

# **Impact of Motorcycle Helmets and State Laws on Society's Burden: A National Study**

## **Abstract**

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### **OBJECTIVE:**

To analyze a large national database, the National Trauma Data Bank, regarding the contribution of motorcycle helmet use to outcome and the efficacy of state helmet laws.

### **BACKGROUND DATA:**

Motorcycle helmet laws remain controversial, and advocacy groups continue their lobbying efforts to rescind or weaken existing laws. One argument is that helmets contribute to severe injuries and are not associated with survival.

### **METHODS:**

The National Trauma Data Bank identified motorcycle crash patients from 2002 to 2007. Data collected included demographics, markers of injury severity, resource utilization, and outcome.

### **RESULTS:**

Over 2.3 million patients were entered into the National Trauma Data Bank. A total of 76,944 were in motorcycle collisions and had helmet use documented. Mean age, admission Glasgow Coma Scale score, and Injury Severity Score were 36 years, 13.7, and 13.5, respectively. Of the patients 76% wore helmets, and had lower Glasgow coma scale, injury severity score, head abbreviated injury scale, resource utilization, and mortality than unhelmeted patients. There were more uninsured patients who did not wear helmets. Logistic regression analysis indicated that helmet use has a strong protective effect on in-hospital mortality. Helmet use could save approximately \$32.5 million by reducing ICU stay.

### **CONCLUSIONS:**

Unhelmeted motorcycle crash patients suffer more severe brain injuries, consume more resources, and have the worst payor mix. Society bears a large financial burden for these uninsured unhelmeted patients. There is a survival advantage for helmeted patients. All states should have universal motorcycle helmet laws that are aggressively enforced.