



STATE OF DELAWARE
STATE COUNCIL FOR PERSONS WITH DISABILITIES
Margaret M. O'Neill Bldg., Suite 1, Room 311
410 Federal Street
Dover, Delaware 19901
302-739-3621

The Honorable John Carney
Governor

John McNeal
SCPD Director

MEMORANDUM

DATE: February 21, 2017

TO: All Members of the Delaware State Senate
and House of Representatives

FROM: Ms. Jamie Wolfe, Chairperson
State Council for Persons with Disabilities

RE: H.B. 14 (Motorcycle Helmets)

The State Council for Persons with Disabilities (SCPD) has reviewed H.B. 14, which requires adults over 19 years of age to have a helmet in their possession while riding a motorcycle. Riders under 19 must actually wear the helmet. The bill would amend the statute to require riders of all ages to actually wear a helmet. Additional background is contained in the attached Delaware News Journal article, "Legislation proposed on motorcycle helmet use, violent dogs" (December 26, 2016).

Similar bills have been introduced in the past. See, e.g., bills introduced in 2007 (S.B. No. 46); and 2015 (H.B. No. 54). The 2015 bill was not released from committee despite wide-ranging support. See attached March 27 and April 2, 2015 New Journal articles. The State Council for Persons with Disabilities, which is statutorily designated the "primary brain injury council for the State" [29 Del.C. §8210(b)], has historically endorsed such initiatives.

If enacted, Delaware would join the majority of states in the Northeast in establishing a "universal" law requiring riders to wear helmets regardless of age. Currently, the neighboring states of New Jersey and Maryland have universal helmet laws. They are joined by New York, Massachusetts, Vermont, Virginia, West Virginia, and District of Columbia. See attachment. This leads to an anomaly for riders in the I-95 corridor. A rider traveling from D.C. to New Jersey would be required to wear the helmet for the entire route except for Delaware.

Clinical and highway safety agency support for universal helmet laws is overwhelming. See attachments. Consider the following:

The CDC reports that helmets reduce the risk of deaths by 37% and head injuries by 69%.

The National Highway Traffic Safety Administration (NHTSA) concluded that an annual \$1.1 billion could have been saved in economic costs, and \$7.2 billion in comprehensive costs, if all motorcyclists wore helmets in a single year.

Advocates for Highway & Auto Safety quote a GAO report which concluded that “laws requiring all motorcyclists to wear helmets are the only strategy proved to be effective in reducing motorcyclist fatalities.”

Public Health Law Research (PHLR) reviewed the results of 69 studies resulting in the following “bottom line”:

According to a Community Guide systemic review, there is substantial evidence to support the effectiveness of universal helmet laws in increasing helmet use among motorcyclists, and to support that universal helmet laws reduce deaths, injuries and economic costs attributable to motorcycle crashes. Partial laws do not achieve any reduction in deaths, injuries or costs.

Finally, the fiscal burden imposed on Delaware State government and the Medicaid program is often overlooked in considering the value of universal helmet laws. A NHTSA report based on past studies concluded as follows:

A number of the reviewed studies examined the question of who pays for medical costs. Only slightly more than half of motorcycle crash victims have private health insurance. For patients without private insurance, a majority of medical costs are paid by the government. Some crash patients are covered directly through Medicaid or another government program. Others, who are listed by the hospital as “self-pay” status, might eventually become indigent and qualify for Medicaid when their costs reach a certain level.

NHTSA, “Costs of Injuries Resulting from Motorcycle Crashes: A Literature Review, published at https://one.nhtsa.gov/people/injury/pedbimot/motorcycle/motorcycle_html/overview.html.

Thank you for your consideration and please contact SCPD if you have any questions regarding our position or observations on the proposed legislation.

cc: The Honorable Kara Odom Walker, MD – DHSS
The Honorable Jennifer Cohan, DelDOT
The Honorable Robert M. Coupe, DSHS
Mr. Brian Hartman, Esq.
Governor’s Advisory Council for Exceptional Citizens
Developmental Disabilities Council

HB 14 motorcycle helmet 2-21-17

§ 4185 Riding on motorcycles.

(a) A person operating a motorcycle shall ride only upon the permanent and regular seat attached thereto, and such operator shall not carry any other person nor shall any other person ride on a motorcycle unless such motorcycle is designed to carry more than 1 person in which event a passenger may ride upon the permanent and regular seat if designed for 2 persons or upon another seat firmly attached to the rear or side of the operator and said motorcycle shall be equipped with passenger footrests.

(b) Every person operating or riding on a motorcycle shall have in that person's possession a safety helmet approved by the Secretary of Safety and Homeland Security (hereinafter "Secretary") through the Office of Highway Safety and shall wear eye protection approved by the Secretary; provided, however, that every person up to 19 years of age operating or riding on a motorcycle shall wear a safety helmet and eye protection approved by the Secretary.

(c) The operator of a motorcycle shall keep at least 1 hand on a handgrip of the handlebars at all times when moving.

(d) A person shall ride upon a motorcycle only while sitting astride the seat, facing forward, with 1 leg on each side of the motorcycle.

(e) No person shall operate a motorcycle while carrying any package, bundle or other article which prevents the person from keeping both hands on the handlebars.

(f) No operator shall carry any person, nor shall any person ride, in a position that will interfere with the operation or control of the motorcycle or the view of the operator.

21 Del. C. 1953, § 4182; 56 Del. Laws, c. 333; 60 Del. Laws, c. 701, § 54; 61 Del. Laws, c. 314, § 1; 70 Del. Laws, c. 186, § 1; 74 Del. Laws, c. 110, § 90; 75 Del. Laws, c. 75, § 1;

Legislation proposed on motorcycle helmet use, violent dogs

Bills have been filed ahead
of session starting Jan. 10.

MATTHEW ALBRIGHT
THE NEWS JOURNAL

When the General Assembly convenes on Jan. 10, they will be met by some already-filed bills, including one that would require all motorcycle riders to wear a helmet.

Other pre-filed measures include one that would prevent cities and towns from labeling dogs dangerous because of their breed, one that would eliminate the estate tax and one that would provide more special education services to young students.

Current law requires motorcyclists to merely keep a helmet with their motorcycle, but does not require riders to actually wear it unless they are 19 or younger.

Rep. Sean Lynn, D-Dover, and Sen. Gary Simpson, R-Milford, have proposed legislation that would require every motorcyclist to wear a helmet. They cite traffic statistics that show almost half of the 48 people who died in motorcycle crashes in Delaware since 2014 were not wearing helmets.

Lynn sponsored a similar bill 2015 at the urging of a constituent whose husband suffered a traumatic brain injury in a crash without a helmet. But the bill stalled in committee amid opposition from motorcyclists who said it was government overreach.

Lynn argues taxpayers end up paying for the long-term care of those who suffer brain injuries in a crash, so helmets are in the public's interest. He compared helmet laws to laws requiring seat belts.

"This isn't government overreach, this is common sense," Lynn said.

A bill sponsored by Sen. Charles Potter, D-Wilmington North, and Sen. Dave Sokola, D-Newark, would ban local governments from passing ordinances that label all dogs of a specific breed as "dangerous." Owners who have such dogs must follow strict requirements on leashing and keeping the animals indoors or behind secure fences, and can be fined for violations.

There have been fights in some cities across the country over whether certain breeds of dog, like pit bulls and rottweilers, should be considered dangerous. Advocates for such laws say they protect residents, particularly children, but owners of those breeds say they are discriminating against animals.

Laws

Continued from Page 1A

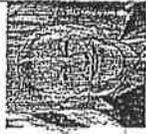
that can be as loving and gentle as any pet.

Potter's bill would prevent towns from imposing such laws. Instead, dogs could only be labeled dangerous based on their individual behavior.

Another bill would bar students from dropping out of school until they are 17 years old. Currently, they can do so at age 16.

Primary sponsor Timothy Dukes, R-Laurel, says the bill was inspired by a constituent who works in schools.

"She sees this as a major problem because a kid realizes at 16 they can just drop out and be gone," Dukes said. "When you look at the stats about what happens to a kid who drops out of school, it's just really staggering. It's very bleak."

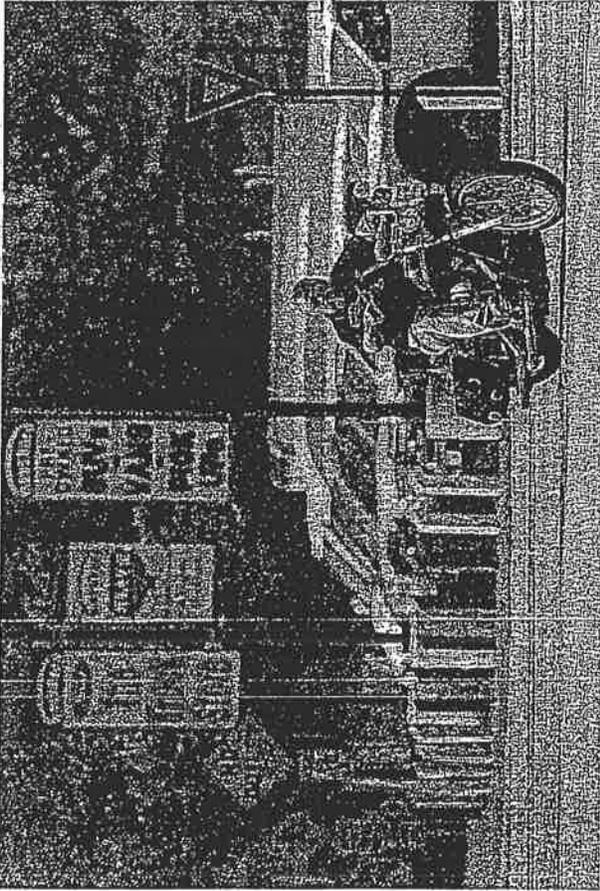


Rep. Timothy Dukes, R-Laurel

which applies to inheritances of more than \$5.12 million. Delaware created an estate tax in 2009, but it has yielded smaller returns than hoped for — in the 2015-2016 fiscal year, it brought in about \$9.3 million, according to the Delaware Economic and Financial Advisory Council.

GOP lawmakers have argued the tax hurts the state more than it helps because it drives out wealthy residents who pay the most in taxes. But repealing taxes could be difficult in a year when the state is grappling with a budget hole as big as \$350 million.

Rep. David Bentz, D-Newark, is bringing back a bill that did not get a final vote in the last legisla-



SUCHAT PEDERSON/THE NEWS JOURNAL
A motorcycle rider rolls through the intersection of Memorial Drive and Route 13. A proposed bill would require all motorcyclists to wear helmets while on the road.

Dukes said the bill should get bipartisan support. Co-sponsors include members of both parties, including two former education committee chairs. A slew of Republicans have signed onto a bill to repeal the estate tax,

tive session. It would remove a rule that bars people convicted of felonies from receiving benefits through the Temporary Assistance for Needy Families program, which helps families get by while their breadwinner searches for a job.

Bentz has argued that rule makes it harder for felons to reintegrate into society, which increases the likelihood that they will re-offend.

Rep. Kim Williams, D-Newport, is also sponsoring a bill that didn't pass last year. It would provide school districts extra funding for students in the "basic" special needs category in kindergarten through third grade — currently, districts don't get extra money for those students until fourth grade.

Contact Matthew Albright at malbright@delawareonline.com, (302) 324-2428 or on Twitter @TNJ_mailbright.

Mandatory helmet bill restarts debate in Delaware

Paul Kalp of Dover suffered a brain injury in a 2012 motorcycle accident. Kalp's injuries caused temporary paralysis, affected his speech and have caused severe emotional strains. SUCHAT PEDERSON/THE NEWS JOURNAL



Jon Offredo, The News Journal 1:05 a.m. EDT March 27, 2015

Delaware's current helmet law requires motorcyclists only to be in possession of a helmet.



(Photo: SUCHAT PEDERSON/THE NEWS JOURNAL)

A yearslong debate is back in Legislative Hall, with a Dover lawmaker sponsoring legislation to mandate all motorcycle drivers and riders wear a helmet.

Current state law requires riders over 19 to have a helmet in their possession.

Rep. Sean Lynn, a Dover Democrat wants to change that. The effort is backed by two Kent County families affected by traumatic brain injuries suffered in motorcycle accidents.

"It's kind of silly that the law would mandate that you have a helmet on the motorcycle, but not on your head," Lynn said. "It seems counterintuitive."

Lynn says helmets, like car seats, seatbelts and not texting while driving, should be a given safety precaution.

But there is strong opposition in Legislative Hall to such a mandatory requirement, with riders and some legislators saying that it is a rider's choice whether or not to wear a helmet.

Since 2014, there have been 15 motorcycle fatalities in Delaware. Of those, six of the victims were wearing helmets. Maryland, Virginia and New Jersey all have mandatory helmet laws. Pennsylvania does not.

Paul Kalp of Dover suffered a brain injury in a 2012 motorcycle accident. Kalp's injuries caused temporary paralysis, affected his speech and have caused severe emotional strains.

"I hit a car bad," said Kalp, a retired Air Force security forces pilot. "Now, I'm nothing."

Mandatory helmet bill restarts debate in Delaware

The National Highway Traffic Safety Administration estimates that helmet use saved the government and individuals more than \$3 billion in injuries and treatment costs.

Lynn's legislation faces significant pushback from those who say requiring helmets is another form of government intruding in people's lives. Previous attempts at passing similar legislation in 2007 failed. In 2011 a measure to eliminate the requirement to possess a helmet made it through the General Assembly and was vetoed by Gov. Jack Markell.

The bill will appear before the House Public Safety & Homeland Security Committee on Wednesday.

Gary Hilderbrand, legislative coordinator with ABATE Delaware, a motorcyclist rights group, said a rider's choice is about personal liberty and individual freedom. He said he and other riders have sympathy for families who have had their loved ones involved in accidents.

"We are adults. We should have the right to make the choice," he said. "We get up, go to work, raise families; we play by the rules. We don't get government intrusion.

"We have the right to choose. Just like a woman has the right to choose what happens to their body, we have a right to choose what happens to ours."

But Tammy Kalp, Paul's wife, and Gigi Law of Felton have a different take. A rider's right to choose has lasting consequences for family members who become caretakers after severe accidents.

Buy Photo



Paul Kalp was an Air Force security forces pilot. "Now, I'm nothing," he says. Kalp's injuries caused temporary paralysis, affected his speech and have caused severe emotional strains. (Photo: SUCHAT PEDERSON/THE NEWS JOURNAL)

Law's son Brian suffered a traumatic brain injury in 2012 and was in a coma for six weeks and in the hospital for 10 months after an accident while he was on the way to dinner.

"Brian never said, 'Hey, Mom, would you mind being my caretaker for the rest of my life? Then you have to worry about what's going to happen to me after you can no longer take care of me,'" Law, 52, said.

Kalp was injured riding his motorcycle on Saulsbury Road in Dover in September 2012. Kalp said he was observing the posted speed limit but was unable to avoid a car that pulled out in front of him.

The crash's aftermath has affected Kalp's wife, who says Kalp is not the same man she fell in love with.

"It's the hardest thing when you lose someone that you love, and they are gone forever and you can't talk to them again. It's sort of like that because I can never talk to him again," Tammy Kalp said. "But he's also here.

"The man that I fell in love with is gone. He's gone."

Contact Jon Offredo at (302) 678-4271 or at joffredo@delawareonline.com. Follow him on Twitter @jonoffredo (<http://www.twitter.com/jonoffredo>).

Buy Photo



Tammy Kalp says her husband, Paul, is not the same man she fell in love with after his 2012 motorcycle crash. (Photo: SUCHAT PEDERSON/THE NEWS JOURNAL)

THE LAWS

Delaware: Riders under 19 must wear a helmet, and adults must have one in their possession.

Pennsylvania: Riders under 20 must wear a helmet.

New Jersey: All riders must wear a helmet.

Maryland: All riders must wear a helmet.

Virginia: All riders must wear a helmet.



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[Death penalty repeal advances in Delaware Senate](#)

[\(http://www.delawareonline.com/story/firststatepolitics/2015/03/25/death-penalty-repeal-advances-senate/70451348/\)](http://www.delawareonline.com/story/firststatepolitics/2015/03/25/death-penalty-repeal-advances-senate/70451348/)



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Mandatory motorcycle helmet law stuck in committee

4-2-15

JON OFFREDO THE NEWS JOURNAL

A plan to require motorcycle riders in Delaware wear a helmet is in legislative purgatory after lawmakers Wednesday declined to release the bill for a full hearing in front of the House of Representatives.

The legislation now sits in the House clerk's office, where it will stay until brought back into committee, or remain until the 148th General Assembly concludes on June 30, 2016, and possible action on the measure expires.

Rep. Sean Lynn, D-Dover, who introduced the proposal, said he remains optimistic about the chances of the bill in future years.

"Just because it didn't happen today doesn't mean it won't happen next session," Lynn said. "I think we got more done today ... than has been done in a decade."

Current state law requires riders over 19 to have a helmet in their possession. A handful of motorcyclists testified during Wednesday's hearing that it was their choice to wear a helmet or not.

"Laws like this make us more of a nanny state, not a state of free will," said Dave Johnson, a rider from Harrington.

Gary Hilderbrand, legislative coordinator with ABATE Delaware, a motorcyclist rights group, said lawmakers are more concerned with putting a helmet on his head than taking on drivers who put all motorcyclists in danger.

"We've had a lot of brave men and women in this country go to war for us to fight for other nations to not have to listen to dictatorships of their country and government telling them what to do," he said. "I don't need anybody telling me what to do."

Since 2014, 15 motorcycle fatalities have occurred in Delaware. Six victims were wearing helmets. Maryland, Virginia and New Jersey have mandatory helmet laws. Pennsylvania does not.

An attempt to pass similar legislation failed in 2007. In 2011, a measure to eliminate the requirement to possess a helmet made it through the General Assembly and was vetoed by Gov. Jack Markell.

The National Highway Traffic Safety Administration estimates that helmet use saved the government and individuals more than \$3 billion in injuries and treatment costs.

The bill gained support of insurance companies, automotive safety groups and family members of those injured in accidents.

Tammy Kalp, whose husband Paul received a traumatic brain injury in 2012 after an accident while he was riding his motorcycle, said Wednesday that she was disappointed that no action was taken on the proposal. Paul Kalp was not wearing a helmet at the time of the accident.

She's hopeful they were able to kick start a conversation about wearing helmets.

"It's already too late for us," she said. "But it's not too late for someone else."

Contact Jon Offredo at (302) 678-4271 or at joffredo@delawareonline.com. Follow him on Twitter @jonoffredo.



Motorcycles

Helmets and antilock brakes make riding less dangerous.

Motorcycle helmet use

January 2017

Motorcycle helmet laws vary widely among the states and have changed a lot in the past half a century. Currently, 19 states and the District of Columbia have laws requiring all motorcyclists to wear a helmet, known as universal helmet laws. Laws requiring only some motorcyclists to wear a helmet are in place in 28 states. There is no motorcycle helmet use law in three states (Illinois, Iowa and New Hampshire).

In the past, many more states had universal helmet laws, thanks to pressure from the federal government. In 1967, states were required to enact helmet use laws in order to qualify for certain federal safety programs and highway construction funds. The federal incentive worked. By the early 1970s, almost all the states had universal motorcycle helmet laws. However, in 1976, states successfully lobbied Congress to stop the Department of Transportation from assessing financial penalties on states without helmet laws.

Low-power cycle is a generic term used by IIHS to cover motor-driven cycles, mopeds, scooters, and various other 2-wheeled cycles excluded from the motorcycle definition. While state laws vary, a cycle with an engine displacement of 50 cubic centimeters or less, brake horsepower of 2 or less, and top speeds of 30 mph or less typically is considered an low-power cycle. Twenty-three states have motorcycle helmet laws that cover all low-power cycles. Twenty-four states and the District of Columbia have laws that cover some low-power cycles.

Table Map Table: motorcycle helmet laws history

Hover over map for more detail.





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Table [Map](#) **Table: motorcycle helmet laws history**

State	Motorcycle helmets	Does the motorcycle helmet law cover all low-power cycles?
Alabama	all riders	yes
Alaska	17 and younger ¹	yes
Arizona	17 and younger	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 1 1/2, or can attain speeds greater than 25 mph are covered by the motorcycle helmet law
Arkansas	20 and younger	yes
California	all riders	yes
Colorado	17 and younger and passengers 17 and younger	yes
Connecticut	17 and younger	yes

State	Motorcycle helmets	Does the motorcycle helmet law cover all low-power cycles?
Delaware	18 and younger ²	all low-power cycles defined as a moped or triped if the operator is 15 or younger; bicycle helmet acceptable for motorized scooter
District of Columbia	all riders	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 1 1/2, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
Florida	20 and younger ³	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 2, or can attain speeds greater than 30 mph and all low-power cycles operated by those 15 and younger are covered by the motorcycle helmet law
Georgia	all riders	all low-power cycles are covered by the motorcycle helmet law except bicycle helmets are acceptable for electric assisted bicycles
Hawaii	17 and younger	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 2, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
Idaho	17 and younger	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 5, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
Illinois	no law	no law
Indiana	17 and younger	yes
Iowa	no law	no law
Kansas	17 and younger	all low-power cycles except electric assisted bicycles are covered by the motorcycle helmet law
Kentucky	20 and younger ⁴	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 2, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
Louisiana	all riders	yes
Maine	17 and younger ⁵	all low-power cycles with an engine displacement greater than 50cc or more than 1,500 watts are covered by the motorcycle helmet law
Maryland	all riders	yes all low-power cycles designed to travel at speeds exceeding 35 mph, scooters with engine displacement greater than 50cc or brake horsepower greater than 2.7 and mopeds with an engine displacement greater than 50cc or brake horsepower greater than 1.5 are covered by the motorcycle helmet law
Massachusetts	all riders	yes
Michigan	20 and younger ⁶	

State	Motorcycle helmets	Does the motorcycle helmet law cover all low-power cycles?
		all low-power cycles with an engine displacement greater than 50cc or can attain speeds greater than 30 mph and all low-power cycles operated by those 18 and younger are covered by the motorcycle helmet law
Minnesota	17 and younger ⁷	yes
Mississippi	all riders	yes
Missouri	all riders	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 3, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
Montana	17 and younger	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 2, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
Nebraska	all riders	yes
Nevada	all riders	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 2, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
New Hampshire	no law	no law
New Jersey	all riders	yes
New Mexico	17 and younger	all low-power cycles with an engine displacement greater than 50cc or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
New York	all riders	all low-power cycles designed to travel at speeds of 20 mph or greater are covered by the motorcycle helmet law
North Carolina	all riders	yes
North Dakota	17 and younger ⁸	yes
Ohio	17 and younger ⁹	yes
Oklahoma	17 and younger	all low-power cycles are covered by the motorcycle helmet law except bicycle helmets are acceptable for electric assisted bicycles operated by those 18 and younger
Oregon	all riders	yes
Pennsylvania	20 and younger ¹⁰	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 1 1/2, or can attain speeds greater than 25 mph are covered by the motorcycle helmet law
Rhode Island	20 and younger ¹¹	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 4.9 or can attain speeds greater than 30 mph are covered by the motorcycle helmet law

State	Motorcycle helmets	Does the motorcycle helmet law cover all low-power cycles?
South Carolina	20 and younger	yes
South Dakota	17 and younger	yes
Tennessee	all riders	yes
Texas	20 and younger ¹²	all low-power cycles, except motor assisted scooters with an engine displacement less than than 40cc, are covered by the motorcycle helmet law
Utah	17 and younger	yes
Vermont	all riders	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 2, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
Virginia	all riders	all low-power cycles operated at speeds greater than 35 mph or with an engine displacement greater than 50cc are covered by the motorcycle helmet law
Washington	all riders	yes
West Virginia	all riders	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 2, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law
Wisconsin	17 and younger ¹³	all low-power cycles designed to travel at speeds exceeding 30 mph or a Type 1 motorcycle with an automatic transmission with an engine displacement greater than 50cc are covered by the motorcycle helmet law
Wyoming	17 and younger	all low-power cycles with an engine displacement greater than 50cc, brake horsepower greater than 2, or can attain speeds greater than 30 mph are covered by the motorcycle helmet law

¹ Alaska's motorcycle helmet use law covers passengers of all ages, operators younger than 18, and operators with instructional permits.

² In Delaware, every motorcycle operator or rider age 19 and older must carry an approved helmet.

³ In Florida, the law requires that all riders younger than 21 years wear helmets, without exception. Those 21 years and older may ride without helmets only if they can show proof that they are covered by a medical insurance policy.

⁴ In Kentucky, the law requires that all riders younger than 21 years wear helmets, without exception. Those 21 and older may ride without helmets only if they can show proof that they are covered by a medical insurance policy. Motorcycle helmet laws in Kentucky also cover operators with instructional/learner's permits.

⁵ Motorcycle helmet laws in Maine cover operators with instructional/learner's permits and operators in their first year of licensure. Maine's motorcycle helmet use law also covers passengers 17 and younger and passengers riding with operators who are required to wear a helmet.

⁶ In Michigan, the law requires that all riders younger than 21 wear helmets, without exception. Those 21 and older may ride without helmets only if they carry additional insurance and have passed a motorcycle safety course or

have had their motorcycle endorsement for at least two years. Motorcycle passengers who want to exercise this option also must be 21 or older and carry additional insurance.

⁷ Motorcycle helmet laws in Minnesota cover operators with instructional/learner's permits.

⁸ North Dakota's motorcycle helmet use law covers all passengers traveling with operators who are covered by the law.

⁹ Ohio's motorcycle helmet use law covers all operators during the first year of licensure and all passengers of operators who are covered by the law.

¹⁰ Pennsylvania's motorcycle helmet use law covers all operators during the first two years of licensure unless the operator has completed the safety course approved by PennDOT or the Motorcycle Safety Foundation.

¹¹ Rhode Island's motorcycle helmet use law covers all passengers (regardless of age) and all operators during the first year of licensure (regardless of age).

¹² Texas exempts riders 21 or older if they can either show proof of successfully completing a motorcycle operator training and safety course or can show proof of having a medical insurance policy. A peace officer may not stop or detain a person who is the operator of or a passenger on a motorcycle for the sole purpose of determining whether the person has successfully completed the motorcycle operator training and safety course or is covered by a health insurance plan.

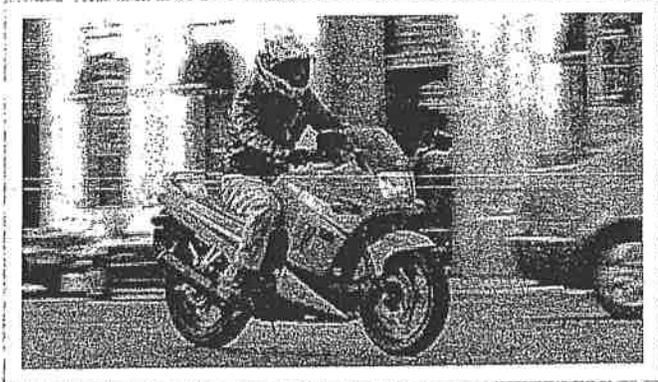
¹³ Motorcycle helmet laws in Wisconsin cover operators with instructional/learner's permits.

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Motorcycle Safety

Motorcycle crash deaths are costly, but preventable. The single most effective way for states to save lives and save money is a universal helmet law.

- Helmets saved an estimated 1,630 lives and \$2.8 billion in economic costs in 2013.¹
- The United States could have saved an additional \$1.1 billion in 2013 if all motorcyclists had worn helmets.¹
- * Helmets reduce the risk of death by 37%.¹
- Helmets reduce the risk of head injury by 69%.^{2,3}



“Our role is to identify ways to prevent injury and death and rigorously check what works and what does not work. For motorcycle safety, the research shows that universal helmet laws are the most effective way to reduce the number of deaths and traumatic brain injuries that result from crashes.”

- Dr. Thomas Frieden, CDC Director

Motorcycle Safety Guide



[Motorcycle Safety Guide](#) [PDF - 5 MB]

Note: This document does not contain current data and is included for historical purposes only.

Motorcycle Crash Deaths



Motorcycle Fatality Facts from the International Institute for Highway Safety.

Learn More (<http://www.iihs.org/iihs/topics/t/motorcycles/fatalityfacts/motorcycles>) >

Additional Information

The Guide to Community Preventive Services: Motorcycle Helmets
(<http://www.thecommunityguide.org/mvoi/motorcyclehelmets/index.html>)

NHTSA: Estimating Lives and Costs Saved by Motorcycle Helmets with Updated Economic Cost Information (<http://www-nrd.nhtsa.dot.gov/Pubs/812206.pdf>)

NHTSA: Motorcycle Safety (<http://www.nhtsa.gov/Safety/Motorcycles>)

State-Based Motor Vehicle Data & Information

IIHS: Motorcycle Helmet Laws (<http://www.iihs.org/iihs/topics/laws/helmetuse?topicName=motorcycles>)

Share the Road with Motorcycles campaign
(<http://www.trafficsafetymarketing.gov/CAMPAIGNS/Motorcycle+Safety/Share+The+Road>)

Drunk Riding Prevention campaign
(<http://www.trafficsafetymarketing.gov/CAMPAIGNS/Motorcycle+Safety/Stop+Impaired+Riding>)

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The Effect of Universal Motorcycle Helmet Laws on Behavior

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The Problem: Motorcycle crashes are a significant public health concern. In 2010, 4,502 drivers died in motorcycle crashes, and deaths related to such crashes increased 55% between 2000 and 2010, according to the CDC (<http://www.cdc.gov/Features/MotorcycleSafety/>). The same report notes that the economic burden of motorcycle crashes was \$12 billion in 2005. The public bears most of these costs through lost tax revenue, increased insurance premiums, and Medicaid spending. Multiple studies (<http://www.ncbi.nlm.nih.gov/pubmed/18254047>) have shown that the injury and death rate among non-helmeted drivers is much higher than among helmeted

drivers (See Liu BC, Ivers R, Norton R *et al.* Helmets for preventing injury in motorcycle riders. *Cochrane Database Syst Rev* 2008:1.)

The Law: Washington, DC and 19 states have universal helmet laws, which mandate helmet use for riders and passengers, e.g., Cal Veh Code § 27802 (<https://www.dmv.ca.gov/pubs/vctop/d12/vc27803.htm>). Twenty-eight states have partial helmet laws, which allow riders and passengers not to wear helmets if they are older than a certain age (ranging from 17 to 20) and possess insurance coverage over a specific dollar amount, see for example Fla. Stat. § 316.211 (3) (<http://www.dmv.org/fl-florida/motorcycle-license.php#Helmet-Laws->); MCLS § 257.658 (http://www.michigan.gov/sos/0,4670,7-127-1585_50413-277037--,00.html). Illinois, Iowa, and New Hampshire have no helmet laws. CDC: Motorcycle Helmet Laws By State. (<http://www.cdc.gov/Motorvehiclesafety/mc/states/index.html>)

The Evidence: A Community Guide review

(<http://www.thecommunityguide.org/mvoi/motorcyclehelmets/helmetlaws.html>) found that states with universal helmet laws experienced substantial increases in helmet use and decreases in fatal and non-fatal injuries compared to states with partial or no laws. The study also found that states that repealed universal helmet laws and replaced them with partial or no laws experienced sharp decreases in helmet use and increases in fatal and non-fatal injuries, see Guide to Community Preventive Services: Motorcycle Helmet Laws

(<http://www.thecommunityguide.org/mvoi/motorcyclehelmets/helmetlaws.html>).

The reviewers identified 69 studies with 78 study arms. Sixty-seven of the study arms evaluated motorcycle helmet use within the United States. The remaining study arms examined Australia, Italy, New Zealand, Spain, and Taiwan. The selected studies measured helmet use, non-fatal injuries (both total and head-related), total fatalities, and head-injury-related fatalities, as well as fatalities per individual crash, registered motorcycle, and vehicle miles traveled. The review

included multiple study designs: ten study arms were interrupted time series, 14 were panels, 13 were time series or before-after with concurrent comparison groups, 39 were before-after, and 2 were cross-sectional. The reviewers observed that regardless of the study design and potential source of bias, universal helmet laws were consistently effective in increasing helmet use and decreasing both fatal and non-fatal injuries. The reviewers also found that partial laws are more difficult to enforce than universal laws, and are ineffective in motivating motorcyclists to wear helmets. An economic review, based on 22 studies, found that benefits to universal helmet laws heavily outweighed the costs.

* **The Bottom Line:** According to a Community Guide systematic review, there is substantial evidence to support the effectiveness of universal helmet laws in increasing helmet use among motorcyclists, and to support that universal helmet laws reduce deaths, injuries and economic costs attributable to motorcycle crashes. Partial laws do not achieve any reduction in deaths, injuries or costs.

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Estimating Lives and Costs Saved by Motorcycle Helmets With Updated Economic Cost Information

Summary

In 2013, an estimated 1,630 lives were saved in the United States by motorcycle helmets; an estimated 715 additional fatalities could have been prevented if all motorcyclists¹ had worn helmets. The lives saved resulted in an estimated \$2.8 billion saved in economic costs, and \$17.3 billion in comprehensive costs,² by helmet-wearing motorcyclists. An additional \$1.1 billion could have been saved in economic costs, and \$7.2 billion in comprehensive costs, if all motorcyclists had worn helmets.

The National Highway Traffic Safety Administration annually provides information on the number of lives saved by the use of DOT-compliant motorcycle helmets, as well as the potential number of lives that could have been saved at 100-percent helmet use. In addition, the economic costs saved by those wearing helmets, and how much could have been saved had all riders worn helmets, are also estimated. This information is provided for each State as well as the nation as a whole. A recently published report, *The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)* (Blincoe, Miller, Zaloshnja, & Lawrence, 2015), updated the cost information used with these estimates.

This Research Note provides information on how NHTSA determines estimates of lives and costs saved by the use of motorcycle helmets, principally presenting updated economic

cost estimate data. The Appendix details the process for calculating these estimates.

Background

The process NHTSA uses to calculate these estimates is detailed in *Determining Estimates of Lives and Costs Saved by Motorcycle Helmets* (NHTSA, 2011). The cost information in that document came from a number of reports published more than a decade ago (Blincoe, 1994; NHTSA, 1988; and Blincoe, Seay, Zaloshnja, Miller, Romano, Luchter, & Spicer, 2002). The information in these documents has recently been combined and updated in Blincoe, Miller, Zaloshnja, and Lawrence (2015), which provides not only updated economic cost estimates, but also cost estimates relating to lost quality of life. The combined economic and quality of life costs are referred to as "Total Costs" or "Comprehensive Costs." This new economic data enables an update of the procedure used to estimate the lives and costs saved by wearing motorcycle helmets, and the lives and costs that could be saved at 100-percent helmet use. The report of Blincoe and colleagues (2015) provides costs associated with various types of crashes (e.g., police reported/unreported, crashes that involve speeding, crashes involving bicyclists, costs that occurred as a result of crashes and costs saved due to safety equipment use).

Methodology

NHTSA's National Center for Statistics and Analysis (NCSA) published *Calculating Lives Saved by Motorcycle Helmets* (Deutermann, 2005) that presented the formulas and calculations for estimating the number of lives saved by motorcycle helmets. While this document was published in 2005, the effectiveness estimates (37% for riders [operators] and 41% for passengers) and method remains current.

NHTSA's methodology to estimate the number of motorcyclists saved by helmets, and the associated costs, is based on the number of motorcyclist fatalities. Using the effectiveness estimates of motorcycle helmets and the number of motorcyclist fatalities, the number that would have died but were saved because they wore a helmet can be calculated. The number of fatalities is obtained from the Fatality Analysis Reporting System (FARS) database, a census of all traffic fatalities in the United States. Motorcyclists whose injuries were prevented by helmets, as well as those that could have been prevented, are calculated in a similar manner.

¹ Motorcyclist is the term used to reference both the motorcycle rider (operator) and the motorcycle passenger.

² The economic or human capital costs represent the tangible losses resulting from motor vehicle crashes, the value of resources that are used or that would be required to restore crash victims, to the extent possible, to their pre-crash physical and financial status. These are resources have been diverted from other more productive uses to merely maintain the status quo. These costs include medical care, lost productivity, legal and court costs, insurance administrative costs, workplace costs, travel delay, and property damage. Comprehensive costs are made up of these economic costs plus the estimated costs associated with lost quality of life. In cases of serious injury or death, medical care cannot fully restore victims to their pre-crash status, and the human capital costs fail to capture the relatively intangible value of lost quality-of-life that results from these injuries. In the case of death, victims are deprived of their entire remaining lifespan. In the case of serious injury, the impact on the lives of crash victims can involve extended or even lifelong impairment or physical pain, which can interfere with or prevent even the most basic living functions.

For every motorcyclist traffic fatality, a number of other motorcyclists receive injuries of various levels. Helmets are effective at preventing injuries as well as fatalities, and these must also be accounted for when calculating the economic costs prevented by helmets. Because NHTSA does not have data on the number and severity of motorcyclists injured in each State, the number of motorcyclists receiving serious and minor injuries are estimated, based on the number of fatalities in each State.

Previously, NHTSA economic estimates (Blincoe et al., 2002) used the year 2000 as the base year for economic estimates, and adjusted for inflation. Blincoe, Miller, Zaloshnja, and Lawrence (2015) updated this using 2010 as the cost base year. A change in the relative frequency of the levels of injury severity was also introduced. In the 2011 NCSA report, the estimated injuries were categorized into two groups based on their Maximum Abbreviated Injury Score (MAIS): minor (MAIS 1), which made up 63 percent of motorcyclist injuries, and serious (MAIS 2 through 5), which made up the remaining 37 percent. Blincoe, Miller, Zaloshnja, and Lawrence's report (2015) provides frequency estimates for each individual MAIS injury level, rather than grouping those who were seriously injured. This enables the estimation of the number of injured people at each individual MAIS level, rather than grouping MAIS levels 2 through 5. Note that because there are not effectiveness estimates for each MAIS level, the total estimate of the number of motorcyclists prevented from being injured does not change. The benefit is that the costs saved and savable can now be estimated more precisely. Finer detail on the distribution of injuries enables more accurate estimates of costs saved by the wearing of motorcycle helmets.

Note that:

- Costs that were prevented by the use of motorcycle helmets *would* have occurred had the motorcyclists not worn helmets.
- Preventable costs were those that *did* occur, but could have been prevented by the use of helmets. Since they are costs that were experienced, these preventable costs are a portion of the estimated reported cost of motorcyclist crashes.

Table 1 shows the estimated relative incidence of each injury level for reported motorcyclist crashes, separately by helmet use.

Table 1
Relative Injury Incidence in Reported Crashes, by Helmet Use

MAIS Level	Helmeted	Unhelmeted
1	0.64	0.62
2	0.22	0.23
3	0.12	0.14
4	0.01	0.01
5	0.01	0.01

Source: The economic and societal impact of motor vehicle crashes, 2010 (Revised)
[Note: Shown are rounded values, obtained from the incidence of motorcyclists at each injury level in Tables 10-4 and 10-5.]

NHTSA has estimated that the effectiveness of helmets in preventing fatalities is 0.37 for riders and 0.41 for passengers (Deutermann, 2005). While there are not different effectiveness estimates for riders and passengers that are injured, there are two separate estimates based on the level of injury. NHTSA estimates helmets are 8 percent effective in preventing minor/MAIS 1 injuries, and 13 percent effective in preventing serious/MAIS 2 – 5 injuries (NHTSA, 1988). This latter estimate was developed using data from combined AIS 2 through 5 injured motorcyclists. Separate estimates of the effectiveness of motorcycle helmets in preventing each individual level of MAIS 2 through 5 injured motorcyclists have not been developed.

Another feature of the new method is that estimates of costs due to lost quality of life were added (Blincoe, Miller, Zaloshnja, & Lawrence, 2015). Previous cost estimates had included economic costs only. Using this new information, both economic and comprehensive (economic plus quality of life) costs are able to be provided.

Finally, cost estimates are available for non-fatally injured motorcyclists by helmet use. Even within an MAIS level, those injured who were unhelmeted have higher estimated costs than those who were helmeted, both economic and comprehensive. The differences are greater at higher injury levels. For fatalities, however, the economic and comprehensive costs are the same regardless of helmet use. The economic and comprehensive costs per injury level/fatality, by helmet use, are in Table 2. These values are those that appear in Blincoe, Miller, Zaloshnja, and Lawrence (2015) in 2010 dollars. For subsequent data years, these values are adjusted for inflation (see Appendix, Economic Impact).

Table 2
Economic and Comprehensive Unit Costs per Injured Motorcyclist, by Injury Level and Helmet Use, 2010

Helmet Use	Injury Level	2010 Costs	
		Unit Economic Cost	Unit Comprehensive Cost
Helmeted	MAIS 1	\$18,079	\$30,915
	MAIS 2	\$48,186	\$220,580
	MAIS 3	\$184,941	\$759,107
	MAIS 4	\$328,872	\$1,701,424
	MAIS 5	\$1,190,011	\$4,909,241
	Fatal	\$1,381,645	\$9,090,622
Unhelmeted	MAIS 1	\$18,941	\$32,926
	MAIS 2	\$49,258	\$227,273
	MAIS 3	\$184,639	\$763,673
	MAIS 4	\$352,587	\$1,852,270
	MAIS 5	\$1,617,283	\$7,564,608
	Fatal	\$1,381,645	\$9,090,622

Source: The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised), Tables 10-6 and 10-7.

*Comprehensive costs consist of Economic and Lost Quality-of-Life Costs.

It is important to note the differences between the Blincoe, Miller, Zaloshnja, and Lawrence (2015) cost report and the costs presented in this research note. Most importantly, costs covered in this research note relate specifically to those costs prevented and preventable due to helmet use. The Blincoe report, on the other hand, presents costs realized due to various types of motor vehicle crashes *in addition* to costs prevented and preventable by motorcycle helmets.

An additional difference involves the crashes that are included in the cost estimation. Costs in this present research note are estimates of *reported* crashes only. FARS data, on which these estimates are based, is a census of fatal crashes which are required to be reported through law enforcement. This research note also uses the General Estimates System GES data to estimate the number of people injured at each MAIS level and is also reported data. This differs from the Blincoe report which bases estimates on *reported* data, but then adjusts them to account for unreported crashes. There are larger percentages of unreported injured at lower injury levels, so differences between all crashes and reported crashes are greater at lower injury levels.

The economic report presents estimates of all costs generated by crashes involving motorcycles, in addition to those specifically prevented and preventable by motorcycle helmets (Blincoe, Miller, Zaloshnja, & Lawrence, 2015, p. 187, Table 10-8). Finally, the costs reported in Blincoe (2015) are costs for the calendar year 2010. While those are the base costs used in this present research note, they have then been indexed for inflation to represent 2013 costs (to agree with the 2013 data used).

Results

In 2013, after adjusting for inflation, the *economic* cost to society for each motorcyclist fatality was \$1.48 million, and the *comprehensive* cost of each fatality was \$9.71 million. Nearly 85 percent of this *comprehensive* amount is attributable to lost quality of life. The loss of a life clearly has a tragic emotional impact on the family and friends of the deceased. The substantial economic loss, some immediate but much of it realized over upcoming years, is an additional burden they must bear. Helmets worn by motorcyclists saved an estimated 1,630 lives in 2013; an additional 715 lives could have been saved had all motorcyclists worn helmets. Forty-one percent of fatally injured motorcyclists in 2013 were unhelmeted. According to the National Occupant Protection Use Survey (NOPUS), the use of DOT-compliant helmets remained at 60 percent in 2013, unchanged from the previous year.

The overall *economic* cost savings in the United States due to helmet use was approximately \$2.8 billion in 2013, and an additional \$1.1 billion could have been saved if all motorcyclists had worn helmets. The overall *comprehensive cost* savings, including both economic costs and lost quality of life, was \$17.3 billion, and an additional \$7.2 billion in comprehensive costs could have been saved at 100-percent helmet use.

Table 3 presents the number of fatally injured motorcyclists as well as the percentage of them that wore helmets, by State, for the 2013 crash year. It is this number, fatally injured helmeted motorcyclists, on which the estimates of costs saved and numbers of motorcyclists prevented from being killed and injured are based. Also presented in the table are the estimated number of lives saved by helmets, and those that could have been saved at 100-percent helmet use; the economic costs saved and savable at 100-percent helmet use; and comprehensive costs (economic plus quality of life costs) saved and savable at 100-percent helmet use.

Texas had the highest number (491) of motorcyclist fatalities in 2013, while the District of Columbia had the fewest, 3. Motorcycle helmet use rates in fatal crashes ranged from a high of 100 percent in the District of Columbia to a low of 7 percent in Maine. The number of lives saved by motorcycle helmets is a combination of both the number of riders, and the percentage of those wearing helmets. The largest number of motorcyclists' lives saved was in California (248), a State with 92-percent helmet use. Only 1 life was saved by helmets in Maine, with its low helmet use rate as well as having a relatively small number of motorcyclist fatalities.

Currently 19 States and the District of Columbia have universal helmet laws. Helmet use in fatal crashes in States with universal helmet laws averaged 91 percent in 2013, while in the remaining States helmet use averaged 38 percent. There were about 11 times as many unhelmeted motorcyclist fatalities in States without universal helmet laws (1,704 unhelmeted fatalities) as in States with universal helmet laws (150 unhelmeted fatalities) in 2013. States with universal helmet laws saved an average of 48 lives because more motorcyclists wore helmets, and could have saved an average of 3 more per State if all motorcyclists wore helmets. The States without universal helmet laws saved an average of 21 lives per State, and at 100-percent use could have saved, on average, an additional 21 per State. This highlights the effect of the higher use rates in States with universal helmet laws. Without such a law, only about half of those that could be saved, were saved, because of lack of helmet use. Looking at economic costs that were saved, and those that could have been saved, in States with universal helmet laws, 94 percent of the costs that *could* have been saved *were* saved by motorcyclists wearing helmets. In States without universal helmet laws, only 48 percent of possible costs that could have been saved actually were.

For further information on how the costs discussed in this Research Note were estimated, see Blincoe, Miller, Zaloshnja, and Lawrence (2015).

Table 3
Motorcyclist Fatalities, Helmet Use, Lives Saved, and Additional Savable at 100% Helmet Use, Costs Saved by, and Savable at 100% Helmet Use, 2013

State	Motorcyclists Helmets Used	Helmet Not Used	Unknown	Helmet Use Rate in Fatal Crashes (Known)	Total Fatalities	Number of Fatalities Prevented	Additional Fatalities Preventable at 100% Use	Economic Costs Saved	Additional Econ. Costs Savable at 100% Use	Comprehensive (Econ. + QoL) Costs Saved	Additional Comp. Costs Savable at 100% Use
Alabama	78	1	0	99%	80	47	0	\$68,906,318	\$526,439	\$425,735,600	\$3,387,347
Alaska	7	2	0	78%	9	4	1	\$8,066,420	\$1,350,093	\$49,592,233	\$8,678,427
Arizona	62	83	6	43%	151	38	32	\$58,904,061	\$46,220,396	\$362,784,791	\$297,273,448
Arkansas	19	39	3	33%	61	12	15	\$16,990,268	\$20,799,759	\$104,966,844	\$133,920,305
California	409	34	10	92%	453	248	13	\$497,743,329	\$22,734,044	\$3,018,976,515	\$146,232,159
Colorado	31	55	1	36%	87	19	21	\$33,044,995	\$35,946,901	\$206,548,215	\$231,675,693
Connecticut	22	21	10	51%	53	16	10	\$36,603,224	\$21,424,612	\$229,299,479	\$138,212,740
Delaware	13	7	0	65%	20	8	3	\$12,941,090	\$4,338,027	\$80,743,785	\$27,943,468
Dist. of Col.	3	0	0	100%	3	2	0	\$5,107,923	\$0	\$31,974,215	\$0
Florida	238	237	10	50%	485	144	90	\$242,338,532	\$143,538,390	\$1,499,154,993	\$924,689,050
Georgia	107	26	4	96%	116	66	2	\$101,024,654	\$2,778,741	\$624,045,386	\$17,889,073
Hawaii	10	19	0	34%	29	6	7	\$10,899,551	\$11,983,247	\$66,651,785	\$76,843,672
Idaho	12	12	1	50%	25	7	5	\$10,582,766	\$6,186,178	\$65,187,135	\$39,785,979
Illinois	35	113	4	24%	152	22	43	\$41,882,998	\$75,462,606	\$256,318,102	\$486,642,769
Indiana	18	82	14	18%	114	12	35	\$17,847,712	\$49,982,061	\$111,203,434	\$321,865,241
Iowa	10	31	0	24%	41	6	12	\$9,936,524	\$18,073,121	\$62,286,778	\$116,488,868
Kansas	15	18	2	45%	35	9	7	\$15,334,545	\$11,315,840	\$95,901,536	\$72,947,902
Kentucky	28	59	0	32%	87	17	22	\$23,178,082	\$29,953,854	\$144,441,583	\$192,850,149
Louisiana	66	16	2	79%	86	40	7	\$63,554,709	\$10,611,647	\$396,843,574	\$68,363,930
Maine	1	13	0	7%	14	1	5	\$935,045	\$7,454,288	\$5,805,147	\$47,929,912
Maryland	56	5	1	92%	62	34	2	\$68,557,722	\$3,707,736	\$429,043,701	\$23,899,006
Massachusetts	31	5	4	86%	40	20	2	\$42,957,929	\$4,257,668	\$268,943,948	\$27,468,615
Michigan	64	67	7	49%	138	40	26	\$59,543,227	\$38,066,351	\$371,520,551	\$245,165,569
Minnesota	16	34	11	32%	61	12	15	\$20,912,890	\$26,800,746	\$130,840,613	\$172,746,694
Mississippi	36	3	0	92%	39	22	1	\$28,668,029	\$1,424,736	\$178,391,695	\$9,162,156
Missouri	66	7	1	90%	74	40	3	\$61,088,669	\$3,946,713	\$381,396,735	\$25,422,018
Montana	12	22	1	35%	35	7	8	\$11,028,170	\$12,357,302	\$68,644,353	479,526,426
Nebraska	12	11	1	92%	14	8	0	\$12,380,000	\$634,776	\$77,454,608	\$4,092,743
Nevada	48	7	2	87%	57	30	3	\$45,923,563	\$4,074,699	\$285,995,111	\$26,202,356
New Hampshire	7	17	0	29%	24	4	6	\$7,571,303	\$11,265,125	\$47,227,598	\$72,549,645
New Jersey	51	2	3	96%	56	32	1	\$66,510,301	\$1,599,197	\$415,710,906	\$10,306,311
New Mexico	13	20	8	39%	41	9	9	\$13,450,994	\$13,050,944	\$83,603,448	\$83,959,761
New York	147	16	7	90%	170	91	6	\$186,784,286	\$12,370,232	\$1,162,145,805	\$79,584,510
North Carolina	170	17	2	91%	189	102	6	\$152,407,814	\$9,326,474	\$948,913,345	\$60,024,622
North Dakota	5	3	1	63%	9	3	1	\$5,563,042	\$2,049,788	\$34,758,099	\$13,209,304
Ohio	43	87	2	33%	132	26	33	\$39,093,462	\$48,752,662	\$243,480,189	\$314,022,202
Oklahoma	15	77	0	16%	92	9	29	\$13,666,107	\$42,468,769	\$85,413,945	\$273,624,854
Oregon	32	2	0	94%	34	19	1	\$29,930,651	\$1,132,983	\$185,899,850	\$7,283,806
Pennsylvania	84	94	4	47%	182	52	35	\$87,707,463	\$58,978,022	\$548,106,529	\$379,978,099
Rhode Island	5	6	0	45%	11	3	2	\$5,266,367	\$3,858,641	\$32,772,603	\$24,828,132
South Carolina	43	106	0	29%	149	26	39	\$36,172,401	\$53,837,751	\$224,923,619	\$346,229,030
South Dakota	7	15	0	32%	22	4	6	\$6,822,603	\$8,820,479	\$42,621,452	\$56,816,345
Tennessee	126	1	0	92%	137	75	4	\$109,657,800	\$5,890,134	\$684,284,243	\$37,942,003
Texas	187	279	25	40%	491	118	109	\$190,947,887	\$174,623,436	\$1,194,883,265	\$1,125,864,593
Utah	12	19	0	39%	31	7	7	\$9,860,720	\$9,449,263	\$61,365,411	\$60,788,930
Vermont	5	2	0	71%	7	3	1	\$5,153,366	\$1,280,583	\$32,107,614	\$8,246,427
Virginia	76	3	0	96%	79	45	1	\$83,044,487	\$1,995,066	\$520,508,635	\$12,868,415
Washington	69	3	1	96%	73	42	1	\$75,334,849	\$1,992,955	\$470,594,313	\$12,839,304
West Virginia	16	8	0	67%	24	9	3	\$12,999,083	\$3,963,071	\$80,816,479	\$25,490,840
Wisconsin	21	62	2	25%	85	13	23	\$20,499,487	\$36,969,830	\$127,891,452	\$238,091,588
Wyoming	4	5	0	44%	8	2	2	\$4,579,076	\$3,606,525	\$28,720,307	\$23,284,142
Nation	2,653	1,854	151	59%	4,668	1,630	715	\$2,789,852,511	\$1,123,228,901	\$17,287,318,553	\$7,235,138,549
Puerto Rico	17	25	0	40%	42	10	9	\$18,511,970	\$16,844,793	\$115,620,013	\$108,555,188

*Economic Costs Include lost productivity, medical costs, legal and court costs, emergency service costs (EMS), insurance administration costs, congestion costs, property damage, and workplace losses.

**Comprehensive Costs include Economic Costs plus valuation for lost quality-of-life (QoL).

Cost data from Blincoe, Miller, Zaloshnja, & Lawrence, 2015.

Source: Fatality Analysis Reporting System 2013 Annual Report File (ARF); Bureau of Labor Statistics; Blincoe et al., 2015.

Motorcyclist Fatalities (Riders and Passengers) Helmet Use, FARS 2013, Lives and Costs Saved and Savable (Based on 2013 Cost)

Shaded States are those with laws requiring helmet use for all motorcyclists, at the time of publication.

State costs are adjusted for relative per-capita income; dollar amounts for the nation will not equal the sum of the States.

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U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

This research note and other general information on highway traffic safety may be accessed by Internet users at www-nrd.nhtsa.dot.gov/CATS/index.aspx

Appendix:

Calculating Lives and Costs Saved by Motorcycle Helmets

The process, formulae, and calculations used to estimate the number of lives saved and savable by motorcycle helmets, and the associated costs, were detailed in NCSA, 2011 (Appendix). This appendix uses the same process and formulas, with the following adjustments.

- Updated (2013) motorcycle fatal crash data
- Updated economic cost numbers with data from Blincoe, Miller, T. R., Zaloshnja, E., and Lawrence, 2015 (Revised)
- Updated inflation factor with information from the Bureau of Labor Statistics website
- Incidence of MAIS injury level now ascertained separately by helmet use
- Revised cost breakdown to use each MAIS level, rather than combining MAIS 2-5 into "serious" injury, as well as helmet use
- Added calculations and information on comprehensive cost numbers

The information needed to calculate these estimates is:

- For a given year, the number of motorcyclist fatalities, subdivided by helmet use and role (rider or passenger). This data would come from FARS. If you wish to look at States individually, you would also need this information subdivided by State.
- The number of motorcyclist fatalities for each of the past 5 years, subdivided by helmet use. This data is also from FARS.
- The estimated number of motorcyclists injured for each of the past 5 years, subdivided by helmet use. This data comes from NASS GES.
- The appropriate cost inflation factor, obtained from information on the Department of Labor's Bureau of Labor Statistics website (see below).

Motorcyclist Fatalities and Estimating the Number of Lives Saved

Data is obtained from FARS for the year of interest (Table A1) by helmet use and role.

Table A1
Motorcyclist Fatalities by Person Type and Helmet Use (Unknown Helmet Use Distributed, 2013)

	Operator	Passenger	All Motorcyclists
Helmeted	2,620	131	2,752
Unhelmeted	1,779	138	1,916
Total	4,399	269	4,668

Source: FARS 2013 ARF
Unknown helmet use has been distributed proportionally by role (operator or passenger).

The number of lives that were saved by motorcycle helmets is estimated using the number of helmeted fatally injured motorcyclists and the effectiveness estimate. For motorcycle operators, helmets have an estimated effectiveness of 0.37. First, the potential operator fatalities are calculated:

$$OperatorFatalities_{Potential} = \frac{OperatorFatalities_{Helmeted}}{(1 - 0.37)}$$

Using the number of helmeted operator fatalities above (2,620), this is:

$$OperatorFatalities_{Potential} = \frac{2,620}{(1 - 0.37)} = 4,159$$

The number of potential fatalities less the number actual fatalities gives the number of lives saved by helmets. In this case, $4,159 - 2,620 = 1,539$

For motorcycle passengers, helmets have an effectiveness of 41 percent. So, in 2013, the calculations for the number of motorcycle passenger lives saved are estimated by:

$$PassengerFatalities_{Potential} = \frac{131}{(1 - 0.41)} = 222$$

The number of motorcycle passenger fatalities prevented is $222 - 131 = 91$

So the total number of lives saved by motorcycle helmets nationwide in 2013 is $1,539 + 91 = 1,630$

For ease of presentation, values are rounded at each step calculated in examples in this Appendix. Therefore small differences may occur between values calculated here and those presented elsewhere, or when adding individual States compared to the national total.

Estimating additional preventable fatalities at 100-percent helmet use

The additional lives that could be saved if all motorcyclists had worn helmets are calculated using the number of unhelmeted fatally injured motorcyclists and the effectiveness estimate.

$$\text{MotorcyclistFatalities}_{\text{Unhelmeted}} \times \text{Effectiveness}_{\text{role}}$$

For operator fatalities, using the number of unhelmeted operator fatalities from Table A1, this is $1,779 \times 0.37 = 658$

Had all of these 1,779 riders that died in crashes been wearing helmets, 658 (37 percent) of them would have survived.

The number of additional lives that could have been saved if all passengers had worn helmets is:

$$138 \times 0.41 = 57$$

Therefore, a total of 715 additional lives (658 operators and 57 passengers) could have been saved had all motorcyclists worn helmets.

Estimating the total number of Motorcyclists Injured

The method used to estimate costs saved by motorcycle helmets requires information on injury severity. NCSA maintains a number of crash data files. The Fatality Analysis Reporting System (FARS) is a census of fatal crashes in the United States. The General Estimates System (GES), part of the National Automotive Sampling System (NASS), is a sample of reported traffic crashes to which weights are applied in order to obtain national estimates. Data from both of these systems are used

together to estimate the number of motorcyclists by role (passenger or operator), helmet use, and injury severity for Maximum Abbreviated Injury Scale (MAIS) levels 1 through 5. MAIS 6 is a fatal injury, and FARS data is used in that case. Since the GES data is not collected in every state, these calculations allows for lives and cost saved estimates for each State, rather than only on a nationwide basis.

The initial step is to determine the total number of motorcyclist fatalities (from FARS) and the estimated number injured (from GES), separately by helmet use, using the most recent five years of data. Fatality counts in Table A2 exclude those with unknown helmet use, since it is the proportion required here, not a numerical count.

The ratio of injured motorcyclists to fatalities, by helmet use, is calculated for each year, and then the average of the five injury-to-fatality ratios is calculated. Using 5 years, rather than only the most recent, gives a better estimate as it controls for the year-to-year variability inherent in any sampling system. The numbers presented in Table A3 are rounded, while the actual calculations are based on unrounded numbers.

For helmeted motorcyclists, this is:

$$\frac{23.04 + 20.93 + 19.98 + 20.75 + 20.25}{5} = 20.99$$

For unhelmeted motorcycles, this is:

$$\frac{16.23 + 14.57 + 14.12 + 14.38 + 14.82}{5} = 14.82$$

These ratios give us the number of injured motorcyclists for every motorcyclist fatality. So, there are about 21 injured, helmeted motorcyclists for each helmeted motorcyclist that dies in a traffic crash. The appropriate ratio is then used to estimate the number of injured motorcyclists, by helmet use as well as role

Table A2
Total Motorcyclist Fatalities and Injured, 2009–2013

Year	Fatalities		Injured		Injury to Fatality Ratio	
	Helmeted	Unhelmeted	Helmeted	Unhelmeted	Helmeted	Unhelmeted
2009	2,506	1,963	57,748	31,860	23.04	16.23
2010	2,614	1,904	54,708	27,740	20.93	14.57
2011	2,737	1,893	54,669	26,730	19.98	14.12
2012	2,813	2,039	58,365	29,324	20.75	14.38
2013	2,663	1,854	53,934	27,482	20.25	14.82
Total	—	—	—	—	20.99	14.82

Source: FARS 2009–2012 Final File, 2013 ARF and GES 2009–2013

(rider or passenger). Multiplying each of the helmeted values in Table A1 by 20.99, and each unhelmeted value by 14.82 results in:

Table A3
Estimates of Motorcyclists Injured, by Person Type and Helmet Use, 2013

	Operator	Passenger	All Motorcyclists
Helmeted	55,001	2,757	57,758
Unhelmeted	26,368	2,040	28,408
Total	81,369	4,798	86,166

Estimating the number of injured motorcyclists at each injury level

Previously, the process used to estimate the number of injured motorcyclists allowed estimates separating injured into two groups, minor (MAIS 1) and seriously (MAIS 2-5) injured motorcyclists. Using relative incidence of injury level in reported crashes, provided in Blincoe, Miller, Zaloshnja, and Lawrence (2015), estimation of the number of injured motorcyclists at each individual MAIS level is now possible. The relative incidence of injury at each MAIS level is shown in Table A4 (which is the same as Table 1, and repeated here for convenience).

Table A4
Relative Injury Incidence in Reported Crashes, by Helmet Use

MAIS Level	Helmeted	Unhelmeted
1	0.64	0.62
2	0.22	0.23
3	0.12	0.14
4	0.01	0.01
5	0.01	0.01

Source: The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)
[Note: Shown are rounded values, obtained from the incidence of motorcyclists at each injury level in Tables 10-4 and 10-5.]

Using this incidence of motorcyclists by injury level and helmet use status, 64 percent of injured helmeted motorcyclists are estimated to be injured at MAIS level 1, 22 percent at MAIS level 2, twelve percent at MAIS 3, and one percent at each MAIS levels 4 and 5. For example, if there were 100 injured helmeted motorcyclists in a given state in one year, the estimated number of those with MAIS 1 injuries would be 64, with 22 MAIS 2, 12 MAIS 3, and 1 each at MAIS 4 and MAIS 5. For injured motorcyclists that were unhelmeted, similar calculations would be made using the second column in Table A4.

So, given 55,001 helmeted operators injured (from Table A3):

Number of MAIS 1 helmeted motorcycle operators:

$$0.64 \times 55,001 = 35,201$$

Number of MAIS 2 helmeted motorcycle operators:

$$0.22 \times 55,001 = 12,100$$

Number of MAIS 3 helmeted motorcycle operators:

$$0.12 \times 55,001 = 6,600$$

Number of MAIS 4 helmeted motorcycle operators:

$$0.01 \times 55,001 = 550$$

Number of MAIS 5 helmeted motorcycle operators:

$$0.01 \times 55,001 = 550$$

Calculations would be similar for unhelmeted motorcycle operators, and helmeted and unhelmeted motorcycle passengers. (Note that for the results in these calculations, the rounded incidence values presented above in Table A4 were used. In calculations for estimates of annual lives and costs saved in motorcycle crashes, the unrounded ratios using incidence values from Table 10-2 of Blincoe et al. [2015] are used.) Table A5 presents the estimates for motorcyclist by MAIS level, role, and helmet status.

Table A5
Estimates of Motorcyclists Injured, by Person Type, Helmet Use, and MAIS level, 2013

	Operator		Passenger	
	Helmeted	Unhelmeted	Helmeted	Unhelmeted
MAIS 1	35,201	16,348	1,764	1,265
MAIS 2	12,100	6,065	607	469
MAIS 3	6,600	3,692	331	286
MAIS 4	550	264	28	20
MAIS 5	550	264	28	20

Estimating the number of motorcyclists prevented from being injured because of motorcycle helmets, at each injury level

The number of motorcyclists whose injuries were prevented by helmets is estimated using the same process that was used for estimating the number of lives saved (above), but at each MAIS level. Recall that the effectiveness estimates for saving lives were 37 percent for operators and 41 percent for passengers. The effectiveness estimate for preventing a motorcyclist from receiving a minor injury is 8 percent and for preventing a seriously injured motorcyclist (MAIS 2-5), 13 percent. The estimate for the effectiveness of motorcycle helmets in preventing injuries is the same for both operators and passengers. Note that distributing injured motorcyclists by each MAIS level will not affect the estimated total number of motorcyclists prevented from being injured, since the effectiveness estimate is the same for all MAIS levels 2 through 5. However, the cost estimates differ by MAIS level, so the amount of money saved (and savable at 100% helmet use) is better estimated by separating those injured by MAIS level.

To estimate the number of motorcyclists whose helmets prevented them from receiving a serious (MAIS level 2 through 5)

injury, the number of helmeted motorcyclists is used. First the number of potentially seriously injured is estimated:

$$\text{Seriously Injured}_{\text{Potential}} = \frac{\text{Seriously Injured}_{\text{Helmeted}}}{(1 - 0.13)}$$

Using the estimate of helmeted, seriously injured motorcyclists above, the sum of both operators and passengers at MAIS levels 2 through 5 (20,793³), this is:

$$\text{Seriously Injured}_{\text{Potential}} = \frac{20,793}{(1 - 0.13)} = 23,900$$

The number of potential seriously injured, less the number actual seriously injured, gives the number of seriously injured prevented by helmets. In this case, 23,900 – 20,793 = 3,107. Again, these calculations are being shown using rounded numbers, whereas during the actual calculations rounding would not occur until presenting the final value.

The number of potential minor injured (MAIS 1) motorcyclists is:

$$\text{Minor Injured}_{\text{Potential}} = \frac{\text{Minor Injured}_{\text{Helmeted}}}{(1 - 0.08)}$$

Using the estimate of helmeted minor injured motorcyclists above (35,201 + 1,764 = 36,965), this is:

$$\text{Minor Injured}_{\text{Potential}} = \frac{36,965}{(1 - 0.08)} = 40,179$$

The number of potential minor injured, less the number actual minor injured, gives the number of minor injured prevented by helmets. In this case, 40,179 – 36,965 = 3,214.

Estimating the number of additional motorcyclists prevented from being injured at 100-percent Helmet Use, at each injury level

The number of motorcyclists whose injuries could have been prevented if all had worn helmets is estimated using the same method as previously shown for motorcyclist fatalities. Again, there are not different injury effectiveness estimates for riders and passengers. There are, however, different effectiveness estimates for the two levels of injury. The number of injured motorcyclists that could have been prevented is calculated as:

$$\text{Motorcyclists Injured (Injury level)}_{\text{Unhelmeted}} \times \text{Effectiveness}_{\text{Injury Level}}$$

From Table A5, there were 11,080 unhelmeted motorcyclists who were seriously injured. The estimate of the number of additional motorcyclists whose serious injuries could have been prevented is:

$$11,080 \times 0.13 = 1,440$$

³ This is obtained by adding together all seriously injured helmeted motorcyclists. From Table A5, these values are 12,100 + 6,600 + 550 + 550 + 607 + 331 + 28 + 28 = 20,793.

And for those with minor injuries, this is:

$$17,613 \times 0.08 = 1,409$$

Economic Impact

Cost savings are calculated by multiplying the number of motorcyclists who were prevented from being injured or killed by the associated economic cost. The cost bases, as well as detailed information on how they were estimated, come from *The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)*. Costs associated with motorcycle injuries are different from those for general (all vehicle) crashes, because the injuries motorcyclists suffer differ from the general injuries at each MAIS level. See chapter 10 of Blincoe, Miller, Zaloshnja, and Lawrence (2015) for the reasoning on costs associated with motorcyclist MAIS level injuries.

The costs in Blincoe, Miller, Zaloshnja, and Lawrence (2015) use 2010 crash data, and are expressed in 2010 dollars. Costs in the present research note use 2013 crash data, and adjust for inflation, from 2010 dollars to 2013 dollars, in order to agree with the 2013 FARS data.

The required inflation factor is obtained using data from the Department of Labor's Bureau of Labor Statistics, at its website at <http://data.bls.gov/cgi-bin/surveymost?cu>.

To obtain the needed values, place a check in the first item's box ("U.S. All items, 1982–84=100 – CUUR0000SA0") then scroll to the bottom and click "Retrieve data." If necessary, you can modify the range of years in the "Change Output Options" section at the top of the screen. If the table presented does not have a column labeled "Annual," check the box for "include annual averages," and click "Go."

For the inflation factor, divide the value for "Annual" for the relevant data year (2013) by that of the base year index (2010 for our calculations, since the known value is the cost per fatality and injured in year 2010 dollars). For example, to convert 2010 dollars to 2013, the values are 232.957/218.056 = 1.068. The cost at each MAIS level or fatality is multiplied by the inflation factor to get the current-year cost per fatality or injury. The 2013 economic cost per fatality, then, is inflated from year 2010 dollars to year 2013 dollars by:

$$\$1,381,645 \times 1.068 = \$1,475,597$$

Table A6 presents the dollar values associated with each fatality and MAIS level, for both economic costs and comprehensive costs, used in the present research note. Note that, for simplicity and clarity, the values in Table A6 use the rounded value of 1.068 as the inflation multiplier. When calculating estimates, the unrounded 218.056/232.957 would be used.

State and/or national cost savings are then estimated by multiplying the number of motorcyclists who were prevented from being killed or injured separately by each MAIS level (including those fatally injured) by the corresponding economic and comprehensive costs, and summing all injury levels. For example,

Table A6
Economic and Comprehensive Unit Costs per Injured Motorcyclist, by Injury Level and Helmet Use, 2010 and 2013

Helmet Use	Injury Level	2010 Costs		2013 Costs	
		Unit Economic Cost	Unit Comprehensive Cost	Unit Economic Cost	Unit Comprehensive Cost
Helmeted	MAIS 1	\$18,079	\$30,915	\$19,308	\$33,017
	MAIS 2	\$48,186	\$220,580	\$51,468	\$235,579
	MAIS 3	\$184,941	\$759,107	\$197,517	\$810,726
	MAIS 4	\$328,872	\$1,701,424	\$351,235	\$1,817,121
	MAIS 5	\$1,190,011	\$4,909,241	\$1,270,932	\$5,243,069
	Fatal	\$1,381,645	\$9,090,622	\$1,475,597	\$9,708,784
Unhelmeted	MAIS 1	\$18,941	\$32,926	\$20,229	\$35,165
	MAIS 2	\$49,258	\$227,273	\$52,608	\$242,728
	MAIS 3	\$184,639	\$763,673	\$197,194	\$815,603
	MAIS 4	\$352,587	\$1,852,270	\$376,563	\$1,978,224
	MAIS 5	\$1,617,283	\$7,564,608	\$1,727,258	\$8,079,001
	Fatal	\$1,381,645	\$9,090,622	\$1,475,597	\$9,708,784

Source: *The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)*, Tables 10-6 and 10-7, adjusted for inflation using data from Department of Labor's Bureau of Labor Statistics to estimate 2013 costs (see text).

*Comprehensive costs consist of Economic and Lost Quality-of-Life Costs.

earlier it was estimated that nationwide, 1,630 lives were saved by motorcycle helmets in 2013. This resulted in an economic cost savings (in 2013 dollars) of:

$$\$1,475,597 \times 1,630 = \$2,405,223,110$$

and a comprehensive cost savings of:

$$\$9,708,784 \times 1,630 = \$15,825,317,920$$

that can be attributed to helmets having prevented fatalities. The economic and comprehensive cost savings at each MAIS level for injured motorcyclists would be calculated in the same way, using the number of motorcyclists prevented from being injured and the corresponding dollar amounts for helmeted injured motorcyclists. Finally, all injury level and fatality costs are summed to estimate a total cost savings from the use of motorcycle helmets.

To calculate the economic and comprehensive costs that could have been saved had all motorcyclists been wearing helmets, the cost savings for each fatality and injury level is multiplied by the number of lives that could have been saved, or the number of motorcyclist who received injured that could have been prevented.

The economic cost savings for fatalities that could have been prevented by 100-percent helmet use is:

$$\$1,475,597 \times 715 = \$1,055,051,855$$

The comprehensive cost saving for fatalities that could have been prevented by 100-percent helmet use is:

$$\$9,708,784 \times 715 = \$6,941,780,560$$

The complete additional cost savings for fatalities and injured motorcyclists preventable at 100-percent helmet use (for the nation, a State, or other grouping) would be calculated by summing the dollar amounts for fatalities and each injury level.

Again, because of rounding used for ease of presentation, the additional dollar amount that could have been saved had all motorcyclists worn helmets differs from the amount presented in Table 3 as well as other published values.

Numbers in the above examples are national totals. For the data in Table 3 for individual States, the number of fatalities by helmet use for each State is used. The dollar amount is adjusted for each state using a ratio of the per-capita personal income in the specific state to the national average per-capita personal income. The rationale for this method is explained in *A Model for Estimating the Economic Savings from Increased Motorcycle Helmet Use*. Depending on the number of motorcyclist fatalities in each State, summing the State costs may differ from the cost estimate based on the national total. The national totals presented in Table 3 are calculated directly from the national counts and cost estimates, and are calculated without intermediate rounding.



MOTORCYCLE HELMETS

4,668 killed

IN MOTORCYCLE CRASHES IN 2013

\$66 billion

SOCIETAL HARM FROM MOTORCYCLE CRASHES

Motorcycle Helmet Laws

Motorcycles are the most hazardous form of motor vehicle transportation.¹ In 2013, 4,668 motorcyclists were killed. Additionally, 88,000 more were injured on our nation's roads in 2013. NHTSA estimates that helmets saved the lives of 1,630 motorcyclists in 2013 and that 715 more lives in all states could have been saved if all motorcyclists had worn helmets. The number of motorcycle crash fatalities has more

than doubled since a low of 2,116 motorcycle crash deaths in 1997. All-rider helmet laws increase motorcycle helmet use, decrease deaths and injuries and save taxpayer dollars.

Helmets Save Lives & Reduce Health Care Costs



- According to a 2012 Government Accountability Office (GAO) report, "laws requiring all motorcyclists to wear helmets are the only strategy proved to be effective in reducing motorcyclist fatalities." In states without an all-rider helmet law 59% of the motorcyclists killed were not wearing helmets, as opposed to only 8% in states with all-rider helmet laws in 2013.
 - Annually, motorcycle crashes cost \$12.9 billion in economic impacts, and \$66 billion in societal harm as measured by comprehensive costs based on 2010 data. Compared to other motor vehicle crashes, these costs are disproportionately caused by fatalities and serious injuries.
 - Motorcycle helmets are currently preventing \$17 billion in societal harm annually, but another \$8 billion in harm could be prevented if all motorcyclists wore helmets.
-
- Per vehicle mile traveled, motorcyclists were more than 26 times more likely to die in a traffic crash than occupants of passenger cars.
 - In Michigan, which repealed its all-rider law in 2012, there would have been 26 fewer motorcycle crash deaths (a 21% reduction) if the helmet mandate was still in place, according to the University of Michigan Transportation Research Institute. Additionally, in the remainder of the year after the helmet repeal was enacted

(April of 2012), only 74% of motorcyclists involved in crashes were helmeted, compared to 98% in the same time period of the previous four years.

- In states with an all-rider helmet law, use of a helmet resulted in economic costs saved to society of \$725 per registered motorcycle, compared with \$198 per registered motorcycle in states without such a law.
 - Helmets are currently saving \$2.7 billion in economic costs annually.
- In 2013, motorcyclists represented 14% of the total traffic fatalities, yet accounted for only 3% of all registered vehicles in the United States.
- By an overwhelming majority (80%), Americans favor state laws requiring all motorcyclists to wear helmets.
- Motorcycle helmets reduce the risk of head injury by 69% and reduce the risk of death by 42%.
- When crashes occur, motorcyclists need adequate head protection to prevent one of the leading causes of death and disability in America — head injuries.

For a full list of citations, please download our Motorcycle Helmet Fact Sheet

[<http://saferoads.org/wp-content/uploads/2015/07/2015-06-09-Motorcycle-Helmet-Fact-Sheet-FINAL.pdf>] .



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