

CHAPTER 13

Improving Motorcycle Safety and Increasing Motorcycle Awareness

GOALS

- Increase motorcycle survival rates.
- Reduce motorcycle fatalities resulting from errors of other drivers.
- Reduce the number of alcohol-related motorcycle fatalities.

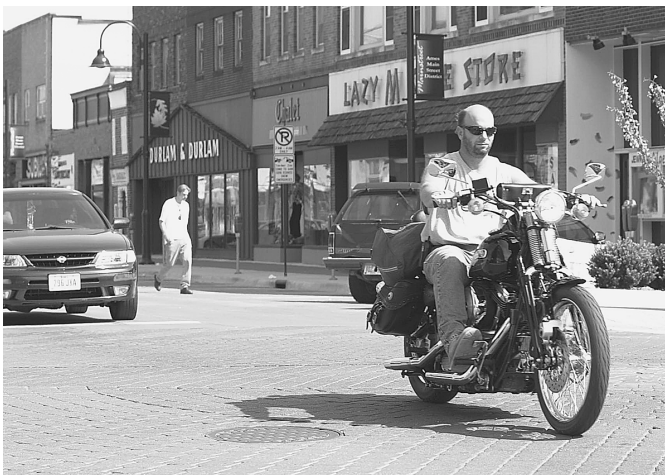
KEY TOPICS

- demographic trends
- helmet use and helmet laws
- motorcycle rider education (MRE) programs
- National Agenda for Motorcycle Safety (NAMS)

BACKGROUND

Per mile driven, a motorcyclist is 16 times more likely to die in a crash and four times more likely to suffer an injury than an automobile driver.

National Traffic Safety Administration (NHTSA), *Traffic Safety Facts—Motorcycles*



Motorcycles by their very nature are more difficult to operate and control than automobiles. Motorcycles respond more quickly than other vehicles can to driver actions such as braking or turning and roadway conditions such as rough pavement, rain conditions, or debris on the road. When motorcycles and other vehicles interact, these variations in vehicle handling often make it more difficult for other motorists to appropriately gauge speeds and maneuvers. This is true during normal driving conditions and increases exponentially in emergencies and abnormal driving conditions.

Motorcycle riders have limited protection from injury in crashes, resulting in higher fatality and injury rates than other motor vehicle operators. Injuries can leave victims permanently disabled, and head trauma is a major risk for motorcycle riders involved in crashes. The trauma and economic loss to families, employers, and insurance companies expands beyond the motorcyclist crash victim—into the community.

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Detailed studies of motorcycle crashes point to a number of contributing factors, including motorcyclist inexperience, speeding or impairment; other motorist failure to see the motorcycle, other motorist turning left in front of a motorcycle, and certain intersection and roadway factors.



NATIONWIDE

National Facts

Although the rate of motorcycle fatalities declined over 50% from 1985 to 1997, much of the decline is attributed to less motorcycle use. NHTSA reported the following data for 1999 regarding motorcycle crashes (*Traffic Safety Facts—Motorcycles*):

- 2,472 motorcyclists were killed in traffic crashes.
- Motorcyclist fatalities increased 8% from 1998.
- 50,000 motorcyclists were injured in traffic crashes.
- Motorcycle accidents accounted for 6% of all 1999 motor vehicle fatalities.
- 41% of all motorcyclists involved in 1999 fatal crashes were speeding.
- 42% of all motorcyclists killed in 1999 single-vehicle crashes were intoxicated; 85% of alcohol-related motorcycle crashes result in rider injury, as opposed to 35% of car crashes. (The safety community may be challenged to develop and promote programs that focus on identifying the intoxicated motorcycle operator as a separate feature of their safety campaigns and future impaired driving programs.)
- 38% of the two-vehicle fatal crashes involving a motorcycle and another vehicle were the result of the other vehicle turning left into the oncoming path of the motorcycle.
- Nearly 70% of all motorcyclists killed in the United States between 1990 and 1999 were between 18 and 39 years old.
- 15% of motorcyclists involved in fatal crashes were operating the vehicle with no valid license.

Helmet Use

NHTSA reported the following data for 1999 regarding motorcycle helmet use (*Traffic Safety Facts—Motorcycles*):

- Riders who don't wear helmets and crash are 40% more likely to sustain a fatal injury and 15% more likely to suffer a nonfatal head injury than a helmeted motorcycle rider.
- Wearing a motorcycle helmet reduces the risk of death and injury by 29% and medical costs by 36%.
- NHTSA estimates that helmets saved the lives of 551 motorcyclists in 1999. An additional 326 lives could have been saved if all motorcyclists wore helmets.
- \$13.2 billion is the estimated savings from 1984 through 1999 because of the use of motorcycle helmets. Another \$11.1 billion could have been saved if all motorcyclists had worn helmets.
- Helmet use is virtually 100% in jurisdictions with helmet use laws, compared to 34% to 54% in jurisdictions with no helmet laws or laws limited to minors, respectively.
- States that have enacted helmet laws have experienced significant reductions in motorcycle related fatalities

In 1990, at the request of Congress, the U.S. General Accounting Office (GAO) reviewed and evaluated available information about motorcycle helmets and helmet laws. The GAO's 1991 report stated that "Helmet use reduced fatality rates and reduced injury severity among survivors of motorcycle accidents." The report also stated that "Universal helmet laws have been very effective in increasing helmet use, virtually doubling use compared with experience without a law or with limited law applying only to young riders. Under universal helmet laws, more states experienced 20% to 40% lower fatality rates than in periods without laws or under limited laws."

Solutions could include requiring all motorcyclists under a certain age to wear a helmet at all times, as most riders killed are between the ages of 18 and 27. Another solution would require all newly licensed riders to wear helmets by denoting a restriction on their license, and require all riders involved in a reportable accident to wear helmets and to take a rider safety course if they have not previously attended one or a refresher course if they have attended a previous rider safety course.

National Agenda for Motorcycle Safety

In 1997, NHTSA partnered with the Motorcycle Safety Foundation (MSF), a national, nonprofit organization promoting the safety of motorcyclists, to

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provide the leadership and resources to create the *National Agenda for Motorcycle Safety*. NAMS is a strategic planning document designed to provide a shared vision for future motorcycle safety efforts by incorporating input from a broad, multidisciplinary spectrum of stakeholders.

“The mission of the *National Agenda for Motorcycle Safety* is to point the way to the most promising avenues for future motorcycle safety efforts in the United States. It seeks to do so by incorporating information and ideas from a broad multidisciplinary spectrum of stakeholders. This document was created to provide guidance to those seeking to enhance motorcycle safety at the national, state, and local levels.”

NAMS lists 82 recommendations for addressing motorcycle safety. The recommendations were categorized into three major groups:

- *Urgent recommendations* (4) are critical recommendations that need to be addressed immediately.
- *Essential recommendations* (56) are fundamental recommendations for improving motorcycle safety but are not as time sensitive as the urgent recommendations.
- *Necessary recommendations* (22) are important to improve motorcycle safety and are the least time sensitive.

There are four urgent recommendations:

- Immediate action should be taken by government and industry to address the critical questions in motorcycle safety through comprehensive, in-depth studies as well as studies focused on specific topics (Research in Motorcycle Crashes).
- Continue to discourage mixing alcohol and other drugs with motorcycling (Motorcyclists Alcohol and Substance Impairment).
- Use effective strategies to increase the use of FMVSS 218 compliant helmets (Personal Protective Equipment).
- Educate operators of other vehicles to be more conscious of the presence of motorcyclists (Motorist Awareness).

The remaining 78 recommendations cover all the topics addressed in NAMS, which is available on the web.

IOWA

Since 1980, Iowa motorcycle registrations have declined by nearly half, from nearly 222,000 to just over 110,000. Motorcycle crashes are less than two percent of Iowa's reported crashes, but they still account for seven percent of all Iowa fatalities and seven percent of all Iowa injuries.

Iowa Facts

The Iowa Governor's Traffic Safety Bureau (Iowa GTSB) reported the following data from the Iowa Department of Transportation (Iowa DOT) *Iowa Crash Facts* book or NHTSA (*Motorcycle Fact Sheet*):

- Iowa experienced 30 motorcycle fatalities in 1999 and 32 in 2000.
- Only two of the 1999 Iowa fatality victims were wearing safety helmets.
- Over the last five years, more than 85% of all motorcyclists killed in Iowa were not using helmets.
- In 1999, 653 motorcyclists were injured and 262 were seriously injured in Iowa. In 2000, 771 motorcyclists were injured and 290 were seriously injured.
- Because a major contributing crash factor is whether other motorists see motorcyclists, Iowa law requires all motorcycles built after 1976 to have their headlight on at all times to increase vehicle visibility.

Helmet Use

Iowa had a helmet law from September 1, 1975, to July 1, 1976. Fatality rates per 10,000 motorcycle registrations were 40% lower during those months in 1975–1976 than for the same months in 1974–1975. Rates during the 1975–1976 helmet law were 30% lower than for the same months in 1976–1977 after the helmet law was repealed.

Iowa's motorcycle helmet law status has been hotly debated many times in the state legislature and in public venues through media and anti-helmet and pro-helmet activism. Any movements to change Iowa's motorcycle laws tend to be very controversial; those with highway safety interests are encouraged to consider a range of fact-supported and proactive strategies. Iowa is one of only five states that do not have some form of motorcycle helmet law (Iowa, Illinois, Florida, Louisiana, and Colorado).

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Iowa Public Opinion

Iowa SMS Public Opinion Survey

The 1999 Iowa Safety Management System (Iowa SMS) *Iowa Strategic Highway Safety Plan* included a number of potential strategies for dealing with some of these risk elements. The Iowa SMS public opinion survey asked over 1,000 Iowans whether they would support these strategies.

- 77% of respondents support requiring motorcycle helmet use.
- 65% of respondents support increasing motorcycle training.
- 49% of respondents support issuing motorcycle licenses based on skill.

POTENTIAL STRATEGIES

Legislation, Policy, and Enforcement

- Increase motorcycle crash survival rates through the enactment of helmet laws as successful in other states (e.g., require newly licensed riders to use helmets).
- Resolutions could be implemented in a series of legislative steps over time, since solutions to motorcycle safety concerns in Iowa are very controversial.
- Institute a motorcycle helmet law for new drivers. Include a restriction on all new motorcycle licensees, allowing previously licensed drivers to be exempt or “grandfathered” and not required to adapt to a new law.
- License motorcycle riders according to the size of the motorcycle they demonstrate proficiency to ride.
- Expand the requirement for all motorcycle riders under the age of 18 to pass a motorcycle rider course to include all first-time motorcycle-licensed riders.
- Require helmets for all motorcycle drivers and passengers under the age of 18.
- Require helmets for all motorcycle drivers and passengers.
- Require all motorcycle riders involved in a single motorcycle crash to complete a rider safety course and wear helmets or have their license suspended.
- Include specific training for law enforcement identification of impaired motorcycle drivers in impaired driving programs.
- Require motorcyclists who are charged with operating while intoxicated



(OWI) to attend a motorcycle rider course and a rider-education seminar using the *Riding Straight* video to influence riders' knowledge and attitudes.

Education and Public Awareness

- Identify effective motorcycle awareness campaigns from other states and implement them in Iowa to help reduce motorcycle fatalities resulting from errors of other drivers.
- Purchase public service announcements that remind drivers to drive defensively for motorcycle versus other vehicle high crash incident situations (e.g., entering an intersection and rapid speed change differences in following a braking motorcycle).
- Conduct aggressive motorcycle awareness campaigns each spring to remind motorists to watch for and share the road with warm weather motorcyclists.
- Increase comprehensive motorcycle rider education (MRE) programs for novice and experienced riders.
- Include strong elements and graphic instruction for awareness of motorcycle operation differences in driver education courses.
- Place “Watch for Motorcycle” bumper stickers on all state, county, and municipal vehicles, similar to current school and ethanol stickers.
- Support and expand MRE programs such as Rider Course, Experienced Rider Course, and others. Expand these to include all first-time motorcycle licensees regardless of age.
- Include motorcycle risk statistics, injury consequences, and the economic impact of motorcycle injuries and deaths in public awareness campaigns and on driver education web sites.
- Involve medical and brain injury experts in developing appropriate motorcycle public information pieces.
- Offer voluntary MRE programs (such programs were well received in Illinois).

Design and Technology

- Improve motorcycle conspicuity by placing signs at or near intersections that read “Watch for Motorcyclists” where high risk is indicated.
- Monitor manufacturer development of motorcycle modulation headlights, fluorescent helmets, reflective jackets, and daytime running lights. Consider ways to effectively encourage or mandate motorcyclist use of these products.

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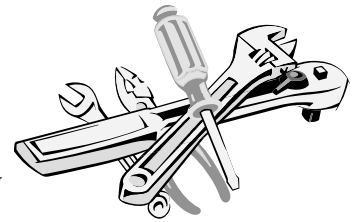
- Consider motorcycle design and operation features when implementing rumble strips, raised markings, and other safety enhancement features on roadways.

Other Initiatives

Consider the recommendations in NAMS.

SUCCESSSES AND STRATEGIES IMPLEMENTED

- Iowa requires all motorcycles built in 1977 or after to be operated with the headlight on during daylight hours.
- Iowa has a quality motorcycle rider education program administered by the Iowa DOT Office of Driver Services. Iowa's MRE program teaches the Motorcycle Rider Course: Riding and Street Skills of the MSF. Sponsors include 13 of Iowa's 15 community colleges.
- Motorcycle drivers must pass a knowledge test and an on-road driving skills exam.
- Alternate Motorcycle Operator Skills Test (Alternate MOST) skills testing will begin in spring 2002.



NOTE

The potential strategies in this chapter do not represent specific recommendations of the Iowa SMS Coordination Committee or any agency, group, or individual represented in Iowa SMS. The strategies represent a range of alternatives for legislators, department or agency directors, local governments, and citizen groups to consider when they elect to address a specific highway safety concern.

This toolbox is a living document that will continue to provide information, direction, and ideas for highway safety decision makers. Any strategies selected for implementation by Iowa SMS or any other entity will require further development through identifying potential partners, entities impacted, potential funding, steps for implementation, evaluation, and other pertinent tasks.

RESOURCES

Information in this chapter is drawn from many individuals and sources. Known sources are listed here. **Contributors:** Scott Falb (primary), Kim Snook, and Mary Stahlhut.

American Association of State Highway and Transportation Officials

Strategic Highway Safety Plan (Sept. 1997):

A comprehensive plan to substantially reduce vehicle-related fatalities and injuries on the nation's highways.

safetyplan.tamu.edu/plan/toc.asp

Federal Highway Administration

www.fhwa.dot.gov/

Iowa Department of Transportation Office of Driver Services

www.dot.state.ia.us/mvd/ods

Iowa DOT 1999 Crash Facts:

www.dot.state.ia.us/mvd/ods/facts99.htm

Motorcycle Operators Manual

Iowa Governor's Traffic Safety Bureau

www.state.ia.us/government/dps/gtsb/index.htm

Motorcycle Fact Sheet (June 2001):

www.state.ia.us/government/dps/gtsb/gtsft_7.htm

Iowa Safety Management System

www.iowaSMS.org

Iowa Strategic Highway Safety Plan (Aug. 1999):

www.iowasms.org/pdfs/ishsp.pdf

Iowa Strategic Highway Safety Plan Goals and Strategies: Statewide Survey of Adults (Oct. 2000):

www.iowasms.org/pdfs/publicopinionsurveyexecsumm.pdf

National Highway Traffic Safety Administration

www.nhtsa.dot.gov

NHTSA Facts—Motorcycle Safety Helmets (Summer 1996)

National Agenda for Motorcycle Safety (1997):

NAMS is a strategic planning document reflecting a shared vision for the future of motorcycle safety.

www.ahainc.com/nams

Traffic Safety Facts—Motorcycles (1999):

www.nhtsa.dot.gov/people/ncsa/pdf/Motorcycle99.pdf

Traffic Tech, NHTSA Technology Transfer Series No. 231 (Sept. 2000):

www.nhtsa.dot.gov/people/outreach/traftech/pub/tt231.html

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www.nhtsa.dot.gov/people/outreach/traftech/pub/tt236.html