Poison Control Centers save Money and Lives

Poisoning in the United States

Each year, approximately 14,134 people die from unintentional or undetermined intent poisonings,[8] and 68,970 more are hospital-admitted.[9] In addition, nearly 2.5 million unintentional poisoning patients are treated and released in emergency departments.[10] Unintentional poisonings are the 4th leading cause of all hospital-admitted unintentional injury and the 15th leading cause of emergency department visits for unintentional injury.

In 2002, 94 children aged 14 and younger died from unintentional poisoning. More than 1.4 million children younger than age 5 were poisoned. Of these children, more than a million (or 86 percent) were treated by poison control centers over the phone (American Association of Poison Control Centers, 2002). Thanks to the centers' quick response and high level of expertise, most of the children recovered fully. In addition, billions of dollars did not have to be spent on medical treatment.

Each year, more than 2.7 million Americans are poisoned. Almost half (52 percent) of these poisonings occur in children younger than age 5. The lifetime medical cost of all poisonings for this age group totaled $1.7 billion. The lifetime medical, future earnings and quality of life costs for children aged 5 and younger were $15.4 billion.
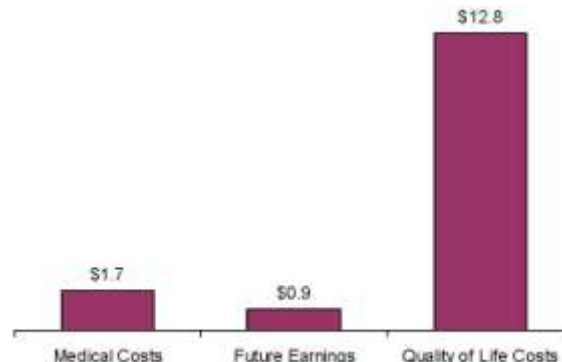

Figure 10. Lifetime Costs of Poisonings Ages 5 and Younger:: $15.4 Billion (2004 dollars)

Costs Saved

• The average call to a poison control center costs $43 and saves $290 in medical costs (Children's Safety Network Economics and Data Resource Center, 2005).

• Poison control centers are cost-efficient and economical because more than 70 percent of their cases are resolved over the telephone while the patient remains at home. This avoids unnecessary emergency room visits, ambulance use, hospital admissions, and treatment delays.

• If poison control centers were not available, 600,000 additional poisoning victims would receive medical treatment annually at a much higher cost.

The Need for Poison Control Centers

• Physicians, hospitals, public health departments, and the public depend on poison control centers to

provide state-of-the-art emergency advice and treatment information 24-hours-a-day, 365 days of the year.

• Poison Control Centers provide essential services to help coordinate an effective response for victims in the event of a public health emergency regarding chemicals or toxic substances such as domestic terrorism.

• Poison Control Centers provide education and outreach efforts to address poisoning incidence.

• Poison Control Centers are the only facilities that have the expertise to monitor the hundreds of thousands of consumer products by which people are unintentionally poisoned every day and to provide the proper advice once a poisoning occurs.

Status of Poison Control Centers

• Only half of the families with children in the United States have a poison control center's telephone number available.

• As important, but generally non-revenue generating, public health resources poison control centers rely upon a variety of sources for operating funds: Federal grants, States (including State administered Federal grants), Counties, host institutions (e.g. hospitals and universities), and other sources (e.g. Children's Miracle Network, community service organizations, corporations, events, foundations, United Way, Health Insurers/HMOs, and individuals).

• Despite their clinical contributions and their recognized value as a source of cost savings to the medical system, many poison control centers remain financially unstable and at risk of closure. Approximately half of the 52 centers that meet national standards are in financial jeopardy and heavily dependent on Counties, States, Federal grants, host institutions, and other sources for essential operating funds.

• Most poison control centers are affiliated with a host institution. However, in recent years, poison control centers have experienced significant reductions or total elimination of funding from host institutions. For these centers the loss of host/institutional funding has been compounded by a reduction or loss of State and/or Country funds.

• Since 1999, Federal grant funds have been utilized to stabilize poison control centers and ensure their continued operation in the face of an uncertain economic environment and significant loss of funding from traditional funding sources.

(Note: All costs are in 2004 dollars and were computed using the methodology outlined by Miller, Romano, and Spicer [2000]. Numbers may not correspond to totals due to rounding.)

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Definitions

A. Data Types

- **Fatal:** Mortality data by multiple causes of death include all deaths occurring within the United States. Deaths of U.S. citizens and deaths of members of the Armed Forces occurring outside the United States are not included. Data are obtained from certificates filed for deaths occurring in each State.

- **Admitted:** Hospital patient discharges from short-stay noninstitutional hospitals and general and children's general hospitals regardless of length of stay located within the 50 States and the District of Columbia. Military and U.S. Department of Veteran Affairs hospitals are not included.

- **Nonadmitted:** Information on the health of the civilian, noninstitutionalized population of the United States compiled through the National Health Interview Survey that was designed to obtain accurate and current statistical information on the amount, distribution, and effects of illness and disability and the services rendered for or because of such conditions. Persons who did NOT report going to the hospital for their condition were included; counts related to poisonings were obtained from Toxic Exposure Surveillance System data maintained by the American Association of Poison Control Centers.

B. Incidence-Based versus Prevalence-Based Costs

- **Incidence-based costs** are the present value of the lifetime costs that may result from injuries that occur during a single year. For example, the incidence-based cost of head injuries in 2001 estimates total lifetime costs associated with all head injuries that occurred in 2001. Incidence-based costs measure the savings that prevention can yield.

- **Prevalence-based costs** measure all injury-related expenses during 1 year, regardless of when the injury occurred. For example, the prevalence-based cost of head injuries in 2001 measures the total health care spending on head injuries during 2001, including spending on victims injured many years earlier. Prevalence-based cost data are needed to project health care spending and evaluate cost controls.

C. Resource versus Productivity Costs

Resource costs are broken down into **medical costs** and **other resource costs**. **Productivity costs** include immediate and future work losses due to a childhood injury.

- **Medical costs** include emergency medical services, physician, hospital, rehabilitation, prescription drugs, and related treatment costs, as well as ancillary costs (i.e., crutches, physical therapy, etc.), funeral/coroner expenses for fatalities, and the administrative costs of processing medical payments to providers. For violence, this category also includes mental health treatment costs.
- **Other resource costs** include police and fire department costs, plus the travel delay for noninjured travelers resulting from transportation crashes and the injuries caused by the crashes. For violence, this category also includes social services and victim assistance costs. It excludes mental health services costs. Fact sheets that do not explicitly show other resource costs include paramedic, ambulance, and helicopter transport costs in medical costs.
- **Future earnings** include victims' lost wages and the value of lost household work, fringe benefits, and the administrative costs of processing compensation for lost earnings through litigation, insurance, or public welfare programs such as food stamps and Supplemental Security Income. Work losses by family and friends who care for injured children also are included. For violence, this category also includes earnings lost by family and friends caring for the injured and the value of school missed when children are temporarily disabled.
- **Quality of Life** places a dollar value on the pain, suffering, and lost quality of life those children and their families experience due to an injury.

Calculation Methods

To value **quality of life lost to fatal injuries**, we start by estimating the value people place on survival. We measure the value of survival from the amounts people spend (in dollars or time) for safety. Fifty technically sound "willingness to pay" studies have estimated this value (Miller, 1990). They examine such things as markets for auto safety features and smoke detectors, extra wages paid to get workers to take risky jobs, and speed choice when driving.

The value of survival is essentially the combined value of future earnings and quality of life. By subtracting the lost future earnings, we get the quality of life costs per death.[131]

To value **quality of life lost to nonfatal injury,** we use two methods. In the first, physicians rate the typical effects of different injuries on six dimensions of functioning: mobility, cognitive, bending and grasping, pain, sensory, and cosmetic. We also collect data about a seventh dimension: the ability to work. Using surveys about the value people place on different dimensions of functioning, we combine the data to obtain a percentage of the value of survival lost to each injury.

Again, we subtract lost future earnings to get the quality of life costs per injury.

The second method uses jury verdicts to value victims' pain and suffering. This method is used in valuing the quality of life lost to violent crime and to drunk-driving crashes without physical injury. It provides our only estimate of the losses due to rape and to fear.

Estimates from the two methods of valuing quality of life lost to nonfatal injury differ by less than 10 percent.

Since 1989, the U.S. Office of Management and Budget has required all Federal regulatory benefit-cost analyses to include quality of life costs if they place a dollar value on saving lives.

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[8] These fatal injury incidence estimates are based upon data from the National Center for Health Statistics (NCHS), Multiple Cause-of-Death File 1999-2002.

[9] Denotes that nonfatal injury incidence estimates for admitted cases were based upon 2000 Nationwide Inpatient Sample data produced by the Healthcare Cost and Utilization Project.

[10] Nonfatal injury incidence estimates for nonadmitted cases were based upon data from the National Ambulatory Medical Care Survey (NAMCS, 1995-1996), the National Hospital Ambulatory Medical Care Survey (NHAMCS, 1992-1996), and the National Health Interview Survey (NHIS, 1987-1996). All three of these datasets were produced by NCHS.

[13] Estimating quality-adjusted life years (QALYs) is one way to value the good health lost to an individual who suffers a health problem, is disabled, or dies prematurely. A QALY is a measure based on individual preferences for states of health that assigns a value of "1" to a year of perfect health and "0" to death. QALY losses are affected by the duration and severity of a health problem. To estimate QALY losses, years of potential life lost to a fatal injury are added to the number of years spent with an injury-related disability multiplied by a "weighting factor" that represents the severity of the disability. Such weighting factors can be estimated by using rating scales or by using tradeoff methods that elicit individual preferences between death and various health states.

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