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MEDICAL CARE COSTS OF INJURY AND VIOLENCE, AND THE SAVINGS ACHIEVABLE THROUGH PREVENTION

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Consequences of Social Behavior on Health Care

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Oral Testimony of Ted Miller Before the Senate Finance Committee, 10/19/93

My testimony covers four topics: injury's share of medical spending, the medical costs of violence, costs of injuries to employers, and the medical savings achievable through injury prevention.

Injury's Share of Medical Care Spending. You may know that injury is the leading cause of death from age 1 to 45 and the third leading cause overall. Injury also is the largest cause of medical spending from ages 5 to 50. Among the very young and very old, it ranks second.

In 1992, medical spending was $522 billion. That excludes nursing home care and insurance claims processing costs. Injury caused $70 billion of the spending. That's 13%. It's second only to heart disease at $80 billion.

Medical Costs of Violence. Gun violence is a major killer. We lack a good count of nonfatal firearm injuries. I ran some estimates for this hearing. In 1992, medical spending on firearm death and injury was roughly $1.9 to $2.7 billion. Wage losses were perhaps $20 to $25 billion more and quality of life losses three times that. By comparison, civilian firearm sales were about $2.1 billion. Ammunition sales to the public were perhaps $1 billion. Taxing arms and ammunition sufficiently to recoup their societal costs could raise considerable revenue. Recent research suggests that if taxation reduced gun sales, it also would reduce the violence.

In 1992, all violence cost at least $14 billion. That's 20% of injury costs. Of this amount, suicides and hospitalized suicide attempts caused $3 billion. We lack data on nonhospitalized suicide atempts. Six crimes -- murder, rape, robbery, assault, drunk driving, and arson -- cost $10.5 billion more. These costs omit child abuse. They also undercount rape and domestic assault costs.

Violence also creates large mental health care costs. Crimes in 1991 caused $3.5 to 4 billion in mental health care costs in 1991. In addition, treatment of adults who were abused as children cost $4 to 6 billion. We estimate annual unmet adult mental health care needs due to crime at perhaps $5 to $6 billion.

I think we need to raise alcohol taxes. I view drunk driving as a violent crime -- it's an illegal act, it maims, and it kills. This crime causes almost $7 billion dollars in medical care costs annually. That 's more than 1% of medical spending. The $7 billion includes only crashes caused by alcohol.

Alarmingly, a drunk driver is behind the wheel for one in every 100 miles driven in this country. Every mile driven drunk costs the rest of society $2.55.

Alcohol is implicated as a facilitator in virtually every kind of injury and in many diseases. Including these societal costs, every drink imposes a cost of $.63 on people other than the drinker. I consider that the optimal tax on alcohol. It equates to $1.38 per ounce. That's $85 billion in annual revenue. Taxing alcohol also would reduce health care costs by deterring drinking.

Costs to Employers. Injury is a knife in industry's side. It causes 19 percent of employer health care bills ($35 of $184 billion). It also causes 48 percent of employers' sick leave and disability payments. Overall, injuries cost employers about $1,000 per employee or $119 billion/year.

Medical Cost Savings of Injury Prevention. And injuries are largely preventable. Preventing them can save money while saving lives. Every dollar spent on child safety seats for children saves $2 in medical spending. Every dollar spent on bicycle helmets for children age 4 to 15 saves $2 in medical spending. Every dollar spent enforcing state laws against serving

Medical Care Costs of Injury and Violence, and the Savings Achievable Through Prevention Statement of Ted R. Miller, Ph.D., at Senate Finance Committee Hearing on Consequences of Social Behavior on Health Care, October 19, 1993

I am an internationally recognized safety economist. I direct the Children's Safety Network Economics and Insurance Resource Center and the Safety and Health Policy Program at the National Public Services Research Institute (NPSRI). NPSRI and its parent organization, the Pacific Institute for Research and Evaluation, are nonprofit organizations that specialize in research and development on substance abuse, injury, and violence issues. The Children's Safety Network is a group of six resource centers funded by the Maternal and Child Health Bureau in DHHS. The Network fosters development and inclusion of childhood injury and violence prevention strategies into organizations, programs, and services targeting maternal and child health or safety. Our Center, which includes the National SAFE KIDS Campaign, works to forge child safety partnerships with third party payers. It also informs the public and decisionmakers about safety economics.

My testimony today represents solely my own views and estimates. It is not the official position of my funders or my employer.

My testimony is divided into four sections. They describe:

- Injury's share of medical care spending
- The medical and societal costs of violence and related social problems
- The costs of injuries to employers
- The medical cost savings of selected injury prevention efforts.

All dollar estimates in my testimony are stated in November 1992 dollars.

Injury's Share of Medical Care Spending. Injury is widely known to be the leading cause of death at every age from 1 to 45 (Rice et al., 1989). It also is the largest contributor to health care costs from ages 5 to 50 and the second largest contributor among the very young and very old. (See Exhibit 1.) That conclusion comes from our ongoing analysis of recently released 1987 National Medical Expenditure Survey (NMES) data. Our analysis includes spending on hospital inpatient, outpatient, and emergency room care, physician and allied health professional services, prescriptions, emergency transport, and medical supplies and equipment, including eyeglasses. It excludes live birth, dental, nursing home, and insurance claims processing costs.

If the 1987 spending pattern is accurate, injuries caused $70 billion of the $522 billion in 1992 medical spending for services other than nursing home care. That was more than 13 percent. The injury costs included spending on late effects of back and joint injuries that happened years earlier.

Injury was second only to cardiovascular disease at $80 billion. It far exceeded cancer and genitourinary diseases (including kidney disease and sexually transmitted diseases) at $50 billion each. Two things may have changed the pattern of medical spending between 1987 and 1992 -- AIDS and improving medical technology which causes illnesses and injuries that once were quickly fatal to become costly and protracted but survivable episodes.

In 1992, medical spending on injury treatment averaged $288 per American (based on the 1987 distribution of costs). As Exhibit 2 shows, the highest per capita spending largely was among those aged 70 and over. On a percentage basis, injury spending is lower for the

intoxicated patrons saves $10 in medical spending. Every dollar spent painting centerlines and edgelines on roads saves $3 in medical spending. The list goes on.

In violence, we have many promising approaches, but few proven ones. Proven approaches include home visits to prevent child abuse, gun control, and getting guns out of homes.

In Conclusion. Violence and unintentional injury cost $70 billion last year. These costs are often unnecessary; injuries can be prevented cost-effectively. Injury control can and should play a leading role in health care cost containment. That requires more funds for prevention and for research to develop proven interventions.

Alcohol and firearms are major health care cost factors. Fully taxing to recover their societal costs could raise more than $100 billion annually. Taxation can reduce health care costs by deterring drinking and violence while helping to finance health care.

elderly only because other disease costs fall even more heavily on them.

Importantly, medical care costs are not the only public costs imposed by injury. Annually, almost 800,000 people are injured so severely that they permanently lose some capacity to work (Miller, Pindus, et al., 1994). That creates Social Security disability costs and home health services costs. It disrupts workplaces and drains society of productive labor.

Costs of Violence. Violence caused almost one fifth of injury medical care costs ($13.5 billion) in 1992. Suicides and hospitalized suicide attempts caused about $3 billion (Miller et al., 1994). Interpersonal violence cost $10.5 billion more (Miller, Cohen, and Rossman, 1993; Miller and Blincoe, 1994). Our interpersonal violence costs cover six crimes: murder, rape, robbery, assault, drunk driving, and arson. They are quite conservative. They exclude child abuse, other violence against children less than 12 years of age, and crimes, primarily rapes and domestic assaults, that victims choose not to self-report in the National Crime Survey. In early 1994, through a grant from the National Institute of Justice, we will be able to provide costs of these excluded incidents.

I view drunk driving as a violent crime because it is an illegal act that maims and kills. This crime alone causes almost $7 billion dollars in medical care costs annually. That figure excludes the expected crash costs if the drivers had been sober. It represents crash costs attributable to alcohol (Levy and Miller, 1993).

Alarmingly, a drunk driver is behind the wheel for one in every 100 miles driven in this country. Every mile driven drunk costs the rest of society [people other than the drunk driver] $2.55. The costs include medical costs, property damage, emergency services, legal and administrative costs, employer costs, and wages and quality of life lost by innocent victims and their families. Twenty percent of auto insurance payments result from drunk driving. Again, these are just the costs attributable to alcohol.

We incorporated our drunk driving costs into existing estimates of alcohol costs (Rice et al., 1990; Manning et al, 1991). Alcohol abuse causes $18 billion in medical care costs annually. The effects of alcohol on crime, especially on child abuse and domestic assault, are underestimated. Every drink imposes a cost of $.63 on people other than the drinker. I consider that the optimal tax on alcohol. It equates to $1.38 per ounce, or $85 billion in annual revenue. Raising the alcohol tax is a proven way to reduce alcohol-related health care costs, especially among youth (Cook and Tauchen, 1982; Saffer and Grossman, 1987). Thus, taxing alcohol can reduce health care costs by deterring drinking while helping to finance health care.

Violence creates large mental health care costs as well as medical care costs. An exploratory survey of 168 mental health providers that Mark Cohen at Vanderbilt University and I just conducted shows that recent crimes caused $3.5 to 4 billion in mental health care costs in 1991. In addition, treatment of adults who were physically or sexually abused as children cost $4 to 6 billion.

For every murder in 1991, three people were in therapy. We estimate annual unmet adult mental health care needs due to interpersonal violence at perhaps $5.5 billion. Imagine the impact if we had adequate mental health care funding.

Guns are a large component of violence. They also cause unintentional injury, with young children commonly the victims. The number of gunshot victims is not readily traced. The firearm death toll was 36,866 in 1990 (National Safety Council, 1993). From case-

fatality rates and hospital discharge data for Washington, California, and Vermont (three states where the cause of injury almost always is coded), I estimate another 75,000 to 110,000 were hospitalized. We have only a fuzzy estimate of non-hospitalized firearm victims, perhaps 200,000 to 275,000.

Using unit costs developed by Max and Rice (1993), I estimate the medical care costs of firearm death and injury in 1990 at $1.9 to $2.7 billion (in 1992 dollars). Wage losses were perhaps $20 to $25 billion more and quality of life losses three times that. By comparison, 1990 civilian firearm sales were about $2.1 billion (U.S. Statistical Abstract, Table 406, 1991, inflated to 1992 dollars). At wholesale, ammunition sales were about $491 million in 1992, including sales to police departments. Taxes on the ammunition sales were $54 million (McCarron, 1993). The medical costs alone were comparable to the sales revenues. Taxing arms and ammunition sufficiently to recoup their societal costs could raise considerable revenue. Recent research suggests that if taxation reduced gun sales, it also should help to check the violence (Loftin et al., 1991; Kellerman et al., 1992, 1993).

Costs to Employers. Employers bear most medical care costs of injury for the non-Medicare population. They pay the costs of injuries not only for benefit-eligible employees but for dependents. They also bear disability costs when benefit-eligible employees are injured on or off the job. The potential costs include sick leave, life insurance, Workers' Compensation and other short- and long-range disability insurance, and employer contributions to Social Security Disability/Survivors Insurance. Death and disability also tax the productivity of other workers. For example, they force supervisors to spend time juggling schedules and recruiting and training replacements.

Employers' injury-related fringe benefit losses and productivity losses by uninjured supervisors and co-workers dealing with the aftermath of an injury total $119 billion annually. That's $1,000 per employee. At a 10-percent profit margin, employers must make 1.2 trillion dollars in sales just to pay their annual injury bill. The bill includes health insurance, Workers' Compensation, life insurance, disability insurance, and sick leave payments.

Injuries cause 29 percent of health-related fringe benefit payments -- $93 billion annually. They are 19 percent of employer health care bills ($35 of $184 billion). Injuries while working cause 11 percent of employer health care bills; injuries to employees and dependents outside work cause 8 percent. Injuries also cause 48 percent of employers' disability bills. Injuries on the job alone produce 34 percent.

Medical Cost Savings of Injury Prevention. Injuries are largely preventable. Preventing them can save money while saving lives. Consider some examples.

Injury prevention should start at birth. Every dollar spent on child safety seats saves $2 in medical care costs (Miller, Demes, et al, 1993). Because seats are widely used, much of this savings already is realized by private health insurers. Seat use among Medicaid recipients, however, is only about 25 percent in most areas. If we gave every Medicaid mother a child seat as a baby present, Medicaid would save money. Eliminating seat misuse also offers major savings: $50 billion per year for health insurers and $73 billion for auto insurers.

Every dollar spent on bicycle helmets for children ages 4 to 15 saves about $2 in medical care costs (Children's Safety Network, 1993). The savings are $1.75 to $2.30 in health insurance payments plus $.80 to $.90 in auto insurance payments (largely associated

with deaths and permanently disabling injuries).

Preliminary estimates that I am working on with the U.S. National Highway Traffic Safety Administration (NHTSA) suggest getting everyone into a safety belt would save $7.5 billion a year in medical care costs. Three recent case studies suggest employers implementing comprehensive belt use programs typically save $55,000 per million vehicle miles of on-the-job travel (Miller, 1993).

Attacking DWI also can be very cost effective. For example, the average dollar spent enforcing state laws against serving intoxicated patrons saves $10 in health care costs (Levy and Miller, 1993). From an employer's perspective, every mile that a benefit-eligible employee or dependent drives drunk costs at least $.30.

In violence, we have few proven interventions. One is home visitation for injury prevention. This activity has been shown to reduce child abuse, as well as unintentional injury (Olds et al., 1986). Other proven interventions are gun control and keeping houses and schools gun-free. Reducing media violence also is widely viewed as an effective countermeasure.

Conclusion. Violence and unintentional injury cause 13 percent of health care costs. These costs are often unnecessary; injuries can be prevented cost-effectively. Injury control can and should play a leading role in health care cost containment. That will require increased budgeting for prevention and for research to develop proven interventions.

Alcohol and firearms are major health care cost factors. Fully taxing their societal costs could raise more than $100 billion annually. Taxation can reduce health care costs by deterring drinking and violence while helping to finance health care.

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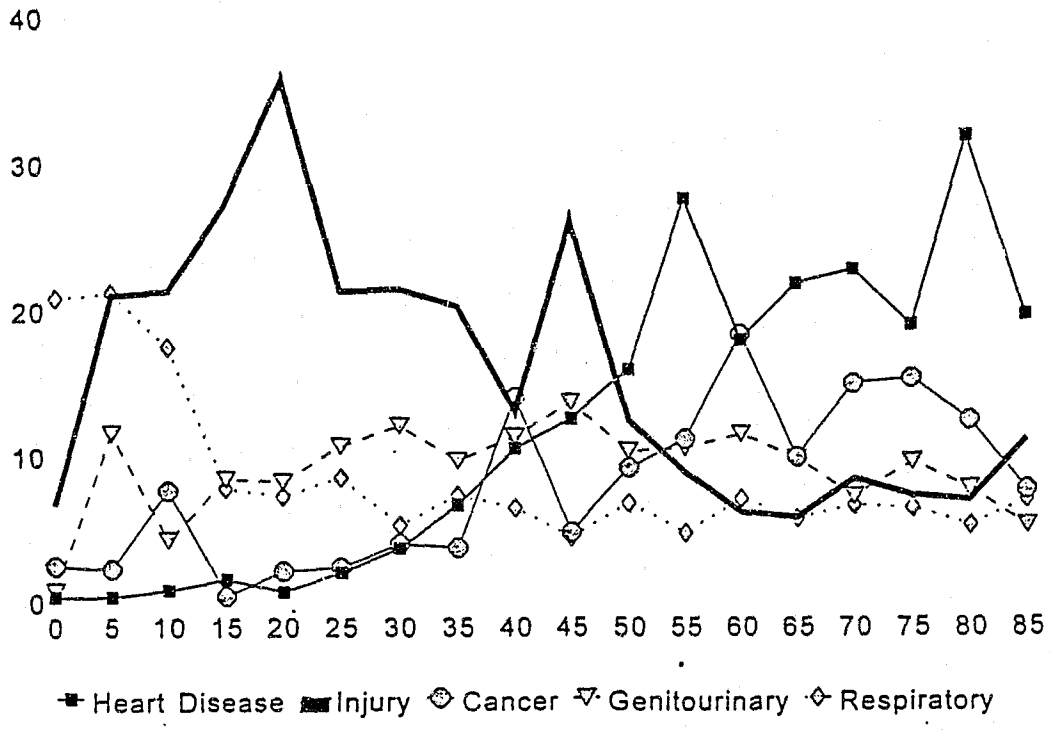
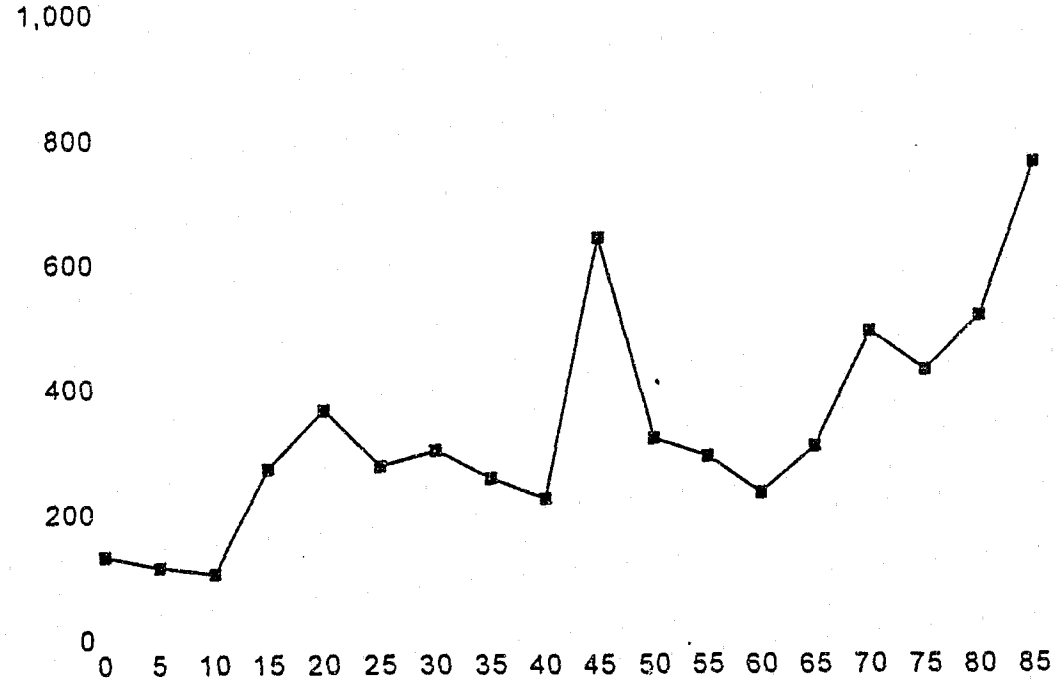
Exhibit 1. % of Health Spending by Age Group and Cause



Source: NMES Survey Data Compiled by National Public Services Research Institute, Landover, MD 1993. Excludes nursing home, dental, live birth, and claims processing costs.

Exhibit 2. Injury Cost/ Person by Age



Source: NMES Survey Data Compiled by National Public Services Research Institute, Landover, MD 1993 Excludes nursing home, dental, live birth, and claims processing costs.