ALCOHOL-IMPAIRED DRIVING AND CRASHES INVOLVING ALCOHOL IN THE UNITED STATES DURING THE 1970s AND 1980s

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Summary. Data from the United States Fatal Accident Reporting Systems (FARS) and roadside surveys were used to track changes in alcohol-impaired driving and crashes involving alcohol in the 1970s and 1980s. National roadside surveys conducted in 1973 and 1986 indicate that substantial reductions in drivers with high blood alcohol concentrations (BACs) on weekend nights occurred between those two dates. FARS data indicate that a substantial decrease in the percentage of fatally injured motor vehicle drivers with high BACs occurred in the past decade, although the problem is still large. This decrease has been very pronounced for some groups (e.g., youthful passenger vehicle drivers); there has been little or no change for other groups (e.g., motorcycle drivers, alcohol-impaired pedestrians). Research studies have indicated that specific legal actions (e.g., raising the minimum alcohol purchase age; administrative license suspension laws) have led to reductions in alcohol-related crashes. Attempts to quantify the role of government, private groups, and other likely contributors to the reductions are necessarily speculative.

Because of data limitations, it is not possible to accurately or completely assess trends in alcohol-impaired driving and crashes for the 1970s and 1980s. Despite this lack, there is clear evidence that there have been substantial reductions during this period in alcohol-impaired driving and in fatal crash involvement of drivers impaired by alcohol. This evidence comes from two roadside surveys conducted during this period and from information obtained by some states on blood alcohol concentrations (BACs) of fatally injured drivers since the middle to late 1970s. These are the only reliable data readily available that can be used to track changes.

Roadside Surveys

National roadside surveys were undertaken in 1973 and 1986 to determine the incidence of alcohol-impaired drivers on American roads on weekend nights (Wolf, 1974; Lund and Wolf, 1989). To the extent possible, the 1986 survey used the same sampling design and survey procedures as the 1973 survey. Table 1, which summarizes the results, indicates that there was a substantial reduction in drivers with high BACs on the roads from 1973 to 1986. The percentage of drivers with BACs of 0.10 percent or greater decreased 37 percent during this period.

The 1973-1986 differences were even greater when only the localities that participated in both surveys were compared. The percentage of drivers with BACs of 0.10 percent or greater decreased 52 percent in these localities from 1973 to 1986.
Crashes Involving Alcohol Impaired Drivers

The Fatal Accident Reporting System (FARS), a census of virtually all fatal crashes in the United States on public roads, provides blood alcohol test results for drivers to the extent that individual states obtain and report these results to the National Highway Traffic Safety Administration (NHTSA, 1989). Table 2 shows the percent of fatally injured drivers and pedestrians with high BACs in the past decade in the 10 states with reporting rates of 70 percent or greater during this period. The 10 states are: California, Colorado, Delaware, Hawaii, Nevada, New Jersey, Oregon, Vermont, Washington, and Wisconsin.

Overall, the percentage of fatally injured drivers with BACs at or above 0.10 percent declined from 49 in 1979 to 39 percent in 1988, a 20 percent drop. This decline was greatest among passenger vehicle and tractor-trailer drivers and was somewhat less among motorcyclists. However, the percentage of fatally injured pedestrians with high BACs was the same in 1988 as it was in 1979. NHTSA researchers, who since 1982 have used a different method than that on which Table 2 is based to estimate alcohol involvement in fatal crashes in the United States, have reported similar trends in the 1980s (NHTSA, 1989).

The FARS data indicate that the declines began in the early 1980s. It cannot be said for certain what the trends in alcohol involvement in crashes were in the 1970s as FARS data date only to 1975. Reporting rates for the 10 states in Table 2 were not as high in 1975-1978 as in the subsequent period, but there is no evidence from these states or from other sources that alcohol involvement in fatal crashes was much different than in the 1979-1982 period. There are no national crash data prior to 1974, but the 1973 roadside survey data suggest that alcohol involvement in crashes was much higher in the early 1970s than in the late 1980s.

The Table 2 data indicate further that the decline appears to be tapering off and that the alcohol-impaired driving problem and its consequences are still large.

During the 1980s in the United States, there were also reductions in alcohol consumption in general, as well as reductions in the use of most other drugs, and cigarette smoking, as indicated by surveys done by the National Institute on Drug Abuse (1989). These changes are displayed in Figure 1, along with the change in drivers with high BACs.

Reasons for the Changes

There appear to be several factors that have contributed to the reductions in alcohol-impaired driving and crashes in the United States. Some of the reduction is attributable to whatever social forces were responsible for the concurrent changes in alcohol consumption and other health-related behavior such as smoking and drug use. That is, some of the driving-related changes would likely have occurred without the special emphasis given to alcohol-impaired driving by federal and state agencies, citizen action groups, and traffic safety organizations. It is, of course, possible that, to the extent special efforts to curtail alcohol-impaired driving were successful, they also have decreased overall alcohol consumption somewhat.

Another part of the reduction is due to demographic changes. People 18-24
years have the highest per capita rate of alcohol involvement in fatal crashes, and the 18-24 year old population decreased 11 percent from 1980 to 1988, while the remainder of the adult population increased 16 percent (NHTSA, 1987; Bureau of the Census, 1988).

The activities directed against alcohol-impaired driving by government agencies, citizens groups, and traffic safety organizations likely played a part in the 1980s reduction. One factor suggesting this to be the case is that the reduction in alcohol-related fatal crashes occurred among drivers and not pedestrians; all of the programs associated with these groups focused on drivers.

Attempts to quantify the role of government agencies, and other groups and organizations, in reducing the problem are necessarily speculative. Scientific evaluations that would determine the extent to which programs sponsored by these groups reduced the effects of alcohol impaired-driving on crashes are rare, and such evaluations are difficult to accomplish when an evaluation component has not been built into the program as is typically the case. This was true even of the federally funded $78 million dollar Alcohol Safety Action Projects of the early 1970s, although the best evidence suggests that these programs did not reduce the problem in the short term (Zador, 1976).

It is widely accepted, however, that the efforts of public, private, and government agencies, in combination, can facilitate positive change. Research studies have shown that laws whose passage was spurred in part by these organizations (e.g., per se laws, first-offense mandatory jail sentences, and -- especially -- administrative license suspension and minimum alcohol purchase age laws) reduced fatal crashes (Zador, Lund, Fields, and Weinberg, 1989; DuMouchel, Williams, and Zador, 1987). The movement to a minimum alcohol-purchase age of 21 during the 1980s is the classic example. This movement was based on an effective mixture of research studies by traffic safety organizations showing that laws raising the purchase age reduced the problem, the activities of citizens groups in arousing public support for state legislation, and federal legislation providing for sanctions against states not adopting this measure. These efforts resulted in greater reductions in alcohol-impaired driving and alcohol-related crashes among teenagers in the 1980s than among other age groups (Lund and Wolfe, 1989; Fell and Nash, 1989).

Thus, there is evidence that some of the changes in the laws regulating access to alcohol or alcohol-impaired driving have reduced motor vehicle crashes. However, the documented effects of the new laws do not account for all or even most of the reduction in alcohol-related crashes during the past decade. Moreover, it is not known to what extent even these effects are dependent on the current social climate regarding drinking and driving. As we move into the 1990s, public attention seems to be shifting to other societal issues, such as illegal drugs and AIDS. As researchers, it will be important to determine whether the effects of these laws are maintained with less public support than they enjoyed in the 1980s. Even if they are still effective, it will be a challenge to find ways to further reduce the still massive death and injury toll resulting from alcohol-impaired driving.
Acknowledgements

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References


Table 1

<table>
<thead>
<tr>
<th>BAC (percent)</th>
<th>Percent of Drivers by BAC - Weekend Nights</th>
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Table 2
Percent of Fatally Injured Drivers and Pedestrians with BACs ≥0.10 Percent

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<th>Year</th>
<th>Drivers All</th>
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<th>Motorcycles</th>
<th>Pedestrians (Age +16)</th>
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Figure 1
Trends in Adult Use of Tobacco, Alcohol and Other Drugs in Past Month, and in Percent of Fatally Injured Drivers with High BACs

- Alcohol Use
- Drivers with BACs ≥0.10
- Cigarette Use
- Any illicit Drug

+ Marijuana, cocaine, heroin, nonmedical use of psychotherapeutics, inhalants, and hallucinogens