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Cost of Injury -- United States: A Report to Congress, 1989

In 1987, Congress directed the National Highway Traffic Safety Administration and CDC to evaluate the cost of injury in the United States in terms of the medical resources used for the care, treatment, and rehabilitation of injured persons; life years lost* due to short- and long-term disability and premature death; and pain and suffering of the injured persons, their families, and their friends. This article summarizes the report (Cost of Injury in the United States) submitted to Congress in October 1989 (1).

The report estimates the lifetime economic cost for injuries that occurred in the United States in 1985. This estimate reflects the incidence of injury by patient age, sex, and major cause categories, as well as indicators for injury severity, i.e., death, hospitalization, medical attention outside the hospital, and restricted activity for greater than or equal to 1 day. The lifetime economic cost reflects the direct cost for medical treatment and rehabilitation of patients injured in 1985 and the indirect costs associated with loss of earnings due to short- and long-term disability and premature death.

Estimates of incidence and lifetime cost were based in part on data from CDC's National Center for Health Statistics, including the National Mortality Detail File, National Health Interview Survey, National Hospital Discharge Survey, National Medical Care Utilization and Expenditure Survey, and National Nursing Home Survey. Other data sources included the National Council on Compensation Insurance Detailed Claim Information Database, Maryland and California statewide hospital discharge abstract data, and information from smaller studies.

In 1985, approximately 57 million persons were injured in the United States at a lifetime cost to the nation of \$157.6 billion. Adults aged 25-44 years accounted for the greatest number of injuries and for 42% of the total cost. Injury to persons aged 15-24 years ranked second, accounting for 25% of the total cost (Table 1).

The greatest lifetime economic losses (in billions of dollars) were caused by motor vehicles (\$48.7); falls (\$37.3); firearms (\$14.4); poisonings (\$8.5); fire and burns (\$3.8); and drownings and near drownings (\$2.5) (Table 2). Injuries from all other causes (e.g., cutting and piercing instruments, railway and

air transportation crashes, suffocations, and trauma from blunt objects) resulted in \$42.4 billion in lifetime costs (Table 2).

As a result of injuries that occurred in 1985, 155,665 persons died (142,568 deaths in 1985 and 13,097 deaths in subsequent years). An additional 2.3 million Americans were hospitalized for their injuries, while 54.4 million were treated outside the hospital for injuries or required restricted activity for greater than or equal to 1 day.

Direct personal medical and nonmedical costs of care for injured persons were \$44.8 billion, of which \$24.5 billion (55%) was for hospital care, including rehabilitation and the cost of professional services provided to hospitalized patients. Physician visits outside of hospitals (\$6.5 billion) and nursing-home care (\$2.5 billion) were the second and third highest direct cost expenditures.

In 1985, morbidity losses included 5.1 million productive life years**, or 9 life years lost per 100 injured persons. These losses represented a cost of \$64.9 billion, or \$1145 per injured person. Injury fatalities resulted in losses of 5.3 million life years and \$47.9 billion.

Private sources (e.g., private health insurance, workers' compensation, uninsured care) paid approximately 72% of the direct cost; public sources (federal, state, and local governments) accounted for 28%. Medicare and other public sources paid 72% of the direct costs for injured persons aged greater than or equal to 65 years. For injured persons aged less than 65 years, however, private health insurance and other private funds paid 85% of the direct costs. Reported by: DP Rice, PhD, SR Kaufman, PhD, E McLoughlin, ScD, W Max, PhD, Institute for Health and Aging, Univ of California, San Francisco. EJ MacKenzie, PhD, GS Smith, PhD, DS Salkever, PhD, GV deLissovoy, PhD, AS Jones, MPH, Injury Prevention Center, Johns Hopkins Univ, Baltimore, Maryland. TR Miller, PhD, Urban Institute, Washington, DC. LS Robertson, PhD, Nanlee Research, Branford, Connecticut. BM Faigin, Office of Regulatory Analysis, National Highway Traffic Safety Administration, US Department of Transportation. Div of Injury Epidemiology and Control, Center for Environmental Health and Injury Control, CDC.

Editorial Note

Editorial Note: In 1985 and 1988, the National Academy of Sciences (NAS) recommended as a high priority research on the prevention and treatment of injuries and the rehabilitation of injured persons (2,3). Although injury is the fourth leading cause of death in the United States, productivity losses are greater from injury than from the three other leading causes of death--heart disease, stroke, and cancer. Injury causes 36 life years lost per death compared with 12 years from heart disease and stroke combined and 16 years from cancer.

The large number of premature deaths and disabilities due to injury and the accompanying high economic cost, including public-sector expenditures, emphasize the need to reduce the burden of injury in the United States. Implementation of known injury-control interventions can substantially reduce the incidence, severity, and accompanying cost of injury.

The report to Congress provides recommendations in four major areas: injury prevention and control, methods for collecting injury data, types of data needed, and treatment and rehabilitation. Data needs include 1) a national coordinated program of injury surveillance for rapid identification and control of specific injuries; 2) longitudinal studies to determine the short- and long-term consequences of injuries for individuals, families, friends, communities, and society; 3) improved and more timely data on cost of injury; and 4) reliable data on occupational injuries (4).

Single copies of Cost of Injury in the United States are available from the Division of Injury Epidemiology and Control, Center for Environmental Health and Injury Control, CDC, Mailstop F-36, Atlanta, GA 30333.

References

1. Rice DP, MacKenzie EJ, Jones AS, et al. Cost of injury in the United States: a report to Congress. San Francisco: Institute for Health and Aging, University of California; Injury Prevention Center, Johns Hopkins University, 1989.
2. Committee on Trauma Research, Commission on Life Sciences, National Research Council, Institute of Medicine. Injury in America: a continuing public health problem. Washington, DC: National Academy Press, 1985.
3. Committee to Review the Status and Progress of the Injury Control Program at the Centers for Disease Control. Injury control. Washington, DC: National Academy Press, 1988.
4. National Research Council. Counting injuries and illnesses in the workplace: proposals for better systems. Washington, DC: National Academy Press, 1987.

*Based on number of years of life expectancy remaining at death (1).

**Derived from the number of years lost from work by employed persons and from performance of housekeeping services by those who perform them as their major activity.

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