

**Injury - Childhood Injuries Ages 0-19**  
Summary of Methods and Data for Estimate of Costs of Illness

- |  |                 |
|--|-----------------|
| 1. Estimated Total Economic Cost   | \$ 69.6 billion |
| Estimated Direct Cost  | \$ 19.2 billion |
| Estimated Indirect Cost  | \$ 50.3 billion |
| Estimated Quality Adjusted Life Years (QALYs) lost   | 3.33 million    |
| Reference Year   | 1995            |
| IC Providing the Estimate  | NICHD           |
|  |                 |
| Direct Costs Include: Other related nonhealth costs  | Yes             |
| Indirect Costs Include:  |                 |
| Mortality costs  | Yes             |
| Morbidity costs: Lost workdays of the patient  | Yes             |
| Morbidity costs: Reduced productivity of the patient   | Yes             |
| Lost earnings of unpaid care givers  | No              |
| Other related nonhealth costs  | No              |
| Interest Rate Used to Discount Out-Year Costs  | 2.5%            |
| 2. Category code(s) from the International Classification of Diseases, 9th Revision, Clinical Modification, (ICD-9-CM) for all diseases whose costs are included in this estimate: <u>800(6)-999</u> . |                 |
| 3. Estimate Includes Costs:  |                 |
| Of related conditions beyond primary, strictly coded ICD-9-CM category   | No              |
| Attributable to the subject disease as a secondary diagnosis   | No              |
| Of conditions for which the subject disease is an underlying cause   | No              |
| 4. Population Base for Cost Estimate (Total U.S. pop or other)   | < 20 years old  |
| 5. Annual (prevalence model) or Lifetime (incidence model) Cost:   | Lifetime        |
| 6. Perspective of Cost Estimate (Total society, Federal budget, or Other)  | Total Society   |
| 7. Approach to Estimation of Indirect Costs  | Human Capital   |
| 8. <u>Source of Cost Estimate:</u>   |                 |

Dr. Ted Miller, Children's Safety Network Economics and Insurance Resource Center, National Public Services Research Institute, Landover, Maryland, 1996, (301) 731-9891.

9. Other Indicators of Burden of Disease:

In 1994, accidents and injuries remained the leading cause of death among children ages 1-24. *CDC, MVSR, Oct 23, 1995; Vol 45(42):26*

10. Commentary:

Miller recently updated the 1989, *Cost of Injury in the U.S., Report to Congress* by Rice and colleagues. Accidents that lead to childhood injuries represent an estimated lifetime cost of \$69 billion in 1995 dollars. Miller reexamined direct costs of childhood injury associated with both, nonfatal and fatal accidents by injury mechanism and intent, then aggregated their costs.

Different costs accrued based on gender, age, type of injury, and outcome were considered in the estimated total economic costs of childhood injuries. For example, the relative distribution of fatalities by five-year age group was used to split out costs for Rice's 15-24 age group where Rice's data were used and for poisoning (e.g. fall costs for ages 10-14 equaled fall costs for ages 5-14 multiplied by the percentage of fall fatalities of children ages 10 -14 among fall fatalities of the 5-14 year age group).

The direct cost of accidents among children ages 0-19, \$89 billion, includes costs associated with emergency transportation, medical, hospital, rehabilitation, prescription, home modification, and related treatment/ancillary costs, as well as insurance administrative costs for medical claims compensation. Indirect costs, \$19 billion were computed at a 2.5% discount rate. At a discount rate of 2.5%, the *human capital approach*, was used to estimate the lifetime cost of injury among persons ages 0-19. The human capital approach did not account for human suffering and pain, and reduced quality of life. Nor did the total cost include the struggle to acquire the personal, therapeutic, legal and financial aid that enables injured persons to survive and create meaningful lives in terms of work, love, mutual support, recreation and personal growth.

Total QALYs associated with all injuries for children ages 0-19 is 3.33 million. QALYs represent millions of quality-adjusted life-years discounted a 2.5% discount rate. Following Miller, the QALYs can be monetized at a cost of \$82,000 per QALY. To avoid double-counting, this price is net of the productive component of the QALYs. The QALY approach follows the principles established by the Panel on Cost-Effectiveness in Health and Medicine convened by the U.S. Department of Health and Human Services (Gold et. Al. 1996). Monetization of the QALYs uses a value derived from 48 reasonably sound "willingness-to-pay" studies (Miller 1990).