



Posted by Larry Starkey California Highway Patrol Motorcycle Safety Unit

February 14, 2018

## Effectiveness Study

We are soliciting information from motorcycle safety stakeholders regarding motorcycle training program effectiveness studies. Please respond with any suggestions, ideas, or other relevant information on the subject.

Any information obtained will be forwarded to our program's advisory committee to assist them in determining whether or not they would like to move forward with the previously proposed effectiveness study of California's program.

Thank you in advance for your input.

### NEW JERSEY

NJ requires a state background check only as per regulation. The instructors pay for this. Larry, Ohio does not have mandatory training. So we look at errors (fatalities and crashes) overall and then in two separate groups. There are disparities in the groups we cannot quantify easily; type of motorcycle, miles ridden, and safety gear (except helmet) are just a few.

One area we do look at is our trained riders and what type of error, when trained, and if they are at fault.

We use this info to see if our program/exercises needs to be modified. The next phase will be to trace the training back to origin to see if there is a trend in training delivery that need to be addressed.

~Lori Sanella

### MICHIGAN

Dan Petterson of SMARTER has great list of studies: <http://smarter-usa.org/research/training/>

~Eric Line

**Senior Traffic Safety Analyst, Motorcycle Safety Rep.  
Safety Programs, Bureau of Highway Development  
Michigan Department of Transportation**

### NEVADA

Check in with Glenn Davis - Colorado.

I don't have it in front of me but I seem to remember their comprehensive study tracks trained and

untrained riders in various types of crash scenarios.

~Peter Vander Aa

## OHIO

Larry,

As I remember reading the study many years ago, it found that trained riders had a significantly lower occurrence of crashes than their untrained counterparts, but only for the first six months after training. After six months, the crash experience of both groups was essentially the same. Some (from Irvine) have used this study to say that rider training is only good for six months. I have always preferred to look at this data as confirming that training can reduce the likely hood of a crash for riders who take training for that that first, very vulnerable, six months/500 miles. Below is the Abstract.

Evaluation of California Motorcyclist Safety Program

John Billheimer

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\* Abstract

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\* References

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#### Abstract

The California Motorcyclist Safety Program (CMSP) is a legislatively mandated, statewide program that has trained more than 100,000 motorcyclists in the 10 years since its implementation in July 1987. The program is mandatory for riders under 21 seeking a California motorcycle license. The current evaluation traces motorcycle accident trends before and after the formation of the CMSP, compares accident trends in California with those in the remainder of the United States, and analyzes the riding records of matched pairs of 2,351 trained and untrained Southern California riders. Analyses of statewide accident trends indicate that fatal motorcycle accidents have dropped 69 percent since the introduction of the CMSP, falling from 840 fatal accidents per year in 1986 to 263 in 1995. If accident trends in California had paralleled those in the rest of the United States over this period, the state would have experienced an additional 124 fatalities per year. In the case of novice riders with less than 805 km (500 mi) of prior experience, a matched-pair analysis indicates that trained riders experience fewer than half the accident rates of their untrained counterparts for at least 6 months after training. Beyond 6 months, riding experience begins to have a leveling effect on the differences between the two groups. In the case of riders with more than 805 km (500 mi) of experience prior to training or interviewing, no significant differences in accident rates were detected between the two groups, either before or after riders took the basic training course. There was no evidence that riders electing to enter a safety course voluntarily rode any more safely than their untrained counterparts before taking training.

~Chuck Stiteler

#### MARYLAND

There are so many variables to look at in trying to determine effectiveness of rider training. Those of us who believe there is VALUE to rider training may not be able to verify effectiveness. Remember, most rider training is entry level and focuses on basic skills and basic street strategies. Also, few states have the capability of tracking trained and untrained riders accurately and the police crash reports usually have errors. Insurance companies seem to have important data, but it is not always shared. And finally, not everyone who completes a rider education course and receives a license gets involved in motorcycling immediately. This messes up data. Those who do get involved (limited studies) tend to ride more, have more exposures and seem to have more crashes for a period of time.

~Andy Krajewski

**SMARTER**

Larry,

A main goal of the Skilled Motorcyclist Association -Responsible, Trained and Educated Riders, Inc. is to locate, evaluate and post motorcyclist safety research. Our website is [www.smarter-usa.org](http://www.smarter-usa.org). We have research posted in 12 areas including 8 studies regarding rider training at <http://smarter-usa.org/research/training/>

A common assumption is that trained motorcyclists have fewer accidents. A review of the literature shows that there is no consensus for the validity of this assumption. A review of the literature can be found at <http://smarter-usa.org/wp-content/uploads/2017/06/3.-effectiveness-of-motorcycle-training-and-licensing-2009.pdf>

**~Dan Petterson**

Are you suggesting we stop training?

**~Jim Cannon**

I am not part of a study, but I can tell you that the training I received when I was riding helped to save my skin more than once. I also believe that it minimized my injuries when I did crash. Sometimes there is just no time to react and avoid, but the reaction you can get in, may save your life.

Just my two cents. Sometimes studies look at the wrong metrics instead of the people involved in the study.

**~Melissa Rifts**

**MARYLAND**

I do not think anyone is suggesting stopping rider training. Rider training must have VALUE, but until we can clearly define what is meant by effectiveness and everyone can collect accurate and appropriate data, we could be making assumptions that cannot be supported. Also, if effectiveness is a goal and we can define it, rider education, licensing practices and data collection and analysis may need to be updated

**~Andy Krajewski**

**SMARTER**

Jim, My review of the research suggests to me that we need more and better research regarding the effectiveness of training for reducing the risk of riding. Basic training from all providers seems obviously effective at

helping novice riders acquire basic skills. My thinking leans to the conclusion that physical riding skills are not a major contributing factor regarding the risk of crashing. For me, it is much more likely that astute situational awareness, judgment, and making choices to be safe and responsible are the attributes that contribute the greatest amount to reducing crash risk. My thinking would suggest a need for a different type of training if the goal of training is to reduce the risk of crashing.

p.s. Billheimer presented a summary of his research at the 2001 IMSC and his paper is posted here: <http://smarter-usa.org/research/training/>

~Dan Petterson

## MICHIGAN

The only data we have to provide a correlation to some degree between rider training and crashes, is a system we use to track what riders in Michigan received their motorcycle endorsement by way of taking a training course. We know this because when the individual applies for their CY endorsement, it is noted in their record with the Michigan "DMV" that they took and passed a training course and received a waiver certificate. Problem is, we only retain that data for 10 years.

That said, what we have been able to do is compare the DLN of a motorcyclist involved in a crash to this 10 years of driver record data. From that we know that approximately 80% of operators involved in a crash had not taken training in that 10 year period.

We recognize there are holes in our figure because we can't account for riders who received and endorsement by way of 3rd party testing.

We did though feel it was a pretty significant finding with regard to rider training.

~Chad Teachout

Peter,

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> The study you may be thinking about is the "Billheimer" study, for the California Motorcyclist Safety Program, conducted in the 1990's.

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> Jon W. Billheimer was able to find more than 1,000 matched pairs of riders for both the BRC and ERC. Comparing the experience of matched pairs is the "gold standard." A matched pair would be two almost identical motorcyclists, one having taken the training course, and another who had not taken the training course. The matched pairs were followed for a year to measure "mishaps."

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> To save you time looking up the study, I'll summarize the numbers. The results showed that untrained riders had fewer mishaps than trained riders, even with the numbers adjusted to eliminate incidents that occurred in training.

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			mishaps
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> BRC grads        1,101    38

> untrained               1,114    25

>

> ERC grads        1,156    26

> untrained 1,161 21

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> The numbers indicate that untrained riders had fewer mishaps than trained riders. In other words, neither the BRC nor the ERC helped prevent mishaps over a one year time frame. And since the study was done in California--representing somewhere around 30% of the motorcyclists in the USA--that's a very powerful result, especially since both the BRC and ERC are standardized across all states. If the mishaps during BRC training were included, the results would be even more embarrassing.

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> Other than with a matched pair study, it's difficult to measure the effectiveness of training or licensing by tactics such as counting the fatalities involving training or licensing status, or looking at a fatalities per MC registrations rate. Even a matched pair study would be difficult today, because it's more difficult to find motorcyclists who have not taken training.

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> Perhaps the best way to measure the effects of training/licensing is to just look at the total number of motorcyclist fatalities. Are there any trends where fatalities have gone up or down in relation to numbers of students trained or new riders licensed? You can find the fatality history based on FARS at

<http://motorcycleinstitute.org/docs/data/crash/motorcycle/historical/MC-Crash-Fatalities.html>

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> For tracking training/fatality trends, it's important to use a rate based on exposure, since a registered motorcycle in the garage is not a motorcycle on the road. VMT is a good indicator of exposure. NHTSA's MC VMT is now very reliable. And when comparing motorcycle fatality rates to auto fatality rates, it's important to compare only drivers, not passengers, since passenger vehicles tend to carry more passengers. We'd want to compare the fatalities of motorcycle drivers to passenger vehicle drivers over the same VMT. Several appropriate methodologies are discussed at Nobody Told Me That Motorcycles Are So Dangerous

<http://www.motorcycleinstitute.org/docs/articles/no-body-told-me/USA-no-body-told-me.pdf>

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> Frankly, I advise you to not access the "DangerOmeter" generated by the NMI. It ranks the states by level of danger to motorcyclists, similar to a football handicapping chart. Every state has had at least a doubling of MC fatalities since 1997. Nothing hints that training/licensing has caused a reduction in the fatality numbers. Be forewarned, you might choke on the results for your state. 2016 DangerOmeter

<http://www.motorcycleinstitute.org/docs/data/crash/dangerometer/2016-Dangerometer.pdf>

~David Hough