

Costs Associated with Helmet Use in Motorcycle Crashes: The Cost of Not Wearing a Helmet

Abstract

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OBJECTIVE:

The relationship between injuries sustained in a motorcycle crash (MCC) by unhelmeted motorcyclists and the multitude of costs associated with those injuries has been a decades-long debate. Results from research addressing injuries and mortality due to helmet use in MCCs demonstrates that unhelmeted motorcyclists experience more severe injuries, resulting in higher health care costs and an increased likelihood of requiring care beyond the hospital in other facilities. However, a link between injury severity and hospital costs has not been established with its spillover effect onto health insurance providers. This retrospective study was designed to delineate the health care and insurance costs of adult trauma patients admitted to a Level 1 trauma center due to an MCC.

METHODS:

The study included adult trauma patients 18 years of age or older admitted to a Level 1 trauma center due to an MCC between January 1, 2005, and December 31, 2010. The center is a receiving hospital for the central third of a Midwestern state, serving a medium-sized city as well as rural and isolated population areas. Patients were stratified into 2 groups based on helmet use. Patient variables included mechanism of injury, clinical characteristics, total units of blood used, intensive care unit (ICU) length of stay (LOS), hospital LOS, days on a ventilator, mortality, number of procedures during hospital stay, primary payor, discharge location, and total hospital charges. A linear regression model was used to predict the charges associated with the severity of injuries.

RESULTS:

A significant difference was found for total hospital charges. The mean total hospital charge for helmeted patients was \$4184.26 compared to \$7383.31 for unhelmeted patients. The prediction model was statistically significant, indicating that not wearing a helmet starts the patient at a cost of \$3199.06. The cost of treatment for patients who wore helmets was \$256.93 for each incremental increase in Injury Severity Score (ISS) compared to \$537.57 for unhelmeted patients. ICU LOS, hospital LOS, and vent days were statistically significant, with durations longer for unhelmeted patients. Helmeted patients also required more units of blood. The total number of procedures for each patient approached significance, with the unhelmeted group requiring more procedures.

CONCLUSIONS:

The goal of the study was to delineate the medical costs associated with helmet use and nonuse in motorcyclists. The results demonstrate that medical costs due to an MCC for an unhelmeted motorcyclist were significantly higher than for a helmeted motorcyclist. These costs were paid by providers of health insurance, mainly Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), Medicaid, and commercial insurance.