

METHODS

IMPAIRED DRIVING

Incidence: Police-reported counts of impaired-driving crashes were obtained from state departments of transportation, highway safety, or highway patrol. Police under-reporting of alcohol-involvement in crashes is well documented. We adjusted police reported counts of impaired-driving crashes for under-reporting according to the methods in Blincoe (1996). Deaths, injuries, and crashes were distributed by blood alcohol content (BAC) using the methods in Miller, Lestina, and Spicer (1998).

Costs: Cost per fatality, injury, and crash were calculated by the methods in Miller, Lestina, and Spicer (1998). Crash costs per mile driven at various BALs is developed using methods in Miller, Spicer, and Levy (1998). Auto insurance losses attributable to impaired-driving were the product of total auto insurance losses from Sweeney (1997) and the percentage of the state's total motor-vehicle crash costs attributable to alcohol. Costs per drink were obtained by dividing the state's impaired-driving costs by its alcohol consumption. (We analyzed a drink containing one-half ounce of alcohol). All costs are adjusted to reflect state prices and wages with price adjusters from ACCRA (1994) and the Council of Economic Advisors (1998).

Prevention Savings: Miller and Levy (1998), Miller, Galbraith, and Lawrence (1998), Miller, Lestina, and Spicer (1998), and Levy and Miller (1995) provided the basis for estimating the savings from alcohol prevention strategies. They analyze average national costs and impacts. We made state-specific price adjustments. Because impaired-driving rates differ by state, the benefits from prevention will also vary. To account for these differences, we adjusted the benefits by each state's per capita alcohol consumption and miles driven per licensed driver.

DEFINITIONS OF COSTS

Medically Related Costs including hospital, physician, rehabilitation, prescription, and related payments. Also included are coroner and premature burial costs for fatalities, and the costs of medically-related loss compensation through insurance and the courts. Loss compensation omits time spent on the loss recovery process.

Other Monetary Costs include:

Work Loss (Lost Productivity) includes wages, fringe benefits, and household work lost by the injured, as well as the costs of productivity loss compensation. This category also includes productivity loss by those stuck in crash-related traffic jams and by co-workers and supervisors recruiting and training replacements for disabled workers, investigating work-related crashes, and repairing damaged company vehicles. Excluded for lack of data are earnings lost by family and friends caring for the injured and the value of schoolwork lost.

Public Services costs including police, fire, ambulance, and helicopter services.

Property Damage is the cost to repair or replace damaged vehicles and property including the costs of damage compensation.

Quality of Life places a dollar value on the pain, suffering, and lost quality of life that victims and their families experience due to a death or injury.

To value the 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 while 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.

To value the quality of life lost to nonfatal injury, Miller uses 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.

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.

SOURCES

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