



**Community
&
Hospital
Letter**

Pedestrian Deaths due to Motor Vehicles

More than 4,000 pedestrians are killed by motor vehicles each year in the United States. Someone struck by a large sports utility vehicle (SUV) or large pick-up truck is more than twice as likely to die as someone hit by a car or minivan traveling at the same speed, according to the National Highway Traffic Safety Administration (Accident Analysis and Prevention 36:295, 2003). And, someone struck by a large van is three times as likely to die as a person hit by a car or minivan. The risk of death from a collision with a small SUV or small pick-up truck is about 1.5 times greater than for a car or minivan.

The higher death rates are attributed to the design of larger vehicles (they tend to be geometrically more blunt and stiffer) as well as their increased weight. The probability of serious head and thoracic injury after being struck by a large vehicle is substantially greater than with a car or minivan. As they are lower in profile, cars tend to cause leg injuries, which are less likely to kill than head injuries.

According to the Missouri State Highway Patrol's *2002 Missouri Traffic Safety Compendium*, in 2002, 89 pedestrians were killed and 1,579 injured in traffic accidents. Overall, 0.9% of all vehicle traffic crashes in the state involved a pedestrian and 8.3% of fatal traffic crashes involved a pedestrian. A pedestrian was killed or injured every 4.9 hours throughout the year. While 79% of accidents involving pedestrians occurred in urban areas, 42.2% of deaths occurred in rural portions of the state. Forty-one percent of the fatalities occurred on city streets and 24.4% on interstate highways. Males accounted for 61.9% of pedestrian accident victims. The average age of pedestrians involved in accidents was 31 y, yet for those killed the average age was

43.3 y. Overall, 64% of pedestrians involved in accidents with motor vehicles were struck by a car and 13.4% by a pick-up truck.

The Missouri data for 2002 show the most pedestrian related accidents occurring in April, October, and November, with least occurring in February and December. Thursdays and Fridays were the worst days of the week for pedestrian-motor vehicle accidents, while Sunday had the fewest accidents. Thirty-eight percent of the accidents occurred between 3 PM and 8 PM.

Statewide, the 4 metropolitan area counties ranked in the upper quartile of pedestrian related accidents. Jackson County was 2nd with 301 accidents, Clay was 7th with 37 accidents, Platte was 13th with 14 accidents, and Cass was tied for 20th with 9 accidents.

Epidemiology: Think Globally, Act Locally

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Kansas City proper had 272 such events and ranked only 2nd to St Louis City with had 458 pedestrian-motor vehicle accidents. Locally, the City of Independence ranked 5th with 31 while Lee's Summit was 12th with 13. Data from the Jackson County Medical Examiner's Office for 1997 through 2002, showed 92 pedestrian fatalities in Jackson

County, 12 in Clay County, and 3 in Platte County. Over 95% of these fatalities were caused by being struck by a car.

Potpourri

Good news as people begin to plan their summer vacations, namely, worldwide there were only 55 reported incidents of unprovoked shark attack on humans and only 4 fatalities in 2003 (International Shark Attack File 2003). This was the lowest number of attacks in the last 4 years, although the number of fatalities was similar to those in 2002 and 2001, but down significantly from the 11 in 2000. None of the fatalities occurred in the Western Hemisphere. All total, there were 41 attacks in US territorial waters (35 from the continental US and 6 from the Virgin Islands, Hawaii and the Johnson Atoll). Florida recorded 31 unprovoked attacks. Surfers/windsurfers were the recreational user groups most often subjected to shark attack, followed by swimmers/waders, and divers/snorkelers. The estimated risk of experiencing an attack in US coastal waters is 1 in 11.5 million and the that for being killed is 0 in 264.1 million. As a matter of comparison, since 1948, alligator attacks in the US, although less frequent than shark attacks, have resulted in 13 fatalities compared to only 8 shark attack fatalities. On average each year, during the 1990s, the number of deaths from interactions with other animals was higher: 130 deaths from vehicular collisions with deer; 18 from dog attacks; and 15 from snake bites.

A recent study of 21 North American hospital emergency departments found that only 16% of patients (allergic to nuts, crustaceans, fruit or fish) coming in with severe allergic reactions to food were treated with epinephrine, the gold standard for treating allergic reactions to food (J Allergy Clin Immunol 113:347, 2004). Physicians prescribed antihistamines for 72% of the patients and corticosteroids for 48%, neither of which is indicated for treating an acute allergic reaction. Further only 16% were prescribed self-injectable epinephrine upon discharge and only 12% were advised to visit an allergist or immunologist. The American Academy of Allergy, Asthma and Immunology estimates that 1-2% of the general population is at risk for anaphylaxis from food allergies and insect stings.

Last year the Red Cross announced that it expected to begin testing donated blood for Chagas disease, a parasitic disease caused by *Trypanosoma cruzi*. That announcement was based on the fact that there had been 7 cases of the disease reported in the US and Canada since 1986 that were acquired via blood transfusion. Chagas disease is an ancient affliction in Central and South America as evidenced by the detection of the parasite's DNA in 41% of 283 9,000 year old mummies from coastal Andes mountains of Peru (Proc Nat Acad Sci 101:2034, 2004). *T cruzi* is transmitted to humans by hematophagous kissing

bugs when their parasite containing feces contaminate the conjunctiva of the eye, mucous membranes, abrasions, or bite wounds. Infection is chronic. It is estimated that 16-18 million people are infected with Chagas disease; of those infected, 50,000 will die each year.

On the 5th of February, the US Environmental Protection Agency announced that it estimates about 630,000 of the roughly 4 million babies born each year in this country may be exposed to dangerous levels of mercury in the womb. The primary source of that mercury comes from fish and shellfish eaten by their mothers. This level of exposure is twice what was previously thought and reflects a new understanding that umbilical cord blood has higher mercury concentrations than a mother's blood. The new information comes as the Food and Drug Administration (FDA) is redrafting its guidelines on how much and what kind of seafood women of childbearing years can eat without putting their babies at risk.

The 7-valent pneumococcal conjugate vaccine, PCV7, is in short supply according to the Centers for Disease Control and Prevention (CDC) (MMWR

53:108, 2004). This vaccine is used to immunize children following a 3 primary dose and 1 booster dose schedule. To help stretch the available national supply of PCV7, CDC is recommending that health care providers suspend routine use of the 4th dose. The 3-dose primary series is 90% effective in preventing invasive pneumococcal disease, while the full 4 dose series is 96% effective.

In the US, the existence of the CDC is viewed as an integral component of the nation's public health system that is able to both support state and local health departments as well as to monitor and assist with disease problems in other countries. However, it is truly a unique entity worldwide. Recently, the United Kingdom moved to create a national center for disease control and, on the 10th of February, the European Union (EU) approved the creation of a similar center (Brit Med J 328:426, 2004). The EU center will be located in Sweden and have a relatively small core staff of 30-40 officials from national governments and EU institutions. The center should be operational by early 2005.

The Missouri Department of Health and Senior Services has chosen to proceed with the 2nd phase of the national smallpox vaccination program. While the initial phase of the program was restricted to public health workers and selected groups of health care providers, the 2nd phase targets first responders, eg fire, police, and emergency medical services, as well as anyone who was eligible in the 1st phase. As with the 1st phase, the Kansas City Health Department will coordinate this effort for the west central and northwestern portions of the state. Vaccinations will begin sometime in late spring and continue through early summer.

Chickenpox (varicella) vaccine loses a substantial amount of its effectiveness in the 1st year after it is administered, but overall remains very protective up to 8 years (JAMA 291:851, 2004). Most cases of breakthrough disease are mild. If administered at younger than 15 months of age, the vaccine's effectiveness was lower in the first year after vaccination, but the difference in effectiveness was not statistically significant for subsequent years.

The drug adefovir dipivoxil, which is used to treat cases of chronic hepatitis B, may also help patients infected with anthrax (Proc Natl Acad Sci 10.1073/pnas.0306552101). The drug blocks toxic edema factor, one of the two deadly components of anthrax infection.

In 2002, the Institute of Medicine reported that members of racial and ethnic minorities are given lower quality of health care than whites even when they make as much money and carry the same insurance. Now a study of rectal cancer reports that the disease is diagnosed a later stage in blacks than whites, and the disparity extends to death rates and quality of treatment (Arch Surg 139:151, 2004). Blacks were diagnosed at a younger age and more advanced disease stage than whites, implying a need for more aggressive screening. After adjusting

for stage and other covariates, surgical and radiation treatment also differed along racial lines. The study data suggest that treatment disparities may contribute to differences in outcome among racial/ethnic groups with rectal cancer, and they highlight the need for improving access to state-of-the-art surgical care for minority patients with rectal cancer.

Asia's rapid urbanization, dangerous levels of pollution and poor medical treatment have triggered an alarming increase in asthma, the world's largest respiratory killer. According to the Asia Asthma Development Board's report at the World Asthma Meeting held in mid-February, said that poor treatment standards in the region are leading to some of the highest mortality rates in the world — data from China, for example, suggest that 36.7 of every 100,000 asthma sufferers die as compared to only 5.2 in the US and 1.6 in Canada.

As of the 20th of February, the influenza A H5N1 epizootic in Asia had claimed 31 confirmed human infections with 22 deaths (case fatality rate of 71%). All the confirmed human cases to date are from Thailand and Vietnam, although suspected cases are under investigation in Cambodia and China. The virus also has killed a clouded leopard, *Neofelis nebulosa*, at a zoo near Bangkok and at least two domestic cats in Thailand (WHO Avian Influenza A (H5N1) – Update 28, 2/20/04). Up to now, domestic cats have not been considered susceptible to disease caused by natural infection with

influenza viruses. Some older studies reported experimental infection of domestic cats with influenza A under laboratory conditions. Although infection occurred (virus was recovered from the respiratory tract), all of the cats remained healthy. None developed typical symptoms of influenza, including fever, nasal discharge, coughing or sneezing. These findings are important in that they strongly suggest that, should additional cats become infected with H5N1, they would not shed large quantities of the virus. There also is a report of natural influenza A virus

infection killing a tiger in China (Chinese J Vet Sci 23:107, 2003). Of 3 domestic cats inoculated intravenously with this virus, 2 died with symptomology consistent with that observed in the tiger.

West Nile virus (WNV) has been active in Florida, Louisiana, and Texas thus far in 2004. Later this spring, the Kansas City Health Department will larvicide public water sources in order to control mosquito populations, as well as conduct surveillance for human infection. However, it will not be monitoring or testing dead birds. WNV is firmly established in the environment and must be considered an endemic disease that will represent a potential threat to human health every year.

The US Department of Agriculture announced, on the 24th of November, that the rate of *Salmonella* contamination in raw meat

and poultry dropped by 66% over the past 6 years and by 16% compared with 2002. Of random meat and poultry samples tested, only 3.6% were positive for *Salmonella*. Reductions also have occurred in the presence of *Escherichia coli* O157:H7 in ground beef and *Listeria monocytogenes* in ready-to-eat meat and poultry products.



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