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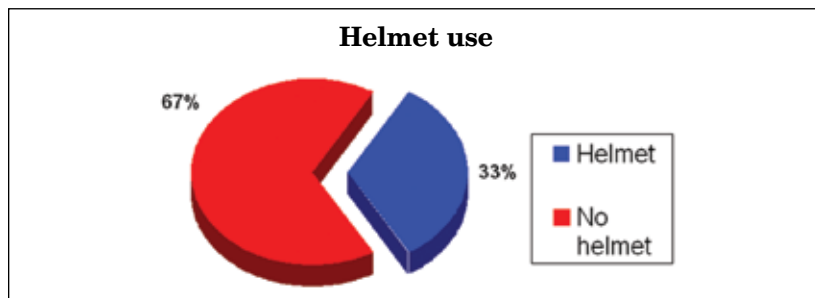
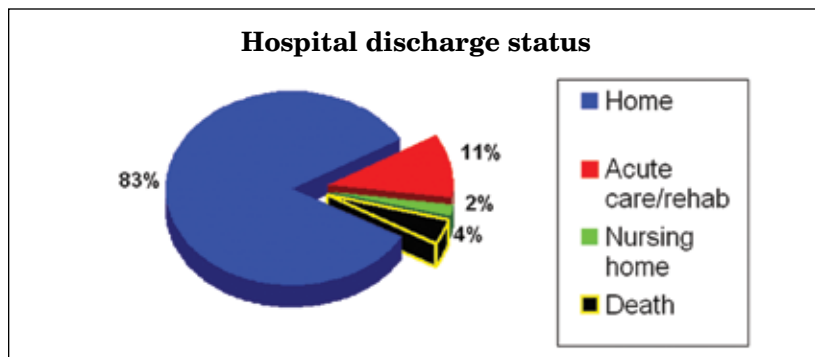
Pedal to the metal

by Richard J. Fantus, MD, FACS

In the October 2007 *Bulletin* (page 69), this column reported on the unusual mechanism of pedestrians being struck by bicyclists. Now that spring is in full swing and the dreary winter weather is merely a bad memory, throngs of bicyclists take to the trails, sidewalks, and, unfortunately, the streets, resulting in the much more frequent occurrence of a bicyclist being injured by a motor vehicle.

The origin of the bicycle was once attributed to Leonardo da Vinci, with a 1490 sketch of a nonsteerable, two-wheeled device. However, like da Vinci's "code," there has been much debate and many accusations that the sketch was a forgery. What we do know is that in 1817, Baron von Drais invented a walking machine with two wheels but no pedals. The velocipede followed this in 1865, when pedals were applied to the front wheel. The metal and wood device was also known as a bone shaker, getting its name from the ride one experienced when going along the cobblestone roads.

With advances in metallurgy, the all-metal high wheel "bicycle" was designed in 1870. However, if one of the wealthy young men who favored this cycle (which cost the average worker the equivalent of six months' pay) hit a stone in the road, with the high center of gravity, he would go over the



top, and thus the phrase "taking a header" was coined.

Bicycle advancements that followed included the high-wheel tricycle for ladies, the high-wheel safety, the hard-tired safety, and in 1898, the pneumatic-tired safety bicycle designed by an inventive Irish veterinarian, Dunlop, who wanted to make the ride more comfortable for his son. Then, after World War I, several manufacturers made bicycles for children, and these 65-pound devices continued into the 1950s. Now there are bicycles of all shapes, sizes, and design.

Despite advances in design, dating back to the early days

of cycling there were head injuries. These injuries likely increased as more and more roads were paved. Fortunately, bicycle clubs recognized this trend, and helmets were first used as far back as 1880. This protective gear was of a crude design, but because there were no cars on the road, it only needed to protect riders from road impact. Over the years, the helmet was refined, and national standards were put into place in 1984. Unfortunately, current helmet use ranges from one extreme to the other, depending on the geographic area and population

demographic, with overall use close to 25 percent.

In order to examine the occurrence of bicyclists injured by motor vehicles in the National Trauma Data Bank® Dataset 7.0, we used the International Classification of Diseases, Ninth Revision, Clinical Modification cause of injury code E813.6, *Motor vehicle traffic accident involving collision with other vehicle injuring pedal cyclist*. In the dataset with this E code, there were 10,680 records with discharge status recorded. Of the victims in these records, 8,867 were discharged to home, 1,158 to acute care/rehabilitation, and 221 to nursing homes; 434 died. These data are depicted in the figure on page 43. Among victims, 84.5 percent were male and on average 28.2 years of age; they had an average length of hospital

stay of 5.1 days and an average injury severity score of 11.0. Of those bicycle riders tested for alcohol, one-fourth tested positive, whereas one-half of those screened for drugs tested positive. Information on helmet use was available in 4,129 of the cases, and approximately one-third (1,381) of the injured riders were wearing a protective helmet.

No one can argue the fact that helmets are protective devices and save lives. Otherwise, why would football players, hockey players, and baseball players wear them? A word to the wise: when getting ready to mount your metallic steed, do not drink, do not take drugs, and wear reflective clothing and reflectors after dark. But most of all, wear a bicycle helmet—especially if you are heading to the streets—so you will be pro-

tected in case you put your pedal to the metal of a motor vehicle.

The full NTDB *Annual Report Version 7.0* is available on the ACS Web site as a PDF and a PowerPoint presentation at <http://www.ntdb.org>.

If you are interested in submitting your trauma center's data, contact Melanie L. Neal, Manager, NTDB, at mneal@facs.org.

Acknowledgment

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