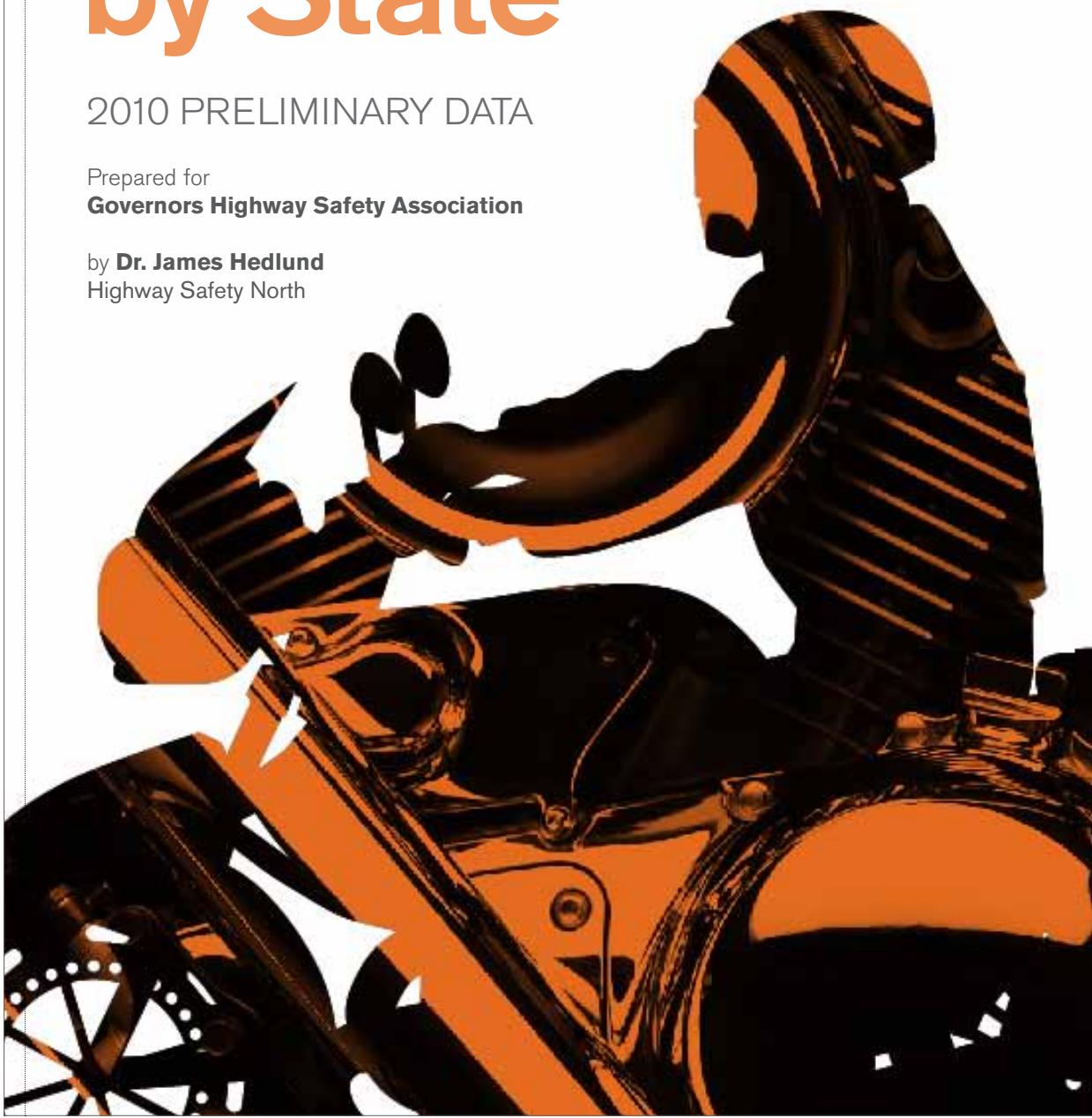


Motorcyclist Traffic Fatalities by State

2010 PRELIMINARY DATA

Prepared for
Governors Highway Safety Association

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Summary

Motorcyclist traffic fatalities in the United States continued to fall in 2010, based on preliminary data supplied by all 50 states and the District of Columbia.

Motorcyclist fatalities dropped by 2.4% during the first nine months of 2010 across the 48 states and the District of Columbia that reported monthly data for these months. Most states have quite complete traffic fatality counts for this period. Fatalities decreased substantially in the first quarter, decreased slightly in the second quarter, and rose slightly in the third quarter.

While fatality data for the final months of 2010 are less complete in some states, motorcyclist fatalities for the full year nationwide are expected to be 4,376 or fewer, a decrease of at least 2% from the 4,465 fatalities of 2009.

About half the states are likely to have fewer motorcyclist fatalities in 2010 than in 2009, and about half are likely to have more.

States with decreased motorcyclist fatalities suggested several explanations, including: higher priority for motorcycle safety education, publicity, and enforcement; increased motorcyclist training; and poor cycling weather. States with increased fatalities cited more motorcycle travel, lower helmet use, and good cycling weather.

The good news of 2010's likely decrease in motorcyclist fatalities must be tempered with several disturbing observations. First, 2010's predicted 2% decrease is far less than 2009's 16% decrease. Second, the decrease was concentrated in the early months: fatalities dropped only slightly in the second quarter and rose in the third quarter. Next, it's highly likely that motorcycle travel is increasing as the economy improves. Finally, use of DOT-compliant motorcycle helmets dropped an alarming 13 percentage points in 2010. To prevent an increase in motorcyclist fatalities in 2011, states should work to increase helmet use, provide motorcycle operator training to all who need or seek it, and reduce motorcyclist alcohol impairment and speeding.

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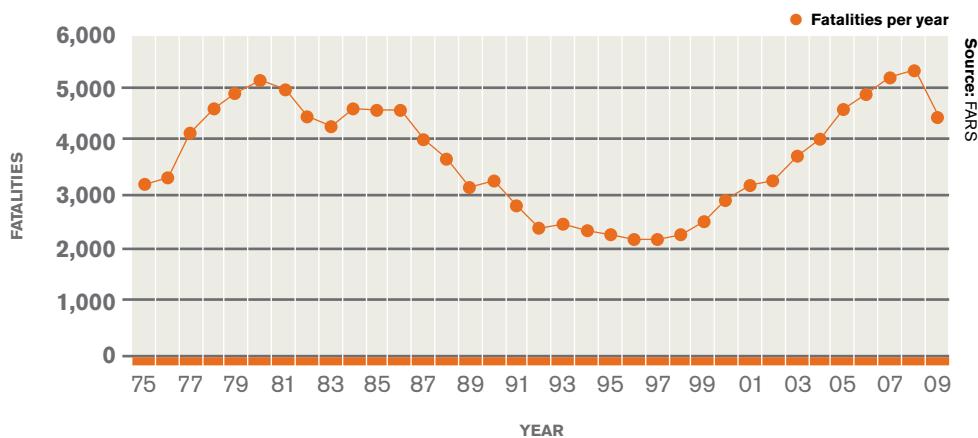
Introduction

Motorcyclist traffic fatalities in the United States dropped by 16% in 2009 to 4,465. This broke a chain of 11 consecutive years of increases that more than doubled motorcyclist fatalities from 2,116 in 1997 to 5,312 in 2008 (Figure 1).

Was the 2009 drop the beginning of a long-term downward trend in motorcyclist fatalities similar to that from 1980 to 1997? Or was 2009 only a temporary bit of relief from the steady upward trend that began in 1997?

To investigate, in late January 2011 the Governors Highway Safety Association (GHSA) asked each state and the District of Columbia to provide their preliminary motorcyclist fatality counts for 2010, as they did at the same time in 2009. All 50 states and the District of Columbia supplied data. Forty-eight states and the District of Columbia provided preliminary counts by month for at least the first nine months. The remaining two states provided data for fewer than nine months. Many states also presented their views on why their motorcyclist fatalities increased or decreased.

Figure 1 United States motorcyclist fatalities 1975-2009



This report summarizes the information received. It should be read with three important considerations in mind.

- 1) All data are preliminary, especially for the last few months of 2010. This report presents data through September because these counts are reasonably complete for the 48 states and the District of Columbia that reported monthly data for this period.
- 2) All data are reported by the states from their traffic record systems. Their motorcyclist fatality counts may differ slightly from the counts recorded in the Fatality Analysis Reporting System (FARS) of the National Highway Traffic Safety Administration (NHTSA), even for 2009, for which all data files are complete and closed.
- 3) The states' views on possible reasons for increases or decreases are based on their experience and best judgment, not on any scientific analyses.

Throughout this report, a motorcyclist is any person operating or riding as a passenger on a motorcycle, motor scooter, or other two-wheeled motorized vehicle.

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Motorcyclist fatalities in 2009 and 2010

Table 1 shows how the 2009 and 2010 motorcyclist fatality counts compare in three-month intervals through September 2010 for the 49 states and the District of Columbia that reported monthly data. (California did not report third quarter data, so the July-September and January-September counts include only 48 states and the District of Columbia; Arizona reported only aggregated data for January through April and is not included in Table 1.) See Table 3 for complete data by state.

Many states have relatively little motorcycle travel in the winter months due to snow, ice, rain, and cold weather. In 2009, for the nation as a whole, only 14% of motorcyclist fatalities occurred in January through March and 15% in October through December. Two-thirds occurred during the other six months: 34% in April through June, and 37% in July through September.

Table 1 Motorcyclist fatalities by quarter, 2009 and 2010, preliminary data

	Jan - Mar	Apr - June	Jul - Sept	Nine Month Total Jan - Sept
2009 total	577	1500	1483	3359
2010 total	430	1484	1531	3279
change from 2009	-147	-16	+48	-80
percent change	-25.5 %	-1.1 %	+3.2 %	-2.4 %
States with decrease*	30	25	25	26
States unchanged	9	5	3	2
States with increase	11	20	21	21
States reporting*	50	50	49	49

Data reported to GHSA by the states and the District of Columbia in February and March 2010; some data preliminary
* includes the District of Columbia

In the first quarter of 2010, January through March, motorcyclist fatalities decreased in 29 states and the District of Columbia, increased in 11, and were unchanged in 9. Most changes were small: only three of the decreases and none of the increases were by 10 or more fatalities. For the 50 jurisdictions as a whole, fatalities decreased by 147, or 25.5%, continuing the 2009 trend of dramatic decreases from the preceding year.

This pattern changed substantially in the second quarter as better riding weather increased motorcyclist travel and fatalities. Almost as many of the 50 reporting jurisdictions reported increases as decreases compared to the second quarter of 2009. Five of the increases and three of the decreases were by 10 or more fatalities. Overall, motorcyclist fatalities dropped by 16 from 2009, just over 1%.

For the six months through June, fatalities dropped by 163, or 7.8%. Data from this period are quite complete. The final data are expected to confirm that motorcyclist fatalities nationwide dropped about 8% during the first half of the year.

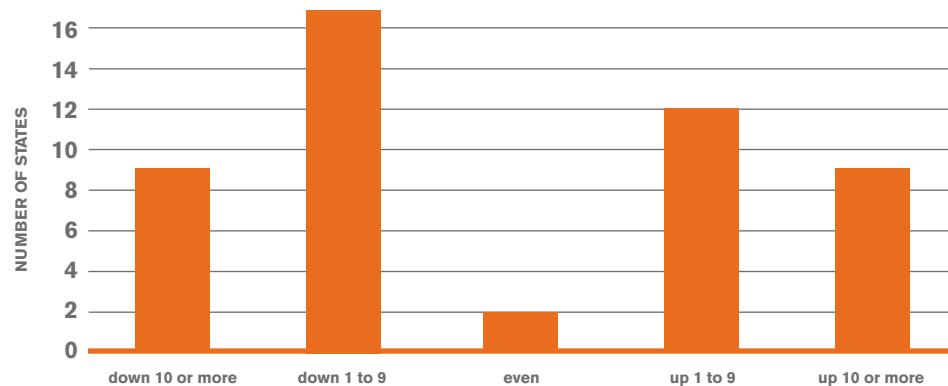
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In the third quarter, 24 states and the District of Columbia reported decreases, 21 reported increases, and 3 reported no change. Nine of the increases and four of the decreases were by 10 or more fatalities. Overall, fatalities increased by 3.2% in these 49 jurisdictions. For the nine months through September, motorcyclist fatalities decreased by 80, or 2.4%.

Over the first nine months of 2010, the states were reasonably balanced between those reporting decreases in motorcyclist fatalities and those reporting increases: 25 states and the District of Columbia reported a decrease, 21 states reported an increase, and 2 states reported no change. The sizes of the decreases and increases also were reasonably balanced, with 9 states reporting a decrease of 10 or more, 9 reporting an increase of 10 or more, and the rest reporting a change of 9 or less from 2009 (Figure 2).

Figure 2 Motorcyclist fatality changes by state, 9 months, 2009 to 2010



Data reported to GHSA by the states and the District of Columbia in February and March 2010; some data preliminary

A few fatal crashes from the third quarter probably have not yet been recorded. While there is no way to estimate this under-reporting, many states are quite confident of their 2010 data through September. The final data are expected to show a decrease in motorcyclist fatalities of at least 2% for these nine months.

In 2009, the 9-month motorcyclist fatality change from 2008 provided a remarkably accurate prediction for the full year. The GHSA report "Spotlight on Highway Safety: Motorcyclist Traffic Fatalities by State – 2009 Preliminary Data" (GHSA, 2010) used the same methods as this report, with preliminary 2009 data provided by states in early 2010. These data showed a 16% decrease in motorcyclist fatalities for the first 9 months of 2009. The final 2009 FARS data confirmed that they dropped 15.9% for the full year.

Complete data from the final quarter are not presented because some states' 2010 counts for this period are known to be under-reported. Motorcycling decreases substantially during this quarter, typically contributing only about 15% of annual motorcyclist fatalities. Even if the third quarter's increase continues in the fourth quarter, fatalities for 2010 will remain lower than 2009. For example, a 5% increase in fourth-quarter fatalities compared to 2010 would raise fourth-quarter fatalities only by 28, far less than would be needed to offset the decrease from the first nine months. The final 2010 data are expected to show that motorcyclist fatalities were at least 2% below the 2009 total of 4,465, (no more than 4,376). Figure 3 shows the long-term trend if the decrease is 2%.

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About half the states report their overall 2010 motorcycle fatality data are final or very close to final. The rest are preliminary to varying degrees, with some final except for December and others incomplete for two or three months. Judging from each state's reported totals and completeness, it is expected that the final data will confirm a decrease for most of the states currently reporting one. This means that motorcyclist fatalities will have decreased in about half of the states.

Figure 3 Motorcyclist fatalities, 1975-2010, with a **2% decrease in 2010**



Source: 1975-2009 from FARS, 2010 estimated

Table 2 compares the 2010 quarterly changes in motorcyclist fatalities with the overall traffic fatality quarterly changes estimated by NHTSA (2011c). The pattern is very similar: a substantial decrease in the first quarter became an increase by the third quarter, though the nine-month estimates still show an overall decrease. NHTSA estimates that total traffic fatalities decreased by 3% for the full year 2010 compared to 2009.

Table 2 Estimated traffic fatality change by quarter, 2009 and 2010, preliminary data

	Jan - Mar	Jan - June	Jan - Sept	Nine Month Total Jan - Sept
motorcyclist fatalities	- 25.5 %	- 1.1 %	+ 3.2 %	- 2.4 %
total traffic fatalities	- 11.4 %	- 5.0 %	+ 1.6 %	- 4.6 %

Motorcyclists: data reported to GHSA by the states and the District of Columbia in February and March 2010; some data preliminary
Total: NHTSA (2011c)

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Reasons for changes in motorcyclist fatalities

The causes of the 2009 motorcyclist fatality decrease are not yet understood. GHSA's spring 2010 report (GHSA, 2010) summarized reasons suggested by the states, but there have been no formal studies. The Federal Highway Administration (FHWA) estimates that motorcycle travel was essentially unchanged from 2008 to 2009: a total of 20,800 million miles in 2009 compared to 20,811 million miles in 2008, which is a decrease of 0.05 percent (FHWA, 2011a, Highway Statistics 2009 and 2008, Table VM-1). Motorcycle travel estimates are not accurate enough to detect this small a change. Motorcycle registrations increased to 7,929,724 in 2009, up by 2% from 7,752,926 in 2008 (*ibid*). But more registered motorcycles may not produce more overall motorcyclist travel. A substantial amount of motorcycle travel is recreational and is influenced by economic conditions, weather, and other recreational opportunities. Note that the FHWA estimates imply an average of only 2,623 miles of travel for each registered motorcycle in 2009 compared to 10,380 miles for each passenger vehicle.

States in which motorcyclist fatalities decreased in 2010 suggested the following potential explanations. Quoted comments come from various states.

- Higher priority for motorcycle safety at the state highway safety office.
 - "Started a Motorcycle Safety Coalition and held our sixth annual motorcycle safety forum."
 - "Developed a Motorcycle Safety Strategic Plan."
- Motorcycle safety education and publicity directed both at riders (with messages such as alcohol-free riding) and at other motorists (be aware of motorcyclists and share the road with them).
 - "Educational and awareness campaign associated with major bike rallies."
 - "A targeted motorist awareness campaign ... via phone surveys, we have seen significant increases in driver recognition of the campaign."
 - "Expanded our motorcycle awareness media campaign."
- Increased rider training.
 - "Increased numbers ... seeking basic motorcycle training."
 - "Increased the number of motorcyclists trained in 2010 by 21%."
- Fewer beginning riders.
 - "In talking to a few of our motorcycle dealers, their business has definitely flattened. More existing riders are coming for new bikes and upgrades than brand new riders getting their first bike."
- Less motorcyclist travel, indicated by a drop in motorcycle sales or registrations in that state.
 - "Sales of new units continue to be down in 2010."
 - "Number of registered motorcycles tapering off."
- Legislation.
 - One bill "doubled the penalty for riding a motorcycle without [a motorcycle] endorsement" and another "required all new riders to take an approved motorcycle safety course to get an endorsement."

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- Cold and rainy weather.
 - "Weather was unusually wet and cold until mid-July."
 - "A colder February and March in 2010."
- Random variation, with a decrease in 2010 following an increase in 2009, especially for states with few motorcyclist fatalities.
 - "Apparent decrease in 2010 is more attributable to a dramatic spike in motorcycle fatalities in 2009."

Not surprisingly, states with an increase in motorcyclist fatalities in 2010 suggested different explanations.

- More motorcycle travel, indicated by an economic recovery or by increased motorcycle registrations.
 - "Increased ridership as the economy stabilized."
 - "Upturn in the economic climate."
- Lower motorcycle helmet use.
 - "Motorcycle passenger helmet usage has dropped by as much as 16% from recent years."
- Good riding weather.
 - "An above average amount of clear, dry, warm weather."
 - "Less rain and warmer temperatures than the prior year."
- Random variation, with an increase in 2010 following a decrease in 2009, especially for states with few motorcyclist fatalities.
 - "With such a small increase ... [we are] not able to speculate on the reason."

Two states also noted that motorcyclists have not benefited from highway improvements directed at other vehicles.

- "There hasn't been much improvement for motorcyclists in the roadway environment as compared to cars."
- "The safety enhancements we are engineering into our roadway system do not seem to have the level of impact on motorcyclists that we have seen on other passenger vehicles."

Finally, NHTSA's annual observational survey found that use of DOT-compliant motorcycle helmets in 2010 dropped by 13 percentage points from 67% in 2009 to 54% in 2010 (NHTSA, 2010b). Use of non-compliant helmets rose from 9% to 14%, while unhelmeted riders increased from 24% to 32%. DOT-compliant helmet use decreased by 10 percentage points in states with universal helmet laws and by 15 percentage points in states without these laws.

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Discussion

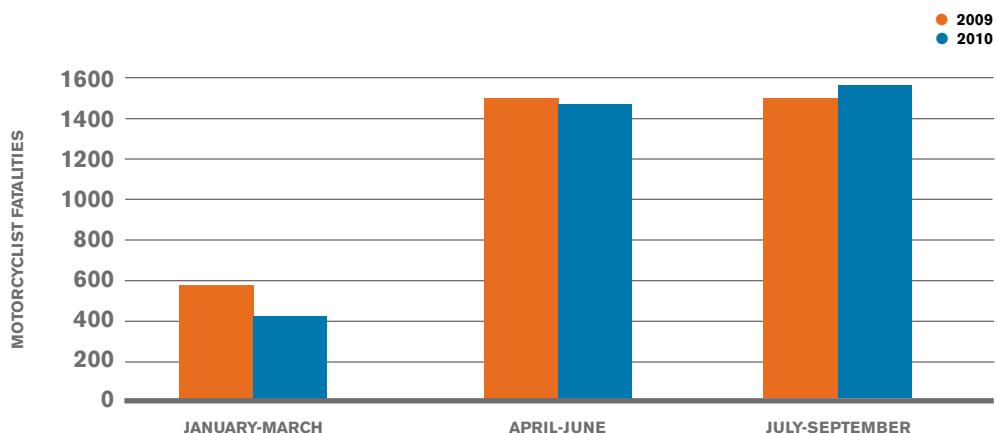
Motorcyclist fatalities in 2010 neither continued to drop substantially as they did from 2008 to 2009 nor did they rebound to 2008 levels. For the full year, motorcyclist fatalities are expected to be about 2% lower than in 2009.

In 2009, motorcyclist fatalities dropped by 16% from 2008, while total traffic fatalities dropped by 10% (NHTSA, 2011c). In contrast, motorcyclist and total traffic fatality changes from 2009 to 2010 are expected to be quite similar, with a drop of about 2% for motorcyclists and about 3% for total fatalities. The quarterly patterns also are expected to be similar. Total traffic fatalities have begun to increase again, rising in both the third and fourth quarters of 2010 after 17 consecutive quarters of decreases (Table 2; NHTSA, 2011c). Through the first nine months of 2010, motorcyclist fatalities have done the same.

In contrast to 2009, when fatalities decreased in most states, in 2010 motorcyclist fatalities decreased in about half the states and increased in about half.

What does this suggest for 2011 and beyond? The good news of 2010's likely decrease in motorcyclist fatalities must be tempered with several disturbing observations. First, 2010's predicted 2% decrease is far less than 2009's 16% decrease. Second, the decrease was concentrated in the early months: fatalities dropped only slightly in the second quarter and rose in the third quarter (Table 1 and Figure 4). Next, it's highly likely that motorcycle travel is increasing as the economy improves. While no motorcycle travel data for 2010 are available, total vehicle travel rose in 2010 to the highest level since 2007 (FHWA, 2011b). Finally, motorcyclist helmet use dropped alarmingly in 2010 (NHTSA, 2010b). Active motorcycle safety measures likely will be needed to prevent motorcyclist fatalities from rising in 2011.

Figure 4 Motorcyclist fatalities by quarter, 2009 and 2010, preliminary data



Data reported to GHSA by the states and the District of Columbia in February and March 2010; some data preliminary

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The effective strategies to prevent motorcyclist crashes, injuries, and fatalities have not changed and are reflected in the comments from states where fatalities decreased in 2010. Many states have made motorcycle safety a high priority. Beyond this, states should address four major areas.

- **Increase helmet use.** Helmets are 37% effective in preventing fatal injuries to motorcycle riders (operators) and 41% effective for passengers (NHTSA, 2011a). In 2008, 42% of fatally-injured motorcyclists were not wearing helmets. NHTSA estimates that 822 of these unhelmeted motorcyclists would have lived if they had worn helmets. Thirty states do not require all motorcyclists to wear helmets. Helmet laws are the only motorcycle safety strategy whose effectiveness is rated as five-star (“demonstrated to be effective by several high-quality evaluations with consistent results”) in Countermeasures That Work (CMTW), NHTSA’s guide for states (NHTSA, 2011b, Section 5). Similarly, increasing the use of helmets is the only motorcycle safety strategy rated as proven (“used in one or more locations, and for which properly designed evaluations have been conducted that show it to be effective”) in the American Association of State Highway and Transportation Officials (AASHTO) “Guide for Addressing Collisions Involving Motorcycles” (Potts et al., 2008, Strategy 11.1E1) and the only strategy rated “scientifically proven” in the Centers for Disease Control and Prevention’s “Motorcycle Safety” (CDC, 2011).
- **Reduce alcohol impairment.** In 2009, 29% of fatally injured motorcycle riders had a blood alcohol concentration above the legal limit of .08 and an additional 7% had lower levels of alcohol (NHTSA, 2010a, Table 17). States should include motorcyclists in their impaired driving program activities. For example, CMTW recommends highly publicized enforcement, using officers trained in identifying impaired motorcyclists as well as other vehicle drivers, combined with offender sanctions including vehicle impoundment or forfeiture (NHTSA, 2011b, Strategy 5.2.1). AASHTO recommends a combination of education, prevention, and enforcement programs (Potts et al., 2008, Strategies 11.1B1-3).
- **Reduce speeding.** In 2008, 35% of motorcycle riders involved in fatal crashes were speeding, compared to 23% for passenger car drivers and 19% for light truck drivers (NHTSA, 2009). More than half of all motorcycle fatal crashes did not involve another vehicle, and speeding likely contributed to many of these.
- **Provide motorcycle operator training to all who need or seek it.** All beginning riders should be trained in basic motorcycle operating skills and safe riding practices. Refresher training can be useful for many riders who are returning to motorcycling after not riding for several years. All states currently conduct operator training courses, but they may not provide enough course openings at the places and times when riders wish to be trained. Both CMTW (NHTSA, 2010b, Strategy 5.3.2) and AASHTO (Potts et al., 2008 Strategies 11.1C1-3) endorse rider training.

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Table 3
Motorcyclist fatalities,
January – June and
January – September
2009 and 2010, data
from 49 states and the
District of Columbia

Data reported to GHSA by all 50 states, the District of Columbia, and Guam in February and March 2010; some data preliminary. California reported monthly data for January through August so is not included in the 9-month comparisons. Arizona reported aggregated data for January through April so is not included in Table 3; Arizona's motorcyclist fatalities in these four months dropped from 46 in 2009 to 30 in 2010. Guam's motorcycle fatalities dropped from 3 in 2009 to 2 in 2010.

State	2009 6 months	2010 6 months	Change from 2009	2009 9 months	2010 9 months	Change from 2009
AK	3	5	2	7	9	2
AL	40	36	-4	62	69	7
AR	49	38	-11	70	70	0
CA	201	166	-35	-	-	-
CO	43	30	-13	74	71	-3
CT	18	24	6	39	43	4
DC	2	1	-1	3	1	-2
DE	5	4	-1	13	6	-7
FL	198	206	8	293	286	-7
GA	64	48	-16	112	98	-14
HI	22	18	-4	26	21	-5
IA	23	30	7	44	54	10
ID	15	8	-7	33	25	-8
IL	56	43	-13	114	107	-7
IN	54	49	-5	104	100	-4
KS	16	12	-4	39	29	-10
KY	40	29	-11	78	66	-12
LA	58	33	-25	84	47	-37
MA	19	19	0	43	49	6
MD	29	35	6	59	61	2
ME	9	6	-3	22	15	-7
MI	43	44	1	92	111	19
MN	23	17	-6	50	39	-11
MO	39	40	1	76	75	-1
MS	25	20	-5	38	33	-5
MT	11	9	-2	25	23	-2
NC	85	80	-5	138	144	6
ND	3	6	3	6	13	7
NE	7	5	-2	15	11	-4
NH	5	16	11	19	26	7
NJ	28	32	4	59	59	0
NM	20	18	-2	31	34	3
NV	22	15	-7	35	33	-2
NY	66	88	22	136	160	24
OH	62	77	15	140	148	8
OK	50	33	-17	83	58	-25
OR	21	19	-2	48	35	-13
PA	96	86	-10	186	197	11
RI	8	8	0	18	13	-5
SC	58	50	-8	91	80	-11
SD	1	5	4	14	26	12
TN	59	71	12	104	117	13
TX	241	195	-46	371	311	-60
UT	11	7	-4	28	19	-9
VA	33	39	6	61	62	1
VT	4	1	-3	8	2	-6
WA	31	29	-2	63	65	2
WI	47	46	-1	75	99	24
WV	9	8	-1	18	29	11
WY	5	10	5	12	30	18