive mobility device; number of persons; wearing of crash helmet; conditions; rules; requirements for autocycle., Mich. Comp. Laws § 257:658 (5). Michigan Vehicle Code(2012); Equipment for motorcycle and moped riders.— , Fla. Stat. § 316.211(3(b); Protective Head-gear for Motorcycle Operators and Passengers, Texas Trans- portation Code § 661.003(c). Texas Transportation Code: Title 7, Subtitle G.(2001).
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33. Id.; see Fla. Stat., supra note 31.
34. See Brown et al., supra note 23.
35. An Act Relating to Traumatic Injuries; Requiring the Use of Motorcycle Safety Helmets; Providing Exceptions; Creating a Distinctive Motorcycle Validating Sticker Allowing Certain Operators and Passengers to Refrain From Wearing a Safety Helmet; Creating the Fatal-Injury Diagnosis and Reporting Fund; Prescribing Penalties; Making Appropriations. Ortiz y Pino G, trans. 52nd Legislature- State of New Mexico - First Session, 2015 ed.
39. Id. (Lakoff, 2008).
40. See Haidt, supra note 38.
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42. See Haidt, supra note 38.
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