

Legislative Budget and Finance Committee

**Motorcyclist Injuries and Fatalities Since the
2003 Repeal of the Mandatory Helmet Law
(2008 Update)**

**Report Presentation by John Rowe, Project Manager
at June 25, 2008, Meeting**

Good Morning. Effective September 4, 2003, Pennsylvania's 1968 mandatory helmet law was repealed for motorcyclists 21 and older who either have been licensed to operate a motorcycle for at least two years or have completed an approved safety program. At the same time, House Resolution 349 directed our Committee to conduct a study of reported motorcycle crashes and associated injuries and fatalities following passage of the Helmet Repeal Law. Specifically, the resolution posed the following three questions:

- How many motorcycle crashes were reported in Pennsylvania during the first two, and the subsequent two, years following repeal of the Helmet Law in 2003?
- How many of the individuals involved in reported motorcycle crashes in Pennsylvania in the first two, and next two, years following repeal of the Helmet Law were wearing helmets?
- What was the increase, if any, in motorcyclist injuries and fatalities specifically due to head trauma when not wearing a helmet?

The resolution required that we respond to these questions within three years of the adoption of the resolution and then issue a second report by July 1,

2008. We released our first report in June 2006, and today's report is the second required by the resolution.

With regard to the first question posed by HR 349-- "How many motorcycle crashes were reported in Pennsylvania in 2006 and 2007?"-- we found that, reported crashes totaled 4,109 in 2007, an increase of 5.5 percent over 2006, and a 44.6 percent increase over the 2000 level. Although the number of crashes involving motorcycles has increased rather dramatically since 2000, the "crash rate," or number of crashes per 10,000 motorcycle registrations, has actually declined by nearly 15 percent. This is because motorcycle registrations have also been increasing rapidly--by nearly 70 percent since 2000.

PennDOT's Crash Reporting System provides information on helmet usage by motorcycle drivers and passengers involved in crashes and, in turn, provides a basis for answering the resolution's second question: "How many of the individuals involved in reported motorcycle crashes in Pennsylvania in 2006 and 2007 were wearing helmets?" Based on the latest PennDOT data, 57.4 percent of the 4,716 motorcyclists involved in a crash in 2007 were wearing a helmet. Over the full four-year period since repeal of the Helmet Law, 55.7 percent of the motorcyclists involved in a reported crash were wearing a helmet.

Addressing the third question, “What was the increase, if any, in motorcyclist injuries and fatalities specifically due to head trauma when not wearing a helmet?” proves to be considerably more difficult.

We found that the various crash, EMS, and hospital data sources that are necessary to specifically track crash victims and determine the relationship between helmet usage and head trauma-related injuries and fatalities are still not linked. In 2006, we reported on a joint project involving the Department of Health, PennDOT, the Health Care Cost Containment Council, and others that was developing such linkages and was expected to be operational by this time.

This project, known as the Crash Outcome Data Evaluation System, or CODES, is designed to electronically track individuals injured or killed due to being involved in motor vehicle crashes. When completed, the CODES project will track data from the scene of the crash through the health care system to determine crash outcome in terms of mortality, injury, severity, and health care costs.

However, because the CODES project is not yet completed, we analyzed the information available from PennDOT and the Pennsylvania Trauma Systems Foundation pertinent to motorcycle crashes and related fatality and injury trends since repeal of the Helmet Law.

According to PennDOT crash records, an all-time high of 225 individuals lost their lives in motorcycle crashes in 2007. Overall, the average annual number of fatalities has increased from 139 in the three years prior to repeal (2000-2002) to 194 in the four years after repeal (2004-2007). However, when the number of registered motorcycles is taken into consideration, the average annual fatality rate for the four years after repeal of the Helmet Law is virtually identical to the average annual fatality rate for the three years prior to repeal. During both periods, the motorcyclist fatality rate was 5.9 fatalities per 10,000 registered motorcycles.

In addition to fatalities, PennDOT also collects information on the severity of injuries that occur in a crash. These injuries are classified as “major,” “moderate,” or “minor” based upon the judgment of police officers responding to the scene of a crash. As defined in the PennDOT system, major injuries are incapacitating injuries that require transport of the patient from the scene.

Following repeal of the Helmet Law, a total of 1,157 motorcyclists involved in crashes sustained a major injury in 2004 and 2005 compared to 904 persons in the two years prior to repeal, an increase of 28.0 percent. This translates to an average annual rate of 18.6 major injuries per 10,000 registered motorcycles in 2001 and 2002, prior to the repeal compared to 19.0 major injuries per 10,000 registered motorcycles in 2004 and 2005 and 16.7 major injuries per 10,000 registered motorcycles in 2006 and 2007.

We supplemented the data available from the PennDOT system with data from Pennsylvania's statewide trauma registry. The statewide trauma registry provides information about various types of motor vehicle crashes, including motorcycles, and isolates the nature of injuries, medical diagnoses, and injury severity scores.

The trauma system data shows that the rate of serious (category 3), severe (category 4), and critical (category 5) head injuries suffered by motorcyclists is on the rise. The overall average annual injury rate for these types of injuries during the four years after repeal was 8.6 head injuries per 10,000 motorcycle registrations compared to the three-year pre-repeal average of 5.9 head injuries per 10,000 motorcycle registrations.

In summary, the key question posed by HR 349 is to what extent is the increase in the numbers of motorcyclist injuries and fatalities specifically due to head trauma caused by motorcyclists not wearing a helmet? Currently available data, including the PennDOT data and the statewide trauma registry, are not conclusive in providing an answer to this question. While the trauma center data indicates that there has been a substantial increase in motorcyclist head injury rates since the helmet law was repealed, the PennDOT data shows that the motorcyclist fatality rates have remained unchanged.

In closing, the LB&FC staff acknowledges the excellent cooperation and assistance we received on this project from PennDOT, the Department of Health, and the Pennsylvania Trauma Systems Foundation. Thank you.