

Effective Solutions for Improving Motorcyclist Safety

Handout for 2019 Lifesavers Conference

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What is SMARTER? What is our mission? Who is Dan? (ppt 1-3)

The Skilled Motorcyclist Association - Responsible, Trained and Educated Riders Inc. (SMARTER at www.smarter-usa.org) is a 501c3 non-profit education association incorporated in 2007.

SMARTER wants motorcycle riders, motorcyclist safety advocates and policy decision makers to make responsible decisions based on factual knowledge and the conclusions of quality research, therefore, *our mission is to gather, examine, catalogue, share, post and distribute motorcyclist safety factual information and research and to advocate for the use of such knowledge as the basis of decisions.*

As SMARTER CEO Dr. Petterson has a decade of experience searching for, reading, examining and categorizing every piece of research related to motorcyclist safety issues he can locate. He is a rider since 1963, a professional educator, former Motorcycle Safety Foundation (MSF) RiderCoach and RiderCoach Trainer, a contributor to MSF curriculum development and recipient of a couple national awards for contributions to motorcyclist safety.

The ABOUT section at www.smarter-usa.org has more information regarding the SMARTER Board and the associations principles and positions.

Research posted on the SMARTER website (ppt 4 & 5)

Conference attendees interested in motorcyclist safety research are urged to visit the RESEARCH section of the SMARTER website. The research section is divided into twelve categories with several categories having subdivisions. For example, the research section Helmets and Helmet Laws has eight subdivisions. Research is posted with the most recent first. Currently there are nearly 300 research reports available for reading and downloading.

Examining the workshop title: Effective Solutions for Improving Motorcyclist Safety (ppt 6)

Effective is defined as “causing a desired or intended result.” It is highly appropriate that this workshop is titled as being about *motorcyclist* safety (as opposed to motorcycle safety) as our efforts are for people not a machine. Our work is not about motorcycle safety. A rider can keep his/her motorcycle safe by keeping it locked in the garage. Effective motorcyclist safety efforts are complicated and are about people. *Making the Case for Saying Motorcyclist Safety: Personalizing the Tragedy of Motorcycle Traffic Crashes* is on the SMARTER website at: http://smarter-usa.org/wp-content/uploads/2017/05/1_2015_Making_the_case_for_.pdf

Comprehensive motorcyclist safety programs are generally considered to have three goals

1. Reduce the number of crashes
2. Reduce the risk of death or injury in the event of a crash
3. Reduce the severity of injury in the event of a crash

Effective solution must do one or more of these three things.

Why we care? (ppt 7)

According to recent Traffic Safety Facts Research Notes from the National Center for Statistics and Analysis in 2016, U.S. motorcyclist fatalities reached their highest level since 2008.

Motorcycles represented just 3 percent of registered vehicles and only 0.6 percent of Vehicle Miles Traveled (VTM) yet accounted for 17 percent of all vehicle fatalities in 2015.

The deaths and injuries of motorcyclists should be addressed as a public health issue – not a transportation issue. For example, bills to enact or strengthen or to repeal or weaken motorcycle helmet laws should not be referred to transportation committees but to public health committees. As a result, the conversation should not be about helmet laws; the conversation should be about head-protection requirements.

Traditional countermeasures have little or no research based evidence of effectiveness (ppt 8-11)

Our traditional methods to prevent motorcyclist injury and death are simply not working. We are doing the same old stuff over and over again and expecting different results. Too often the only efforts are to train riders, communicate to motorists to be more aware of motorcyclists in the traffic mix and/or to increase the number of licensed riders.

Current *rider training* is focused on teaching the physical skills of riding. The research on the effectiveness of this type of training for preventing crashes is mixed at best and at worst indicates trained riders have an elevated risk of crashing and an increased likelihood of exhibiting risky riding behavior. This conclusion for rider training is consistent with the driver training literature. Given the absence of demonstrated safety benefits of rider training combined with the substantial challenges in successfully implementing state wide programs, rider training should be considered a low priority strategy for reducing crash risk.

Another often implemented countermeasure is *motorist awareness communication campaigns*. There is simply no research and no data to indicate any effectiveness for these types of programs in reducing motorcyclist crash risk. Motorists may remember signs encouraging them to “look twice to save a life” but there is no indication remembering the message changes behavior. These types of programs seemed logical in 1981 when HH Hurt identified the problem of drivers looking but not seeing an approaching motorcyclist. However, such programs have not been a logical countermeasure since the mid 1990’s when we started learning about how our eyes and brain work together to perceive.

Countermeasures to *increase the number of riders who are legally licensed or endorsed* are also

often attempted. We know that unlicensed or unendorsed riders are overrepresented in the crash and fatality data. However, that doesn't mean that the licensing process actually reduces crash risk. The licensing process is skill based - requiring a rider to demonstrate riding skills and/or having successfully completed a training course - and there is no evidence that training reduces crash risk. Crash risk is less related to physical skill than to attitude, judgment, decision making and responsibility so skill based licensing processes do not correspond accurately to the real world predictors of crash risk.

Irresponsible behaviors such as speeding, drinking, not wearing a helmet and not being licensed are overrepresented in the crash data. Speeding and drinking are likely factors that contribute to crashing and not wearing a helmet and not having an endorsement are "ride along" irresponsible behaviors.

Possible fixes for traditional countermeasures (ppt 12-14)

Rider training could be improved by

1. Increasing the focus and time dedicated to hazard perception
2. Designing training programs that offer a progression to on-road riding and developing riding in traffic skills through on-road experience in a range of situations
3. Increasing focus on attitudes to risk-taking, decision making, and responsibility.

If the goal of government sponsored programs is to reduce crash risk and injury in the event of a crash then government sponsored programs should consider increased focus the above noted topics. Various private vendors can teach the physical skills.

Motorist focused programs need more than simple reminders. The old "look left, look right, look left again" and go is antiquated and ineffective. Motorists should be taught a specific system for looking for vulnerable road users – motorcyclists, bicyclists, and pedestrians. We have current research about "looked but failed to see right-of-way violation" caused crashes and two decades of research about how our eyes and mind work together to see – which we are not using to teach motorists to perceive vulnerable road users.

Licensing processes need to move away from a skill focus to a responsibility focus (in conjunction with changes in training). Consideration should be given to graduated licensing systems designed to provide new motorcycle riders with operating experience gradually over time in low-risk environments. Tiered licensing could also be considered. Tiered licensing requires beginner riders to purchase machines with restricted horsepower levels. A combination graduated and tiered might be most effective.

Based on the research available – what does work?

Leave no stone unturned. Like almost every safety program there is no silver bullet in motorcyclist safety. We cannot afford (in lives, injuries and \$) to leave any stone unturned. For example a few years ago my state initiated a campaign encouraging riders to get trained and endorsed. The state spend thousands of dollars making posters and flyers however the posters

and flyers contained pictures of riders wearing all black, half helmets and no gloves. Communication campaigns like this have little evidence of effectiveness to begin with and, additionally, send a message through the pictures that does not model the desired behavior.

We need to be talking about *systems approaches - not single isolated measures*. The motorcyclist safety world seems way behind in this regard. Systems approaches to road safety shift the focus away from a singular focus on road user behavior to modification of the system from multiple perspectives, including roads and roadsides, vehicles, speed and road users.

Countermeasures that work – indications from the research. A review of available research provides support for the following countermeasures (in no specific order):

- A strong government role in setting legislation and policy enforcement
- Strong police enforcement - alcohol, speeding, helmet use
- Improving post-crash response
- Graduated/tiered licensing
- Conspicuity enhancements for rider and machine including standardized unique frontal lighting
- Anti-lock brakes & stability control systems
- Alcohol interlocks
- Black (blind) spot treatments
- Protective gear use – armor & air bag gear

And of course the # 1, considered the only scientifically proven countermeasure for preventing death and injury in the event of a crash, *the use of a helmet*

Helmets, helmet laws and gear work to prevent deaths, injuries and/or reduce the severity of injury in the event of a crash. State motorcycle rights organizations (SMRO's) which are opposed to all-rider head protection requirements often say "helmets don't prevent crashes" as if the only acceptable goal is to prevent crashing. This position ignores the fact that crash rates remain high and the research that indicates traditional countermeasures have little evidence of effectiveness. If we are not reducing the number of crashes, then reducing death and injury and severity of injury in the event of a crash, become even more important goals.

Please feel free to contact SMARTER or Dan if you have any questions or if we can help you with locating research or writing a white paper.

Thank you,
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