HB

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"The Scandinavian Myth: The Effectiveness of Drinking and Driving Legislation in Sweden and Norway," *Journal of Legal Studies* 4 (1975):285-310; and J.R. Gusfield, "Categories of Ownership and Responsibility in Social Issues: Alcohol Abuse and Automobile Use," *Journal of Drug Issues* 5 (1975):285-295.

41. R.J. Bonnie, *Marijuana Use and Criminal Sanctions: Essays in the Theory and Practice of Decriminalization* (Charlottesville, Virg.: Michie/Bobbs Merrill, 1980), pp. 14-16. Reprinted with permission.

This report is basically inconclusive as it pertains to the effects of RAISING the drinking age, although some preliminary stats suggests a significant reduction in single vehicle, nighttime, male (18 yrs) crashes.

Studies are underway in a few eastern states to make some firmer conclusions. Most of the published reports deal with the effects of LOWERING the drinking age. Consensus is that it has had a negative impact on teen-age alcohol-related crashes.

4 Historical Trends in Alcohol Use and Driving by Young Americans

Robert B. Voas and John Moulden

Early in this century, improvements in hygiene and nutrition significantly reduced mortality due to infectious diseases, which had been the principal threat to the lives of children and young adults in industrialized nations. Since that time, the principal threat to life for young Americans, particularly for males, has become traumatic injury. Consider the group of particular interest regarding the issues discussed in this book: males aged 15 to 19. Statistics reveal that this is the age group with the highest proportion (39 percent) of deaths resulting from motor-vehicle accidents. The total accidental death picture for this group shows that another 22 percent die in job-related or recreational accidents, 10 percent die from homicide, and 8 percent from suicide. This means that 79 percent of deaths among 15- to 19-year-old males are the result of trauma! All these types of death are frequently associated with the use of alcohol. Those related to homicide and motor-vehicle accidents are particularly significant, since alcohol involvement has been estimated to be present in up to 50 percent of the deaths in these categories.[1]

Since World War II, exposure to the potential for death and injury resulting from a combination of drinking and driving has increased, as shown in figure 4-1. Total per capita alcohol consumption was relatively constant during the 1950s, rose significantly in the 1960s, and leveled off again in the 1970s.[2] At the same time, per capita motor-vehicle mileage has increased rather steadily, with no reduction in its upward trend during the past decade.[3] The mortality rates related to these two factors are shown in figure 4-2. Deaths from cirrhosis of the liver—a common measure of alcoholism in a population—generally increased throughout the 1960s but leveled off in the 1970s and even dropped in 1975.[4] The trend for motor-vehicle fatalities is remarkably similar. The number of such deaths increased until 1967-1968 when they seemed to reach a plateau. In 1974, when the fuel crisis occurred and the national maximum speed limit was set at 55 mph, traffic fatalities dropped, although such deaths appear to be increasing slightly again.[5] The similarity of the trends of these two mortality rates is interesting. Whereas both rates rose rapidly in the 1960s, they have remained constant or dropped slightly in more recent years.

The opinions and conclusions are those of the authors and not necessarily those of the National Highway Traffic Safety Administration.

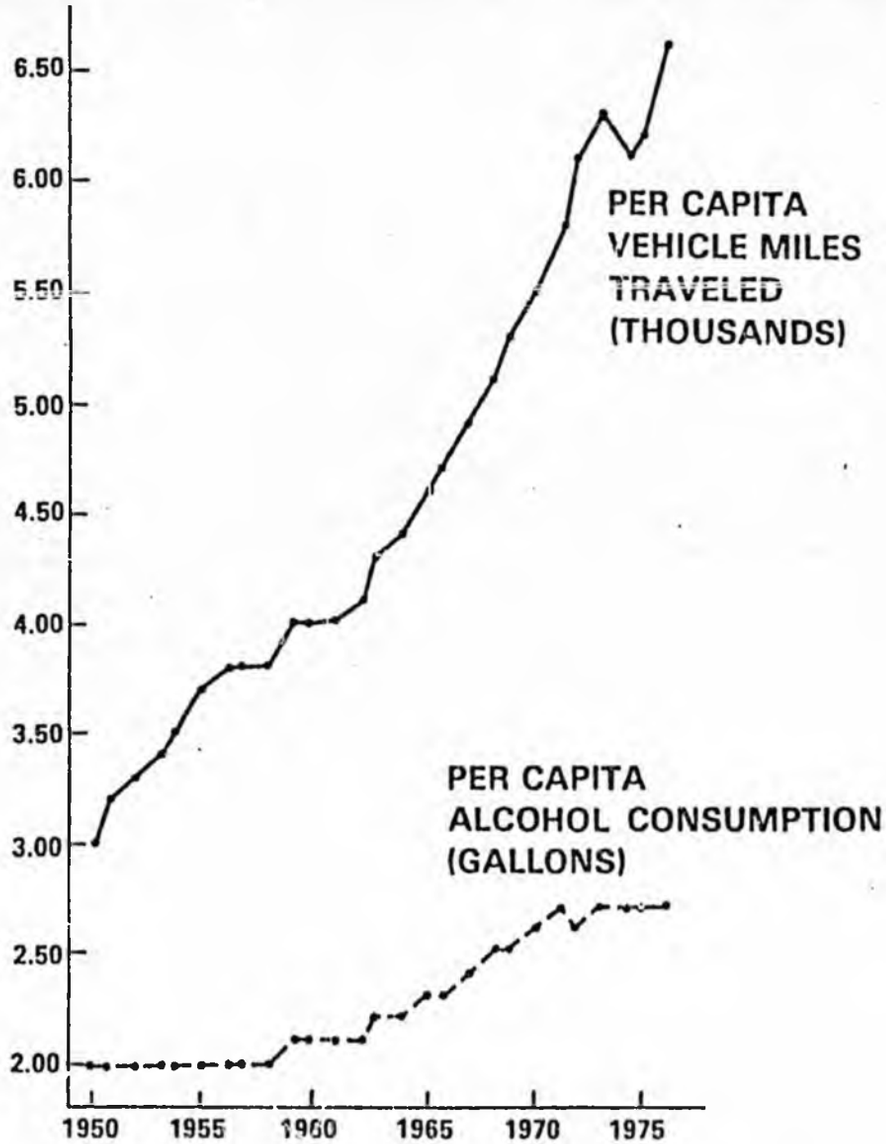


Figure 4-1. Miles Traveled and Alcohol Consumption, 1950-1975

Motor-vehicle accidents related specifically to alcohol use are a highly patterned variable, correlating strongly with the age and sex of drivers and to a lesser extent with drivers' marital status, the severity of the crash, and the time and day of the week on which the crash occurs.[6] This patterning reflects the impact of the life-style of American males, especially of young unmarried males. As can be seen in figure 4-3, the traffic-accident fatality rate among teenage males is four times that of female teenagers, and the fatality rates

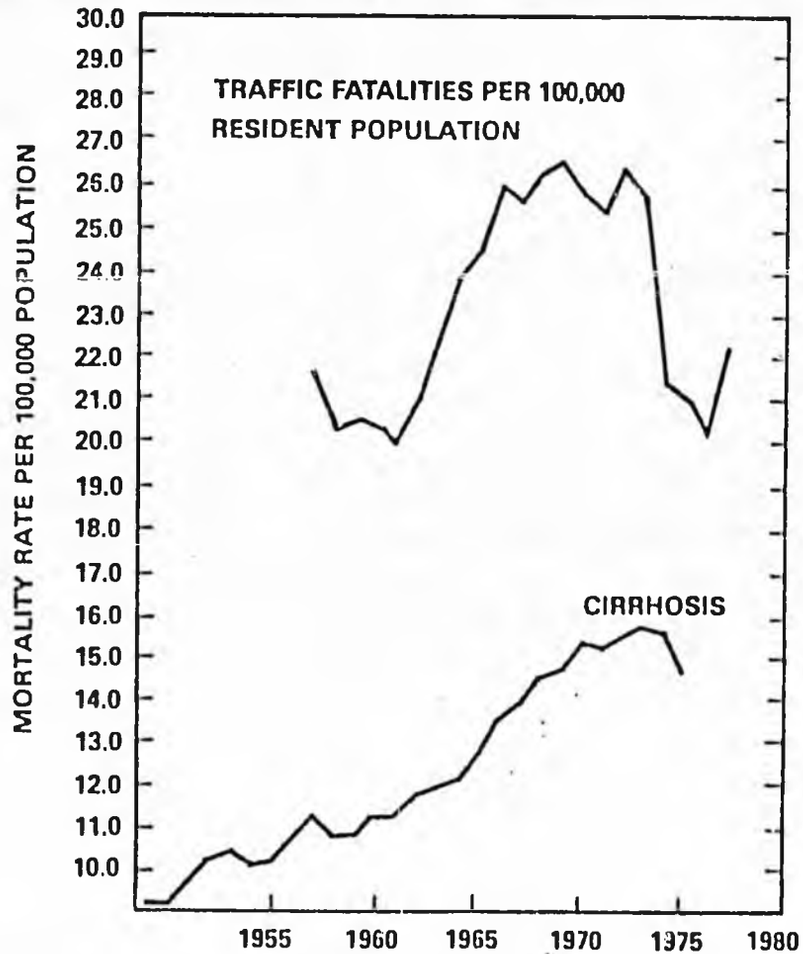


Figure 4-2. Mortality Rate: Traffic Fatalities and Cirrhosis, 1955-1980

for teenagers of both sexes is about three times that of same-sex drivers over 45 years old.[7]

Not surprisingly, motor-vehicle-accident involvement is also related to the amount of alcohol the driver has consumed. This has been shown repeatedly by studies that have contrasted the blood alcohol content (BAC) of drivers involved in accidents with the BAC of drivers who were not so involved but who were using the same road at the same time.[8] These studies show that the risk of being in an accident for which the driver is judged responsible increases as a function of the driver's blood alcohol content. Although there is some increase in risk of crash involvement at BACs below 0.10 percent, particularly among inexperienced drivers, most of those drivers involved in fatal crashes who have been drinking have been shown to be at or well above this level

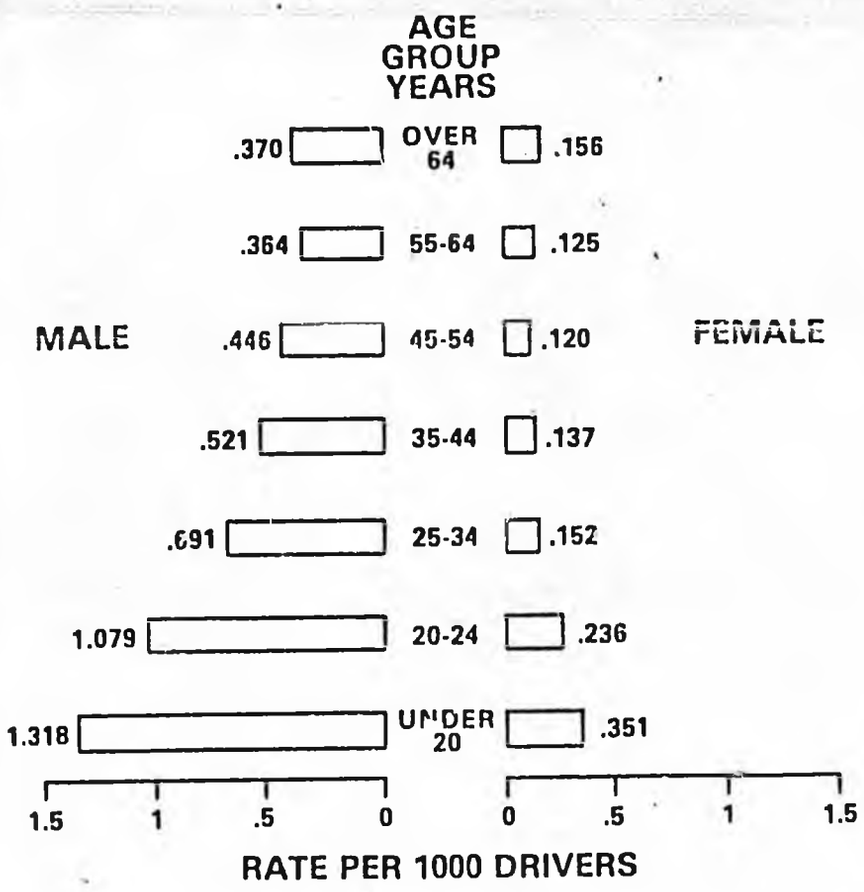
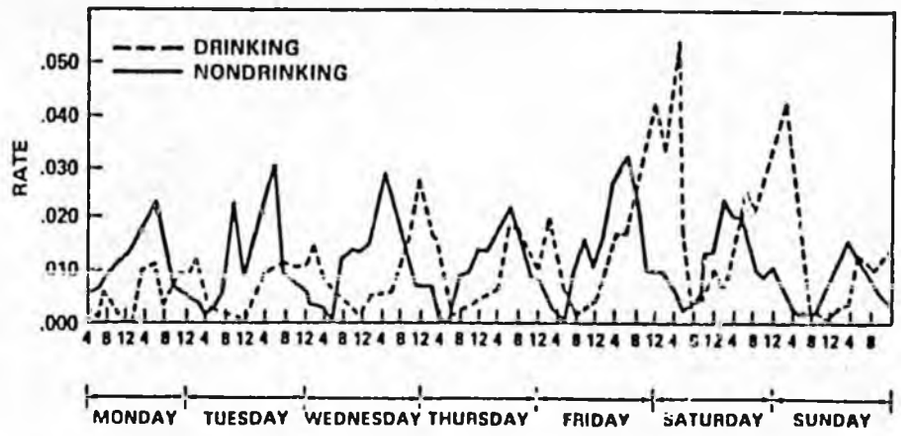


Figure 4-3. Fatal Traffic Accident Involvement Rate per 1000 Licensed Drivers by Sex and Age Group, 1977

Since heavy drinking in the United States seems to occur primarily at night and particularly on weekend nights, it is not surprising that most alcohol-related automobile crashes also occur at night. This is illustrated by the data presented in figure 4-4. The dashed curve represents the frequency of accidents about which the investigating police officer reported that the driver "had been drinking"; the solid line represents the accidents about which there was no such report. (Of course, police estimates of this factor can be unreliable, as is discussed later in this chapter.) As can be seen, the alcohol-related accidents peak around midnight and are especially high on Friday and Saturday nights. In contrast, the non-alcohol-related accidents peak in the late-afternoon and early-evening rush hours.



Source: J.D. Epstein, "A Preliminary Report on Alcohol-Involved Crashes in Washtenaw County, Michigan," HIT Lab Reports 1-7 (Ann Arbor, Mich.:University of Michigan, Highway Safety Research Institute, August 1971), p. 24.

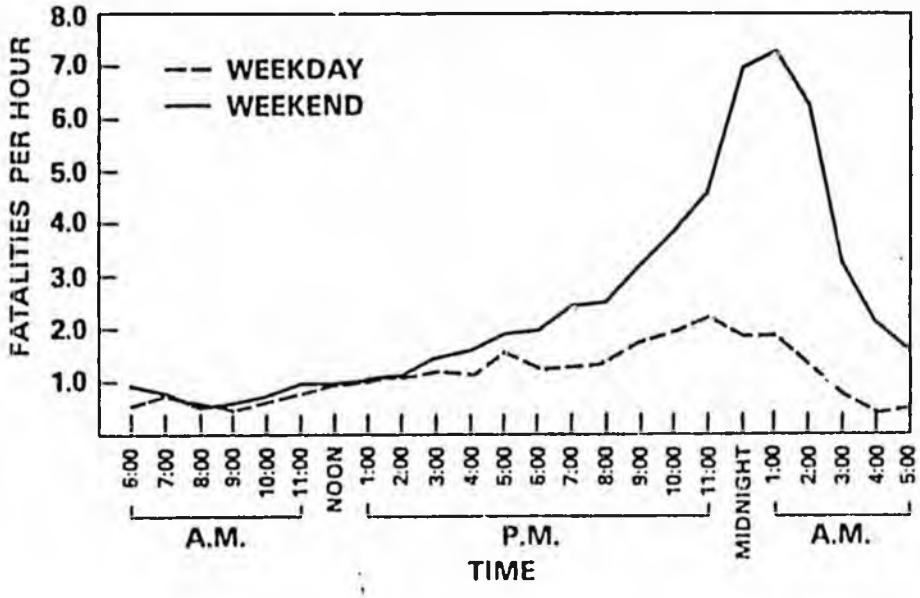
Figure 4-4. Comparison of Alcohol-Involved and Nonalcohol-Involved Crashes in Washtenaw County, Michigan, 1970

This correlation between alcohol consumption and the time of day of accidents has been used as a surrogate measure of the accident involvement of those who have been drinking when the best evidence, the blood alcohol content of the responsible driver, is not available.[9] Forty-seven of the fifty states have laws permitting or requiring determinations of the BAC of fatally injured drivers, but only ten states actually do measure as many as 75 percent of their dead drivers. Most states make these determinations on fewer than 25 percent of their fatally injured drivers, and in any case, many drunk drivers live through accidents in which others are killed and consequently are not tested for BAC. As a result, BAC data on drivers involved in fatal crashes are very incomplete. Thus, when using national accident statistics, researchers must generally contrast the number of nighttime and the number of daytime crashes to ascertain alcohol involvement.

It is instructive to consider the relationship of the time of day and highway fatalities as it is affected by the age of drivers. This can be done by using the Fatal Accident Reporting System (FARS), a system maintained by the National Highway Traffic Safety Administration to record all accidents in which a highway user dies within thirty days of the crash.[10] Figures 4-5, 4-6, and 4-7 show

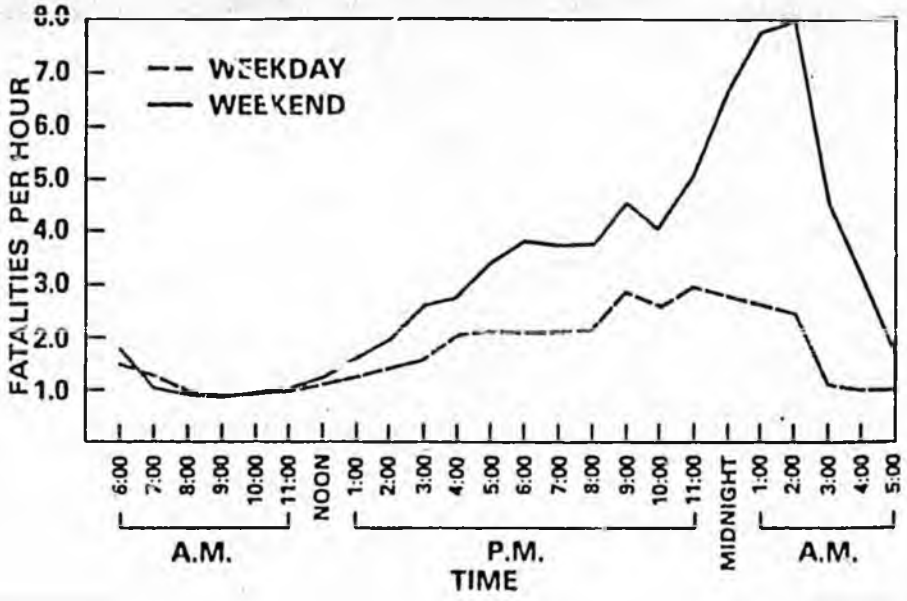
the fatalities per hour for weekdays and weekends for three age groups. For those aged 45 or older (figure 4-7), the weekday and weekend curves are very similar; the peak accident rate among this group occurs during the afternoon rush hours on weekdays and slightly later on weekends. In contrast, the highest weekday fatality rate for young adults between 22 and 44 years of age (figure 4-6) takes place in the late-night hours, around midnight. This rate is two to three times higher on weekends, with the highest rate occurring one to two hours after midnight on Friday and Saturday nights. The youngest drivers, those from 15 to 21 years old, show an even more extreme skewing of the fatality rate during the night hours (figure 4-5). On both weekdays and weekends, young adults have fairly high fatality rates in the afternoon and evening. But drivers between 15 and 21 years old have fewer accidents in the afternoon, particularly on weekends, and a high number of late-night fatalities.

These patterns of fatalities occur for many reasons. The number of vehicles on the road, the type of driving (commuting versus recreational), weather conditions, and roadway characteristics, as well as the characteristics of the drivers and their alcohol use--all influence the rate of fatal accidents. The correlation between driver age and time of fatality involvement nevertheless



Source: National Highway Traffic Safety Administration, *Fatal Accident Reporting System, 1978 Annual Report* (Washington, D.C.: U.S. Department of Transportation, 1978).

Figure 4-5. Fatalities by Hour, Ages 15-21, 1978



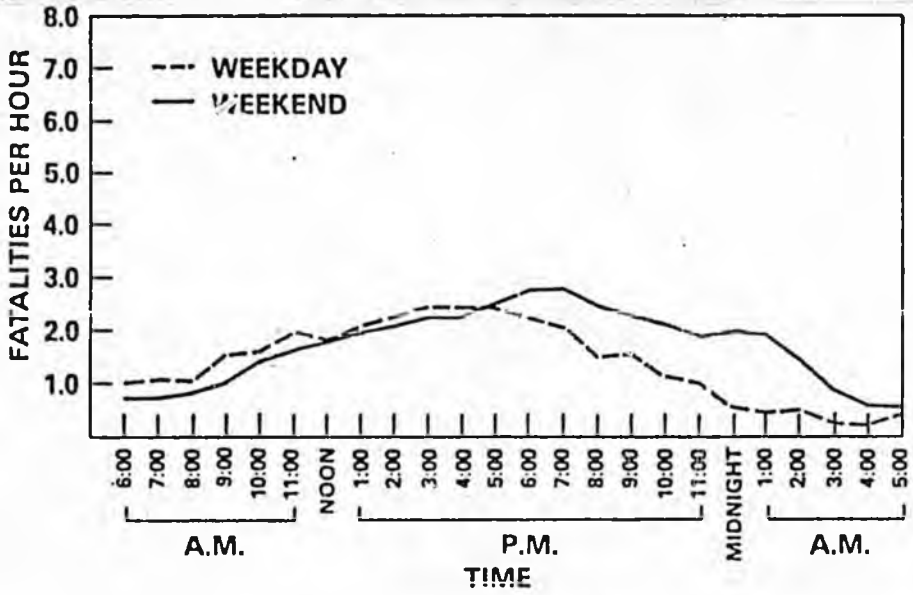
Source: National Highway Traffic Safety Administration, *Fatal Accident Reporting System, 1978 Annual Report* (Washington, D.C.: U.S. Department of Transportation, 1978).

Figure 4-6. Fatalities by Hour, Ages 22-44, 1978

provides evidence to support the hypothesis that adolescent life-styles, particularly among males, increase teenagers' exposure to fatal crashes.

One factor that must be considered in relation to the involvement of adolescents in accidents during weekend nights is the general pattern of teenage driving. Measurements of driving exposure are approximate at best but can be attained through questionnaires or interviews with drivers. The results of one such study are shown in figure 4-8.[11] Drivers were asked to estimate the number of miles they drove annually, and those in their teens reported less-than-average amounts of driving. Furthermore, these drivers constitute a low percentage of all U.S. drivers. But random roadside surveys conducted on weekend nights (8 P.M. to 4 A.M.) in several locations throughout the United States reveal, as shown in figure 4-9, that drivers in their teens and twenties are greatly overrepresented at these times.[12]

Thus, the evidence indicates that (1) most alcohol-related accidents occur at night, particularly on weekend nights; (2) the highest fatality rates for young drivers occur at night, particularly on weekend nights; and (3) drivers younger than 30 are found on the road on weekend nights more frequently than would be expected from their numbers in the driving population. The question then



Source: National Highway Traffic Safety Administration, *Fatal Accident Reporting System, 1978 Annual Report* (Washington, D.C.: U.S. Department of Transportation, 1978).

Figure 4-7. Fatalities by Hour, Ages 45 and Over, 1978

arises, is the high late-night weekend fatality rate simply a function of the amount of driving done by young people at these times, or do these drivers have a greater risk of involvement in accidents, even when their exposure is controlled? (The common understanding of the term *exposure* is that it refers to conditions external to the driver: the condition of the roadway, traffic, environmental conditions, and perhaps the condition of the vehicle. However, it is possible that drivers who use the road at night differ significantly in personal characteristics from those who drive during the day. If so, part of their increased exposure is related to these characteristics as well as to the external factors mentioned previously.)

It is not surprising, of course, that although teenagers do drive considerably less frequently than their seniors, they may drive most often on weekend evenings. But if the highest rates of fatal accidents and alcohol-related accidents occur on these evenings, then teenagers appear to drive at the times of highest risk, both for causing an alcohol-related crash and for being victimized in an accident caused by another driver.

On the other hand, since a high fatality rate occurs among licensed teenage drivers anyway, and such drivers reveal a low overall mileage rate, it seems that these young vehicle operators must have a much higher risk per mile than their

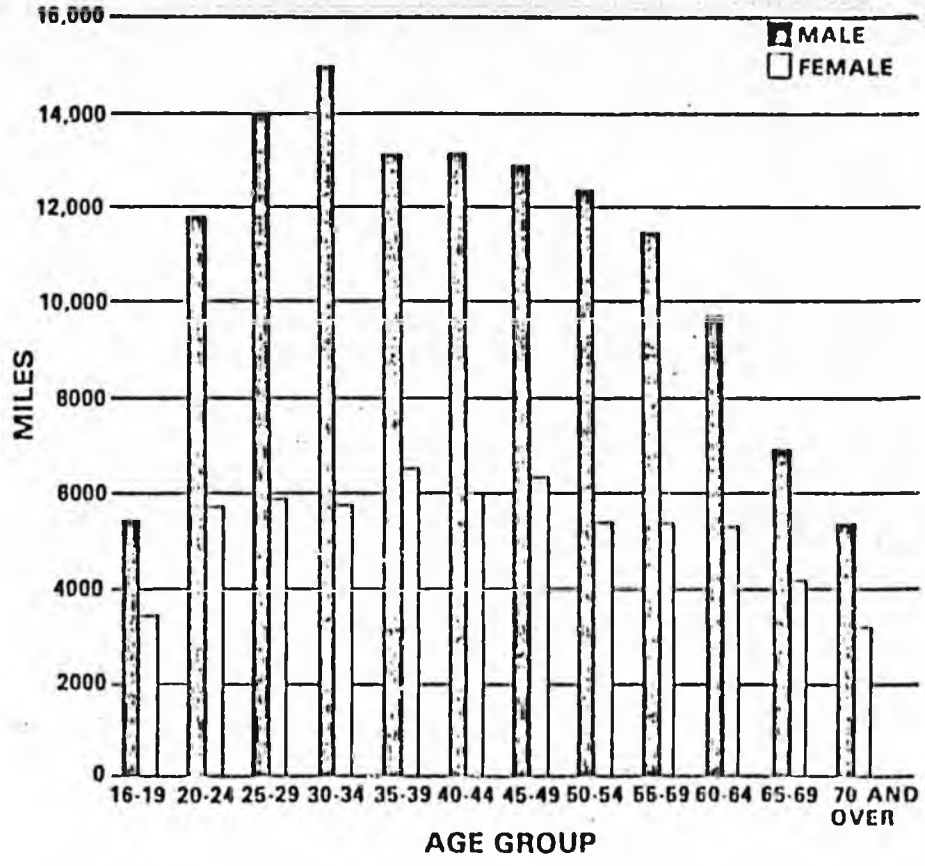
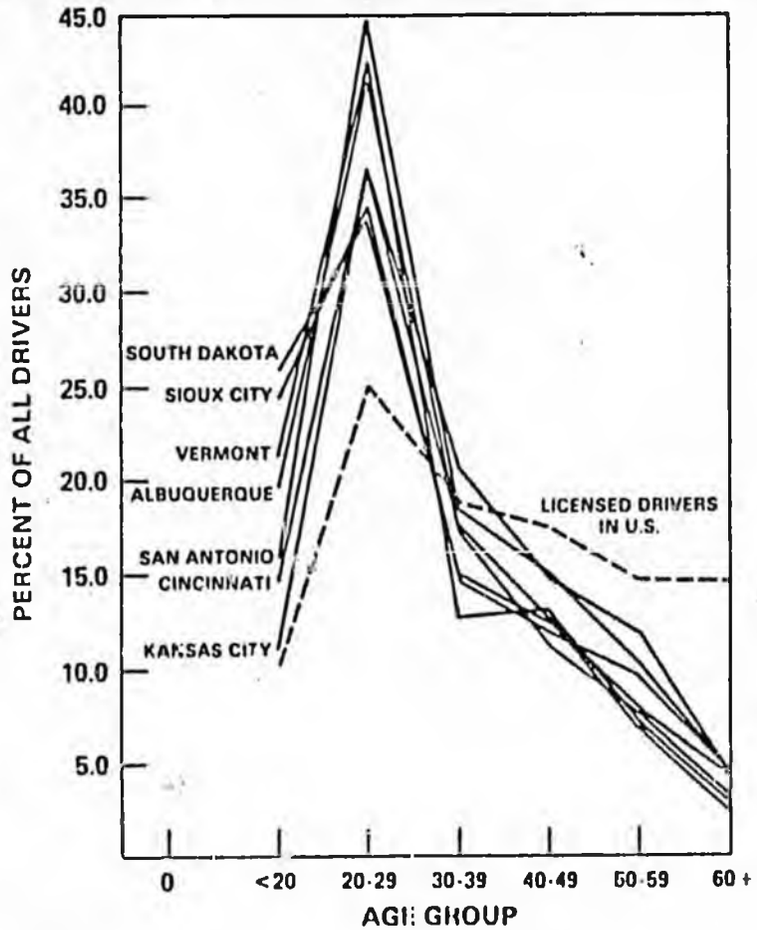


Figure 4-8. Estimated Average Annual Miles Driven per Licensed Driver by Age and Sex

older counterparts. Although a part of this risk may be due to the dangerous times of day and week at which young people drive, teenage drivers do appear to have a higher risk of involvement in nighttime alcohol-related crashes than their elders did. One study, for example, compared the age distribution of nighttime drivers stopped in random roadside surveys and of drivers involved in nighttime single-vehicle crashes (that is, accidents for which the driver was held responsible).[13] Only among the 16- to 20-year-old age group was the crash involvement proportionately higher than the frequency with which people of that age group were found in the nighttime driving population.

Additional evidence for the overinvolvement of teenagers in accidents even when exposure is controlled is presented by the well-known Grand Rapids study of Borkenstein and his coworkers.[14] These researchers used their data to calculate accident risk as it related to age and blood alcohol concentration



Source: National Highway Traffic Safety Administration, *Alcohol Safety Action Project: Evaluation of Operations, 1972*, Vol. 2 (Washington, D.C.: U.S. Department of Transportation, April 1, 1974).

Figure 4-9. Age Distribution of Drivers Using the Road at Night in Seven Areas in the United States 1971-1972

of drivers. They found that among sober drivers, teenagers are two to three times more at risk for accidents than drivers in their forties. The lowest risk per mile of exposure appears to occur among drivers from about 30 to 60 years of age, and younger and older drivers have a slightly increased risk of crash. Even low amounts of alcohol consumption accentuate this difference, and the trend becomes more pronounced as the BAC increases.

In view of the apparent higher risk of younger drivers for involvement in nighttime and alcohol-related crashes, it is particularly interesting to note the

enforcement pattern of the police, as indicated by data on arrests for driving while under the influence of liquor (DUIL). In a study in Michigan, which used data that are probably typical of most areas of the nation, Clark contrasted the age range of drivers arrested for DUIL with the age range of fatally injured drivers in the same area.[15] The results show that the younger age groups are overrepresented among fatalities but that older drivers are most frequently arrested for driving while under the influence of alcohol. One explanation may be that about the same proportion of younger drivers and drivers in their thirties and forties have alcohol in their bodies, but the older drivers tend to have higher BACs than their younger counterparts. Other factors also play an important role; for example, police may be more likely to take teenagers home to their parents than to arrest them. This behavior, along with many other elements that enter into a police officer's decision to make an arrest, has been well documented.[16]

The tendency for the older drinking driver to appear in official records while the younger driver is more likely to die on the highway but less likely to have a record is paralleled in the field of alcoholism. "On-the-record" hospitalizations of alcoholics occur most frequently among men in their middle to late forties, but self-reported drinking problems are more typical of younger males. In his study of problem drinking, Cahalan found the greatest number of reported problems (on the job, marital, and so on) among young men in the 21 to 24 age bracket.[17] This same group is most frequently found on the roads on weekends and, next to teenagers, has the highest accident fatality rate.

One question that remains to be considered is the role of changes in minimum-drinking-age laws on the accident morbidity and mortality of the affected age groups. In particular, it may be of interest to ask what effects might be expected if states that still have a 21-year-old minimum drinking age were to lower their limit. Some indirect evidence on this question can be obtained from the FARS file.[18] Among the ten states that report the blood alcohol concentrations in their fatally injured drivers in 75 percent or more of the cases are five western states—California, Oregon, Washington, Nevada, and Colorado—that have laws limiting sales of liquor, beer, and wine to those 21-years-old or older. In these states, 64 percent of fatally injured young adults, aged 22 to 44, had some alcohol in their bodies, and 53 percent had an illegal BAC of 0.10 percent or higher. But the data show that a similar proportion of fatally injured teenagers had been doing some drinking or had illegal BACs near the level of the older drivers, even though they could not legally purchase alcoholic beverages. In fact, by age 17, half of all fatally injured drivers in these states have alcohol in their bodies, and a third have an illegal BAC. This suggests that much of the effect of lowering the legal minimum drinking age might already be discounted by the apparent availability of alcohol to teenagers.

Given the number of states that have reduced the minimum legal age for the purchase of alcohol and are now thinking of raising it again, recent trends

in teenage automobile crashes may be relevant. Unfortunately, the FARS file has only been in existence since 1975, so it provides consistent national trend data for only the five years 1975 through 1979. Reliable individual state trend data may be available in some cases, but no sufficiently sensitive national file of fatalities other than FARS is currently in existence. To study alcohol related accident trends over the four years from 1975 to 1978, data on nighttime (8 P.M. to 4 A.M.) single-vehicle crashes (a surrogate measure for crashes involving alcohol) were drawn from the FARS file. Trend analyses were conducted on data for the young adult group (ages 22 to 44) and the teenage group (ages 16 to 21). Both groups showed a rise in fatalities, probably due at least in part to the general reduction in adherence to the 55 mph national speed limit. However, the teenagers showed a significantly smaller rise in fatalities during this four-year period.

Previous studies have shown that lowering the legal minimum drinking age increases the number of automobile accidents among adolescents.[19] To determine whether raising the drinking-age limits is having an impact on traffic accidents involving young drivers, the National Highway Traffic Safety Administration is conducting studies of those states that have recently raised their legal minimum drinking age. These studies focus on states that have raised their limit by two or more years of age because of the probability that crash statistics would be insensitive to a one-year shift. Included in these studies are Maine (which raised its limit from 18 to 20), Massachusetts (18 to 20), New Hampshire (18 to 20), and Michigan (18 to 21). New York, which has always allowed 18-year-olds to purchase liquor, will provide comparison data.

Because of the limitations in state data concerning automobile accidents related to alcohol consumption, NHTSA researchers are employing the surrogate measure used by Richard Douglass in his 1974 study, single-vehicle nighttime male crashes (SVNM).[20] The statistical analysis employs the Box-Tiao intervention analysis technique.[21]

An initial analysis has been made of crash data from Maine, which raised its legal minimum drinking age in October 1977. This analysis suggests that a significant reduction in SVNM accidents began two months after the law took effect, averaging 5.51 crashes per month (SE. 1.71) over the twelve-month period of December 1977 to December 1978. A sizeable reduction in SVNM crashes (averaging 11.78 accidents a month) was also detected for the two months of December 1977 and January 1978. This reduction is believed to have been caused by the severe winter weather that paralyzed the Northeast during that year.

For comparison, single-vehicle daytime crashes of 18-year-old male were also analyzed. These data were used to determine the trend in non-alcohol-related crashes. This series shows similar results but of lesser magnitude. The effect attributed to the change in the minimum-drinking-age law is an average accident reduction of 2.38 per month from December 1977 to December 1978 (SE. 1.04). What might be called the severe-winter effect accounted for a reduction of 15.84 crashes (SE. 3.38) for the month of December 1977. Crash data for 19-year-old drivers in Maine have shown no effect of the change in the law, but do show a severe-weather effect for December 1977-January 1978, on both day and night single-vehicle male accidents.

These data on crashes in Maine cover too short a period of time for researchers to place much reliance on the results to date. Only as additional data from Maine, Massachusetts, New Hampshire, and Michigan become available will we be able to make a reliable determination of whether the raising of the minimum-drinking-age laws is reducing automobile accidents among young people. The data in this chapter thus indicate that although young drivers comprise only a small percentage of the national driving population, they do drive more frequently at night, especially on weekends, when the risk of accidents related to alcohol use is highest, and they do form a disproportionately high percentage of those involved in such accidents at such times.

Notes

1. E.P. Noble, ed., *Alcohol and Health: Special Report to the U.S. Congress from the Secretary of Health, Education, and Welfare, June 1978.* (Washington, D.C.: U.S. Government Printing Office, 1979), chap. 8.
2. Ibid.
3. National Highway Traffic Safety Administration, *Fact Book: Statistical Information on Highway Safety, 1979* (Washington, D.C.: U.S. Government Printing Office, 1979).
4. Noble, *Alcohol and Health.*
5. National Highway Traffic Safety Administration, *Fact Book.*
6. See R.K. Jones and K.B. Joscelyn, *Alcohol and Highway Safety 1978: A Review of the State of Knowledge*, vols. 1 and 2, Report no. DOT-HS-803-764 (Springfield, Virg.: National Technical Information Service, 1978); Organization for Economic and Cooperative Development, *Road Research: New Research on the Role of Alcohol and Drugs in Road Accidents* (Washington, D.C.: Organization for Economic and Cooperative Development, September 1978); and R.B. Voas, *Alcohol, Drugs and Young Drivers* (Washington, D.C.: U.S. Department of Transportation, National Highway Traffic Safety Administration, May 1974).
7. National Highway Traffic Safety Administration, *Fact Book.*
8. Jones and Joscelyn, *Alcohol and Highway Safety.*
9. See R.L. Douglass, L.D. Filkins, and F.A. Clark, "The Effect of the Lower Drinking Age on Youth Crash Involvement" (Final Report for the National Highway Traffic Safety Administration, U.S. Department of Transportation, Report no. UM-HSRI-AL-74-1-2) (Ann Arbor, Mich.: University of Michigan, 1974); and National Highway Traffic Safety Administration, *Alcohol*

Safety Action Project: Evaluation of Operations, 1972, vol. 2 (Washington, D.C.: U.S. Department of Transportation, April 1, 1974).

10. National Highway Traffic Safety Administration, *Fatal Accident Reporting System, Annual Report for 1978* (Washington, D.C.: U.S. Department of Transportation, 1978).

11. National Highway Traffic Safety Administration, *Fact Book.*

12. National Highway Traffic Safety Administration, *Alcohol Safety Action Project.*

13. W.L. Carlson, "Alcohol Usage of the Nighttime Driver," *Journal of Safety Research* 4 (1972):12-25.

14. R.F. Borkenstein, R.F. Crowther, R.P. Shumate, W.B. Ziel, and R. Aylman, *The Role of the Drinking Driver in Traffic Accidents* (Bloomington, Ind.: Indiana University, 1964).

15. C.D. Clark, "A Comparison of the Driving Records and Other Characteristics of Three Alcohol-Involved Populations and a Random Sample of Drivers" (HIT Lab Reports II, 10) (Ann Arbor, Mich.: University of Michigan, Highway Safety Research Institute, June 1971).

16. See, for example, Jones and Joscelyn, *Alcohol and Highway Safety*, p. 52.

17. D. Cahalan, *Problem Drinkers* (San Francisco: Jossey-Bass, 1970).

18. National Highway Traffic Safety Administration, *Fatal Accident Reporting System.*

19. Douglass et al. "Effect of Lower Drinking Age."

20. Ibid.

21. G.E.P. Box and G.C. Tiao, "Intervention Analysis with Applications to Economic and Environmental Problems," *Journal of the American Statistical Association* 70 (1975):70-79.

5 Research Strategies to Evaluate the Impact of Changes in the Legal Drinking Age

Paul C. Whitehead

Studies of the impact of changes in the legal drinking age have addressed a number of different questions and have employed a wide array of research methodologies. Of the possible effects of changes in the minimum drinking age, automobile collision involvement of young drivers has received the most attention. In fact, this subject has acquired a well-developed line of inquiry in its own right. Other questions have also been investigated, including the impact of the change in the legal drinking age on overall consumption and patterns of consumption of alcoholic beverages and on consequences of alcohol use such as admissions for treatment of alcoholism or problems in secondary schools. Most of these studies are "one-of-a-kind" and they involve widely differing methodologies and data from diverse sources.

This chapter has two major objectives differing markedly in magnitude. The first objective is to provide a review of the research strategies that have been used in ascertaining whether the lowering of the legal drinking age had an impact on the collision involvement of young drivers. This serves as an introduction to chapter 5, which presents the exemplary set of contributions to this field of study. The second objective is to introduce some methodological issues about the research strategies that have been used to study other possible impacts of the change in the legal drinking age. These comments will introduce the review of much of the relevant research that is covered in chapter 6. In addition, this chapter is intended to provide a framework within which general conclusions and directions for future research can be considered, which is the topic of chapter 8.

Collision Involvement

The most serious problem usually associated with drinking and driving is the automobile collision. Collisions may involve only property damage or they may result in injury or even death for the occupants and others. Data on collisions routinely are collected independently of the needs of scientists. For these reasons, studies of the impact of the change in the drinking age generally use measures associated with collisions rather than impairment as the dependent variable.[1] These measures are of two kinds. The first is the type of

Journal of Studies on Alcohol, Vol. 38, No. 7, 1977

Effects of Reducing the Legal Alcohol-Purchasing Age on Drinking and Drinking Problems

A Review of Empirical Studies

Reginald G. Smart and Michael S. Goodstadt[1]

SUMMARY. *A review of studies of the effects of reducing the legal age for drinking and purchasing alcoholic beverages suggests that there are public health reasons for not introducing such changes in jurisdictions which have not already done so.*

CONCERN HAS BEEN EXPRESSED recently about the effects of the reductions in the legal age for drinking and purchasing alcoholic beverages across North America; some of these jurisdictions (e.g., Massachusetts and Ontario) are even considering the advisability of returning to former legal age limits. Chart 1 shows the provinces in Canada and states in the United States which have reduced the legal purchasing age. All 10 Canadian provinces and 26 of the 50 American states have implemented age reductions, usually as part of a movement to create a single age of majority, usually 18, at which most legal rights are achieved.

The trend toward reductions in the legal purchasing age began in 1970, since when a number of preliminary studies have been undertaken to examine some of the consequences of the changes. Many of these studies were conducted without adequate comparison or control groups; some were, of necessity, conducted with haste because of lack of warning about forthcoming changes in the law; several had to rely on post hoc analyses with or without the advantages of data extending over a long time period before and after changes in the law. The purposes of the present article are to review the empirical research related to the changes in the alcohol-purchasing age and to indicate what consequences have so

[1] Addiction Research Foundation, 33 Russell St., Toronto, Ont., Canada M5S 2S1.
Received for publication: 8 April 1976. Revision: 28 October 1976.

CHART 1.—*Recent Changes in Alcohol-Purchasing Age By State (U.S.A.) and Province (Canada)*

From 21 to 18

Connecticut (1972)
Florida (1973)
Georgia (1972)
Iowa (1972–73)
Maryland (1973)*
Massachusetts (1973)
Michigan (1972)
Minnesota (1973)
Montana (1971–73)
New Hampshire (1973)
New Jersey (1973)
Rhode Island (1972)
Tennessee (1971)
Texas (1973)
Vermont (1971)
West Virginia (1972)
Wisconsin (1972)
Alberta (1971)
Manitoba (1970)
Ontario (1971)
Prince Edward Island (1972)

From 21 to 19

Alabama (1975)
Arizona (1972)
Idaho (1972)
Wyoming (1973)
Newfoundland (1972)
Nova Scotia (1971)
New Brunswick (1972)
British Columbia (1970)
North West Territories (1970)
Yukon (1970)

From 21 to 20

Delaware (1972)

From 20 to 18

Hawaii (1972)
Maine (1972)
Quebec (1971)

From 20 to 19

Alaska (1970)
Nebraska (1972)

From 19 to 18

Saskatchewan (1972)

* Beer and light wine only.

far been identified. Several of the studies are unpublished, and apparently no critical review has been made of research in this area.

Expectations as to what consequences might ensue from changes in the alcohol-purchasing age vary with the view generally taken about alcohol-control policies. For example, Wilkinson (1) argues a type of "forbidden fruit" theory in which alcohol is seen as especially attractive to young people because of its illegality. According to this view, it was expected that once it became legal for young people to drink it would be possible for acceptable drinking norms to develop. Wilkinson recommended lowering the purchasing age to 18 in all jurisdictions. On the other hand, those in favor of the "distribution" theory (e.g., 2) argue that it is likely that any liberalization would contribute to higher per capita consumption and hence to alcohol-related problems.

It can be argued that changing the law would have no effect on consumption at all. Many young people drank before the law was changed and a new legal age may only legalize the status quo. It has also been observed that many European countries such as Britain have always had low alcohol-purchasing ages and they have relatively low per capita consumption and alcoholism rates. However, France and Italy also have low purchasing ages and lead the world in both alcohol consumption and its problems. International comparisons, however, may be of little real value compared with before-and-after studies in a single jurisdiction.

Effects of New Age Laws on Drinking

Few studies have been made of the effects of the new alcohol-purchasing laws on alcohol consumption. Only Canadian studies have been identified, and all but one refer only to Ontario; most of these studies have no control or comparison groups.

In Ontario the legal age for buying and drinking alcoholic beverages was reduced from 21 to 18 in July 1971. Smart and Schmidt (3) report a survey of Toronto high-school students which has been conducted every 2 years since 1968. The study was a cross-sectional one, employing the same sampling system in all years but not resurveying the same students. The sample included approximately 20% of the available high-school districts; 120 students of each sex were selected from each of grades 7, 9, 11 and 13. In 1970, 6882 students were surveyed; in 1972, 6627 students; and in 1974, 3479 students. The number of drinkers increased significantly between 1970 and 1972 and between 1972 and 1974. Sixty per cent of the students were drinkers in 1970, 70% in 1972 and 73% in 1974. It is, however, interesting to observe that the 1970–72 increase was greater than that occurring between 1972 and 1974. (A change in the questionnaire between the 1968 and 1970 surveys precludes easy comparisons for these years.) Also, changes in drinking were greatest among grade-13 students who because of their age (18–20) should have been most affected by the new law.

In May 1972 students were also asked directly about changes in their drinking behavior since the new law; 27% reported no drinking at all, 41% said there had been no change, 20% reported more drinking, 4% less drinking, and 9% started drinking after the new law. The most frequent drinkers reported increases in the frequency of drinking more often than did the less frequent drinkers.

Smart and Schmidt (3) also report a study conducted in February 1972 in Ontario on drinking among college students 7 months after the passage of the new law. First-year students at community colleges and universities ($N = 448$) were asked whether the new law made a difference in how often they drank. Most (57%) reported no change. However, 25% of the men and 21% of the women reported an increase in the frequency of drinking. The increases were greater among students who were younger and among those who were more frequent drinkers. However, few students claimed that they drank more on each drinking occasion. The type of drinking occasion also appeared to change after the new law. About

54% of students reported increased visits to bars and pubs, but only 19% reported more drinking with parents. About 40% reported more frequent purchases at liquor stores after the new law. The percentage of students who went to bars or pubs 3 or more times a week doubled from 3 to 6%. Again, the largest changes were among the younger students who were most affected by the new law. For example, 81% of those 18 years of age, but only 45% of those aged 21, reported never having made purchases before the new law. It would appear from this study that the major effects of the new law were not on family drinking but on drinking in bars and pubs and on purchases from liquor stores.

A study by Schmidt[2] examined the effect of the change in the Ontario law on sales of alcoholic beverages. On- and off-premise sales were analyzed separately. The new law increased the population of those legally permitted to buy alcohol by only 8.1% (i.e., those between 18 and 21 years of age), many of whom were drinking before the new law. Schmidt calculated an expectancy of the proportion of total annual sales accounted for by sales between January and July and between August and December, taking into account the increase in population after the change in the drinking age law. He found that the increase of on-premise consumption was greater than expected, although that of off-premise consumption was lower than expected; the sales of beer, wine and distilled spirits all increased.

The only study of drinking that included comparison groups against which to assess changes in areas which lowered the legal alcohol-purchasing age was reported by Smart and Finley (4). The effect of the change on per capita beer consumption in each of the 10 Canadian provinces was examined. Beer was chosen because it is popular among young people and also because monthly sales data on wine or spirits were not available. Per capita beer consumption in each province was computed for the year before and the year after the change. Two control provinces—British Columbia and Saskatchewan—were selected in which there had been no change during the year before or after the change in the experimental provinces. Only data for the year after the change were used for the control provinces, because earlier data would have

[2] SCHMIDT, W. A note on the effect of lowering the drinking age on the consumption of alcoholic beverages. (Addiction Research Foundation, Substudy No. 525.) Toronto; 1972.

included data affected by earlier changes. (Consumption in British Columbia had been increased by an earlier change in alcohol-purchasing age from 21 to 19 and in Saskatchewan by a change from 19 to 18.) The observed and expected proportions of sales before and after the age change were computed using Schmidt's[2] method.

The findings were that (*1*) there was considerable inconsistency in apparent beer consumption—striking changes were not obvious; (*2*) there was an over-all increase in beer consumption in the pre–post comparison but this increase was not greater than in the control provinces; problems in finding control provinces not affected by earlier age changes made firm conclusions difficult; (*3*) there appears to have been a decrease in consumption in five provinces and an increase in five, but the increases were larger, and the reasons for the variations are not clear; and (*4*) the method suggested by Schmidt indicated that beer consumption during the year of the change was not greater than that expected on the basis of adding new drinkers to the drinking population. Unfortunately, separate data on on- and off-premise consumption were not available. The findings suggest that the effects of new age laws may vary from one jurisdiction to another and that more control studies should be done.

Effects of New Age Laws on Driving

A variety of studies in several jurisdictions have shown the effects of alcohol-purchasing age laws on accident involvement. Several of these studies employed control jurisdictions in which there had been no change; there is, however, little agreement at the present time concerning the effects of the changes.

One of the first studies of accidents after a change in alcohol-purchasing age was made by Schmidt and Kornaczewski[3] of Ontario alone with no comparison province. They found a gradual increase in the proportions of accidents involving young drivers from 5.5% in 1967 to 5.8% in 1968, 6.7% in 1969 and 6.9% in 1970, but in 1971, the year of the change, the proportion rose to 10.5%. It does appear, however, that even without an age change young drivers were accounting for more of the drinking accidents in

[3] Schmidt, W. and Kornaczewski, A. A note on the effect of lowering the legal drinking age on alcohol related motor vehicle accidents. (Addiction Research Foundation, Substudy No. 552.) Toronto; 1972.

each succeeding year. Whether the 1971 rates would have been as high without a change is difficult to answer with certainty without a control area in which no change in law occurred.

A similar study was conducted by Whitehead et al. (5). They examined the accident records of men drivers in London, Ontario, a city of 237,000 persons. They found that after the reduction in the alcohol-purchasing age alcohol-related collisions increased 339% among 18-year-olds and 346% among 19-year-olds over 2 years while the total collisions among these age groups increased by only 42 and 37%. Increases in alcohol-related collisions were far lower (20%) among 24-year-olds, who ought not to have been affected by the law. The authors reject two alternative explanations, (*1*) that a public clamor resulted in increased police activities against younger drivers, and (*2*) that the change in the age of majority allowed more car ownership via loans for young drivers. The first is rejected because a search of newspapers found no clamor, and the second because nighttime accidents increased more than daytime accidents. Neither refutation is totally convincing, as police surveillance may have increased without a public clamor, and a higher proportion of nighttime driving is accounted for by youthful drivers. Whitehead et al. concluded (5, *p. 1221*) that "the change in the alcohol-purchasing age had an independent effect of increasing the incidence of alcohol-involved collisions and total collisions among young drivers."

The validity of this conclusion as it relates to the Michigan alcohol-purchasing age law has been debated at length. Hammond (6) showed that after the alcohol-purchasing age was reduced in January 1972 there was an increase in the number of young drivers involved in collisions. Among drivers aged 18 and 19, the number of fatal crashes increased by 29% from 1971 to 1972. However, Zylman (7) argued that the increase could have been due to increased police surveillance, expected year-to-year fluctuations in numbers, or to a change in drinking or driving practices of young people. Ferrence and Whitehead (8) countered the argument of greater police surveillance by showing that the increase in alcohol-related crashes persisted into 1973, beyond the point at which Zylman expected such surveillance to stop. However, stronger arguments presented by Zylman are that (*1*) the total number of licensed drivers increased by 31% in the years 1968–73, and (2) in several years between 1962 and 1971 there were greater

increases in the proportion of crashes involving young drivers than there were after the age change (e.g., 35, 40 and 31%). Apparently, data are not available for alcohol-related crashes by age for the years 1962–72. Perhaps in Michigan the law was changed at a low point in the fluctuating curve for alcohol-related accidents, and postlaw effects are, in part, artifacts of that occurrence.

Problems similar to those outlined above apply to some of the Michigan data described by Hammond (6). He showed that there was a 141% increase in driving-under-the-influence charges in the period 1971–72 among those aged 18–20, but only a 26% increase among those over 21. He also referred to a Highway Safety Research Institute report indicating that in road surveys the proportion of drivers aged 16–20 with blood alcohol concentrations (BACs) of over 0.05% increased from 1.3 to 4.9%. Although these changes appear to be very large and outside normal fluctuations, it is difficult to attribute them directly to the new law.

Pelz et al. (9) also analyzed data on young men drivers in Michigan. They found evidence that just prior to the lowering of the alcohol-purchasing age a drop in the increase in fatal crashes occurred. They suggested that perhaps awareness of the forthcoming legal change encouraged young drivers to drive more responsibly. They did not, however, present any postchange data.

Naor and Nashold (10) studied the effect of a new alcohol-purchasing age law in Wisconsin. This change was different from that in Ontario and Michigan because it made only wine and spirits newly available to those aged 18–20. Beer had been available earlier on a local-option basis and hence somewhat smaller effects on driving problems might be expected. They studied the change in BACs of drivers aged 18–20 involved in fatal accidents during 1968–73; the law was changed in March 1972. The proportion of drivers with BACs over 0.05% had remained essentially unchanged; a very slight increase in 1973 compared with 1972 and 1971 was noted, but the changes were not greater than had occurred in earlier years. Similar nonsignificant changes were found in the rates of fatalities per 100,000 licensed drivers. The latter statistic, however, may not be very sensitive to the effects of a partial liberalization of the drinking age law among young people; a larger impact may be expected on average BACs among all drivers in accidents or at risk as found in Hammond's report (6).

Fortunately, there are two studies with more convincing quasi-

experimental designs than those discussed so far. Douglass and Filkins (11) selected Vermont, Maine and Michigan as states which reduced the alcohol-purchasing age to 18. New York and Louisiana were selected as controls, having for a long time allowed drinking at 18, while Pennsylvania and Texas were selected as consistent "21-year-old" states. The authors studied single-vehicle nighttime accidents among men for several years before and after the change in all but Vermont, where data were available for only 1 year, before and after the change. An interrupted time series analysis was used on age-specific data freed of cyclic variations and linear trend. They found no evidence of increases in alcohol-related accidents among 18-to-20-year-olds in control states, except in Pennsylvania where there was also an increase among older drivers. In Michigan, and less so in Maine, alcohol-related accidents increased "beyond any normally expected level after the legal drinking ages were changed"; this effect was attributed to the legal changes. In Vermont, however, no increase was observed after the change in law; this could have been because (*1*) Vermont has a long border with New York (which has a 40-year history as an "18-year-old" state), (*2*) an Alcohol Safety Action Project may have reduced drinking accidents in 1972, or (*3*) limiting the analysis to 1 pre- and 1 post-change year rendered the time series analysis for Vermont inadequate. The largest change in Michigan was found in Washtenaw County, perhaps because of the large population of young persons and because the earlier age laws had been more strictly enforced. The study indicates, as did Smart and Finley's (4), that the effects of age laws may vary from one jurisdiction to another, but that the effects do not necessarily occur randomly, as suggested by Douglass and Filkins's analysis and discussion.

Another carefully controlled study was reported by Williams et al. (12). Michigan, Wisconsin and Ontario were the experimental states and Indiana, Illinois and Minnesota, "21-year-old" states contiguous to three experimental states, were the control states. A novel aspect was the inclusion of data on both 18-to-20-year-olds and 15-to-17 year-olds. The latter were too young to purchase drinks legally under the new laws but could have had more access to alcohol as a result of changes in the alcohol-purchasing age. Comparison of the incidence of driver fatalities, adjusted for the size of the driver population in the experimental and control states, revealed a small but significant increase in young driver fatalities

in Michigan, Wisconsin and Ontario, especially in nighttime and single-vehicle crashes, in which alcohol is most often involved. This occurred among both those aged 18–20 and those aged 15–17, indicating that alcohol-purchasing age laws can affect those who are technically too young to be covered by them. Since the observed increase was small—only 5% more than expected—the authors suggest that the law affected the perception of the extent of alcohol-related fatalities or the reporting of alcohol involvement by the police more than it affected the actual fatal crash rate.

Effects of New Purchasing Age Laws on Drinking Problems

Only three studies have investigated the variety of drinking-related problems which could have been affected by the new laws, such as crime rates, public drunkenness, school attendance, family functioning or employment. Two of these studies (3, 6) concerned school problems and one (4) dealt with admissions to treatment facilities.

Both Hammond (6) and Smart and Schmidt (3) reported reactions of school officials to the changes in the alcohol-purchasing age 6 months after the change. Hammond's study involved 354 principals "which was only 46% of the total"; it is not clear whether the remainder did not reply or were not surveyed. Of the 354 respondents, 44% reported that school functions such as dances were more of a problem after the change; 26% reported increased drinking at lunch hour and 32% reported more problems with drinking during school hours. Most (66%) thought that there was more drinking than before among 15- to 17-year-olds.

Smart and Schmidt (3) reported the results of a survey of 220 vice principals conducted in the Toronto area 7 months after the change in the law; 86% replied. Slightly more vice principals were against the new law than were for it. Those who were against it reported more drinking problems in their schools after the change. It is uncertain whether their unfavorable attitude to the law led to or followed their negative perceptions about the effects of the law. About 28% reported no increase in drinking but two-thirds said there had been an increase and the remainder did not reply. Over-all, 40% reported more drinking at lunchtime, 34% more alcohol-related disciplinary problems, 20% more drinking-related absenteeism, and 23% more students with hangovers. Studies of this type are of interest but suffer from the confounding effects of

attitudes, distorted memory and the lack of adequate baselines for the observed changes. Before-and-after studies using actual school records have not yet been conducted.

Smart and Finley (4) studied the numbers of young people admitted to alcoholism treatment facilities before and after the change in the law in Ontario. Prior to 1971 very few persons 21 or under were admitted, but by 1974 this age group accounted for 4.4% of all admissions. The first significant change in the number of admissions during the period 1964–74 occurred in 1971, the year the alcohol-purchasing age was changed. Of course, these increased admissions could reflect (*1*) a change in acceptability of treatment among young problem drinkers, (2) a decreased delay between first appearance of a problem and seeking treatment, or (3) an increased incidence of alcohol problems among young people. More research will be necessary to determine whether the age change was the most important factor in these increased admissions.

Summary and Conclusions

In general, there has not been extensive research on the effects of changes in the alcohol-purchasing age, except for alcohol-related traffic accidents. Much of the research on drinking and drinking problems has not involved comparisons with areas where the law has not been changed. However, the results of all these studies indicate some consistent and possibly reliable effects. It would seem that the following conclusions could be supported:

(*1*) Both self-report and sales studies indicate that substantial increases in youthful drinking occurred in Canada after the legal age for purchasing alcoholic beverages was reduced, probably, but not certainly, because of the change. Relevant data for the United States seem not to be available.

(2) The largest changes in drinking probably involved on-premise consumption rather than sales in liquor stores or drinking with families.

(3) The effects of the age change on per capita beer consumption varied from province to province in Canada.

(*4*) There are usually greater increases in alcohol-related automobile accidents in areas where the purchasing age has been reduced than in comparison areas. These increases do not occur in all states (e.g., Vermont), but the reasons for the inconsistency are uncertain.

(5) Changes in the alcohol-purchasing age probably affect the automobile crash experience of those aged 15–17 as well as those 18–20.

(6) No information is available which shows conclusively (e.g., pre–post study with appropriate comparisons) that reducing the purchasing age has caused increases in educational, family or public-order problems. The data indicating increased admissions of young persons for alcoholism treatment are subject to a variety of interpretations.

(7) The evidence, chiefly from studies of traffic accidents and inferentially from studies of changes in drinking patterns, suggests that there are public health reasons for not introducing changes in jurisdictions which have not yet reduced purchasing ages. Whether the arguments based on human rights or age of majority are superior depends on political, social and cultural values too numerous to discuss here.

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POSITION PAPER/Department of Health & Social Services

POSITION PAPER

HOUSE BILL NO. 112

"An Act authorizing an advisory vote by the qualified voters of the State on raising the age of majority to 21 for the purposes of regulation of intoxicating liquor; and providing for an effective date."

Overview

Passage in 1971 of the 26th Amendment to the United States Constitution not only allowed 18 year olds to vote but this action assisted in extending certain other privileges to this age group. During the period of 1970 to 1975, 27 states including Alaska, lowered their minimum drinking age for all alcoholic beverage, and another 11 states lowered the drinking age for wine and/or beer. However, 1976 saw a reversal of this trend when Minnesota raised its minimum drinking age and since then, eight (8) other states have also raised their drinking age. A key factor in states decisions to raise drinking ages has been their experience of sharp increases in alcohol-related highway accidents and fatalities that have coincided with the reduction in drinking age. Massachusetts, for example, found that traffic fatalities involving drinking teenagers nearly tripled in the years following lowering the legal drinking age.

Alaska Experience

Alcohol abuse and alcoholism are generally recognized as Alaska's number one health and social problems. Alcohol has also been linked with the state's high accidential death rate and other manifestations of social ills, such as homicide, suicide, crime, violence, child and spouse abuse and neglect, etc.

Youth of Alaska are not immune from the ill effects of alcoholism and alcohol abuse. For example, the State Alcoholism Plan estimates that over 7,000 of Alaska's youth are problem drinkers, defined as drinking alcohol to an extent, or in a manner that an alcohol-related disability is displayed. Also, our state-funded alcoholism treatment programs report that youth make up 5.9% of all persons seen for treatment and counselling. Our Department finds 16-17% of all juvenile arrests are for driving under the influence, liquor law violators and public drunkenness, ranging to as high as 52% in Bethel and 45% in Juneau.

These statistics appear to indicate that alcoholism and alcohol abuse continues to be a serious health and social problem in the State and to which our youth are vulnerable as well.

POSITION PAPER/Department of Health & Social Services

Department's Position

The Department offers its expertise in looking at the social and health aspects of the problem. Our experience must be considered in combination with expert advice from the other agencies and groups impacted by the problem, such as the Department of Public Safety and Department of Law. We wish to note that the raising of the legal drinking age, although not a panacea for alcohol abuse, may decrease the availability of alcohol to a population that is at risk from this major health and social service problem.

Recommended by: Robert L. Cole

Robert L. Cole
Coordinator
Office of Alcoholism/
Drug Abuse

Date: 02/02/82

Approved by: Helen D. Beirne

Helen D. Beirne
Commissioner
Dept. of Health and
Social Services

Date: 2-2-82

THE LEGISLATURE OF THE STATE OF ALASKA
TWELFTH LEGISLATURE

FISCAL NOTE

I. REQUEST
Bill/Resolution No. HB 112
Title "An Act authorizing an advisory vote by voters raising age to 21..."
Requested by _____ Date _____

II. FISCAL DETAIL
Agency Affected Health & Social Services
Program Category Affected Alcoholism/Drug Abuse
BRU, Program, Or Subprogram(s) Affected _____
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS,CLAIMS,ETC.						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER (Specify Source)						
POSITIONS	-0-	-0-	-0-	-0-	-0-	-0-
FULL TIME						
PART TIME						
TEMPORARY						
	-0-	-0-	-0-	-0-	-0-	-0-

III. ANALYSIS (See Fiscal Note Preparation Instruction, Section III)

Robert L. Cole

IV. DATE January 27, 1982 PREPARED BY Robert L. Cole
AGENCY Alcoholism/Drug Abuse
PHONE 586-6201

jcc

Original: Legislative Finance
cc: Budget and Management
Prime Sponsor (First Legislator Named)
33-001 (Rev. 12/81)

The Anchorage Times

CROSSROADS

Teen drinking:

The younger they are, the faster they fall

by Clark Brooks
Times Writer

When ghetto youths started passing joints to their middle-classed counterparts in the late '60s, the government decided to do something about the country's drug problem.

What was needed, experts figured, was another scare campaign, something to update the theme of "Reefer Madness," the 1930s film about a crazed marijuana addict whose only joy in life aside from puffing funny cigarettes was luring young people to his house and hooking them on the weed with roots in hell.

But too many youths had already learned about drugs first-hand. They didn't swallow stories that LSD users always leaped out of the nearest second-story window or that everyone who smoked grass wound up shooting heroin.

While the so-called drug-education programs had little effect on the kids, they so scared the parents that many were relieved if their children just used alcohol. That, at least, was something mom and dad could understand. Or so they thought.

But alcohol, drug-abuse counselors say, is as volitile as any other chemical concoction. It affects people, especially young people, in different ways.

"What teen-agers develop," says Karen Burner, public information coordinator for the Alaska Council on Prevention of Alcohol and Drug Abuse, "is something called accelerated alcoholism. It takes an adult anywhere from one to 19 years to become an alcoholic. But with their bodies not being mature, it takes teenagers one to *18 MONTHS*."

This is not, to be sure, meant to support the '60s cliche, "You lose with booze, but with dope there's hope." It's meant instead to show that alcohol can be as harmful as illegal drugs.

Ninety Alaskans died in 80 fatal vehicle accidents last year, according to the State Highway Safety Planning Agency. At least one of the drivers was drunk in 56 of those pot and some are on a combination of the two. I think the drinking is a bigger problem than the kids smoking pot. We get a lot of cases where we find kids between the age of 12 and 17 just passed out on the road."

Warner said he wasn't sure how many kids use harder drugs. Users, he said, are hard to catch. However, he did estimate that 97 percent of the juvenile drug cases are for marijuana.

"It's not uncommon for somebody arrested for driving while intoxicated to also have marijuana on him," says Anchorage district attorney Larry Weeks. "But unless you find it on them, you can't tell if it's in their system. As for alcohol, probably 75 percent of the stuff we get in with people under 21, they're under the influence of alcohol when committing it."

The recent, well-publicized hockey-stick murder, for example, occurred after 18-year-old Rick Van Cleve had consumed malt liquor, beer and rum, according to friends who had been with him the night of the killing.

Van Cleve, convicted of murder in June, last year repeatedly beat 40-year-old Mike Hiratsuka with a hockey stick. The attack was provoked, Van Cleve said at the time, by name-calling from natives on Fourth Avenue.

The National Institute on Alcohol Abuse and Alcoholism estimates there are 3.3 million problem drinkers — kids who get into trouble with teachers or the police as a result of drinking — among the country's junior high and high school students.

"Some parents still think alcohol is better for their kids than other drugs," says Mike Dunham, a counselor for Akeela House, a local drug-treatment center. "That's just not true. If a parent is using alcohol, they'll probably feel more comfortable if their kids are using it, too, instead of something they're not familiar with even if it's just as harmful and addictive."

If overall national drinking statistics are any indication, Alaska's teen-age drinking problem is worse than in most states. The 49th state ranks first in per capita resident drinking, according to the State Division of Alcoholism and Drug Abuse.

Perhaps the most widely discussed measure to mitigate Alaska's teen-age drinking problem is raising the drinking age from 19 to 21. Between 1970 and 1975, some 26 states, including Alaska, lowered their drinking age to 18 or 19 in the wake of the 26th Amendment which allowed 18 year olds to vote. More than a third of those states have since gone back to 21, primarily because of an increase in drunk-driving accidents.

A bill to raise the drinking age was introduced in Alaska's last legislative session. When that bill died in the House, it was revised to authorize only an advisory vote. That bill also failed.

Opponents of the bill saw it as a freedom issue. If the government can take away some rights, the argument went, it can revoke other rights. Another argument contended that if a person is old enough to fight and die for his country, he's old enough to drink.

"I'll probably try to just go ahead and pass a bill where no one can be sold anything but 3.2 beer if they're under 21," says Sen. Brad Bradley, author of the original bill. "If I can't pass that, I might try an advisory vote again. Nobody should want to deprive the public of making a choice."

A recent poll sponsored by The Anchorage Times and conducted by Dittman Research Corp. showed that the majority of Alaskans favor raising the drinking age. The statewide poll, in which Dittman interviewed 419 randomly selected people in 47 Alaska communities, found that 55 percent wanted the drinking age raised to 21.

"Raising the age would make a difference," Goldston says. "Some young people who are marginal, who don't know whether they want to drink or not, won't if it's against the law. My personal experience was that the two years between 19 and 21 made a difference. Instead of borrowing money from their parents to drink and party, people over 21 have to make their own money to do it."

"The drinking age definitely should be raised," says juvenile court intake officer Warner. "There

wrecks. That's 70 percent alcohol-related, 20 percent above the national average.

Youths between the ages of 15 and 18 were behind the wheel in 13 of last year's fatal accidents. Ten of them were drunk. That age group represents a mere 3.4 percent of Alaska motorists yet accounts for 11.3 percent of all alcohol-related accidents.

Teen-agers dying on the highway is nothing new, of course. It was 10 years ago that three 17-year-old East High School cheerleaders died in one of the worst car crashes in Anchorage's history. A fourth youth also died in the accident and several others were injured.

Cheryl Iverson, Chris McDannel and Gloria Buenafe were killed when a car driven by 19-year-old James Lee Gullard slammed into them head-on. A passenger in Gullard's car, 16-year-old Jack Cremin, also was killed. Gullard, who suffered multiple leg fractures and head lacerations, was charged with driving while intoxicated.

ASIDE FROM being a highway killer, alcohol is the leading cause of crime among Alaska's youth, according to Anchorage juvenile court intake officer Jay Warner.

"I'd say at least 70 percent of the crimes of violence or robbery are committed by kids who are under the influence of alcohol," Warner says. "Some are drunk, some are on

sion of Alcoholism.

"The fact that there are more adults here who have problems is one of the reasons more kids drink," says Rich Tolman, clinical director of Open-Door Clinic, an Anchorage drug-treatment center for people 12 to 18 years old. "But there are a lot of other reasons. All you gotta do is look around. Look at the movies that appeal to kids. And the records. They're getting lots of pro-drug messages from movies and records. Right now it's the norm for kids to be drinking and smoking marijuana at least a little."

Experts say kids also drink because they're bored, pressured by peers and need an escape from problems. But instead of escaping, what drinkers end up with, of course, are more problems.

"Aside from killing themselves on the highways and committing crimes," Tolman says, "they get emotionally crippled, too. Even if they survive adolescence without looking like they have a severe problem, they've started a career of alcohol and drug abuse."

"KIDS," SAYS local alcoholism counselor Tom Goldston, "tend to have a more difficult time getting off alcohol after they start. They haven't been involved with it long enough to see that it can be detrimental both physically and emotionally. And the younger somebody gets into drinking, the more difficult it is

may not be much difference between 19 and 21 but there's a substantial difference in a 17-year-old passing for 19 than 21.

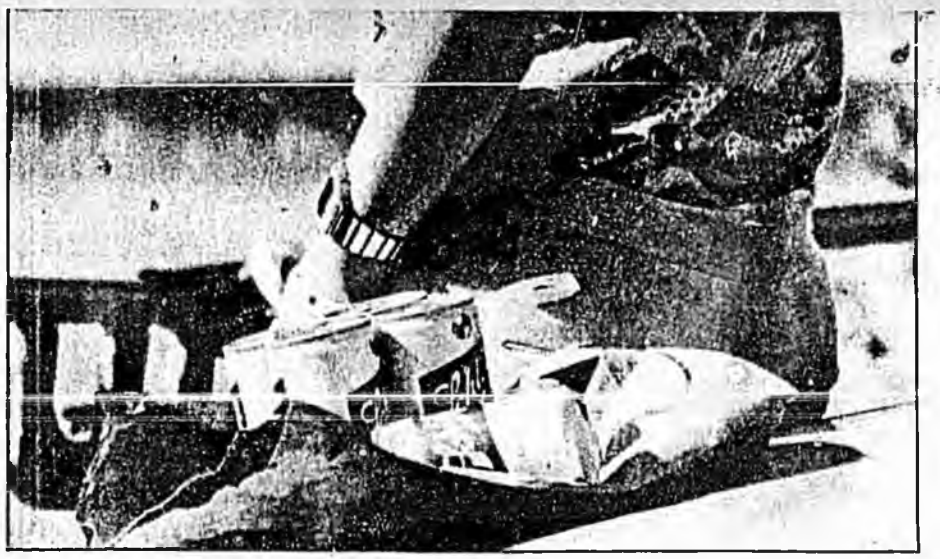
Most experts agree that while raising the drinking age to 21 would be of some help, it would merely be one of many steps that need to be taken.

"Nobody is going to find startling effects as a result of raising the drinking age," says Dr. Dennis Kelso, director of Altam Associates, a consulting firm that researches alcohol-related matters. "The most important step is to increase the relative price of alcohol — relative in relation to average personal disposable income and the consumer price index."

Societies which have the fewest problems with alcohol, Kelso says, are the ones with the most controls and limitations on drinking. These include higher drinking age, higher price, limits on advertising, shorter hours and fewer retail outlets.

THE TEEN-AGERS themselves appear to be against raising the age. Some feel it's not fair to the responsible young drinkers. Others don't think the increase would affect those it's intended to harness.

"It should stay at 19," says Mike Hazlewood, a 19-year-old Anchorage Community College swimming instructor. "They're drafting us, why shouldn't we be able to enjoy privileges, too?"



"They should leave it at 19," says 19-year-old sales clerk Tina Rowell. "Older people abuse alcohol, too. So what do you do, raise the age to 92?"

Although Alaska's youth have had a staggering drinking problem for years, state leaders are only beginning to do something about it. The Open Door Clinic, an outpatient facility for drug abusers under age 18, is less than a year old. Akeela house, which has a resident program for adults and outpatient care for youths, began helping the latter last July.

Treatment centers are essential, but counselors say prevention programs are needed as well. Some steps finally are being taken toward prevention.

The state legislature, for example, upped its allocation to the governor's council on alcohol and drug abuse from $3.5 million to $13 million. The legislature, according to Bob Cole, coordinator of the state office of alcohol and drug abuse, finally has realized that it costs more to cure people than to educate them.

Alaska also is starting a program in elementary and high schools to teach students how to avoid the pitfalls of alcohol. Called Here's Looking at You, the four-part program deals with developing a positive self-image, decision-making skills, coping skills and provides information about alcohol and other drugs.

"One thing we know for sure about young people and drinking," Burner says, "is that they're going to have to make decisions about whether or not they want to drink or use drugs. So they need good decision-making skills. We feel optimistic that in 10 years there will be a reduction of alcohol consumption because of Here's Looking at You."

Such programs are a start, but many believe that much more is needed. "We need a program that will appeal to kids in a lot of different ways," Tolman says. "We need recreation-based programs and more recreational facilities in town. We're behind other places in terms of our treatment facilities. With all the money we have in Alaska, there's no excuse for us not to have top-notch programs."

"What we need," Burner says, "is to develop a public awareness of what's happening and how serious the problem is. Kids today don't use just alcohol or drugs, they use both in concert. When I think about what that's doing to them, it scares me to death."

It's easy to get into, tough to get out of

Ken is only 18, but he's been using alcohol for eight years. He's being treated at Akeela House, a local drug-abuse center. He's progressing well, but isn't sure if he can keep the bottle corked after he's released.

Ken began drinking to get the courage to go to school. He has dyslexia, a learning disability which causes transposition of written letters and words. The other kids teased him because he read poorly.

"I just got a bottle out of my mom's cupboard," he says, "poured some in a jar and sat out in the cold and drank. After a while all I was doing was getting sick—faced and going to school."

A year later, he began smoking grass. The booze continued to flow. By the time Ken reached the sixth grade, he had a lot of company. Half of the 200 students in his Kenai school, he says, were either drinking or smoking grass, mostly drinking.

"Everybody thought that since booze was accepted it must be good," he says. "With weed, you always hid and did it with just a friend or two. With booze a lot of kids would sit around and get drunk."

Next came LSD and amphetamines, which he washed down with alcohol.

"I did acid heavily for a couple of years," he says, "mostly on weekends. I only did it before school about eight times a semester. I remember going to school on two hits of acid. I had a good time but I didn't learn much. At the time I thought it was really right on."

Meanwhile, Ken had been breaking into houses in Kenai, not to get money for alcohol or other drugs, but just for something to do after drinking. When he was 15, he got caught stealing a car.

While on probation, Ken got busted for driving a stolen dune buggy while intoxicated. He was sent to McLaughlin Youth Center, but they decided to give him another chance.

By this time, some of Ken's friends started dying off. One, driving while drunk, was killed in a head-on car crash. A couple of others died in a snow-machine accident. They, too, had been drinking. Ken had planned to accompany them the night of the accident but had stayed home at the request of his mother.

Ken continued to drink and take drugs. He said he merely tried to drive less frequently while intoxicated.

"I didn't think I had a problem then," he says. "And I was getting pretty sneaky. I wasn't supposed to be drinking or doing drugs while on probation. They were giving me my urine analysis on Friday, so I'd party all weekend and hope everything got washed out by Friday."

But it turned out that the urine analyses weren't always on Friday. His probation officer called him in one day to arrest him. They had found cocaine in his urine.

"My P.O. didn't tell me they were going to arrest me," he says. "I got loaded on the way down and brought another joint to smoke on the way home. So they busted me for that, too."

Ken served 30 days in McLaughlin, kept his nose clean, and was put back on probation. He got a job and was determined not to drink or take any drugs.

"It lasted two weeks," he says. "I was living with my dad. I didn't like that because he was always telling me what I was doing wrong with a bottle of booze in his hand."

So two months ago he moved out of the house, which he wasn't supposed to do until he was 19. The authorities decided to send him back to McLaughlin.

"I told them it wouldn't do me any good," he says. "They'd just kick me out in the streets without any money and I'd go back to drinking."

He had been an outpatient at Akeela House and had reached age 18, the minimum age to become a resident there. He told his probation officer that he thought he could benefit from the program, and she agreed to send him there.

Akeela house has 25 residents and 12 counselors. Thirty-seven counselors if you count the residents.

"In this place everybody knows what everybody's done and they keep pushing it in your face," Ken says. "You gotta take it or go."

Counseling is done in groups of two or three, sometimes with staff therapists, sometimes just with residents. The residents also do cleaning and other chores. Ken is the town crier. He announces meals and special events.

"I don't get off on all the functions we do here," he says. "But it's done me a lot of good already. It's made me see the way I act out there. It's letting me get a stronger hold on myself."

At his current rate of progress, Ken will be ready to leave Akeela House in about a year, counselor Mike Dunham says. When he leaves, Ken intends to learn body and fender work at a technical school.

"I feel good not drinking or doing drugs," he says. "But when I get out of this program I can't honestly say that I'll never touch booze or pot. But if I do, I will put a stronger hold on what I do. I've got to."

He ran the fingers of both hands through his medium-length blond hair and leaned back on the couch.

"You always think it'll never happen to you," he said. "You always think you can handle it. But believe me, if you keep drinking and doing drugs something will come down. I always thought I could outsmart the police and the schools. But you can't. Tell the kids out there to just think about what they're doing. Nobody can tell them anything. They've gotta run it through their own heads."

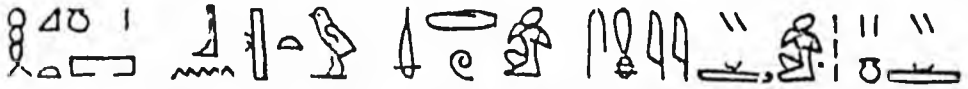
Alcohol health and research World

national institute on alcohol abuse and alcoholism

volume four, number two
winter 1979/80

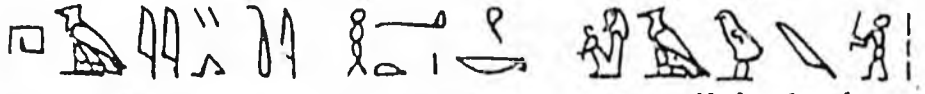
ABC Laws

Make not thyself helpless in drinking in the

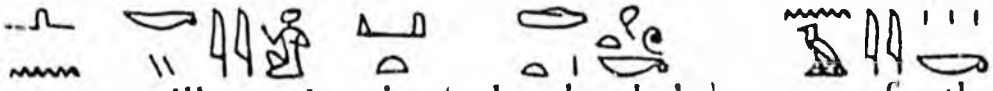


beer shop. For will not the words of thy report repeated

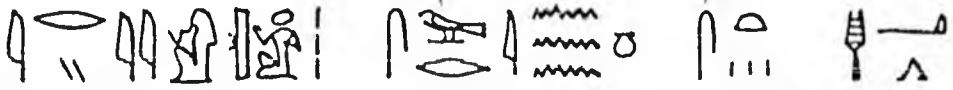
slip out from thy mouth without thy knowing that thou hast uttered them?



Falling down thy limbs will be broken, and



no one will give thee a hand to help thee up as for thy



companions in the swilling of beer, they will get up

and say, "Outside with this drunkard."

u.s. department of health, education, and welfare

public health service·alcohol, drug abuse, and mental health administration

DRAFT

_____

The Above Sponsor is duly
authorized to circulate Petition No._____

INITIATIVE PETITION

ENTITLED "A BILL RAISING THE LEGAL AGE FOR PURCHASE AND CONSUMPTION OF ALCOHOLIC BEVERAGES BACK UP TO 21 YEARS."

PROPOSITION

This initiative would amend the provisions of Title 4 of the Alaska Statutes, and all other appropriate references in Alaska Law to raise the legal age at which persons may purchase or consume alcoholic beverages from 19 years back up to 21 years.

WARNING

" A PERSON WHO SIGNS A NAME OTHER THAN HIS OWN ON THE PETITION, OR WHO KNOWINGLY SIGNS HIS NAME MORE THAN ONCE FOR THE SAME PROPOSITION AT ONE ELECTION, OR WHO SIGNS THE PETITION KNOWING HE OR SHE IS NOT A QUALIFIED VOTER, UPON CONVICTION IS PUNISHABLE BY A FINE OF NOT MORE THAN $1,000 OR BY IMPRISONMENT FOR MORE THAN ONE YEAR, OR BOTH. (AS 15.45.100)"

(See next page for text of bill.)

DRAFT

AN INITIATIVE

For an act relating to raising the legal age for purchase and consumption of alcoholic beverages from 19 back upwards to 21, and providing for an effective date.

BE IT ENACTED BY THE PEOPLE OF THE STATE OF ALASKA:

AS 04, and all other statutes relating to the sale purchase and consumption of alcoholic beverages are ammended so that all references to the age of 19 are changed to the age of 21

and

EFFECTIVE DATE

Fourth Special Report to the U.S. Congress on

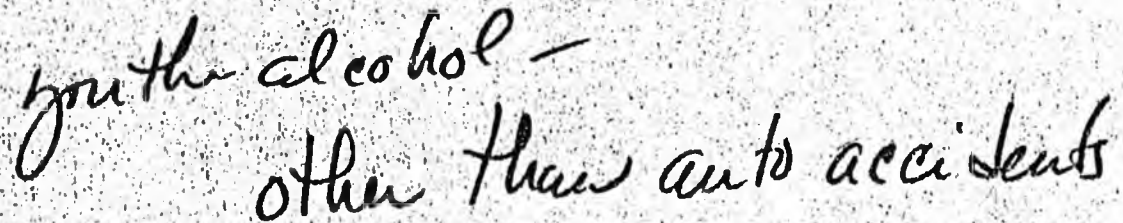
Alcohol and Health

from the Secretary of Health and Human Services

January 1981

U.S. Department of Health and Human Services
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

National Institute on Alcohol Abuse and Alcoholism



Foreword

Alcoholism and problem drinking are among the most serious public health problems in the country today. In addition to their economic impact, they continue to have serious personal and social consequences. The need for national concern in alleviating the illness of our alcoholics and in helping problem drinkers is underscored by the magnitude of these consequences. Alcohol-related accidents result in tens of thousands of injuries and deaths. Physical, psychological, and social disruptions are experienced by large numbers of American teenagers as a result of destructive patterns of drinking. Thousands of children are born with abnormalities due to maternal drinking during pregnancy. Many children of alcoholic parents suffer psychological and behavioral disorders. In addition, problem drinking creates further difficulties for those population groups already suffering from years of neglect and discrimination.

This report to the Congress demonstrates the significant progress to control and treat alcoholism and alcohol abuse that has been made through the Department of Health and Human Services' emphasis on alcohol-related problems. It provides a new base of information on which to build future efforts. To those who work in the field and to those millions who know the ravages of this illness first-hand, the *Fourth Special Report on Alcohol and Health* should prove a source of encouragement. I am pleased to present it to the Congress and to the Nation.

Patricia Roberts Harris
Secretary of Health and Human Services

January, 1981

Preface

Among the many problems that diminish the strength and well-being of the American people, alcohol-related problems are most salient. With significant linkages to suicide, homicide, accidental death and injury, chronic disease, family distress, and lowered productivity, alcoholism and problem drinking invade virtually every important aspect of reality. Personal tragedy, human suffering, and social burden follow in the wake of these problems with alarming consistency.

Fortunately, as this *Fourth Special Report on Alcohol and Health* gives evidence, substantial progress is being made in understanding the disease of alcoholism and in coping with the myriad of dysfunctional personal and social behaviors associated with problem drinking. A comprehensive alcoholism treatment system now exists when, just a decade ago, a systematic network of treatment services could only be imagined. Prevention programs addressed to alcohol-related problems have been conceived, designed, and started. In laboratories throughout the Nation, distinguished scientists are turning their attentions to the biological, psychological, and sociocultural factors that contribute to alcoholism and problem drinking. In the workplace and on the Nation's highways, important programs that increase the likelihood of early identification and intervention are now in place.

Recently, as Surgeon General of the United States, I published *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention.* In that report, threats to health were identified, discussed, and analyzed. The important concepts of health promotion and disease prevention were presented as major approaches to achieving significant reductions in these various threats to the health and well-being of the American people. *Healthy People* referred to destructive drinking practices as a major risk factor; our new knowledge suggests that these practices may constitute a preeminent risk factor. The *Fourth Special Report on Alcohol and Health* underscores these prior convictions. It presents the conditions under which drinking becomes a risk to health, the range of adverse consequences that may be incurred, and the measures that are being taken to diminish the risk.

As did the three documents that preceded it, this fourth report on new knowledge concerning the relationships between alcohol and health challenges some of our previously held beliefs about alcohol-related problems, substantiates others, and encourages us to search for further insights and understandings.

Julius B. Richmond, M.D.
Assistant Secretary for Health and
Surgeon General

Introduction

The National Institute on Alcohol Abuse and Alcoholism was established in 1971 because alcoholism in our society had become increasingly recognized as both a debilitating disease and a major public health problem in need of a significant Federal response. It is appropriate that we mark this 10-year anniversary in the life of the Institute by reflecting on the accomplishments of the past decade and on the challenges of the next.

There have been a number of specific advances since 1971, but perhaps the most significant achievement is the greater maturity that now guides this public health effort. This is apparent in the greater depth and breadth of understanding of those within the field, and in a more sophisticated understanding of alcoholism by the public. This maturity has brought us a deepened appreciation of the complexity of the disease, and has enabled us to discard many myths that once affected our responses to it. The veil of shame that in the past surrounded alcoholism is being lifted, allowing us to see it as a treatable disease and not as a failure of character. We now recognize that alcoholism is a multidimensional disease that cannot be simply defined or understood. And, like all diseases, it can strike the unsuspecting, reaching into all classes, races, and nationalities.

We now know that alcoholism involves an interplay of biological, behavioral, and cultural components within the individuals who are afflicted. We have come to understand that alcoholism involves biological factors, either as etiological indicators or as biomedical consequences, and that psychological and sociocultural factors enter in as well. The interaction of these components, varying as they do from individual to individual, further deepens the complexity of this disease and makes it quite unlike any other.

Our experience in this past decade has also made us acutely aware of the broad impact of problem drinking on our society, so much so that the litany of the damage done has become familiar to us all. Establishing a consensus on precise numbers is difficult, but there is no doubt that alcohol problems cost this country billions of dollars each year. We pay this cost in lost productivity in the workplace, in health and medical care expenses, in deaths and injuries from highway accidents, violent crimes, and fires. We also pay in ways that cannot be measured by cost accounting: in broken families, abused children, ruined careers, unrealized ambitions, in lives cut short. The ultimate cost to our Nation, reckoned in personal tragedies and social burdens, is incalculable.

Surveys consistently find that approximately 10 percent of adult Americans who drink are either alcoholics or experience problems with their drinking. Alcohol problems also reach into our schools, jeopardizing the futures of thousands of young people and causing their parents deep concern and anxiety. Ten percent of all deaths in this country are alcohol related, and many of them are caused when young people drink and drive.

More sophisticated analyses of how alcoholism and excessive drinking affect the human body have increased our understanding of their vast range of indirect health consequences. Alcohol appears to be involved in cancer, heart disease, and a number of serious gastrointestinal and neurological disorders. Its sweep is wide and its damage great.

1–Patterns of Alcohol Consumption

- During the 1970s, the Nation's apparent consumption of ethanol continued to rise, but the rate of increase slowed considerably. By 1978, apparent consumption had risen to more than 2.7 gallons per year of ethanol per person 14 years of age and older.

- Beer accounts for 49 percent of the ethanol consumed by Americans; wine accounts for 12 percent; and distilled spirits for 39 percent.

- In 1979, self-reported consumption for U.S. adults showed no dramatic changes from previous years. Approximately one-third of the adult population continued to report abstention, one-third reported light drinking, and one-third reported either moderate (24 percent) or heavier (9 percent) drinking.

- In the heavier drinking category, males (14 percent) outnumber females (4 percent). While 25 percent of males reported abstaining from alcohol, 40 percent of females reported abstaining.

- Heavier drinking appears to peak at age 21–34 for males (19 percent), at age 35–49 for females (8 percent), and to decline thereafter for both sexes.

- Hispanic groups of both sexes, but especially males, reported relatively high rates of heavier drinking.

- Blacks of both sexes reported relatively high rates of abstention. However, among black adults who drink, the proportions of self-reported heavier drinkers are similar to those for most other groups.

- While the frequency and quantity of adolescent drinking does not appear to have changed much since the 1974 national survey, the proportion of 10th–12th graders who reported ever having consumed alcohol is very high—87 percent.

- In terms of volume of drinking, in the year prior to the 1978 survey, 25 percent of 10th–12th graders reported abstention, 7.6 percent reported infrequent drinking, and 18.8 percent reported light drinking. Heavier drinkers constituted approximately 15 percent of the sample surveyed.

- In the 1978 survey, a substantial number of youths reported drinking fairly large amounts of alcohol by age 15. Heavier and moderate/heavier drinking appears to increase to age 17 and then level off.

- Larger numbers of adolescent females reported abstention while larger numbers of adolescent males reported heavier drinking.

- With regard to trends in self-reported consumption, neither adults nor youths in the 10th–12th grades reported changes in either frequency or quantity of consumption since earlier surveys.

2–Drinking Problems: Variations and Prevalence

- Drinking problems are defined in terms of alcohol dependence, adverse effects of consumption, and alcohol consumption. Self-reports of various drinking problems are possible indicators of alcoholism and problem drinking but are not synonymous with them.

- When low criteria were used for classifying responses to a survey as indicating drinking problems, substantial numbers of adult drinkers reported experiencing various alcohol-related problems. Twenty percent of male drinkers and 10 percent of female drinkers reported one or more symptoms of alcohol dependence or loss of control over a 1-year period. Nine percent of male drinkers and 5 percent of female drinkers reported adverse consequences of consumption. Twenty-eight percent of adult male drinkers and 8 percent of adult female drinkers were classified as heavier drinkers.

- Approximately 15 percent of adolescent drinkers reported drinking at least once a week and consuming five or more drinks per drinking occasion. Thirty-one percent of 10th–12th graders reported experiencing drunkenness at least six times a year. Two percent of adolescents reported adverse consequences of consumption two or more times a year.

- In terms of alcohol misuse (defined as self-reports of drunkenness at least six times a year or negative consequences two or more times in at least three of five social areas), 31.2 percent of the adolescent sample were classified as alcohol misusers.

- More adolescent males reported alcohol misuse than did adolescent females. Increases in alcohol misuse with age were reported by males but not by females. Black and Hispanic adolescent males were substantially lower in alcohol misuse than were white males. Black and Hispanic adolescent females reported the lowest levels of alcohol misuse.

- With regard to trends in drinking problems, comparisons of 1979 national survey data with data from a number of earlier surveys revealed no striking changes—with one exception: Increases in symptomatic drinking are apparent, particularly for males, when 1979 national survey data are compared with survey data gathered in 1967. For youths, comparisons of 1978 national survey data with 1974 national survey data do not reveal significant changes in volume of consumption but do suggest a small, though probably reliable, decrease in adverse social consequences.

- Level of consumption is related substantially to both alcohol dependence and adverse effects. The higher the level of consumption, the greater the probability that a person will experience dependence symptoms and adverse physical and social consequences. Regular heavy drinking appears to be related to both adverse consequences and dependence. Intermittent heavy drinking may result in adverse consequences only.

- When high criteria were used for classifying responses to a survey as indicating drinking problems, substantial numbers of persons were classified as being at increased risk for alcoholism and problem drinking. Fifteen percent of adult male drinkers and 3 percent of adult female drinkers reported consuming 120 or more drinks per month. Five percent of male drinkers and 2 percent of female drinkers reported experiencing three or more symptoms of alcohol dependence. Nine percent of male drinkers and 5 percent of female drinkers reported adverse social consequences of consumption.

- A study reported that approximately 14 percent of U.S. Air Force personnel experience a serious alcohol problem over a period of a year. Approximately 5 percent of U.S. Air Force personnel reported alcohol dependence and an additional 9 percent reported experiencing at least one serious adverse consequence of alcohol consumption.

- On the basis of heavier consumption, approximately 15 percent of 10th–12th graders and 11 percent of 7th–12th graders surveyed were either at substantial risk for developing a drinking problem or were currently problem drinkers.

- Considering all measures of drinking problems and available recent survey data, approximately 10 percent of adult American drinkers are likely to experience either alcoholism or problem drinking at some point in their lives.

3–Biomedical Consequences of Alcohol Use and Abuse

- While alcohol-related mortality for several selected causes appears to have remained relatively constant, mortality rates for alcoholics continue to be higher than expected. One recent study reported a mortality rate 2.5 times greater than expected in a group of alcoholics followed over time.

- Cirrhosis mortality has been decreasing since 1973, but this decline has been offset by an increase in other types of alcohol-related mortality, especially highway accidents. For all ages, cirrhosis mortality is nearly twice as high for blacks as for whites. And for urban black males aged 25 to 34 the rates are 10 times as high as for white males of the same age.

- Heart muscle contractility is decreased at blood alcohol levels representing very mild to severe intoxication. Biochemical, microscopic, and submicroscopic changes are seen in the heart muscle cells of heavy drinkers.

4. Job problems (job loss or near loss because of drinking; advice from people in the workplace to cut down; loss of raises, promotions, or better jobs).

Alcohol Consumption Scale.

The 1979 national survey provided information on consumption on a monthly basis.

Results for Dimensions of Drinking Problems Using Relatively Lower Data Cutting Points

A variety of measures and data cutting points were used in the 1979 national survey for different analyses. Separate analyses were conducted using lower data cutting points and higher cutting points (see figure 1 for actual values). The lower cutting points were intended to provide information on the distribution of drinking problems in the general population. These results for lower cutting points, discussed first, cannot be taken as estimates of the prevalence of either problem drinking or alcoholism.

When self-reports of behaviors and characteristics often associated with alcohol dependence were examined, approximately 15 percent of those who were drinkers reported experiencing such problems during the 12 months prior to the survey (see figure 1). Twenty percent of the male drinkers and 10 percent of the female drinkers reported behaviors and characteristics associated with alcohol dependence or loss of control. Nine percent of the male drinkers reported adverse social consequences as did 5 percent of the female drinkers. With regard to heavier alcohol consumption, 18 percent of the drinkers reported consumption in excess of 60 drinks per month. Twenty-eight percent of the drinkers were heavier drinking males while 8 percent of the drinkers were heavier drinking females.

Figure 1 gives results for drinkers only for low data cutting points on the drinking problems dimensions.

As the results in figure 1 indicate, a substantial minority of drinkers reported having experienced drinking problems in the 12 months prior to the survey. Consistent with most other survey data, males exceeded females on all drinking problems dimensions. They reported more symptoms of alcohol dependence or loss of control, more adverse social consequences, and heavier consumption than did females.

The 1979 national survey data showed clear relationships with regard to age. For both sexes, reports of drinking problems decreased with age, with the highest percentages reported for the 18- to 20-year age group.

As mentioned in chapter 1, the 1979 national survey provided some information on drinking patterns among members of selected minority groups. Self-reports of drinking problems indicated that Hispanic groups of both sexes, but especially males, reported relatively high levels of heavier drinking and of problems associated with drinking. And while blacks of both sexes showed relatively high abstention rates, among blacks who reported drinking, the proportions of heavier drinkers and of drinkers with alcohol-related problems were similar to the proportions for most other groups.

Drinking Problems Among Adolescents

Recent studies of the prevalence of drinking among adolescents indicate that alcohol is the most widely used drug among American youth (Abelson et al. 1977; Johnson et al. 1977). The 1978 national survey of 10th–12th graders discussed in chapter 1 led to the same conclusion but provided further information on drinking problems (Rachal et al. in press).

In the 1978 national survey, drinking problems among adolescents were defined in terms of two dimensions: alcohol consumption and adverse social consequences.[1] Alcohol consumption was measured by two methods. In the first method, a volume of drinking index was derived from questions concerning frequency and quantity consumed on a typical drinking occasion. By this method, 14.8 percent of the sample reported themselves to be heavier drinkers.[2]

The second method employed by Rachal et al. (in press) to estimate alcohol consumption was self-reported frequency of drunkenness. Respondents were asked, "During the last year, about how many times have you gotten drunk or very, very high?" Approximately 31 percent of 10th–12th graders reported drunkenness at least six times in the year prior to the survey.

Adverse social consequences were concerned with self-reports in the following five areas:

1. Trouble with teachers or principal because of drinking;
2. Difficulties with friends because of drinking;
3. Driving after having had a good bit to drink;
4. Criticism of respondent's drinking by a date;
5. Trouble with the police because of drinking.

Two percent of the sample reported negative consequences two or more times in the year prior to the survey.

TABLE 1

Percentages of 10th–12th Graders Classified as Misusers Due to Drunkenness, Adverse Social Consequences, or Both

Misuser Criteria	Percentage
Drunkenness	93.3
Negative consequences	1.2
Drunkenness and adverse social consequences	5.5
(*N*)	(1,396)

SOURCE: Rachal et al. (in press).

Rachal et al. (in press) combined frequency of drunkenness with adverse social consequences in order to develop an index of alcohol misuse.[3] When "alcohol misuse" was defined as drunkenness at least six times in the past year, *or* negative consequences two or more times in the past year in at least three of the five social areas, 31.2 percent of the sample were categorized as "alcohol misusers." However as the data in table 1 show, the alcohol misuser category is accounted for largely by self-reported drunkenness.

In general, the 1978 national survey data for 10th–12th graders indicated that more males (37.8 percent) than females (25.5 percent) reported alcohol misuse. Increases in alcohol misuse with age were reported for males but not for females. Black and Hispanic males were ranked substantially lower in self-reported misuse compared with white males (and others). Black and Hispanic females showed the lowest levels of self-reported misuse. Except for females of lower socioeconomic status who were relatively low in self-reported misuse, no substantial socioeconomic status relationships were apparent (Rachal et al. in press).

[2] Heavier drinkers were defined as those who drank at least once a week and five or more drinks per drinking occasion. A drink was equivalent to 12 fluid ounces of beer, 4 fluid ounces of wine, or 1 fluid ounce of distilled spirits.

[3] While alcohol misuse as defined here is considered one indicator of a drinking problem, it must be interpreted with caution since self-reported "drunkenness" is to some extent arbitrary and subjective. Alcohol misuse is not synonymous with the term "drinking problem" and "alcohol misuser" is not synonymous with the term "problem drinker."

Criteria for Assessing Problem Drinking Among Adolescents

In attempting to arrive at meaningful conclusions concerning the extent of problem drinking among adolescents, it is important to note that adolescent drinking and adult drinking cannot be judged from a single set of standards. A given quantity of alcohol or the frequency with which it is consumed is likely to have a differential impact upon individuals at various maturational and developmental levels. Adolescence is a period of much growth and development of cognitive, social, and physical skills. For many adolescents, such skills are only recently established ones. Such skills in adolescents are vulnerable to disruption by quantities of alcohol lower than those necessary to produce similar changes in adults. For example, it has been noted that adolescents become involved in fatal automobile crashes at blood alcohol concentrations significantly lower than those found in adults involved in similar accidents (Carlson 1972; Waller 1972; Zylman 1972).

Adolescence is traditionally construed as a period of much new learning. Not only must recently acquired skills be solidified but changing external circumstances require the continuous acquisition of new cognitive, social, and physical skills. The significance of any pattern of consumption of alcohol must be construed in terms of its potential impact on new skills acquisition and ongoing maturational processes.

In effect, problem drinking among adolescents cannot be assessed by the same criteria used to assess adult alcoholism or problem drinking. Alcohol-related diseases, classical symptoms of alcohol dependence, and many of the adverse consequences that occur in adult alcoholics are reported infrequently in adolescent populations.[5] Moreover, frequency of adolescent drinking may not be as big a problem as quantity consumed on a given occasion (Harford and Mills 1978). For example, only 1.8 percent of 10th–12th graders reported themselves to be daily drinkers (Rachal et al. in press). While frequency of drinking rises gradually with age well into the adult years, by age 16–17 the mean number of drinks consumed on each occasion rises to a total of nearly six drinks for males and more than four drinks for females, and then declines. Given the fact that much adolescent drinking takes place away from home, in or around cars, and prior to driving, this aspect of adolescent drinking is indeed troublesome. Data for 1978 (National Safety Council 1980) indicate that drivers under age 20 were involved in 11,500 crashes with at least one fatality. Also, in 1978 there were 5.6 million reported traffic accidents caused by young drivers (15–20 years old).

[5] This statement does not mean that symptoms of alcoholism are not found among adolescents. While such symptoms are reported infrequently in surveys, adolescents showing symptoms of clinical alcoholism are admitted to treatment. The distribution of these persons in the general population, however, is unknown.

Considerable justification exists for assigning a central role to heavier consumption as an indicator of adolescent problem drinking. Considering heavier consumption alone, and using the definition of heavier consumption developed by Rachal et al. (in press), approximately 15 percent of 10th–12th graders and approximately 11 percent of 7th–12th graders might be classified as problem drinkers on the basis of self-reports These are the percentages of students reporting a regular consumption pattern of drinking at least once a week and five or more drinks on each drinking occasion.

Among 10th–12th graders, male problem drinkers (20.9 percent) outnumber female problem drinkers (8.9 percent). As for ethnic self-classification, many more whites (12 percent) than Hispanics (4 percent) or blacks (4 percent) are classified as problem drinkers in terms of heavier consumption patterns alone.

It is appropriate to close this discussion of problem drinking among adolescents with a caveat. On any given day, approximately 20 percent of the school population is absent (Rachal et al. in press). It is quite possible that a disproportionate number of problem drinkers are absentees and that, as a consequence, school-based survey data underestimate prevalence.

The effects of having been members of an alcoholic family do not cease when the children marry and leave home. Young adults from alcoholic homes frequently retain adaptive styles and personality characteristics which they had learned in order to survive (Deutsch et al. in press). Children from alcohol-abusing families have been reported to be twice as likely to develop an alcohol problem as children of nonalcoholics (Goodwin et al. 1973).

Among families experiencing alcohol problems, a high rate of divorce is also reported. Studies summarized by Schuckit and Morrissey (1976) indicated a divorce rate of 40 percent. This is significantly higher than for the general population.

Youth

Adolescent drinkers list their own homes as the most frequent drinking location, with drinking companions most often being friends or peers, followed by parents or relatives (Rachal et al. in press). Surveys of adolescent drinking patterns indicate that most teenagers are introduced to alcohol at home in the presence of their parents (Davies and Stacey 1972; Maddox and McCall 1964). Some studies show that teenagers whose early use of alcohol occurs with peers rather than with parents may experience more problems with alcohol (Harford and Speigler in press).

The favorite drinking setting among adolescents is outside the home with peers (Rachal et al. in press). Heavier drinking appears to be related to drinking in settings outside the home, with peers, and not with adults. While the prevalence of drinking alone is, in general, low, it is directly related to high levels of drinking (Rachal et al. in press).

Alcohol use among adolescents is also related to peer influence, specifically peer attitudes toward drinking and peer drinking behavior (Rachal et al. in press). A number of studies have analyzed the relationship between use of alcohol by adolescents and use of alcohol by their peers. These studies consistently reveal that adolescent drinking becomes more prevalent, frequent, heavier, or more problem related as the extent of drinking among friends increases (Harford and Speigler in press).

Rachal et al. (in press) found in their survey of adolescent alcohol use that teenagers' drinking is related to their perception of their parents' alcohol use, with abstainers more likely to report having abstaining parents. Further findings indicate that there is consistency between teenagers' drinking and their parents' approval or disapproval of drinking. Fewer abstainers reported parental approval, and more reported parental disapproval, while the situation was almost exactly reversed for heavier drinkers.

Additional correlates fall into the sociocultural realm and include size of community, socioeconomic status, and religious affiliation. In general, adolescents in larger urban communities tend to use alcohol more than those in smaller rural communities and drinking rates in the Northeast and North Central regions are higher than those in the South (Braucht in press; Harford and Speigler in press; Rachal et al. in press). These regional differences have been shown to relate to variations in religious affiliation, ethnicity, and other demographic characteristics of subgroups (Cahalan and Room 1974).

Religious affiliation is consistently related to adolescent alcohol use, with drinking least prevalent among teenagers affiliated with fundamentalist denominations such as Mormons and Baptists and most prevalent among liberal Protestants, Catholics, and Jews. Of the latter three denominations, use is heaviest among Catholic youth and lowest among Jewish teenagers (Rachal et al. in press).

Adolescent problem drinking is associated with several parental, peer group, and other environmental factors. Compared with those who are not problem drinkers, adolescent problem drinkers are more likely to be in an environmental context in which (1) they feel more disagreement between what their parents expect of them and what their friends expect of them; (2) their friends seem to have relatively more influence on them compared with the influence their parents exert; (3) there is less parental

disapproval for their drinking; (4) there are more peers who model problem drinking and other problem behavior for them; (5) there is more peer approval of their drinking; (6) their parents are less involved with them and their lives; (7) their parents are heavier drinkers themselves; and (8) their parents are less positive or affectionate toward them (Braucht in press).

There are also several personality correlates associated with adolescent problem drinking. Relative to nonproblem drinkers, problem drinkers (1) are more tolerant of deviance; (2) attach less importance to religion; (3) are more apt to weigh the positive aspects of drinking more heavily than the negative aspects; (4) place lower personal value on academic achievement; (5) place more value on self-determination and autonomy from parents; and (6) hold lower expectations of achieving academic success. Some studies have found problem drinkers to have more personal problems and to be more alienated (Braucht in press).

Characteristics of heavier and problem adolescent drinkers include pessimism, unhappiness, boredom, aggressiveness, frustration, impulsiveness, distrust, cynicism, irresponsibility, inflexibility, and dissatisfaction (Rachal et al. in press).

Alcohol use among adolescents appears to lead to other problem behavior, with some studies indicating a significant correlation between antisocial or delinquent behavior and adolescent drinking (Braucht in press; Donovan and Jessor 1978; Jessor and Jessor 1975). Heavy drinking has also been linked to precocious sexual behavior, poor school performance, problem behavior in the classroom, problems within the family, number of classes cut, and higher school dropout rates (Braucht in press).

Economic Costs

Assessment of the economic costs that alcoholism and alcohol use impose upon society is limited by a lack of definitive measurements. Individual researchers, differing in their interpretation and analysis of the data, report varying estimates.

Based on an analysis of six major categories, Berry et al. (1977) estimated that alcoholism and alcohol misuse cost the United States approximately $43 billion in 1975. Six areas were analyzed: lost production, health care expenditures, motor vehicle accidents, violent crimes, fire losses, and social response (table 1).

:ed to
has been criticized as both inflated and conservative. Those who argue that this amount overcompensates support the premise that none of the costs in the six categories analyzed may be attributed unconditionally to alcohol misuse (McGuire 1980). Other researchers contend that the omission of several groups, including males older than 59 and younger than 21, "skid-row" alcoholics, and women in all age brackets, results in serious understatement (Schifrin et al. 1980). A study commissioned by the Alcohol, Drug Abuse, and Mental Health Administration to provide an indepth analysis of alcohol-related costs to society is currently in progress.

TABLE 1
Economic Costs of Alcohol Misuse and Alcoholism in the United States, 1975

Item	Cost (in Billions)
Lost production	19.64
Health and medical	12.74
Motor vehicle accidents	5.14
Violent crime	2.86
Social responses	1.94
Fire losses	0.43
Total	42.75

SOURCE: Berry et al. (1977).

With regard to age limitations on drinking, only a few relevant evaluative studies have been carried out. An unpublished study by Schmidt showed that a change in drinking age from 21 to 18 in Ontario led to a greater increase in alcohol consumption in licensed premises than was expected. Surveys of college and high school pupils also revealed reported increases in drinking, especially in bars and taverns (Smart and Schmidt 1975). Increased rates of road accidents among young people as a result of lowering the legal drinking age limit have been reported (Schmidt and Kornaczewski 1975; Williams et al. 1974; Douglass et al. 1974). Smart (1977) concluded from his review that good presumptive evidence exists that laws lowering age limits for purchase and consumption of alcohol lead to increased alcohol consumption and alcohol problems among young people. The findings of Whitehead et al. (1975) were similar. Barsby and Marshall (1977), however, found that apparent increases in consumption of distilled spirits after reductions in minimum legal purchasing age were not statistically significant.

Another example comes from the United States, where a campaign that began in 1970 to grant full drinking rights to the newly enfranchised 18- to 20-year-olds resulted in 24 States' reducing the minimum age limit for alcohol consumption from 21 to 18, 19, or 20 by 1973. In 1976, Minnesota raised the age from 18 to 19 years, and since then several States have followed. Two Canadian Provinces—Ontario and Saskatchewan—have also recently raised the minimum age from 18 to 19 years. This reversal of the trend seems to have been prompted by an increase in alcohol-related driving accidents and fatalities among 18- to 20-year-olds and by a continuous rise in juvenile crime.

In general, then, prevention strategies involved with reducing per capita consumption are continuing to receive research attention. Present results indicate that the questions and issues raised are exceedingly complex, and specific answers are not yet at hand. Smart (1977, 1980), for example, has recently raised questions about the relationship between availability and alcoholism rates. Smart's review suggested that income and urbanism are more closely related to consumption and alcoholism rates than is availability. Methods for reducing per capita consumption that are not only effective but free of undesirable long-term consequences do not appear to exist at the present time.

The Sociocultural Model.

The sociocultural approach emphasizes the relationship between alcohol problems and the normative patterns of alcohol use within a society (Blane 1976). Problems of alcohol are considered likely to occur when the norms are conflicting. Problematic conflicts are viewed as personal ambivalence and anxiety about drinking that lead to alcohol abuse; juxtaposition of drinking events and social situations that generate social conflict and problematic consequences (Room 1977*a*); or as norms which in themselves encourage excessive and problem drinking. "Norms" can be interpreted through interactions between informal social controls and more formal regulations (Gusfield 1975). In the sociocultural approach alcohol problems may be viewed at levels ranging from the individual to the community (Cahalan and Room 1974) to the national and international (Frankel and Whitehead 1979). Alcohol problems may be seen as difficulties in their own right; the properties of alcohol combined with the sociocultural milieu generate alcohol problems. Or alcohol problems may be seen as one set of problems in a cluster of other problems that occur in the individual's relationship to immediate and more distant social structures (Jessor and Jessor 1980). Implications for prevention projects are as many and as varied as the many turns of theory.

The relationship between the sociocultural and the distribution of consumption models remains unclear, though attempts are under way to make the two sets of theory compatible (Edwards 1980; Frankel and Whitehead 1979). The alcohol problems field has grown so complex that fresh assessments are under way to try to make sense of the variety of theories and findings for purposes of establishing better prevention policy (National Academy of Sciences 1981). Despite these efforts powerful explanations of the causes of alcohol problems have yet to be found that are widely accepted and clear as to their implications for prevention efforts.

Just how big is this problem? It is estimated in the Alaska State Alcoholism Plan for FY 80 that 13,141 Alaskans between the ages of 20-29, 7,372 Alaskans 30-39, and 5,635 Alaskans 40-49 are persons with alcohol related problems. It is projected that these 26,148 people directly and seriously affect the lives of four to six other people, many of whom are children (there are 177,643 young people) in this state where the median age is 22 years. However, considering the extended family system throughout Alaska, young people are seriously affected by those 2,212 Alaskans 50-59, 1,028 Alaskans 60-69, and 72 Alaskans over 70 who are aunts, uncles and grandparents with alcohol-related problems.

Statewide statistics pertaining to youth with alcohol related problems were unavailable as studies deal with the "legal" drinking age. However, in a study done for NIAAA it was found that:

- Over 1/4 of the nation's teenagers are problem drinkers.
- Fewer than 18% of the nation's 17-year-olds never have taken a drink.
- 1/4 of the 13-year-olds surveyed could be classified as moderate drinkers.
- Nearly half of all the students surveyed (13,000 youths in 450 schools) said they had been drunk within the past year.

A National Council on Alcoholsim bulletin reported on a survey done by the Social Advocates for Youth - approximately 3500 4th, 5th, 6th graders:

- 45% of the children considered themselves users of alcohol
- 20% reported drinking alcohol once a month
- 9% stated alcohol use imposed personal problems for them which they felt they would like to discuss with someone
- Lastly, the younger students reported much of their alcohol use occurs within the family and they would be willing to seek counsel with their parents.

The ALCOHOLISM AND ALCOHOL EDUCATION REPORT from Washington, D.C. reported that Michigan's Institute for Social Research shows that "Daily drinking among high school seniors in the U.S. jumped 20% between 1978 and 1979, to 6.9 percent of the class of '79 from 5.7 percent of the 1978 seniors, according to a national study which only last year reported a decrease in the daily drinking habits of 12th graders."

And it is believed that, as with all other national studies, the Alaskan usage would be greater and the problems associated with that, more complex.

The Bachman Study found that when asked how often they had taken five or more drinks in a row during the prior two weeks, 52% of all high school senior males and 41% of females in 1979 reported doing so on at least one occasion, 26% of males and 12% of females reported doing so on three or more occasions. Each of these percentages has risen by 3 or 4% since 1976. This suggests that the problem of alcohol abuse among high school seniors may be increasing dramatically.

2) Alcohol and Youth in Anchorage

The conclusion that alcohol abuse among youth may be stabilizing in numbers, but more intense within the abusing group may be supported by the results of a study given to 8th grade Mat-Su students. Only forty percent (40%) of those surveyed felt that alcohol was a dangerous drug. Excluding the perceived risk of tobacco, alcohol was perceived as having the lowest risk of any drug mentioned. Twenty-two (22) percent of the males and 7% of the females surveyed stated they had used alcohol often and by the 8th grade, only 28% of the males and 33% of the females had never used alcohol. These statistics are similar to those found in an 8th grade classroom in an Anchorage suburban school. [8]

Of the juvenile drug counseling caseload at the Open Door Clinic for FY-80, 38 admissions or 45% of the total caseload was attributable to drugs and alcohol. None of those included in the statistical profile were above 18 years of age. [9] Currently, the Municipality's Youth Outpatient Program is oeprating at 160% of estimated capacity.

In 1979, data derived from the Anchorage area indicated a serious and worsening situation. In the last year, the situation appears to be improving slightly. Listed below are eight arrest categories and one request for service category that have a high degree of relationship with youth and alcohol use. Between 1977 and 1979, these incidents increased by 39.9% while the total increase in police activity increased only 24%. In 1980, these incidents decreased by 10%

8 Response to Self-Evaluating Questionnaire, Akeela House, Inc., May, 1980.

9 Open Door Clinic Juvenile Drug Counseling, Demographic Characteristics, FY-80.

while the total increase in police activity increased only 24%. In 1980, these incidents decreased by 10% while the total increase in police activ-ity was 5.9%. This slight turn around could be the result of both the increasing sophistication of the Anchorage programs designed to assist youth under the age of 18 and the growing conservative philosophy in Anchorage and the Nation.

Table 4
Juvenile Offenses Involving Alcohol
1977-1980, Anchorage

	1977	1979	1980	Percent
Liquor Minors Involved	89	120	104	-13.3%
A & B (Juvenile Arrests	33	41	43	+ 4.9%
Disorderly Conduct	54	70	48	-31.4%
Drinking in Public	3	5	11	+54.5%
Driving While Intoxicated	6	18	14	-22.2%
Drunk on Roadway	3	5	5	- 0 -
Minor in Possession	29	59	64	+ 7.8%
Minor on Premises	13	11	6	-45.5%
Miscellaneous Liquor Violations	8	4	5	+25.0%
Total	238	333	300	-10.0%
Total Cases-Requests and Arrests	63,096	78,380	83,330	5.9%

Source: 1977, 1979, and 1980 Anchorage Police Department Yearly Report.

The philosophy of the local programs are consistent with the conclusions of a recent article regarding alcohol abuse by adolescents and its prevention. The article stated that problem drinking among teenagers is frequently correlated with involvement in anti-social activities, poor school performance, drug use, problem drinking among family and/or peers, and lack of supervision. Alcohol education has tended to increase knowledge, but not change behavior patterns, and in some cases, has led to increased alcohol use. The author suggests that future prevention strategies be targeted at specifically defined groups of adolescents and that they be concerned with the prevention of problem drinking rather than the prevention of alcohol use. [10]

10 Hankoff and Schmidt, " Reviews of Studies of Adolescent Drinking Patterns and the Effectiveness of Prevention Measures Used with This Age Group," Public Health Review, Hankoff and Schmidt, 1979.

Youth - Minni

Table 27. Arrest Data, by Offense Category and Adult/Juvenile Status, Alaska, 1976-1978.

YEAR	AGE GROUP	OFFENSE CATEGORY					
		DRIVING UNDER THE INFLUENCE		DRUNKENNESS		LIQUOR LAW VIOLATIONS	
		NO.	%	NO.	%	NO.	%
1978	Adult	3195	97.9	567	92.0	1205	57.3
	Juvenile	70	2.1	49	8.0	897	42.7
	TOTAL	3265	100.0	616	100.0	2102	100.0
1977	Adult	3430	97.9	184	98.4	903	49.7
	Juvenile	74	2.1	3	1.6	915	50.3
	TOTAL	3504	100.0	187	100.0	1818	100.0
1976	Adult	2928	98.3	10	71.4	592	48.4
	Juvenile	52	1.7	4	28.6	632	51.6
	TOTAL	2980	100.0	14	100.0	1224	100.0

For adult arrestees, the major alcohol-related offense class was driving under the influence, accounting for roughly 21%-24% of all adult arrests. For juvenile arrestees, the liquor law violation class was the major arrest category, accounting for approximately 12%-15% of all juvenile arrests during this period. See Table 28.

Table 28. Total Arrests, and Alcohol-Related Offenses, by Adult/Juvenile Status, Number and Percent of Total, Alaska, 1976-1978.

ADULTS/ARRESTS BY OFFENCE	1978		1977		1976	
	NO.	%	NO.	%	NO.	%
Total Arrests	14862	100.0	14764	100.0	12435	100.0
Total Alcohol-Related Arrests	4967	33.4	4517	30.6	3530	28.4
Alcohol-Related Arrests:						
DUI	3195	21.5	3430	23.2	2928	23.5
Drunkenness	567	3.8	184	1.2	10	0.1
Liquor Law Viol.	1205	8.1	903	6.1	592	4.8
JUVENILES/ARRESTS BY OFFENSE						
Total Arrests	5947	100.0	6031	100.0	5368	100.0
Total Alcohol-Related Arrests	1016	17.1	992	16.4	688	12.8
Alcohol-Related Arrests:						
DUI	70	1.2	74	1.2	52	1.0
Drunkenness	49	0.8	3	0.04	4	0.1
Liquor Law Viol.	897	15.1	915	15.2	632	11.8

alcohol abuse

- the Alaska Council on the Prevention of Alcohol and Drug Abuse estimates there are over 45,000 alcoholics in the State of Alaska
- in a study done in 1979, it was found that almost 30% of all juveniles between 12-17 years old were alcohol and other drug abusers - with alcohol being the drug of choice by far
- "problems with alcohol" is the third leading reason people seek help at local community mental health centers in Alaska
- in a study done in 1979, 12% of Anchorage residents reported they drank "almost all the time."
- Alaskans spent $280,600,000 on retail alcohol in 1980
- 58% of pedestrian-motor vehicle accidents were alcohol-related
- 62.7% of people in the under 25 age group use alcohol to face problems
- fetal alcohol syndrome is the third leading cause of birth defects nationally, and is totally preventable

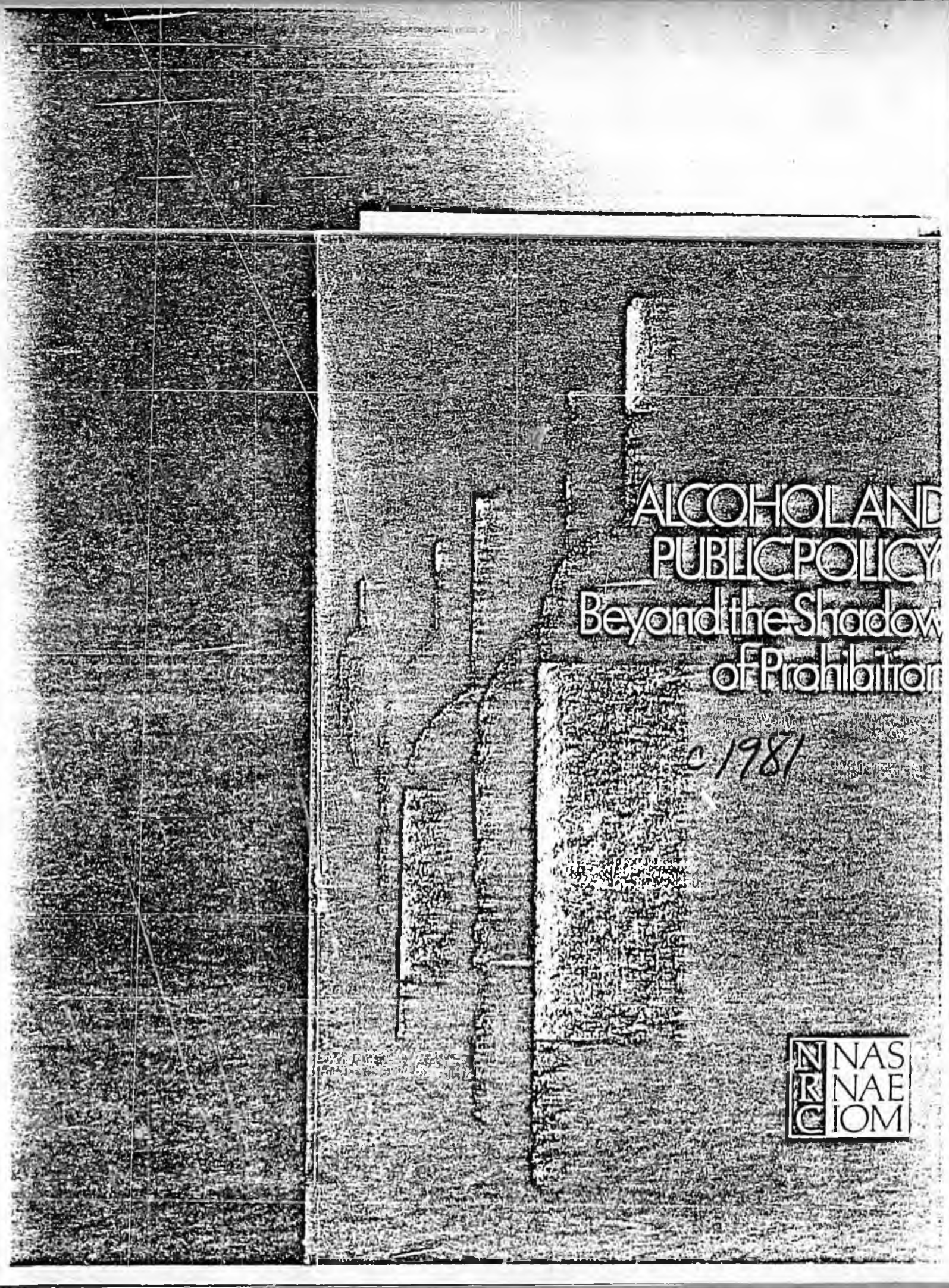
alcohol-related mortality

- 52% of all fire deaths in Alaska are alcohol-related
  - Alaska's fire fatality rate is twice as high as the national average
- 68% of all drownings are alcohol-related
- in 1976-1979 in Anchorage, the leading causes of death in the age group of 15-44 were:

motor vehicle accidents	- 70% alcohol related
suicide	- 80% alcohol related
homicide	- 64% criminal homicides 40% domestic murders

SOURCES
State Office of Alcohol and Drug Abuse - Annual Report to the Legislature 1981
The Alaska State Alcoholism and Drug Abuse Plan - 1981-1983
Anchorage Health Systems Plan 1981-82

PAO 3/82


ALCOHOL AND
PUBLIC POLICY
Beyond the Shadow
of Prohibition
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training given to employees and the host's concern for patrons' transportation arrangements. Such a reorientation may serve to enhance the preventive effectiveness of dramshop laws. At this time, in the absence of research data, the effectiveness of such laws or variations therein is entirely a matter of anecdote, *a priori* speculation, and common sense argument.

Accidents and violent crime that may result from acute episodes of intoxication in public drinking places are a central concern of on-premise control of alcohol. There is also the question of whether widespread availability of public drinking places increases the total quantity of consumption. It seems reasonable to suppose that increased availability of alcoholic beverages in restaurants, cafeterias in workplaces, sports arenas, theaters, and so forth would have an effect on per-capita consumption; generally speaking, if the practice of drinking is integrated into a wider range of day-to-day customary activities, the quantity of consumption will increase. The question of how many and what types of public places should be permitted to accommodate drinking then becomes in part an issue of public health, albeit one that can neither be readily quantified nor simply resolved. The current trend toward increases in the number and variety of drinking premises deserves attention and thoughtful analysis, for the cumulative effect on drinking practices may be substantial.

MINIMUM AGE RESTRICTIONS

While only a small fraction of the United States continues to prohibit the sale of alcoholic beverages, the prohibition of sales to one large segment of the population—youths—is currently mandated by every state. The age thresholds all lie between 18 and 21. As of 1979, 23 states set the minimum age at 18 or 19 years, 3 set the limit at 20, and 24 set the limit at 21 (12 of these, however, allowed beer sales to 18- or 19-year-olds). There was considerable flux in these legal thresholds during the 1970s: between 1970 and 1973, 24 states reduced their minimum drinking ages (Williams et al. 1975), while a number of states have raised the minimum in the last few years. These changes have provided the basis for quasi-experimental analyses of the consequences of varying minimum age restrictions.

Williams et al. (1975) performed a short-term follow-up of minimum age reductions legislated in the early 1970s in Michigan, Wisconsin, and Ontario. Douglass (1979-1980) and his colleagues performed short-term follow-up studies of minimum age reductions in Michigan, Maine, and

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Vermont and a longer term follow-up for Michigan. These and other studies have focused on a single dimension of concern—drunken driving (Haddon 1979). They found consistent evidence that the age reductions resulted in an increase in the rate of auto crashes and fatalities involving youthful drivers. Williams et al. estimate that during the first year of reduced age in the three jurisdictions they studied, the number of drivers 15-20 years old who were involved in fatal crashes was about 5 percent greater than would be expected in the absence of the change.

Smart (1977a) found that in 25 states in which the drinking age was lowered, beer was the only beverage type showing a discernible increase in consumption. Douglass refined this result in his analysis of the Michigan experience, concluding that only draught beer consumption increased significantly as a result of the minimum age reduction in that state. However, Williams et al. found an increase in youthful auto fatalities in Wisconsin following a reduction in the drinking age for spirits and wine, while beer had remained constant at 18—suggesting that beer is not uniquely responsible for teenage drinking problems.

While the minimum drinking age does have an effect on alcohol consumption by youths, underage youths still drink a great deal. National surveys in the 1970s have consistently shown that over 80 percent of high school seniors have had a first drink before age 18; over one-third of high school students, including half of all students 16-17 years old, reported drinking within the past 30 days (Abelson et al. 1977, Blane and Hewitt 1977a, Johnston et al. 1979). The prohibition on sales to youths thus may reduce availability to them somewhat, but it falls far short of imposing total abstinence on this group.

Minimum age restrictions in this country reflect widely accepted beliefs that drinking tends to be more harmful for youths than for adults and that we cannot trust youths to make good decisions about when, where, and how much they should drink. While the legitimacy of this type of restriction is widely accepted, the question of precisely where the age line should be drawn remains alive in many areas. State and federal laws currently gives 18-year-olds most of the rights and responsibilities associated with adulthood, the right to purchase alcohol being the only major exception. If 18-year-olds are mature enough to vote, seek many elective offices, enter into contractual arrangements, serve in the armed services, and so forth, it would seem logically consistent to also confer the remaining symbol of adulthood, the right to drink, on this group. The response to this argument is that as a group, people aged 18-20 are extraordinarily prone to auto accidents, as well as violent crime and other forms of socially destructive activity, and to exemplify

foolish to exacerbate these tendencies by legalizing drinking for this age group.[1]

We do not attempt to resolve this debate, but simply to note that there is reasonable evidence that prohibition for youths does have some effect on their drinking and in particular that the choice of a minimum drinking age has a small but consistently exacerbating effect on the auto accident and fatality rates.

CONCLUSION

The common belief that alcohol control measures (government action to regulate the supply of alcohol and drinking premises) are ineffective as prevention instruments is unfounded. This belief has been engendered in part by a misunderstanding of the lessons of the Prohibition experience. There is good evidence from econometric studies that alcohol prices, as affected by excise taxation, can affect consumption levels, and probably the consequent rates of alcohol- related problems. Reductions in the minimum drinking age slightly but consistently increase auto accident involvement by younger drivers. The effects of merchandising practices, outlet density, civil liability for servers, and so forth have not been established with reliability, in part because these control mechanisms are intrinsically very difficult to study. It is possible but as yet hypothetical that the cumulative effect of a number of changes in these areas of regulation has been substantial.

[1] If the concern is centered about lowering youthful traffic accidents, one might think of raising the driving age rather than the drinking age. European countries generally have lower drinking ages and higher driving ages than the United States.

5.95

REGINALD G. SMART

THE NEW DRINKERS

TEENAGE USE AND ABUSE OF ALCOHOL

SECOND EDITION

ame reasons as adults and because they are maturing into adult ehavior patterns in all areas.

Research into why young people drink has centred around ve general areas:

(1) subjective studies of reasons for drinking—asking students why they drink;
(2) peer studies—determining how friendship patterns govern drinking;
(3) personality studies—determining what personality characteristics are associated with drinking;
(4) studies of permissiveness and availability—determining whether certain attitudes favoring drinking and having alcohol at home make drinking more likely;
(5) family studies—investigating how parental and other family influences relate to drinking.

he first four areas will be covered in this chapter; the last, ecause it has been such a large and well-developed area, equires a separate chapter.

ubjective Reasons for Drinking

uch of the research on why young people drink simply consitutes asking them the reasons as they see them. Although obiously they yield important information, such studies rarely ave any validity or reliability established for the answers. hose who say, "I drink because I like the taste," may indeed, ut there may be a host of equally important social and psychoogical reasons. The subjective reasons supply information about ne level of analysis but are of limited utility in explaining eavy or abnormal drinking. Studies of personality, family, and eer influence offer another level of analysis.

Numerous studies give similar results when students are sked for the reasons they started to drink. The most important easons seem to be "curiosity" and "in order to celebrate a pecial occasion" such as a wedding, anniversary, or birthday. A ird reason is that families gave them alcohol to drink. Taken gether, these reasons account for most of the subjective reorts in studies done in Mississippi, Kansas, and Wisconsin Bacon and Jones, 1968).

One of the few studies of reasons for drinking in Canada utler and Storm, 1973) asked the simple question, "Why did you first drink?" About 30% of high school students reported "holiday or special celebration," 32% "curiosity," and 21% because they were "served at home." In all, 83% reported one of these three reasons.

Only 7.3% reported first drinking because they did not want to feel "out of place" or because "friends urged me to." Although the number reporting each reason varies somewhat from study to study, the data indicate that young persons are typically not forced into drinking (at first) by peer pressure or friends. There is a suggestion that parents and families have a considerable control over the first drinking experiences and we will return later to the implications that this has for parents teaching safe drinking habits. There are also suggestions that young people experience mostly the low alcohol beverages, e.g., beer and wine, in family circumstances and that the first drinks of liquor are outside the home with friends.

Naturally, the reasons for current drinking tend to be different from those for starting. The most common reason for current drinking* is that "I like it" and this was mentioned by about 50% of drinkers in the Maddox and McCall study (1964). About 20% drank "to be with the crowd" and about the same proportion to celebrate a special occasion. Only about 8% said they drank "when they were unhappy." Curiosity, being given drinks by parents, and special occasions were far less important for current drinking than for the first drinking experiences.

A more interesting sidelight in the Maddox and McCall study concerned students' perceived reasons for adult and teenage drinking. The most important reasons given by both groups were sociability, self-expression, and anxiety reduction. Sociability meant the desire to be one of the group, to not be considered different, and to participate in celebrations and family events. Self-expression referred to the need to have pleasurable relaxation and to create a self-conception of being "smart and grown-up." Anxiety reduction meant seeking relief from family, financial, and personal problems.

Teenagers perceived other teenagers' drinking as more often concerned with avoiding being left out and different, and enhancing self-conceptions as "smart and grown-up." It was far less often concerned with pleasurable relaxation and with anxi-

*Unfortunately, this question was not asked in the Cutler and Storm study.

knowledge about alcohol seemed not to be important. The most important factors in predicting the frequency of drinking were age, paternal drinking, and friends' drinking. Older students and those whose friends' and fathers' drank more often drank themselves. The most important factors in predicting whether students got drunk or high were the frequency of drinking, drinking away from home, drinking in cars, and drinking amounts that were not known to parents.

The findings from this study suggest that social influences, e.g., from parents' and friends' drinking, have most importance in determining whether a student drinks or not but they have little effect on whether students get drunk or not. The place and extent of drinking and drinking without parental knowledge are more important in determining whether students get drunk. This strongly suggests that parents concerned about drunken behavior should try to find out the places where their adolescents are drinking and how much they drink.

Personality and Developmental Variables

As noted in the review of research, much of youthful drinking seems to be socially and normatively controlled. Most young people appear to start and continue drinking for social reasons. The nature and extent of drinking seems to be most often influenced by peer pressures, reference groups, and the general family and social contexts. For these reasons it might be expected that personality factors would be relatively unimportant in differentiating drinkers and nondrinkers. Most research on personality has been concerned with identifying *problem* drinkers rather than social drinkers. A few studies have been made but their contribution is not extensive so far because drinkers have not appeared very different from nondrinkers. Several studies have shown that students who start to drink at an early age are more likely to engage in other deviant behaviors as well. For example, a study by Globetti and Windham (1967) showed that high school drinkers and especially problem drinkers had higher deviancy scores than did nondrinkers. "Deviancy" included such things as driving a car without a license, damaging property, stealing, and running away from home.

Other studies have found that drinking *problems* but not drinking are related to alienation. Jessor et al. (1970) showed that alienation—i.e., feelings of social isolation and lack of meaning in daily activities—was related to frequency of drunkenness and drinking for personal effects. Wechsler and Thum (1973) found students who drank distilled spirits and had become drunk were alienated from families and more engaged in antisocial activities (e.g., cheating, delinquency). Alienation does not appear to differentiate between drinkers and nondrinkers.

A great deal of interest has been expressed in sex-role conflicts and drinking. Male heavy drinkers and alcoholics have been found to have feminine identifications and yet show masculine behaviors such as cursing, aggressiveness, and independence. Zucker (1968) attempted to determine whether adolescent drinkers and nondrinkers differed on a masculinity-femininity index. He predicted that nondrinkers would show more sexual identity confusion than drinkers. In a society where nearly everyone drinks, abstainers may be "not drinking" because they fear the consequences of drinking. However, Zucker found no difference in sex-role identity between nondrinkers and moderate drinkers. Heavy drinkers were more masculine than nondrinkers, but nondrinkers did not display more sex-role identity confusion.

Jessor et al. (1968) presented a social learning theory of personality as applied to drinking. Briefly, this theory, as applied to college students, postulated that there are two important goals in college life: academic achievement or recognition and interpersonal liking or social affection. Failure to achieve either of these, they speculated, would lead to major frustrations and recourse to other activities, including drinking. Students who had low expectations of attaining academic success and peer liking were expected to be heavier drinkers than those who did not have these expectations. Measurements of expectations of satisfaction for several groups of college students were taken. It was found that the prediction held best for females; low expectations of success and affiliation were correlated with amount and frequency of drinking, frequency of drunkenness, and drinking-related complications. Correlations for men were in the expected directions but not statistically significant. However, both males and females lowest in achievement and affiliation expectations had more drinking complications. A second study showed that drinking had a different function among female students low in expectation of achievement and affiliation. They more often reported motivations to drink when lonely, sad, disappointed with themselves, or when they wanted to forget, create confidence, or feel less shy.

A somewhat more interesting and productive approach has been taken by Jessor and Jessor (1975) in studying the onset of drinking as a developmental event. This study is one of a few longitudinal studies of drinking in adolescents. It reports a study of some 218 students in junior high school who were not drinking in 1969. By 1972, the year of the follow-up, 129, or 59% had begun drinking when they were in senior high school. Four annual measurements were made between 1969 and 1972. The study examined a network of social and personality variables in an attempt to provide explanations for why some young persons began to drink and some did not and why, of those who did drink, some began earlier and some later. In brief, the results showed that abstainers exhibited "what may be termed a pattern of conventionality—a greater value on achievement or successful performance in the school setting, less value on independence relative to achievement, greater intolerance of deviant behavior, greater religiosity, greater involvement with parents and with friends whose outlook is similar to that of the parents, fewer friends who drink and friends who approve less of drinking, and greater involvement with church and grades while less involved in general transgression." The impression conveyed by this study is not very different from that derived from many cross-sectional studies comparing drinkers and abstainers. It paints a picture of adolescent abstainers as rather ambitious, family- and church-centred pillars of the community who would have difficulty escaping the designation of "cautious bores" among their drinking peers. Naturally, as drinking becomes more popular and abstention less popular, those few abstainers left will be defined as deviants.

Studies of Permissiveness and Availability

People used to think that young people drank because of "lax" conditions around them; this supposedly could be over-indulgent parents, "permissive" society, or anyone in authority who failed to exercise it. Many people think that sterner discipline by parents and teachers might lead to less drinking among young people. People also argue that alcohol is too available to young people because of the permissiveness of society. For the most part, the evidence does not suggest that a majority of young people are undisciplined or careless in their use of alcohol.

There are a few studies about general permissiveness. For

example, Straus's and Bacon's study of college students suggested that there were more drinking problems in colleges that were not tolerant of drinking. Some studies of children from families where parents were abstainers indicated that if they drank, they more likely had drinking problems (Globetti and Chamblin, 1966; Sholl k, 1958).

There are also studies from various countries that show that where restrictions on drinking are severe, drinking problems of a different nature arose. For example, Bruun and Hauge (1963) showed that in Scandinavian countries where there were strict controls on young people's drinking, they tended to drink out of doors and that there was more illicit drinking by underage drinkers than where restrictions were more lax. Other studies in the United States showed that where communities were permissive about alcohol, young people obtained their alcohol illegally from legal merchants. However, in strict communities young people tended to buy their alcoholic beverages from illegal sources such as bootleggers or older persons.

These findings have suggested to people that restrictive systems of control merely force youthful drinking underground or into places where it cannot be seen. However, it seems likely that both drinking and drinking problems are more common in situations of high availability and low restrictions. Smart (1977) studied the relation of students' perceptions of availability and their alcohol and drug use. The study was done among 4,678 students in grades 7 to 13 in Ontario schools. It was found that the ease with which students could get alcoholic beverages was a good predictor of drinking frequency. Where availability was high, students drank more often than when it was not. Perhaps firm conclusions about whether or not regulation should be strict depend on the result we want to achieve. Likely, strict controls reduce the overall amount of young peoples' drinking while leading to other types of problems, i.e., outdoor drinking and purchases from illegal sources.

There are also a few studies in situations where attitudes toward youthful drinking are highly permissive. For example, Globetti et al. (1977) studied high school students who were living on American military bases. Historically, heavy drinking among the military has been tolerated and even encouraged by both low army base prices for drinks and the general norms that associate heavy drinking with manliness. Unfortunately, comparison groups of nonmilitary students were not included.

would appear to be greatly under-represented in treatment facilities. Considering that there were about 145,000 alcoholics in Ontario in 1974 and about 4% are 21 or under, there should have been approximately 5,800 in treatment. So far, no survey has been made of how many young alcoholics are actually in treatment for their alcoholism either in Ontario or elsewhere.

From the studies made to date it seems that youthful alcoholics would rarely fit Jellinek's *beta* type, which is characterized by polyneuropathy, gastritis, and liver cirrhosis. The most common type seems to be *alpha*—continual dependence on alcohol with undisciplined drinking—or the *gamma* type, with physical dependence and loss of control. Cases of liver cirrhosis and polyneuropathy are apparently rare or nonexistent among young alcoholics seen in clinics or hospitals.

Summary

Drinking problems among young people include drunkenness, alcohol-related accidents, antisocial behavior, and alcoholism. Of these, the first two are the most common and least important. Drunkenness is increasing in some youthful populations as drinking frequencies have increased. Drinking and driving accidents are also increasing in Ontario. However, the majority of serious accidents among young people do not involve alcohol. Whether alcohol contributes directly to such antisocial behavior as delinquency is uncertain. There are some signs that it does not and that the heaviest drinkers among delinquents commit fewer crimes than light drinkers.

The extent of alcoholism or problem drinking among young people is difficult to determine. Most studies have been made of drinking symptoms and complications among college students. The complications include failure to meet obligations, loss of friends, accident or injury, and formal punishment. Signs of problem drinking include blackouts, amnesia, heavy frequent drinking, morning drinking, surreptitious drinking, seeking advice about drinking, etc. Several scales and a variety of methods for counting "problem drinkers" have been used. Estimates of the proportions of problem drinkers in youthful populations vary from 6% to more than 40%. Problem drinking is more common among males, heavy drinkers, Protestants, those who drank before age 12, and those who have a variety of personality problems, e.g., low self-esteem, dependency conflicts, etc. It should be remembered however, that about half of the males defined as "problem" drinkers in college were not so defined in follow-up studies during adulthood. Females more often keep this designation.

Young alcoholics in treatment facilities have never been very common. They represent only about 4% of all alcoholics. Only a few isolated cases have been described in the literature up until the last few years, although data from several countries suggest that alcoholics coming to treatment facilities are now more often 21 or under than formerly. At present in Ontario, about 4% are 21 or under, whereas in 1964 there was none. Alcoholism in young people is most often the *alpha* or *gamma* type, e.g., continual dependence on alcohol with or without loss of control but few physical symptoms, such as liver cirrhosis.

TABLE 7 *Number of Times in Past Four Weeks Drinking Made Students High, Drunk, Pass Out, or Ill: Data from Two Orillia High Schools*

	High		Drunk		Pass Out		Ill	
	N	%	N	%	N	%	N	%
None	568	48.0	687	58.1	1,104	93.3	1,031	87.2
Once	186	15.7	198	16.7	60	5.1	124	10.5
Twice	156	13.2	123	10.4	10	.9	18	1.5
3 times	89	7.5	60	5.1	5	.4	3	.2
4 times	77	6.5	46	3.9	0	.0	0	.0
5 or more times	107	9.1	69	5.8	4	.3	7	.6
Totals	1,183		1,183		1,183		1,183	

reaching epidemic proportions. In fact, no figures are quoted to show that teenage alcoholism is increasing, although figures are given for drinking and drunkenness (Saltman, 1973). These reports are certainly alarmist and intemperate in their overstatement. It is worth examining the evidence for the existence of drinking problems among young people and the trends in these problems.

Naturally, how many "problems" one finds depends greatly upon how a "problem" is defined. We could define alcohol problems as alcoholism of the type usually seen in alcoholism clinics and marked by loss of control over drinking, liver disease, physical dependence, and withdrawal symptoms. From that definition we would arrive at an estimate that few drinking problems exist among young people. On the other hand, a problem could include alcohol-related car crashes, public intoxication, or drinking leading to social complications such as delinquency, school failure, and disturbed family and social relationships. If we accept the latter definition, then the numbers of problem-drinking young people is much greater. Some people would, of course, argue that any drinking among young people constitutes a problem, particularly if they are underage, or drinking without parental consent. Rather than trying to define the frequency and reasons for every conceivable problem, let us concentrate on the most important. From the point of view of their frequency and possible dire consequences these would seem to be: (1) drunkenness; (2) alcohol-related traffic accidents; (3) delinquency or antisocial behavior; and (4) alcoholism. None is unique to young people but they represent a developing concern, and are the reasons why treatment or social controls are required.

Drunkenness

It is difficult to decide how frequent drunkenness is among high school students. Much seems to depend upon the school, the area chosen for study, and how recently the data have been gathered. An important problem is that many of the earlier studies were done when the legal drinking age was 21 rather than the present 18 or 19. For example, seven American studies of adolescent drinking reviewed by Bacon and Jones (1968) indicate that only 11% to 17% of students had ever been drunk. Only 4% had been drunk in the past six months. However, the

would appear to be greatly under-represented in treatment facilities. Considering that there were about 145,000 alcoholics in Ontario in 1974 and about 4% are 21 or under, there should have been approximately 5,800 in treatment. So far, no survey has been made of how many young alcoholics are actually in treatment for their alcoholism either in Ontario or elsewhere.

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VII

What is the effect of the new drinking age laws and why were they changed in Ontario and elsewhere?

There are two times when you can never tell what is going to happen. One is when a man takes his first drink and the other is when a woman takes her last.

O. Henry

I was born below par to the extent of two whiskies.

C. E. Montague

In many areas of North America laws were changed in the 1970s to allow persons under 21 to buy and consume alcoholic beverages. All Canadian provinces changed laws to allow 18- or 19-year-olds to drink legally between 1970 and 1974. Also, 27 states in the U.S. have reduced their drinking ages (see Table 10 for recent changes). At the time of the changes most people seemed to be very much in favor of them. Now that the new drinking laws have been in existence for a few years many of their effects appear to have been negative. Young people seem to be drinking more and to be having more problems from

TABLE 10 *Legal Drinking Age in Canada and the United States*

LEGAL DRINKING AGE BY PROVINCE

Province	Present legal age	Former legal age	Date of change
Newfoundland	19	21	July 25, 1972
Nova Scotia	19	21	April 13, 1971
Prince Edward Island	18	21	May 15, 1972
New Brunswick	19	21	August 1, 1972
Quebec	18	20	July, 1971
Ontario	19	18	January 1, 1979
Manitoba	18	21	August 1, 1970
Saskatchewan	19	18	September 1, 1976
Alberta	18	21	April 1, 1971
British Columbia	19	21	April 15, 1970
North-West Terr.	19	21	July 15, 1970
Yukon	19	21	February, 1970

STATES THAT HAVE LOWERED THE DRINKING AGE

State	Present legal age	Former legal age	Date of change
Alaska	19	20	Sept. 25, 1970
Arizona	19	21	Aug. 13, 1972
Connecticut	18	21	October 1, 1972
Delaware	20	21	July 12, 1972
Florida	18	21	July 1, 1973
Georgia	18	21	July 1, 1972
Hawaii	18	20	March 28, 1972

TABLE 10 *(Cont'd.)*

STATES THAT HAVE LOWERED THE DRINKING AGE (cont'd.)

State	Present legal age	Former legal age	Date of change
Idaho	19	21	July 1, 1972
Iowa	18	21	July 1, 1973
Louisiana	18	21	Nov. 22, 1948
Maine	18	21	June 9, 1972
Maryland	18	21	July 1, 1975
Massachusetts	18	21	March 1, 1973
Michigan	18	21	Jan. 1, 1972
Minnesota	18	19	June 1, 1973
Montana	18	19	July 1, 1973
Nebraska	19	20	June 6, 1972
New Hampshire	18	21	June 3, 1973
New Jersey	18	21	July 1, 1973
New York	18	21	May 10, 1934
Rhode Island	18	21	March 29, 1972
Tennessee	18	21	May 11, 1971
Texas	18	21	Aug. 27, 1973
Vermont	18	21	Nov. 29, 1971
West Virginia	18	21	June 9, 1972
Wisconsin	18	21	March 23, 1972
Wyoming	19	21	May 25, 1973

drinking, especially problems of drunkenness and traffic accidents. A number of studies has been made of the effects of these laws both in Canada and elsewhere and it is worth examining what these studies show us about youthful drinking. Partly as a result of these negative effects and the growth of public opinion against them, several states and provinces have raised drinking ages again.

The Age Law in Ontario: a Social Experiment

The law in Ontario was changed on July 28, 1971, to allow people 18, 19, and 20 to drink and buy alcohol for the first time. What is not always recalled is that this change was part of a trend towards defining the age of majority as 18. The drinking law was not changed in isolation but it was only one of 37 statutes changed at the time. Some people speculated that young people were given drinking rights as a vote-getting technique. Indeed, an election did follow by only a few months (October, 1971), the first in which 18-year-olds could vote. Others speculated that young people were being allowed to drink because marijuana and speed use was very prevalent. Complaints were often made that 18-year-olds could more easily buy marijuana than beer and that this situation was unacceptable. Legalizing drinking, it was said, would only make beer (and other beverages) available to compete with some of the illicit drugs.

The debate in the legislature on the age bills didn't reflect any great concern with illicit drugs or vote getting. Most of the debate put the issue on the age of majority. Persons 18 and over had been allowed to vote in federal elections for some time and were allowed to vote in some other provinces (e.g., Quebec, Saskatchewan, Manitoba). Concern was also expressed in parliament about the extra responsibilities given to young people. At about the same time, some 37 statutes were changed to define the age of majority as 18. These statutes made young people responsible for their debts and allowed them to sign contracts. Since young people paid taxes and could join the military, drive cars, and vote federally, it did not seem unreasonable that they should want and be allowed to drink. The new drinking age law received the support of all three political parties in Ontario. Naturally, it was heavily supported by young people themselves.

There appeared to be no rush for young people to buy drinks after the new law. Newspaper reports at the time suggested that bar and tavern owners braced themselves for an onslaught of heavy drinking youth. It never came. Concern was also expressed about how those 14 to 17 would be kept out of bars, since they often appear to be 18 years and could use borrowed identity cards. Although no great increase in drinking immediately followed the new law, more young people seemed to be drinking. Several newspaper articles carried stories about 21- to 25-year-olds being unwilling to drink with the younger crowd. The clientele in many bars and taverns gradually changed so that a large number became youth oriented. Over the last months of 1971, many bars shifted their entertainment acts to please a younger audience: more rock groups, go-go clubs, and discotheques appeared. Disgruntled "older" patrons felt the generation gap between themselves and the new drinking crowd too great and gave up their regular drinking places. Waiters complained of lower tips from the "high schoolers." Some bar owners suggested that it was better to have a room full of heavy drinkers than the new group, which would occupy space but not drink very much. Clearly, not everyone was happy with the new drinking law. As time passed, more evidence accummulated about the adverse results of the new law. Smart and Goodstadt (1977) have summarized the empirical evidence on its effects.

Effects of New Age Law on Drinking in Ontario

It was by no means certain that the new law would have any influence on drinking. Other provinces and states had changed their laws but no study of their effects had been made. No remarkable effects were obvious in those places.

Many people argued that changing the law would only legalize the status quo and bring young drinkers under the watchful eyes of parents. People under 21 were already known to drink and making it legal might have no effect. Another possibility was that lowering the age would encourage parents to drink with their children. Because drinking was illegal for 18-year-olds, some parents were reluctant to train their children in safe drinking practices. Before parents got around to it, the argument went, their children would be drinking outside the home in an uncontrolled way.

It was with all of these considerations in mind that Smart and Schmidt (1975) made some studies of drinking both before and after the new law. In all, four studies were made:

(1) a study of alcohol shipments for 1970 and 1971;
(2) a comparison of reported alcohol use among high school students in Toronto in 1970 and 1972;
(3) a study of attitudes and buying behavior of college students;
(4) a study of attitudes of vice principals to the effects of the new laws.

Effects on Young People's Alcohol Purchases

In the first study, data were collected from the Ontario Liquor Control Board on monthly shipments for 1970 and 1971. Data were obtained for beverages consumed in bars, taverns, and beer parlors (on-premise) and bought from package stores (off-premise).

Average expenditures of 18- to 21-year-olds for on-premise consumption exceeded the expenditures of those over 21 in the case of beer, wine, and spirits. The changes in off-premise proportions were comparatively small. On the basis of the data available, it is not possible to attribute the latter changes to the young drinkers. But the more substantial changes in on-premise expenditures were probably the result of lowering the drinking age. These estimates represent consumption in addition to the level of alcohol use that prevailed prior to the lowering of the legal drinking age. According to an Ontario survey of 1968, 68% in this age group used alcoholic beverages and their reported average consumption was slightly less than one-half of the average for Ontario drinkers as a whole. Our estimates of the sales to 18- to 21-year-olds subsequent to the change in drinking age indicate that this earlier consumption level increased considerably after the new age law was introduced. Apparently, lowering the drinking age not only legalized the status quo, but it also resulted in a considerable increase in consumption among those affected.

Effects of Drinking on High School Students

As part of a larger study of drug use among Toronto high school students, questions were asked about the frequency of alcohol use. In 1972, students were asked whether their drinking increased, decreased, or stayed the same after the new law (Smart and Fejer, 1974). A 1970 sample included some 6,882 students in grades 7 to 13. In 1972, some 6,627 students were interviewed. The sample included about one-fifth of the high

school districts in Metropolitan Toronto. From each district 120 students were selected at random from each of grades 7, 9, 11, and 13. The same sampling system was used in 1970 and 1972 in that the same schools and grades were used.

The frequency of use of alcohol in 1970 and 1972 is shown in Table 11 for students in grades 7, 9, 11, and 13. It can be seen that the proportion of users went from about 60% in 1970 to 70% in 1972. The largest increases are in the "most frequent use" categories—nearly twice as many in 1972 as in 1970 drank four or more times a month. The less frequent use categories decreased, or increased only slightly.

When students were asked about changes in their own drinking since the new law, the results were as follows: 40.5% no change; 26.7% no drinking; 20.1% more drinking; 3.7% less drinking; and 9% who started after the new law. There was a close association between changes in drinking and frequency of consumption, with the most frequent drinkers more often reporting increases in drinking and less often reporting decreases in drinking.

Effects on College Students' Drinking

A total of 448 first-year students between the ages of 17 and 21 years completed a questionnaire during February, 1972. Students at a variety of community colleges (60%) and at a university in Toronto (40%) participated in the study.

When asked whether the new law made a difference in how often they drank, the majority (57%) claimed they drank the same before and after the new law; exactly the same percentage of males and females made this reply. However, females were twice as likely as males—10% compared to 5%—to report no change because they didn't drink before the new law and still didn't afterward. Slightly more males than females—25% compared to 21%—reported an increase in drinking. As age increased, so did the percentage of students reporting no change in their drinking behavior, and the percentage reporting they used less since the change in the law.

Regular drinkers appeared to have increased their drinking more than casual drinkers. About 25% of the regular drinkers, those drinking four or more times a week, and 32% of those who drank once or twice a week, drank no more often than

TABLE 11 *Frequency of Alcohol Use by Students in Grades 7, 9, 11, and 13 in Toronto High Schools in 1970 and 1972*

	1970		1972	
	%	f	%	f
None	39.8	2,742	29.4	1,949
Once per month	28.7	1,977	24.5	1,622
Twice per month	11.8	813	13.1	872
Three times per month	6.9	475	9.7	640
Four or more times per month	12.7	875	23.3	1,544
Totals		6,882		6,627

$\chi^2 = 375.89$ $p < .001$, 4 df.

before the change. Only 5% of those who drank only once a month or less frequently reported they drank more frequently.

The students claimed the new laws had very little effect on the amount they usually drank on each occasion. Slightly more students (6%) claimed that they drank less on each occasion than reported drinking more (5%). Eighty-nine percent reported no change.

Several questions were asked about visits to bars, taverns, and pubs. About 55% of students reported that they attended bars, taverns, and pubs more frequently than before the laws were changed. Only 4% attended less frequently and 41% claimed their attendance had not changed. Fifty-eight percent of the men reported going out more often and 6% less often to bars and pubs. Comparable figures for women were 52% and 3% respectively. The increase in attendance at licensed outlets occurred more frequently among 18- and 19-year-olds and among the more frequent drinkers. The percentage of students who attended bars and pubs three or more times per week doubled from 3% to 6%; those going once or twice a week doubled from 12% to 24%; those going two or three times a month increased from 16% to 24% and the percentage never going to these establishments decreased from 29% to 10%.

Students were asked whether there had been a change in how frequently they drank at home with their parents' consent and how often they drank at home before and after the new laws. The new laws appeared to have very little impact on drinking at home compared to drinking at licensed outlets. While 54% of the students reported an increase in attendance at bars, taverns, and pubs, only 19% reported more frequent drinking with their parents. Slightly more females then males indicated an increase in drinking at home.

The new law led to more frequent purchases by 43% of the male and 35% of the female students. Three percent of the males reported fewer purchases and 2% of the females gave this answer. Approximately 40% of the students under 21 reported they had increased their frequency of purchases since the changes in the liquor laws. This compared to 25% of those 21 years old. The percentage of students reporting that they never made purchases at stores before the new laws was directly related to age. Eighty-one percent of those 18, 64% of those 19, 61% of those 20, and 45% of those students 21 years of age had previously never made purchases.

The students were asked whether the new law changed how often they were too affected by drinking to drive safely. Half the respondents claimed they never get too high from drinking to drive safely. One-third claimed no change, 4% said they were affected more, 3% said they were affected less, 6% didn't drive, and 5% did not reply. Almost equal numbers of males reported an increase as reported a decrease in the frequency with which they drank too much to drive safely. Seven percent reported they drank more often and 6% less often.

Opinions from Vice Principals on New Age Laws

Six months after the new law was passed, all vice principals of Toronto high schools and junior schools were asked for their opinions. Their views are particularly important because vice principals are usually responsible for discipline in schools. In all, 183, or 86% of those asked, replied.

Slightly more vice principals were not in favor of the law than were. The attitudes of the vice principals toward lowering the drinking age were closely related to how they answered the other questions. Those who were highly favorable toward the change tended to report little negative change in student behavior. The reverse was true for those with a highly unfavorable attitude. It is impossible to determine whether the vice principals' attitudes toward the law affected their perceptions of student behavior, or whether actual student behavior produced the attitudes toward the change.

The vice principals were asked whether they thought the new law had made any difference in "how young people drink." Two-thirds felt that young people drank more, 28% claimed no change, and 4% did not reply. None believed young people drank less than before the law was changed. While there was consensus that the amount of drinking had not decreased there was little consensus as to whether it had increased. About 70% of those who were highly favorable believed that no change had occurred in amounts drunk by young people. Of those unfavorable to the new law, 93% claimed no change had occurred in the amount drunk by young people.

About 50% of the vice principals reported no increase in drinking on school property, one-third said there had been an increase, and the remainder did not reply. The more favorable the respondents were to the new law, the more likely they were

to report no increase and vice versa. Eighty percent of those who were highly favorable to the new law reported no increase, compared to 31% of those who were highly unfavorable.

Those favorable to the law reported little drinking at noon and few disciplinary problems, while those unfavorable to the law did report problems. Overall, 40% reported more drinking at noon, 40% reported no increase, and 20% were uncertain or didn't reply. Thirty-four percent reported more alcohol-related disciplinary problems, 60% reported no increase, and 6% were uncertain.

About one-fifth of the respondents reported more absenteeism, which they suspected to be related to student drinking. Sixty percent claimed no increase and 18% were uncertain or did not reply.

Results concerning signs of hangovers among students were almost identical to those for absenteeism. Twenty-three percent reported more signs of hangovers, 57% reported no increase, and 20% were uncertain or did not reply.

While one-quarter of the vice principals were uncertain as to whether there was more discussion of drinking among students, 43% reported more and 29% no increase. Two-thirds of those highly favorably disposed to the new law reported an increase in discussion, compared to only one-fifth of those highly unfavorable.

Three related questions were asked regarding changes in student drinking at high school functions. More than 50% of the respondents believed that more students drank before and during school functions. Between one-quarter and one-third reported no increase. Approximately the same proportion of respondents reported that more students appeared "high" at school dances as reported no change. Forty-three percent noticed more "high" students, 39% did not notice more, and 18% were undecided or did not reply. "High" was defined in the questionnaire as "too high to drive a car safely."

In summary, more vice principals agreed than disagreed that there were more students discussing alcohol, arriving at school functions after drinking, and appearing "high" at school functions. The proportion agreeing and disagreeing about drinking during lunch hours was about equal. For all other behavior, those who disagreed outnumbered those who agreed.

A Study of Drinking-Age Changes in the United States

Only one study has been made of the effects of the age changes on drinking in the United States (Smart, 1977). In this study, comparisons were made in per capita consumption for the states that changed and did not change their age laws. Data were gathered for the year before and the year after the change for beer, wine, and spirits separately. It was found that per capita consumption on the average went up for states that lowered drinking ages. The largest changes were for beer and wine, with none for spirits. This would be expected as most young people consume beer when they first start drinking. Some states experienced very large changes and some no changes at all in per capita consumption.

The Effects on Alcoholism among Young People

A great deal of evidence shows that when per capita alcohol consumption is high, problems such as alcoholism and liver cirrhosis are also high. Countries with the highest rates of consumption, such as France, also have the highest rates of problems from alcohol, e.g., hospital admissions, liver cirrhosis-related deaths, and alcoholism. This would lead us to expect that where drinking increases significantly eventually more chronic alcohol problems result. Since drinking has increased among young people, they probably will begin to have more alcohol problems that necessitate some treatment.

Increases in numbers of young alcoholics in treatment facilities have been assumed by a number of clinicians. In 1974, data on the ages of first admissions were collected from ARF alcoholism facilities and from a large detoxification centre (Smart and Finley, 1975). There were no alcoholic admissions for people under 21 in 1964 but by 1974 those under 21 were 4.4% of all first admissions. Almost all of the change occurred since the new law was passed in 1971.

Very few admissions to the detoxification facility were under 21 in 1971 – only 1.1%, with 6.8% under age 30. By 1974, however, 3.5% were under 21 and 10.4% were under 30. Again these are remarkable differences.

The changes in admissions at both types of facilities show more young people are having serious drinking problems, serious enough to come to treatment and drying-out centres. Of course, it is important to continue these studies to see how

young people are affected over a long time period. If the current increases were to continue, the next generation could see 10% to 15% of the clinic alcoholics under 21 years of age. This would mean a drastic increase in all types of problems for young people – social, school, and employment.

Effects on Drunkenness Arrests

It would be expected that arrests for public drunkenness would increase markedly after the new law. Table 12 shows the data for drunkenness and other Liquor Control Act violations in Toronto (chiefly drinking under age). On the average, more young people have been involved in drunk arrests since 1971. Unfortunately, the proportions show some fluctuation and are difficult to interpret for that reason. However, by 1976 the proportion had fallen to a low level similar to that before the new law. It would appear that the effects of the new law on youthful public drunkenness were temporary.

The Effects of the New Age Law on Traffic Accidents among Young People

Probably increases in alcohol-related accidents were the least anticipated effects of the new law. With young people drinking more, more traffic accidents involving alcohol and more impaired driving can be expected. About 75% of people aged 18 to 21 have a driver's license and many young people drink and drive on some occasions (Cosper and Mozersky, 1968). If there are more drinking occasions, especially at bars and taverns, then more drinking-driving offenses will occur.

Several studies of changes in alcohol-related accidents have been made in different provinces and states. An interesting study for Ontario was conducted by Schmidt and Kornaczewski (1973). They examined how drinking accidents in Ontario between 1967 and 1971 had changed in different age groups. Some of their data is shown in Figure 2. Even cursory examination shows that young people (i.e., aged 15 to 19) made a far greater change in representation among drinking drivers in 1971 than in any previous year. Changes in all other age groups were much smaller and most of them actually decreased their representation in drinking accident statistics. Only the group aged 20 to 24 also showed an increase and it was much smaller than that for those 15 to 19.

TABLE 12 *Percent of Persons Charged With Drunkenness and Other Breaches of the Liquor Control Act (LCA) in Toronto, 1968–1977—Under 18 Years of Age*

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
LCA—Drunk	6.32	1.98	.26	2.65	6.78	7.60	8.97	0.64	1.40	1.40
LCA—Other[a]	52.95	45.94	39.87	50.09	39.38	39.50	39.19	23.56	21.82	28.95

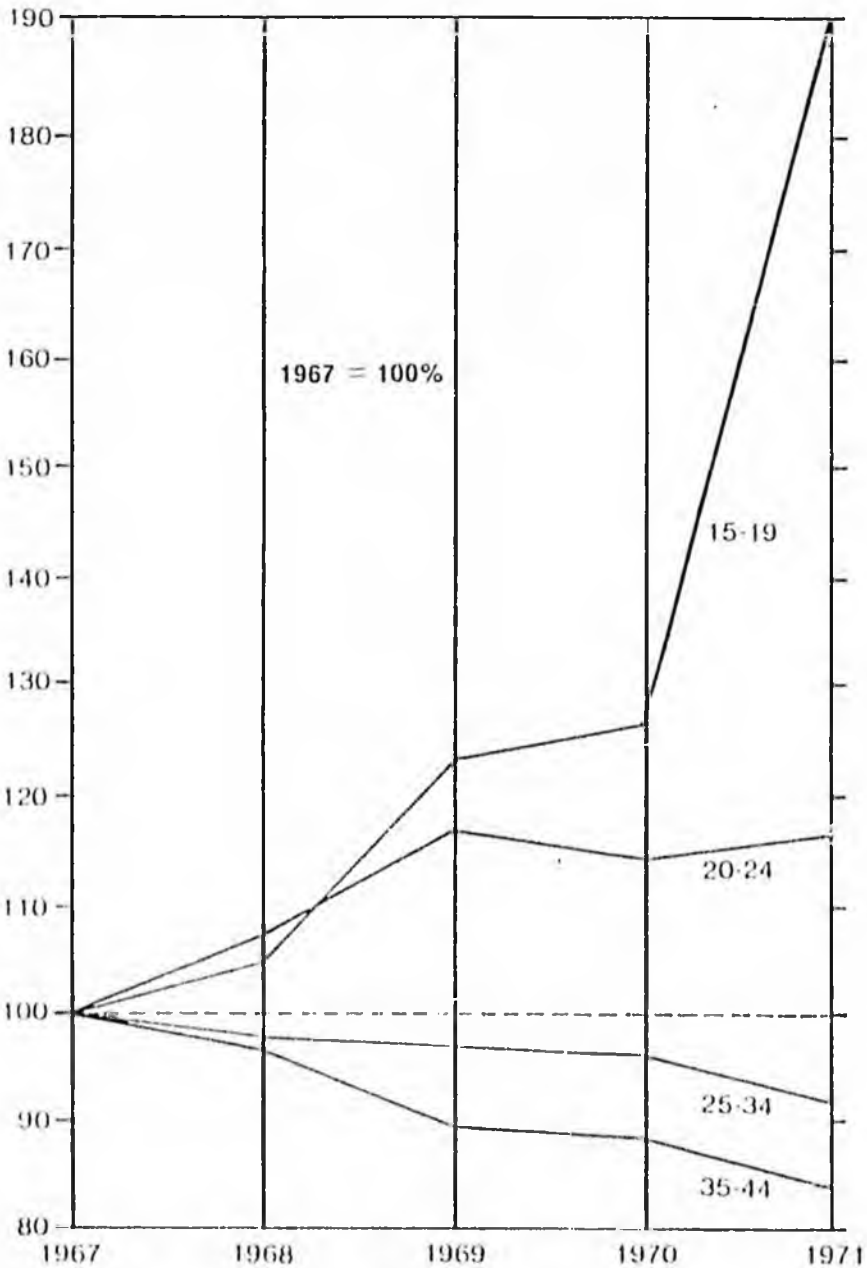
[a] A category including chiefly drinking under age, drinking in cars and other public places.

An important study by Whitehead (1977) was done in Ontario soon after the law was changed. This study examined records of male drivers in London, Ontario. After the reduction in the drinking age there was a 33% increase in alcohol-related accidents among 18-year-olds and a 34% increase among 19-year-olds. Increases were far lower among 24-year-olds (only 20%), who were not affected by the new law. There has been some debate about whether the changes would have occurred even without the law (e.g., Zylman 1974). However, this study was enlarged and extended in 1977 (Whitehead, 1977) and the final conclusion was that "the change in the law is associated with an increased rate of alcohol-related collisions among 18- to 20-year-old drivers and among 16- to 17-year-old drivers." It should be noted that alcohol-related accidents increased among 16- and 17-year-olds who were supposedly too young to be drinking. No doubt, lowering the age from 21 to 18 made it easier for them to drink.

Two studies in the United States have also examined changes after drinking age decreases. They are valuable because they include comparisons of states in which there has been no change. A study done at the Insurance Institute for Highway Safety (Williams et al., 1974) compared three states that had kept their drinking age at 21 (Indiana, Illinois, Minnesota) with Michigan, Wisconsin, and Ontario, which did not. This study showed that both single-vehicle fatal crashes and night-time crashes occurred more often in young people (under 21) after the law was changed. There was no comparable increase in areas that did not change the law. Unfortunately, this study also found increased accidents among those aged 15 to 18, who ought not to have been affected by the new law. This data suggests, as do other studies, that decreasing the drinking age probably allows increased access to alcohol by those who are younger than 18. The IIHS study showed that in the first year the new law probably lead to 29 excess deaths in Michigan, 28 in Ontario, and 13 in Wisconsin.

A similar study by Douglass and Filkins (1974) used data from Michigan, Vermont, and Maine, which lowered drinking ages. These states were compared with two that did not change (Pennsylvania and Texas). Increased accidents due to alcohol were found in Michigan and Maine but not Vermont. It may be that Vermont failed to change because it is relatively small and surrounded by areas with lower age laws. Recently this study

FIGURE 2 *Change in the Proportional Representation of Various Age Groups of Drinking Drivers in Accidents Ontario 1967–1971 1967 = 100%*



was extended and data up to 1976 was included (Flora, 1978). The conclusion was further supported that reducing the drinking age had cost lives in drinking accidents in Michigan.

The Reversal of Drinking Age Laws in Ontario and Elsewhere

In several areas of North America, public debate about the beneficial and harmful effects of the new age laws began shortly after their passage. The public in Ontario and elsewhere became aware of higher rates of alcohol-related accidents, and more drunkenness on the part of young people. School officials and teachers complained of students being able to drink at noon hour and return to school too intoxicated to learn. Certain types of school events, such as dances and football games, often became occasions for heavy drinking. There was also some awareness of increased absenteeism and disciplinary problems for high school students. On the positive side, it was argued that drinking was a natural civil right owed to all adults. The problems experienced might be only temporary and young people would eventually take responsibility for their own drinking. In general, young persons seemed in favor of a low drinking age and older persons did not.

The outcome of the debate in several areas was to partially reverse decisions to lower drinking age laws. In Saskatchewan it was decided to raise the drinking age to 19 again in 1976. Similar decisions were taken in Minnesota and Maine. Unfortunately, no studies have been made of the effects of raising the drinking age in Saskatchewan or Minnesota. Such studies take considerable time to do, particularly if they involve the use of such government records as traffic accident data, which may be as much as a year late in appearing.

In Ontario, the government raised the drinking age from 18 to 19 on December 31st, 1978. (It should be noted that in Ontario the age was not returned to 21, as it had been in 1971.) This change came as a result of several kinds of influence. Public opinion and debate as reflected in newspaper stories and the like seemed to favor a change—concern was often expressed in 1975 and 1976 about the large increase in youthful drinking and alcohol-related accidents. A study of public opinion done in 1976 in London, Ontario, indicated that almost 48% of adults were in favor of increasing the drinking age, most of them to

age 20 (Ennis et al., 1977). A larger study (Ogborne and Smart, 1978) done all over Ontario in 1977 indicated that 68% of adults wanted the drinking age set at 19 or above. Probably when the law was first changed in 1971 adults were mostly neutral or in favor of it but as experience with the law's effects increased, opinion shifted in a negative direction.

A significant event in the Ontario debate was the appointment of the Jones Commission, established by the government to elicit public reaction, examine the evidence, and recommend measures for dealing with youthful drinking problems. This commission conducted public meetings with both adults and youths across the province, and reviewed expert opinion from such government agencies as the Addiction Research Foundation and the Ministry of Health. The report of this commission made a large number of recommendations, including decreasing lifestyle alcohol advertisements, increasing educational efforts, making nonalcoholic beverages more available in bars, and increasing the drinking age to 19. The report became available in 1976. Another government committee was concerned with highway safety and it held deliberations in 1977. This was an all-party committee of the legislature termed "The Select Committee on Highway Safety." Although not concerned solely with youthful driving problems, this select committee recommended an increase in the drinking age to 19. The report became available in mid-1977.

The decision to reverse the age law was announced by the government in May of 1978 after a private member's bill had been sponsored by the opposition in the Ontario Legislature. It seemed to have broad public and political support and it was recommended by the Addiction Research Foundation as well as others such as home and teacher's associations and headmasters' groups.

At present, we cannot be positive whether the decision has substantially affected young people's drinking. It is a logical expectation that it should but empirical evidence is not available yet. It will probably have its greatest effect in combination with other measures, rather than solely on its own. Fortunately, the government raised the drinking age at the same time as it created new measures for better identification cards with the bearer's picture, provided higher penalties for serving alcohol to minors, severely restricted lifestyle advertisements, and improved alcohol education in schools. If the new alcohol control measures in Ontario have a major effect on drinking and driving problems among young people it will be difficult to decide exactly which measure has been most significant.

As of January 1, 1979, 19-year-olds and those who turned 18 in 1978 were allowed to drink in Ontario. As of January 1, 1980, all new drinkers had to be aged 19 or older and the last 18-year-olds became 19. The insertion of this "grandfather" clause into the law meant that its effects will not be felt for some time and that efforts to evaluate those effects will be delayed for several years.

Summary

The data relevant to the age change are consistent except for those for public drunkenness. Areas that lowered drinking ages have experienced far more drinking and alcohol-related traffic accidents than those that did not. In Toronto, however, drunkenness convictions did not increase after the new age law. No data are yet available from areas that raised drinking ages after initially lowering them, so it is still too early to judge the effects of this move. It seems most unlikely that any area would raise drinking ages to former levels. One problem, of course, is that the drinking age is frequently tied to age of majority. To change one without changing the other would likely be unpopular. It should be remembered, too, that persons 18 and over vote and form an important constituency. They might punish any government at the polls that decided to remove their rights piecemeal. Probably age changes ought to have been introduced more slowly (only beer) and in conjunction with a careful education campaign. In all provinces and most states, changes have already been made, but some areas can still benefit from the mistakes made by others. We know, too, that it is possible to change drinking age laws back to their earlier levels or at least to higher levels than 18. Public opinion in several areas seems to favor this more and logical arguments suggest it would be beneficial. Probably the greatest impact of such an increase would occur when combined with other measures such as penalties for serving underage drinkers and reductions in alcohol advertising.

Recently the age for drinking has been increased to 19 in Ontario. This change may have an important beneficial effect

by largely removing drinking from high schools. Also, it indicates that the government is serious about drinking problems among young people and intends to do something about them. Whether changing the age by only one year can have a large impact is debatable. Many studies will be needed to examine the effects of this change and they will take some time to complete as the law contains a "grandfather" clause.

Dear Representative Terry Martin,

Because of a very tragic experience my family has suffered and will continue to suffer for many years to come, I'm finding myself writing to all of the representatives in my district to find out why the laws are so soft on drunk drivers, and what I can do to see that they are changed.

On Halloween night, I lost my 15 year old sister Robin. She was out for the evening with her boyfriend Mike, his brother Randy, and his girlfriend Pam. At approximately 11:00 p.m. that evening when they were on their way home, stopped in the center lane waiting to turn left on to Baxter Road off of Tudor Road, another pick-up, without any headlights on (it was pitch black out, a few days before the street lights were turned on at that intersection) came speeding down the turning lane only, being driven by a 23 year old drunk boy and smashed head on into the truck Robin was in. She was killed instantly from head and chest impact. Mike and Randy suffered many gashes, bruises, sprains and some broken bones. Pam suffered a broken jaw, a severed hand, a very damaged liver, a foot broken in 6 places, an ear cut in two, and many

other cuts and bruises. Also, she now suffers from partial face paralysis. His brother was with him. We were told it was touch and go for him too.

I'm sure this situation has happened to many families. Now, it has happened to someone in my family I love dearly. It creates so many feelings and questions.

No action has been taken against this boy yet. It will probably be a long time before anything does happen. Just look by past cases in the newspaper, etc., this boy won't be punished rightfully for the crime he committed. It comes as a terrific shock to me to learn in reality that the laws are made to protect the criminals, not the ones they kill or maim for life. Look in the newspapers. The sentences handed out to D.W.I. people are so petty, it's like saying go ahead and do it again and they do it over and over again. The sentences and fines are so light it doesn't teach them anything. Why can't the laws be made tough for them? What gives them the power to make a choice and then deprive an absolutely innocent person of her life? Why can't she be allowed to continue living, dating, graduate from High

School, no doubt get married someday and have a family? She was a beautiful girl inside and out, so much to give, so much to live. Why, why did it have to happen to my baby sister, to the baby of our family?

I really don't care if people want to drink. They can drink until they drown in it for all I care, but why can't they let somebody who is sober and alert and has the ability of good judgment, drive them home? This would save so many innocent people their lives. It could have saved my sister's life.

I don't know where to start, or what to do, but I want very much to see strong action being taken in the legislature to replace the soft laws for the crime, of driving while intoxicated.

Sincerely,
Becky Lawson

POSITION PAPER/Department of Health & Social Servic

Dept of HSS

POSITION PAPER
ON
SENATE BILL NO. 406

"An Act relating to age limits under Title 4, Alcoholic Beverages."

Senate Bill 406 would amend sections AS 04.10.040(b), AS 04.10.310, AS 04.10.44, AS 04.15.020(d), AS 04.15.060(a)-(e) of Title 4 by raising the minimum age limit in each section, for participation in the consumption, sale, dispensing, and other activities relating to alcoholic beverages, from 19 years to 21 years.

Overview

Passage in 1971 of the 26th Amendment to the United States Constitution not only allowed 18 year olds to vote but this action assisted in extending certain other priveleges to this age group. During the period of 1970 to 1975, 27 states including Alaska, lowered their minimum drinking age for all alcoholic beverage, and another 11 states lowered the drinking age for wine and/or beer. However, 1976 saw a reversal of this trend when Minnesota raised it minimum drinking age and since then, eight (8) other states have also raised their drinking age. A key factor in states decisions to raise drinking ages has been their experience of sharp increases in alcohol-related highway accidents and fatalities that have coincided with the reduction in drinking age. Massachusetts for example, found that traffic fatalities involving drinking teenagers nearly tripled in the years following lowering the legal drinking age.

Alaska Experience

Alcohol abuse and alcoholism are generally recognized as Alaska's number one health and social problems. Alcohol has also been linked with the state's high accidential death rate and other manifestations of social ills, such as homicide, suicide, crime, violence, child and spouse abuse and neglect, etc.

AN EXCERPT FROM DEPT OF H&SS

Youth of Alaska are not immune from the ill effects of alcoholism and alcohol abuse. For example, the State Alcoholism Plan estimates that over 7,000 of Alaska's youth are problem drinkers, defined as drinking alcohol to an extent, or in a manner that an alcohol-related disability is displayed. Also, our state-funded alcoholism treatment programs report that youth make up 4-5% of all persons seen for treatment and counselling. The alcoholism plan, also, reports that during 1976, four (4) deaths occurred to Alaskan youth, ages 15-24 - due to alcoholism (including alcohol intoxication and/or dependence). Our Department finds 16-17% of all juvenile arrests are for driving under the influence, liquor law violators and public drunkenness, ranging to as high as 52% in Bethel and 45% in Juneau. ~~(See attached chart.)~~

(Continued)

POSITION PAPER/Department of Health & Social Servi

These statistics appear to indicate that alcoholism and alcohol abuse continues to be a serious health and social problem in the State and to which our youth are vulnerable.

Department's Position

The Department offers its expertise in looking at the social and health aspects of the problem. Experience must be considered in combination with expert advice from the other agencies and groups impacted by the problem, such as the Department of Public Safety and Department of Law. We wish to note that the raising of the legal drinking age, although not a panacea for alcohol abuse, may decrease the availability of alcohol to a population that is at risk from this major health and social service problem.

Approved by: Helen O Beirne 3-3-80

Helen D. Beirne, Commissioner
Department of Health and Social Services

(DATE)

DEPARTMENT OF PUBLIC SAFETY
STATE OF ALASKA

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Figure 5

MOTOR VEHICLE TRAFFIC
FATALITY ACCIDENTS

	1976	1977	1978	1979
Total Accidents	111	130	112	80
Accidents With Indicated Alcohol Involvement				
Number...	67	64(11)*	54(7)*	56
% of Total...	60.4	49.2	48.2	70.0
Total Motor Vehicle Traffic Fatalities	127	138	127	90

* Numbers in parentheses represent "unknown" alcohol involvement.

While the number of total fatalities declined sharply in 1979 the number of alcohol related fatalities appears to have remained fairly constant. The result is an increase in the percentage of alcohol related fatalities.

Figure 6

ALCOHOL PRESENT IN DRIVERS ALL ACCIDENTS

Age Group	Number	Percentage	% Licensed Drivers
15-18	220	11.3%	3.4%
19-29	922	47.2	36.5
30-39	407	20.9	27.8
40-49	238	12.2	15.2
50-59	134	6.9	10.3
60+	31	1.6	5.3
	1952		
Not Specified	164		

Figure 7

ALCOHOL & DRIVERS BY AGE
IN FATAL ACCIDENTS

Age Group	Alcohol	Percentage Total Drivers	All Drivers
15-18	10	9.3%	19
19-25	10	9.3%	28
26-30	11	10.2%	23
31-35	4	3.7%	10
36-40	3	2.8%	9
41-45	2	1.9%	4
46-50	2	1.9%	4
51-55	2	1.9%	5
56-60	2	1.9%	3
61-65	0		1
66+	0		2
Total	46	42.6%	108

10/19 had been drinking
19/108 = 17.6% in fatal accidents
are between 15-18.
and they represent
only 3.4% of
the licensed drivers.

YOUNG DRIVERS

Review of the distribution of accidents by age of the driver shows that the age groups 15-19 and 20-24 are involved in 38.8% of fatal accidents and 34.5% of injury accidents. The age groups 25-29 and 30-34 and 35-39 respectively are involved in 15.7%, 9.9% and 11.6% of the fatal accidents for a combined 37.2%. Of the injury accidents they respectively contribute 17.4%, 12.2% and 7.7% for a combined 37.3% of injury accidents.

Figure 8

ACCIDENT BY AGE GROUP

Age Group	% Inj. Accidents	% Fat. Accidents	% Licensed Drivers
15-19	13.8	16.5	6.9
20-24	21.0	22.3	15.7
25-29	17.4	15.7	18.7
30-34	12.2	9.9	16.0
35-39	7.7	11.6	11.8

Drivers in the age groups 15-19 and 20-24 make up 22.6% of licensed drivers. Drivers in the age group 25-29 make up 18.7% of the licensed drivers. The age groups 30-34 and 35-39 comprise 16% and 11.8% of licensed drivers respectively.

The Effect of Raising the Legal Minimum Drinking Age on Fatal Crash Involvement

HB112

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June 1981

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The Effect of Raising the Legal Minimum Drinking Age on Fatal Crash Involvement

ABSTRACT

In the early 1970's, many states in the U.S. lowered their legal minimum drinking ages, resulting in increased fatal crash involvement among young drivers. Beginning in 1976 and continuing into the 1980's, some of these states raised their drinking ages. The present study, conducted in nine states in which the drinking ages were raised, found that this resulted in reductions in fatal crash involvement among drivers the law changes applied to, especially in types of fatal crashes in which alcohol is most often involved. The reductions in the nighttime fatal crash involvement of such drivers, that occurred in eight of the nine states, ranged from 6 to 75 percent. On average, a state that raises its drinking age can expect about a 28 percent reduction in nighttime fatal crash involvement among drivers the law change applies to. It was estimated that in the 14 states that had raised their drinking ages as of January 1981, the result each year is about 380 fewer young drivers involved in nighttime fatal crashes. In the 31 states that still had a legal minimum drinking age less than 21 as of that date, it is estimated that each year there could be about 730 fewer young drivers in nighttime fatal crashes if the legal drinking age were raised to 21.

In the early 1970's, more than half of the states in the U.S. lowered their legal minimum drinking ages -- in most cases from 21 to 18 -- for the purchase of some or all alcoholic beverages. Research indicated that this legislation resulted in increased crash involvement among young drivers.[1,2] In a study of various states and Canadian provinces that reduced their drinking ages from 21 to 18, there were significant increases in fatal crash involvement -- particularly in nighttime and single vehicle crashes in which alcohol is most often involved -- of drivers under 21 in these areas, compared with adjacent areas that did not reduce their drinking ages. These increases occurred not only among 18-20 year olds, who were directly affected by the law change, but also among 15-17 year olds.[1]

As a result of these findings and other reports of growing teenage alcohol-related problems, many states that had lowered their legal minimum drinking ages in the early 1970's raised them beginning in 1976. By the end of 1980, 14 of the 30 states that had lowered their drinking ages for the purchase of some or all alcoholic beverages had raised them, although not necessarily back to the original ages. In this paper, a study of the effect of raising the drinking age on fatal crash involvement of teenage drivers is reported.

METHODS

Research Design

Nine states, all of which raised their legal minimum drinking ages between September 1, 1976 and January 1, 1980, were studied. Four states that raised their drinking ages during 1980 were excluded, because the law changes were too recent for their effects to be measured using data available when the

study was conducted. New Jersey, which raised its drinking age from 18 to 19 on January 2, 1980, but included a "grandfather" clause permitting those already 18 before that date to drink, was also excluded.

Each of the nine states was paired with a comparison state in which the legal minimum drinking age remained unchanged during the study period. Comparison states were chosen on the basis of geographic proximity to law-change states and comparability with law-change states with respect to numbers of crash fatalities. Table 1 shows the law-change and comparison state pairs, and drinking age regulations in each state.

Table 1 goes here

Data on driver involvement in fatal crashes from January 1975 through September 1980 were obtained from the Fatal Accident Reporting System (FARS).* Only drivers of motor vehicles -- automobiles, light trucks, vans, on-off road vehicles -- were included.

Alcohol is a major factor in fatal motor vehicle crashes in general, but is particularly likely to be involved in nighttime fatal crashes (9:00 p.m. - 5:59 a.m.), especially single vehicle nighttime fatal crashes.[3-5] This subset of crashes therefore received special attention during the study.

The duration of post-law periods studied ranged from nine months (Illinois) to three years (Minnesota). In two states that raised their drinking ages from 18 to 19 but had a "grandfather" clause that permitted those already 18 years

* FARS is a computerized data base containing information on motor vehicle fatalities in the 50 states, the District of Columbia, and Puerto Rico. The data are collected by the state governments under contract to the National Highway Traffic Safety Administration. Police accident reports are the primary source of data, supplemented by data from medical examiners and other sources.

old to drink, the 12-month period following the law change dates was excluded. Pre-law and post-law periods for the nine states are shown in Figure 1. The ages to which the law changes apply are also given for each state in Figure 1.

Figure 1 goes here

Fatal crash involvement of drivers younger than those covered by the laws (starting with age 15) was also studied because of the possibility of spillover effects in these ages when alcoholic beverages could no longer be obtained legally by older teenagers. As a control, drivers older than those to whom the law changes applied (through age 21) who could drink legally in law change states throughout the study period were also included.

When a state changes its drinking age, there are possible effects on fatal crash involvement in adjacent states, both in the age groups the law changes apply to, and among their younger and older associates. These effects can be positive or negative. For example, if a state raises its drinking age from 18 to 21 and a neighboring state has an 18-year-old drinking age, then 18-20 year olds in the law-change state may travel to the neighboring state in order to drink legally, and may crash there. On the other hand, if a neighboring state has a 21 year old drinking age, 18-20 year olds in that state may no longer travel to the law-change state to drink, and consequently may crash less in both states.

These and other possible effects have a bearing on the research design used in the present study, which involved comparing law-change states with neighboring (although not necessarily contiguous) states, and also must be considered in assessing the net effect of states raising their legal minimum drinking age. It was found, however, that the number of drivers of the age

groups studied with out-of-state licenses in fatal crashes in law-change and comparison states in the pre- and post-law periods was small (less than 10 percent of the total). More importantly, the number of drivers in fatal crashes in law change states that were licensed in the comparison states (and fatal crash involved drivers in comparison states that were licensed in the law-change states) was less than one percent of the total.

Analyses based only on drivers licensed in the state in which the crash occurred produced the same results as analyses based on all drivers; the latter measure was therefore used.

Statistical Analysis

If raising the drinking age reduces driver involvement in alcohol-related fatal crashes, nighttime fatal crashes would be expected to be reduced more than daytime crashes (and single vehicle nighttime fatal crashes more than multiple vehicle daytime fatal crashes). In other words, the ratio of night-to-day fatal crashes in a law-change state would be greater before the law change than after it. This can be shown in a 2 x 2 table as follows:

	Time Period	
Time of Crash	Before Law Change	After Law Change
Night	n_{11}	n_{12}
Day	n_{21}	n_{22}

and $$\frac{n_{11}}{n_{21}} \geq \frac{n_{12}}{n_{22}} \qquad (1)$$

A statistical measure that compares such ratios is the log odds ratio,[6] defined as:

$$\beta = \ln \frac{n_{12}/n_{22}}{n_{11}/n_{21}} \qquad (2)$$

Positive values of β correspond to increases in the night/day ratio, negative values to decreases, and $\beta = 0$ whenever the ratio is unchanged. Except for small samples ($n \leq 5$) the distribution of β is asymptotically normal and its variance is approximately:

$$\sigma_\beta^2 = \frac{1}{n_{11}} + \frac{1}{n_{12}} + \frac{1}{n_{21}} + \frac{1}{n_{22}} \qquad (3)$$

The hypothesis of no change in the night/day ratio subsequent to the law could therefore be tested in terms of the approximately standard normal test statistic $Z = \beta/\sigma_\beta$. Large negative values of Z would indicate a reduction in this ratio; large positive values an increase.

To rule out the possibility that changes in the ratios in law-change states were part of a regional trend, the log odds ratio for a law-change state (β_ℓ) was compared with the log odds ratio of the non-law change (comparison) state with which it was paired (β_c). To calculate β_c data for the comparison state were split into before and after periods that coincided with these periods in the law-change state. Positive, zero or negative values of the difference $\Delta\beta = \beta_\ell - \beta_c$ are indicative of greater, equal or smaller increases in the law-change state than in the comparison state. The variance of this test statistic is $\sigma^2_{\Delta\beta} = \sigma^2_{\beta_\ell} + \sigma^2_{\beta_c}$ and $\Delta\beta/\sigma_{\Delta\beta}$ is again standard normal if the change in the night/day ratio was the same in both states.

To rule out the possibility that changes observed in age groups covered by the law (and younger ages) were part of a trend in the night/day ratio that occurred in other age groups in law change states, log odds ratios in law-change and comparison states were compared for older drivers through age 21, to whom the law change did not apply. This was done by comparing $\Delta\beta_a$ for the law-affected group to a similarly calculated $\Delta\beta_o$ for the older age group. As before, the variance of $\Delta\beta_a - \Delta\beta_o$ is equal to $\sigma^2_{\Delta\beta_o} + \sigma^2_{\Delta\beta_a}$ and the test statistic is $(\Delta\beta_a - \Delta\beta_o)/(\sigma^2_{\Delta\beta_a} + \sigma^2_{\Delta\beta_o})^{\frac{1}{2}}$ which is standard normal in the absence of a difference between the $\Delta\beta$'s.

The log odds ratios were also used to estimate changes in the number and percentage of drivers in nighttime fatal crashes resulting from the law. Consider now the 2 x 2 x 2 contingency table for a given age group:

		State			
		Comparison		Law-Change	
		Before	After	Before	After
Time of Crash	Night	a	b	e	x
	Day	c	d	g	h

If the two odds ratios are the same then,

$$\frac{xg}{en} = \frac{bc}{ad} = e^{\beta_c} \qquad \text{and } x = bceh/adg.$$

Now if, instead of x, the cell frequency is actually n, then the difference

$$\Delta n = n - x = n\,[1 - e^{\beta_c - \beta_\ell}] \qquad (4)$$

is the change in drivers involved in nighttime fatal crashes in the law-change state after the law went into force. This change can be expressed as a percentage:

$$\Delta P = 100\,\frac{\Delta n}{x} = 100\,[e^{\Delta\beta} - 1] \qquad (5)$$

Estimates of net changes in fatal crash involvement due to the laws were obtained by comparing the estimated changes for the age group covered by the law (ΔP_a) with the estimated change (ΔP_o) for the older group. Applying formula (5) for both age groups leads to the estimated net change due to the law for the law-affected group:

$$\Delta P_k = \frac{\text{Net change}}{\text{in state k}} = \frac{\Delta P_a - \Delta P_o}{1 + \Delta P_o} \qquad (6)$$

These methods were also used to determine what changes occurred in driver involvement in single vehicle nighttime fatal crashes and in all fatal crashes.

Data from the matched state pairs were analyzed by means of these methods in three different ways. The simplest analysis was based on data pooled across the nine law change and nine comparison states. In this analysis the pooled data were treated as if all of it had come from one change and one comparison state. This analysis disregards the variation between the states.

In the second method the "typical" change attributable to the laws was estimated as the average of the nine separate state estimates:

$$(\Delta P)_{av} = 1/9\ (\Delta P_1 + \ldots + \Delta P_9) \qquad (7)$$

The corresponding estimate for the variance of ΔP_k is

$$\sigma^2 = 1/8 \sum_{1}^{9} (\Delta P_k - (\Delta P)_{av})^2 \qquad (8)$$

and so a 95 percent confidence interval for the average is $(\Delta P)_{av} \pm 1.96\ \sigma/\sqrt{9}$. National projections for the estimated impact of already existing laws and the impact of further law changes were estimated on the basis of $(\Delta P)_{av}$.

Finally, to estimate the percentage change in driver fatal crash involvement that occurred in law-change states during the study period, the estimated changes were summed across the law-change states and divided by the estimated sum of the number of drivers that would have been in fatal crashes without the law change. This estimate corresponds to the "aggregate" change due to the laws. The aggregate change is a weighted average of the changes, whereas the typical change is an unweighted average. Statistical significance of the aggregate change was assessed in terms of the test statistic:

$$Z = \frac{1}{\sqrt{9}} \sum_{1}^{9} \frac{\Delta\beta_{ak} - \Delta\beta_{ok}}{(\sigma^2_{\Delta\beta_{ak}} + \sigma^2_{\Delta\beta_{ok}})^{1/2}} \qquad (9)$$

In the absence of a law effect Z would have a standard normal distribution.

RESULTS

Table 2 shows the results of comparisons between the nine law-change and comparison state pairs on driver involvement in fatal crashes before and after the laws went into force. In the age groups the laws applied to, there was a greater decrease in driver involvement in nighttime than in daytime fatal crashes in law-change states than in comparison states subsequent to the laws ($Z = -3.29$, $p = 0.001$). There was also a greater decrease in single vehicle nighttime fatal crash involvement than in multiple vehicle daytime fatal crash involvement for those ages ($Z = -2.85$, $p < 0.01$). There were an estimated 30 percent fewer drivers in the law-affected age groups in fatal nighttime crashes in law-change states during the post-law periods studied, and 41 percent fewer drivers in single vehicle nighttime fatal crashes. There was a decrease in driver involvement in all fatal crashes in law-change states in the age groups that the law applied to, but it was not statistically significant ($Z = -1.20$, $p > 0.10$).

Table 2 goes here

There was some indication of decreased fatal crash involvement of drivers in law-change states who were younger than drivers the law changes applied to, but the changes were not statistically significant. This was also the case when comparisons were based only on drivers one year younger. There were also small, non-significant changes for older drivers in law-change states.

The three sets of estimates of the percent net reductions in fatal crash involvement of drivers in law-change states to whom the law changes applied are given in Table 3. The three estimation methods yielded reasonably consistent results. Estimated reductions in driver involvement in nighttime fatal crashes

ranged from 18 to 28 percent; all three estimates were statistically significant. Estimated reductions in driver involvement in single vehicle nighttime crashes ranged from 23 to 35 percent. Although these reductions were higher than the nighttime reductions, only the aggregate estimate was statistically significant, in part because of the smaller number of drivers in nighttime single vehicle crashes. There were smaller estimated reductions in all fatal crashes (12 to 20 percent); the pooled estimate was statistically significant.

Table 3 goes here

Table 4 shows, for each of the nine law-change states, the estimated post-law changes in nighttime fatal crash involvement for law-affected and older drivers, and the net effects. The net effects of the laws on drivers the law changes applied to are also displayed in Figure 2. There were estimated net reductions in driver involvement in nighttime fatal crashes in eight of the nine states, ranging from 6 to 75 percent. Montana was the lone state in which there was not a net reduction. The average reduction in the nine states was 28 percent (± 17 percent for a 95 percent confidence interval).

Table 4 goes here

Figure 2 goes here

Figure 3 displays the estimated effects of driver involvement in nighttime fatal crashes as deseasonalized monthly time series from 1975 into 1980 as the

nine states studied raised their legal minimum drinking ages.*

Figure 3 goes here

DISCUSSION

When states lowered their legal minimum drinking ages in the early 1970's, the result was an increase, among both law-affected and younger drivers, in involvement in fatal crashes, especially those crashes in which alcohol is most often involved. The results of the present study indicate that when states raise their drinking age, there is a corresponding decrease in fatal crash involvement among law-affected drivers. There is some evidence that raising the drinking age also affects younger drivers, but the reductions in the involvement of younger drivers in fatal crashes were not statistically significant.

For the 14 states (including the nine studied plus five others) that as of January 1981 had raised their legal minimum drinking ages in recent years, it is estimated that these law changes result each year in about 380 fewer young drivers involved in nighttime fatal crashes.** For the 31 states (including seven of the nine studied) that as of January 1981 had a drinking age for

* The estimated monthly series was obtained in three steps. First, for each month the data in the 2 x 2 table representing day/night and law change/no law change splits were pooled among states that had already raised the drinking age, and the frequency of nighttime crash involvement in the change state was estimated so that the odds ratio of the modified table then equalled the odds ratio for a similar table obtained by pooling all pre-law change counts across all months and all states. Second, these estimated counts for the post-law periods in the change states were added to the sum of the observed counts in the states that still did not change their laws. Third, this sum was smoothed using X-11. The estimated monthly reduction in fatal crash involvement was subdivided between law effect and other factors using a constant factor (40 percent). This factor represents the estimated reduction in the involvement of older drivers.

** This annual estimate was based on data from 1979, the last full year for which FARS data were available when the present study was conducted.

some or all alcoholic beverages that was less than 21,* it is estimated that each year there could be about 730 fewer young drivers involved in nighttime fatal crashes if in all states the drinking age for all alcoholic beverages was raised to 21. Any single state that raises its drinking age can expect the involvement in nighttime fatal crashes of drivers of the age groups to which the change in the law applies to drop by about 28 percent.

The societal benefits achieved in states that have raised their drinking ages are substantial; the benefits achievable by additional states raising their drinking ages would be even more substantial. Raising the legal minimum drinking age to 21 in all states would have an important impact in reducing the annual toll of motor vehicle deaths in the United States, particularly the deaths of young people and of others with whom they are involved in crashes.

* If persons less than age 21 were allowed to purchase only beer containing not more than 3.2% alcohol by weight, the state was classified as having a 21-year-old drinking age.

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TABLE 1

Legal Minimum Drinking Ages in Law-Change and Comparison States[1]

Law-Change State	Drinking Age Change From	To	Effective Date	Comparison State	Legal Minimum Drinking Age
Illinois[2]	19	21	1/1/80	Indiana	21
Iowa[3]	18	19	7/1/78	Kansas[4]	21
Maine	18	20	10/24/77	Vermont	18
Massachusetts	18	20	4/1/79	Connecticut	18
Michigan	18	21	12/23/78	Ohio[4]	21
Minnesota[3]	18	19	9/1/76	Wisconsin	18
Montana	18	19	1/1/79	Idaho	19
New Hampshire	18	20	5/24/79	Part of New York[5]	18
Tennessee	18	19	6/1/79	Kentucky	21

1 The laws apply to all alcoholic beverages except where noted.

2 The age change applied to beer and wine; the legal minimum drinking age for distilled spirits was 21 throughout the study period. Prior to the 1980 change, home rule units in Illinois had the authority to promulgate different laws for drinking ages. Some raised the drinking age from 19 to 21 for beer and wine before the statewide change in 1980, although in some cases, beer and wine purchase by 19-20 year olds was permitted under some conditions.

3 A "grandfather" clause permitted 18 year olds to drink if they were 18 before the law went into effect.

4 The legal minimum drinking age was 18 for beer with not over 3.2% alcohol content, and 21 for other alcoholic beverages.

5 The following counties in central and northern New York were included: Clinton, Essex, Franklin, Fulton, Hamilton, Herkimer, Jefferson, Lewis, Madison, Montgomery, Oneida, Oswego, St. Lawrence, Saratoga, Warren, and Washington.

TABLE 2

Statistical Tests Comparing Changes in Driver Involvement in Fatal Crashes Before and After Changes in Legal Minimum Drinking Ages

Fatal Crash Ratios Compared	Driver Categories: Drivers the Law Change Applied to		Younger Drivers		Older Drivers	
	Z statistic[1]	Estimated change(%)	Z statistic[1]	Estimated change(%)	Z statistic[1]	Estimated change(%)
Nighttime : Daytime	-3.29**	-30	-0.29	-6	-0.53	-15
Single Vehicle Nighttime : Multiple Vehicle Daytime	-2.85*	-41	-0.32	-12	-0.20	-9
All Types	-1.20	-11	-0.91	-7	+1.03	+11

[1] Z is standard normal under the null hypothesis. See text.

** p = 0.001, two-tailed

* p < 0.01, two-tailed

TABLE 3

Estimated Percent Net Reductions in Fatal Crash Involvement of Drivers to Whom Changes in the Legal Minimum Drinking Ages Applied

Fatal Crash Type	Method of Estimation[1]		
	Aggregate	Typical	Pooled
Nighttime	-18%*	-28%**	-23%*
Single vehicle nighttime	-35%*	-23%	-25%
All types	-20%	-12%	-14%*

[1] See text.

** $p < 0.001$, two-tailed

* $p < 0.05$, two tailed

TABLE 4

Estimated Changes in Nighttime Fatal Crash Involvement After Changes in the Legal Minimum Drinking Ages in Nine States, and Net Reductions in the Age Group the Law Change Applied To

Law-Change State	Change in Nighttime Fatal Crash Involvement		Net Reduction Among Drivers the Law Change Applied to
	Drivers the Law Change Applied to	Older Drivers	
Illinois	-30%	-9%	-23%
[illegible]	-60%	-29%	-45%
Maine	-14%	-3%	-11%
Massachusetts	-10%	-5%	-6%
Michigan	-17%	+40%	-41%
Minnesota	-56%	-32%	-34%
Montana	+17%	+3%	+14%
New Hampshire	-55%	+80%	-75%
Tennessee	-43%	-14%	-33%
Average Reduction			-28%*

* ± 17% for a 95% confidence interval.

FIGURE 1

PRE-LAW AND POST-LAW PERIODS STUDIED, AND AGES THE LAW CHANGES APPLY TO

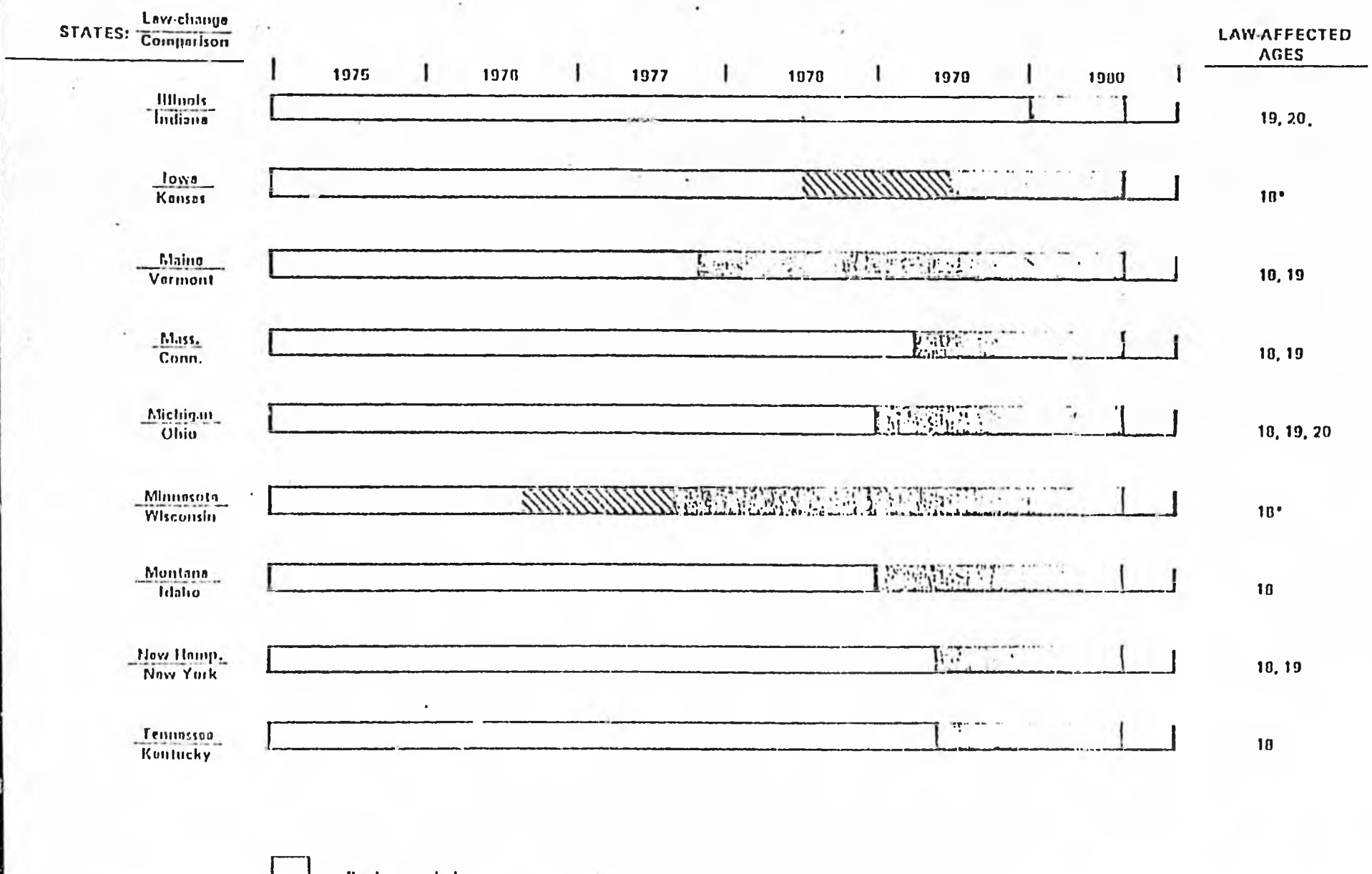


FIGURE 2

NET CHANGES IN DRIVER INVOLVEMENT IN NIGHTTIME FATAL CRASHES
AFTER CHANGES IN THE LEGAL MINIMUM DRINKING AGES

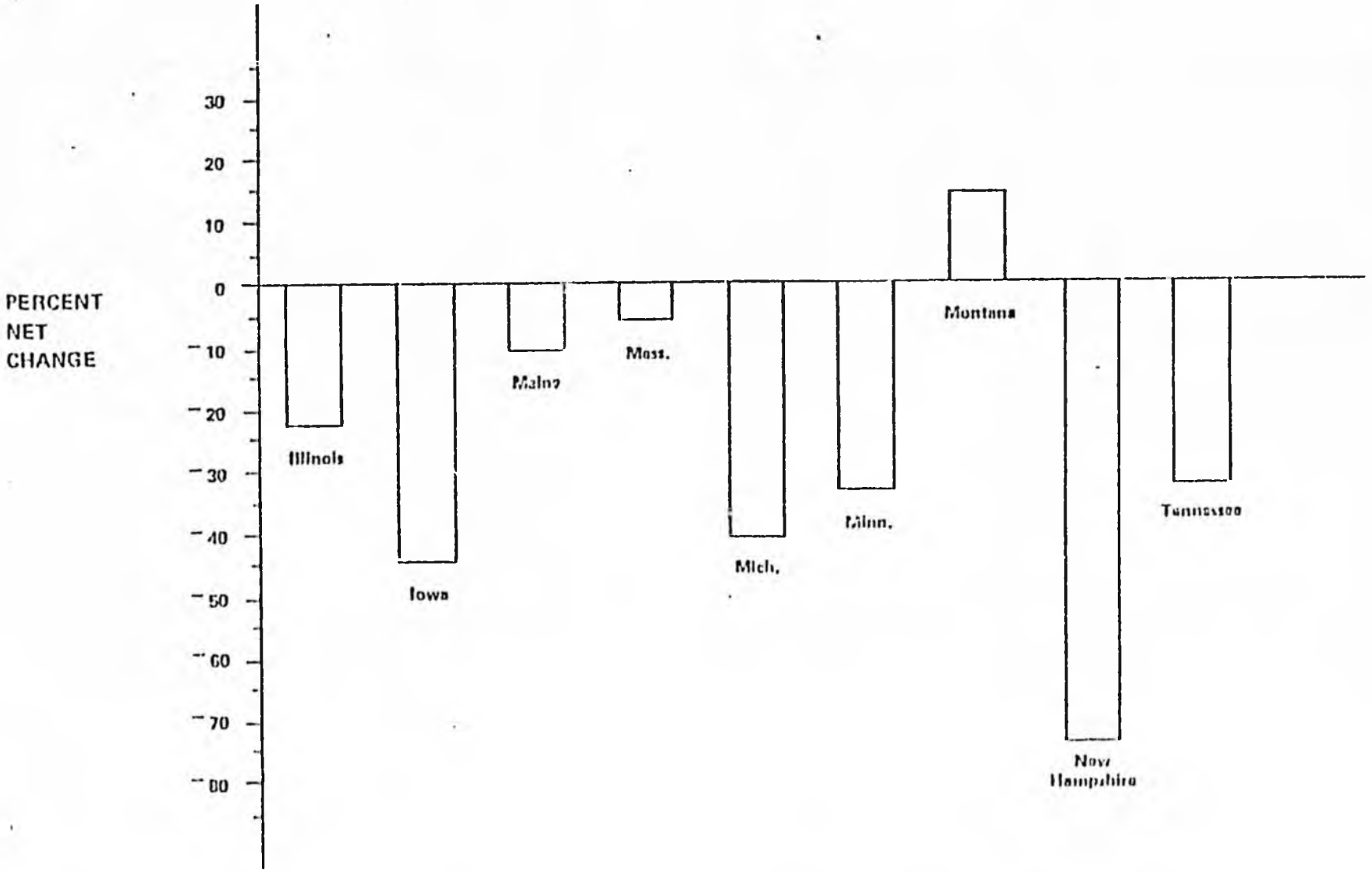
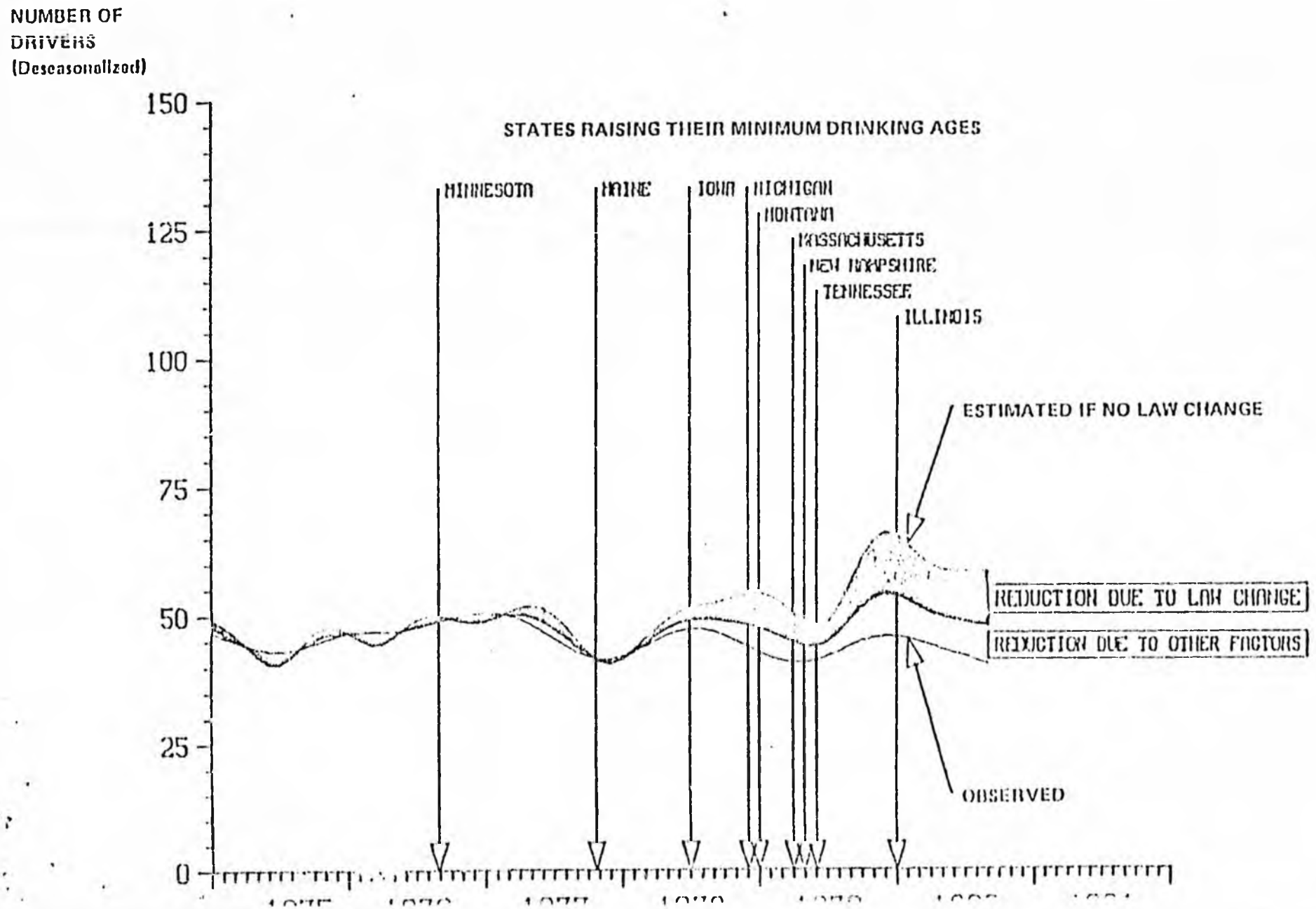


FIGURE 3

ESTIMATED NET REDUCTION IN NIGHTTIME FATAL CRASH INVOLVEMENT
IN NINE STATES THAT RAISED THEIR LEGAL MINIMUM DRINKING AGES



STATE OF ALASKA

JAY S. HAMMOND, GOVERNOR

DEPARTMENT OF PUBLIC SAFETY
OFFICE OF THE COMMISSIONER

POUCH N
JUNEAU, ALASKA 99811
PHONE:

October 28, 1981

Len Danis
c/o Terry Martin
921 W 6th Avenue, Suite 250
Anchorage, Alaska 99501

Dear Ms. Danis:

Enclosed are the statistics regarding traffic accidents and fatalities that you requested. The alcohol-related accidents are somewhat incomplete, but I hope what is available will be of some help to you.

Please feel free to contact me if I can be of any further assistance concerning highway safety-related matters.

Sincerely yours,

Karen VanDusseldorp

Karen VanDusseldorp
Research Analyst
Alaska Highway Safety Planning Agency

KV/sn
Encl:

12-L2LH

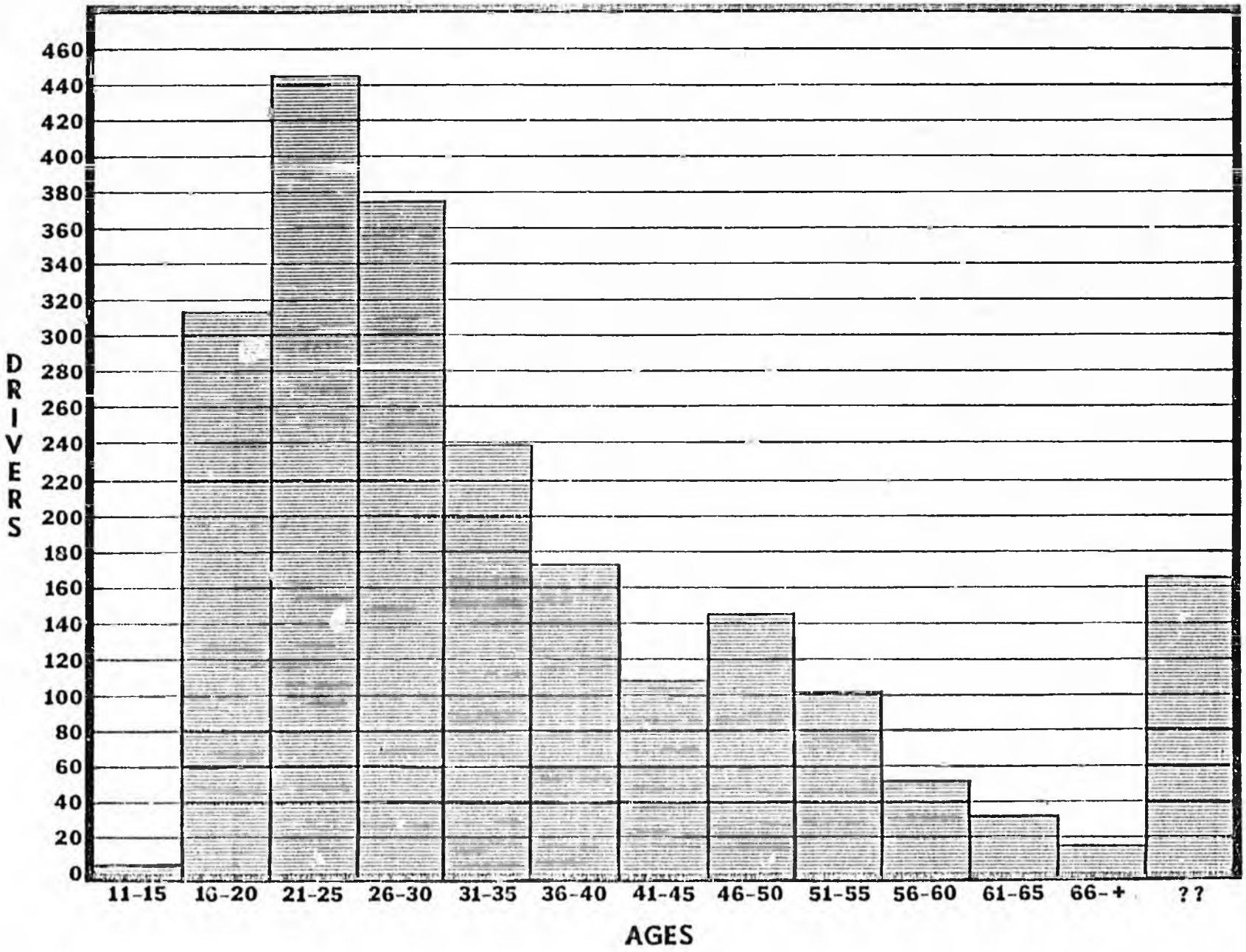
YEAR	FATALITIES	TOTAL # ACCIDENTS	MDR*
1970	101	11,641	7.3
1971	65	10,828	4.1
1972	61	11,753	3.9
1973	74	11,837	4.6
1974	99	17,101	4.1
1975	127	22,590	4.6
1976	124	21,408	4.1
1977	136	15,174	4.5
1978	127	12,962	4.5
1979	90	13,521	3.2
1980	80	13,165	3.3

* Mileage Death Rate

ALCOHOL-RELATED 1979

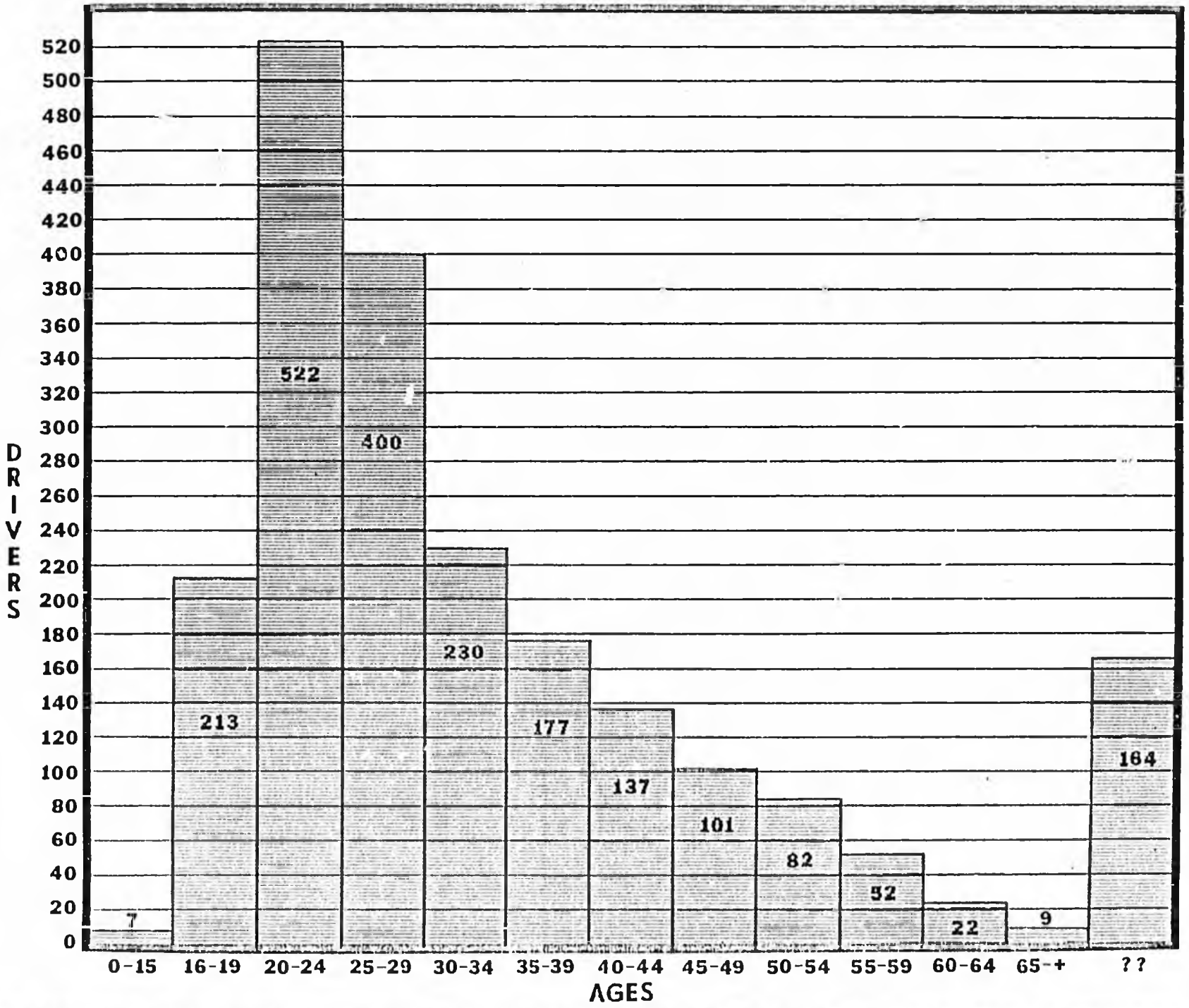
AGE	# OF ALCOHOL ACCIDENTS	PERCENT INVOLVEMENT	PERCENTAGE OF LICENSED DRIVERS
15-18	220	11.3	3.4
19-29	922	47.2	36.5
30-39	407	20.9	27.8
40-49	238	12.2	15.2
50-59	134	6.9	10.3
60+	31	1.6	2.5

ALCOHOL PRESENCE BY AGE GROUP



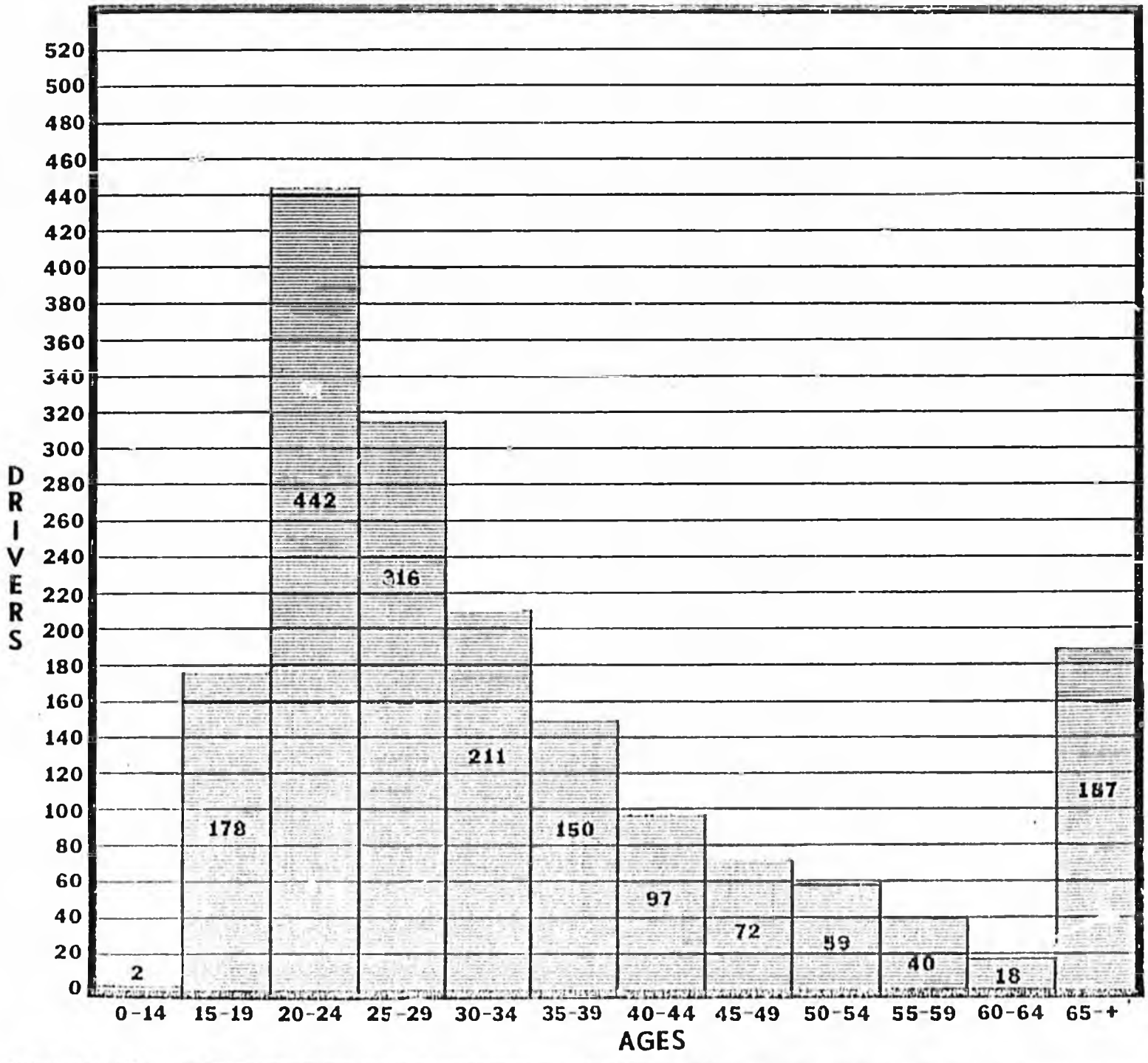
1970

•••DRIVER ALCOHOL PRESENCE BY AGE GROUP•••



1977

•••DRIVER ALCOHOL PRESENCE BY AGE GROUP•••



1978

The Effect of Raising the Legal Minimum Drinking Age on Fatal Crash Involvement

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The Effect of Raising the Legal Minimum Drinking Age on Fatal Crash Involvement

ABSTRACT

In the early 1970's, many states in the U.S. lowered their legal minimum drinking ages, resulting in increased fatal crash involvement among young drivers. Beginning in 1976 and continuing in the 1980's, some of these states raised their drinking ages. The present study, conducted in nine states in which the drinking ages were raised, found that this resulted in reductions in fatal crash involvement among drivers the law changes applied to, especially in types of fatal crashes in which alcohol is most often involved. The reductions in the nighttime fatal crash involvement of such drivers, that occurred in eight of the nine states, ranged from 6 to 75 percent. On average, a state that raises its drinking age can expect about a 28 percent reduction in nighttime fatal crash involvement among drivers the law change applies to. It was estimated that in the 14 states that had raised their drinking ages as of January 1981, the result each year is about 380 fewer young drivers involved in nighttime fatal crashes. In the 31 states that still had a legal minimum drinking age less than 21 as of that date, it is estimated that each year there could be about 730 fewer young drivers in nighttime fatal crashes if the legal drinking age were raised to 21.

In the early 1970's, more than half of the states in the U.S. lowered their legal minimum drinking ages -- in most cases from 21 to 18 -- for the purchase of some or all alcoholic beverages. Research indicated that this legislation resulted in increased crash involvement among young drivers.[1,2] In a study of various states and Canadian provinces that reduced their drinking ages from 21 to 18, there were significant increases in fatal crash involvement -- particularly in nighttime and single vehicle crashes in which alcohol is most often involved -- of drivers under 21 in these areas, compared with adjacent areas that did not reduce their drinking ages. These increases occurred not only among 18-20 year olds, who were directly affected by the law change, but also among 15-17 year olds.[1]

As a result of these findings and other reports of growing teenage alcohol-related problems, many states that had lowered their legal minimum drinking ages in the early 1970's raised them beginning in 1976. By the end of 1980, 14 of the 30 states that had lowered their drinking ages for the purchase of some or all alcoholic beverages had raised them, although not necessarily back to the original ages. In this paper, a study of the effect of raising the drinking age on fatal crash involvement of teenage drivers is reported.

METHODS

Research Design

Nine states, all of which raised their legal minimum drinking ages between September 1, 1976 and January 1, 1980, were studied. Four states that raised their drinking ages during 1980 were excluded, because the law changes were too recent for their effects to be measured using data available when the

study was conducted. New Jersey, which raised its drinking age from 18 to 19 on January 2, 1980, but included a "grandfather" clause permitting those already 18 before that date to drink, was also excluded.

Each of the nine states was paired with a comparison state in which the legal minimum drinking age remained unchanged during the study period. Comparison states were chosen on the basis of geographic proximity to law-change states and comparability with law-change states with respect to numbers of crash fatalities. Table 1 shows the law-change and comparison state pairs, and drinking age regulations in each state.

Table 1 goes here

Data on driver involvement in fatal crashes from January 1975 through September 1980 were obtained from the Fatal Accident Reporting System (FARS).* Only drivers of motor vehicles -- automobiles, light trucks, vans, on-off road vehicles -- were included.

Alcohol is a major factor in fatal motor vehicle crashes in general, but is particularly likely to be involved in nighttime fatal crashes (9:00 p.m. - 5:59 a.m.), especially single vehicle nighttime fatal crashes.[3-5] This subset of crashes therefore received special attention during the study.

The duration of post-law periods studied ranged from nine months (Illinois) to three years (Minnesota). In two states that raised their drinking ages from 18 to 19 but had a "grandfather" clause that permitted those already 18 years

* FARS is a computerized data base containing information on motor vehicle fatalities in the 50 states, the District of Columbia, and Puerto Rico. The data are collected by the state governments under contract to the National Highway Traffic Safety Administration. Police accident reports are the primary source of data, supplemented by data from medical examiners and other sources.

old to drink, the 12-month period following the law change dates was excluded. Pre-law and post-law periods for the nine states are shown in Figure 1. The ages to which the law changes apply are also given for each state in Figure 1.

Figure 1 goes here

Fatal crash involvement of drivers younger than those covered by the laws (starting with age 15) was also studied because of the possibility of spillover effects in these ages when alcoholic beverages could no longer be obtained legally by older teenagers. As a control, drivers older than those to whom the law changes applied (through age 21) who could drink legally in law change states throughout the study period were also included.

When a state changes its drinking age, there are possible effects on fatal crash involvement in adjacent states, both in the age groups the law changes apply to, and among their younger and older associates. These effects can be positive or negative. For example, if a state raises its drinking age from 18 to 21 and a neighboring state has an 18-year-old drinking age, then 18-20 year olds in the law-change state may travel to the neighboring state in order to drink legally, and may crash there. On the other hand, if a neighboring state has a 21 year old drinking age, 18-20 year olds in that state may no longer travel to the law-change state to drink, and consequently may crash less in both states.

These and other possible effects have a bearing on the research design used in the present study, which involved comparing law-change states with neighboring (although not necessarily contiguous) states, and also must be considered in assessing the net effect of states raising their legal minimum drinking age. It was found, however, that the number of drivers of the age

groups studied with out-of-state licenses in fatal crashes in law-change and comparison states in the pre- and post-law periods was small (less than 10 percent of the total). More importantly, the number of drivers in fatal crashes in law change states that were licensed in the comparison states (and fatal crash involved drivers in comparison states that were licensed in the law-change states) was less than one percent of the total.

Analyses based only on drivers licensed in the state in which the crash occurred produced the same results as analyses based on all drivers; the latter measure was therefore used.

Statistical Analysis

If raising the drinking age reduces driver involvement in alcohol-related fatal crashes, nighttime fatal crashes would be expected to be reduced more than daytime crashes (and single vehicle nighttime fatal crashes more than multiple vehicle daytime fatal crashes). In other words, the ratio of night-to-day fatal crashes in a law-change state would be greater before the law change than after it. This can be shown in a 2 x 2 table as follows:

	Time Period	
Time of Crash	Before Law Change	After Law Change
Night	n_{11}	n_{12}
Day	n_{21}	n_{22}

and $$\frac{n_{11}}{n_{21}} \geq \frac{n_{12}}{n_{22}} \qquad (1)$$

A statistical measure that compares such ratios is the log odds ratio,[6] defined as:

$$\beta = \ln \frac{n_{12}/n_{22}}{n_{11}/n_{21}} \qquad (2)$$

Positive values of β correspond to increases in the night/day ratio, negative values to decreases, and $\beta = 0$ whenever the ratio is unchanged. Except for small samples ($n \leq 5$) the distribution of β is asymptotically normal and its variance is approximately:

$$\sigma^2_{\beta} = \frac{1}{n_{11}} + \frac{1}{n_{12}} + \frac{1}{n_{21}} + \frac{1}{n_{22}} \qquad (3)$$

The hypothesis of no change in the night/day ratio subsequent to the law could therefore be tested in terms of the approximately standard normal test statistic $Z = \beta/\sigma_{\beta}$. Large negative values of Z would indicate a reduction in this ratio; large positive values an increase.

To rule out the possibility that changes in the ratios in law-change states were part of a regional trend, the log odds ratio for a law-change state (β_{ℓ}) was compared with the log odds ratio of the non-law change (comparison) state with which it was paired (β_c). To calculate β_c data for the comparison state were split into before and after periods that coincided with these periods in the law-change state. Positive, zero or negative values of the difference $\Delta\beta = \beta_{\ell} - \beta_c$ are indicative of greater, equal or smaller increases in the law-change state than in the comparison state. The variance of this test statistic is $\sigma^2_{\Delta\beta} = \sigma^2_{\beta_{\ell}} + \sigma^2_{\beta_c}$ and $\Delta\beta/\sigma_{\Delta\beta}$ is again standard normal if the change in the night/day ratio was the same in both states.

To rule out the possibility that changes observed in age groups covered by the law (and younger ages) were part of a trend in the night/day ratio that occurred in other age groups in law change states, log odds ratios in law-change and comparison states were compared for older drivers through age 21, to whom the law change did not apply. This was done by comparing $\Delta\beta_a$ for the law-affected group to a similarly calculated $\Delta\beta_o$ for the older age group. As before, the variance of $\Delta\beta_a - \Delta\beta_o$ is equal to $\sigma^2_{\Delta\beta_o} + \sigma^2_{\Delta\beta_a}$ and the test statistic is $(\Delta\beta_a - \Delta\beta_o)/(\sigma^2_{\Delta\beta_a} + \sigma^2_{\Delta\beta_o})^{\frac{1}{2}}$ which is standard normal in the absence of a difference between the $\Delta\beta$'s.

The log odds ratios were also used to estimate changes in the number and percentage of drivers in nighttime fatal crashes resulting from the law. Consider now the 2 x 2 x 2 contingency table for a given age group:

		State			
		Comparison		Law-Change	
		Before	After	Before	After
Time of Crash	Night	a	b	e	x
	Day	c	d	g	h

If the two odds ratios are the same then,

$$\frac{xg}{eh} = \frac{bc}{ad} = e^{\beta_c} \qquad \text{and } x = bceh/adg.$$

Now if, instead of x, the cell frequency is actually n, then the difference

$$\Delta n = n - x = n\,[1 - e^{\beta_c - \beta_\ell}] \tag{4}$$

is the change in drivers involved in nighttime fatal crashes in the law-change state after the law went into force. This change can be expressed as a percentage:

$$\Delta P = 100\,\frac{\Delta n}{x} = 100\,[e^{\Delta\beta} - 1] \tag{5}$$

Estimates of net changes in fatal crash involvement due to the laws were obtained by comparing the estimated changes for the age group covered by the law (ΔP_a) with the estimated change (ΔP_o) for the older group. Applying formula (5) for both age groups leads to the estimated net change due to the law for the law-affected group:

$$\Delta P_k = \begin{matrix}\text{Net change} \\ \text{in state k}\end{matrix} = \frac{\Delta P_a - \Delta P_o}{1 + \Delta P_o} \tag{6}$$

These methods were also used to determine what changes occurred in driver involvement in single vehicle nighttime fatal crashes and in all fatal crashes.

Data from the matched state pairs were analyzed by means of these methods in three different ways. The simplest analysis was based on data pooled across the nine law change and nine comparison states. In this analysis the pooled data were treated as if all of it had come from one change and one comparison state. This analysis disregards the variation between the states.

In the second method the "typical" change attributable to the laws was estimated as the average of the nine separate state estimates:

$$(\Delta P)_{av} = 1/9\ (\Delta P_1 + \ldots + \Delta P_9) \qquad (7)$$

The corresponding estimate for the variance of ΔP_k is

$$\sigma^2 = 1/8 \sum_{1}^{9} (\Delta P_k - (\Delta P)_{av})^2 \qquad (8)$$

and so the 95 percent confidence interval for the average is $(\Delta P)_{av} \pm 1.96\ \sigma/\sqrt{9}$. National projections for the estimated impact of already existing laws and the impact of further law changes were estimated on the basis of $(\Delta P)_{av}$.

Finally, to estimate the percentage change in driver fatal crash involvement that occurred in law-change states during the study period, the estimated changes were summed across the law-change states and divided by the estimated sum of the number of drivers that would have been in fatal crashes without the law change. This estimate corresponds to the "aggregate" change due to the laws. The aggregate change is a weighted average of the changes, whereas the typical change is an unweighted average. Statistical significance of the aggregate change was assessed in terms of the test statistic:

$$Z = \frac{1}{\sqrt{9}} \sum_{1}^{9} \frac{\Delta\beta_{ak} - \Delta\beta_{ok}}{(\sigma^2_{\Delta\beta_{ak}} + \sigma^2_{\Delta\beta_{ok}})^{1/2}} \qquad (9)$$

In the absence of a law effect Z would have a standard normal distribution.

RESULTS

Table 2 shows the results of comparisons between the nine law-change and comparison state pairs on driver involvement in fatal crashes before and after the laws went into force. In the age groups the laws applied to, there was a greater decrease in driver involvement in nighttime than in daytime fatal crashes in law-change states than in comparison states subsequent to the laws ($Z = -3.29$, $p = 0.001$). There was also a greater decrease in single vehicle nighttime fatal crash involvement than in multiple vehicle daytime fatal crash involvement for these ages ($Z = -2.85$, $p < 0.01$). There were an estimated 30 percent fewer drivers in the law-affected age groups in fatal nighttime crashes in law-change states during the post-law periods studied, and 41 percent fewer drivers in single vehicle nighttime fatal crashes. There was a decrease in driver involvement in all fatal crashes in law-change states in the age groups that the law applied to, but it was not statistically significant ($Z = -1.20$, $p > 0.10$).

Table 2 goes here

There was some indication of decreased fatal crash involvement of drivers in law-change states who were younger than drivers the law changes applied to, but the changes were not statistically significant. This was also the case when comparisons were based only on drivers one year younger. There were also small, non-significant changes for older drivers in law-change states.

The three sets of estimates of the percent net reductions in fatal crash involvement of drivers in law-change states to whom the law changes applied are given in Table 3. The three estimation methods yielded reasonably consistent results. Estimated reductions in driver involvement in nighttime fatal crashes

ranged from 18 to 28 percent; all three estimates were statistically significant. Estimated reductions in driver involvement in single vehicle nighttime crashes ranged from 23 to 35 percent. Although these reductions were higher than the nighttime reductions, only the aggregate estimate was statistically significant, in part because of the smaller number of drivers in nighttime single vehicle crashes. There were smaller estimated reductions in all fatal crashes (12 to 20 percent); the pooled estimate was statistically significant.

Table 3 goes here

Table 4 shows, for each of the nine law-change states, the estimated post-law changes in nighttime fatal crash involvement for law-affected and older drivers, and the net effects. The net effects of the laws on drivers the law changes applied to are also displayed in Figure 2. There were estimated net reductions in driver involvement in nighttime fatal crashes in eight of the nine states, ranging from 6 to 75 percent. Montana was the lone state in which there was not a net reduction. The average reduction in the nine states was 28 percent (± 17 percent for a 95 percent confidence interval).

Table 4 goes here

Figure 2 goes here

Figure 3 displays the estimated effects of driver involvement in nighttime fatal crashes as deseasonalized monthly time series from 1975 into 1980 as the

nine states studied raised their legal minimum drinking ages.*

Figure 3 goes here

DISCUSSION

When states lowered their legal minimum drinking ages in the early 1970's, the result was an increase, among both law-affected and younger drivers, in involvement in fatal crashes, especially those crashes in which alcohol is most often involved. The results of the present study indicate that when states raise their drinking age, there is a corresponding decrease in fatal crash involvement among law-affected drivers. There is some evidence that raising the drinking age also affects younger drivers, but the reductions in the involvement of younger drivers in fatal crashes were not statistically significant.

For the 14 states (including the nine studied plus five others) that as of January 1981 had raised their legal minimum drinking ages in recent years, it is estimated that these law changes result each year in about 380 fewer young drivers involved in nighttime fatal crashes.** For the 31 states (including seven of the nine studied) that as of January 1981 had a drinking age for

* The estimated monthly series was obtained in three steps. First, for each month the data in the 2 x 2 table representing day/night and law change/no law change splits were pooled among states that had already raised the drinking age, and the frequency of nighttime crash involvement in the change state was estimated so that the odds ratio of the modified table then equalled the odds ratio for a similar table obtained by pooling all pre-law change counts across all months and all states. Second, these estimated counts for the post-law periods in the change states were added to the sum of the observed counts in the states that still did not change their laws. Third, this sum was smoothed using X-11. The estimated monthly reduction in fatal crash involvement was subdivided between law effect and other factors using a constant factor (40 percent). This factor represents the estimated reduction in the involvement of older drivers.

** This annual estimate was based on data from 1979, the last full year for which FARS data were available when the present study was conducted.

some or all alcoholic beverages that was less than 21,* it is estimated that each year there could be about 730 fewer young drivers involved in nighttime fatal crashes if in all states the drinking age for all alcoholic beverages was raised to 21. Any single state that raises its drinking age can expect the involvement in nighttime fatal crashes of drivers of the age groups to which the change in the law applies to drop by about 28 percent.

The societal benefits achieved in states that have raised their drinking ages are substantial; the benefits achievable by additional states raising their drinking ages would be even more substantial. Raising the legal minimum drinking age to 21 in all states would have an important impact in reducing the annual toll of motor vehicle deaths in the United States, particularly the deaths of young people and of others with whom they are involved in crashes.

* If persons less than age 21 were allowed to purchase only beer containing not more than 3.2% alcohol by weight, the state was classified as having a 21-year-old drinking age.

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TABLE 1

Legal Minimum Drinking Ages in Law-Change and Comparison States[1]

Law-Change State	Drinking Age Change From	To	Effective Date	Comparison State	Legal Minimum Drinking Age
Illinois[2]	19	21	1/1/80	Indiana	21
Iowa[3]	18	19	7/1/78	Kansas[4]	21
Maine	18	20	10/24/77	Vermont	18
Massachusetts	18	20	4/1/79	Connecticut	18
Michigan	18	21	12/23/78	Ohio[4]	21
Minnesota[3]	18	19	9/1/76	Wisconsin	18
Montana	18	19	1/1/79	Idaho	19
New Hampshire	18	20	5/24/79	Part of New York[5]	18
Tennessee	18	19	6/1/79	Kentucky	21

1 The laws apply to all alcoholic beverages except where noted.

2 The age change applied to beer and wine; the legal minimum drinking age for distilled spirits was 21 throughout the study period. Prior to the 1980 change, home rule units in Illinois had the authority to promulgate different laws for drinking ages. Some raised the drinking age from 19 to 21 for beer and wine before the statewide change in 1980, although in some cases, beer and wine purchase by 19-20 year olds was permitted under some conditions.

3 A "grandfather" clause permitted 18 year olds to drink if they were 18 before the law went into effect.

4 The legal minimum drinking age was 18 for beer with not over 3.2% alcohol content, and 21 for other alcoholic beverages.

5 The following counties in central and northern New York were included: Clinton, Essex, Franklin, Fulton, Hamilton, Herkimer, Jefferson, Lewis, Madison, Montgomery, Oneida, Oswego, St. Lawrence, Saratoga, Warren, and Washington.

TABLE 2

Statistical Tests Comparing Changes in Driver Involvement in Fatal Crashes Before and After Changes in Legal Minimum Drinking Ages

Fatal Crash Ratios Compared	Driver Categories: Drivers the Law Change Applied to		Younger Drivers		Older Drivers	
	Z statistic[1]	Estimated change(%)	Z statistic[1]	Estimated change(%)	Z statistic[1]	Estimated change(%)
Nighttime : Daytime	-3.29**	-30	-0.29	-6	-0.53	-15
Single Vehicle Nighttime : Multiple Vehicle Daytime	-2.85*	-41	-0.32	-12	-0.20	-9
All Types	-1.20	-11	-0.91	-7	+1.03	+11

[1] Z is standard normal under the null hypothesis. See text.

** $p = 0.001$, two-tailed

* $p < 0.01$, two-tailed

TABLE 3

Estimated Percent Net Reductions in Fatal Crash Involvement of Drivers to Whom Changes in the Legal Minimum Drinking Ages Applied

Fatal Crash Type	Method of Estimation[1]		
	Aggregate	Typical	Pooled
Nighttime	-18%*	-28%**	-23%*
Single vehicle nighttime	-35%*	-23%	-25%
All types	-20%	-12%	-14%*

[1] See text.

** $p < 0.001$, two-tailed

* $p < 0.05$, two tailed

TABLE 4

Estimated Changes in Nighttime Fatal Crash Involvement After Changes in the Legal Minimum Drinking Ages in Nine States, and Net Reductions in the Age Group the Law Change Applied To

Law-Change State	Change in Nighttime Fatal Crash Involvement		Net Reduction Among Drivers the Law Change Applied to
	Drivers the Law Change Applied to	Older Drivers	
Illinois	-30%	-9%	-23%
Iowa	-60%	-29%	-45%
Maine	-14%	-3%	-11%
Massachusetts	-10%	-5%	-6%
Michigan	-17%	+40%	-41%
Minnesota	-56%	-32%	-34%
Montana	+17%	+3%	+14%
New Hampshire	-55%	+80%	-75%
Tennessee	-43%	-14%	-33%
Average Reduction			-28%*

* ± 17% for a 95% confidence interval.

FIGURE 1

PRE-LAW AND POST-LAW PERIODS STUDIED, AND AGES THE LAW CHANGES APPLY TO

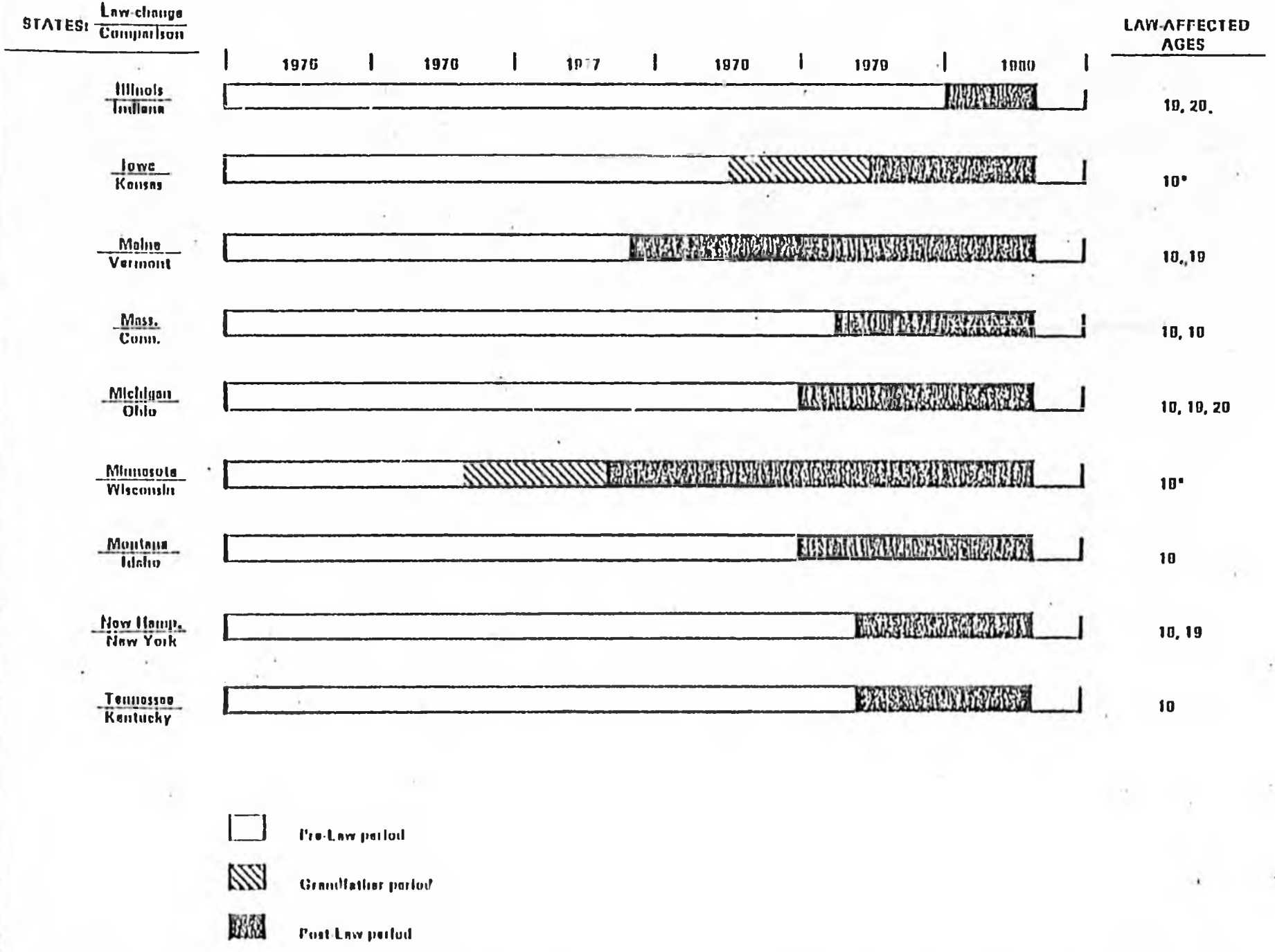


FIGURE 2

NET CHANGES IN DRIVER INVOLVEMENT IN NIGHTTIME FATAL CRASHES
AFTER CHANGES IN THE LEGAL MINIMUM DRINKING AGES

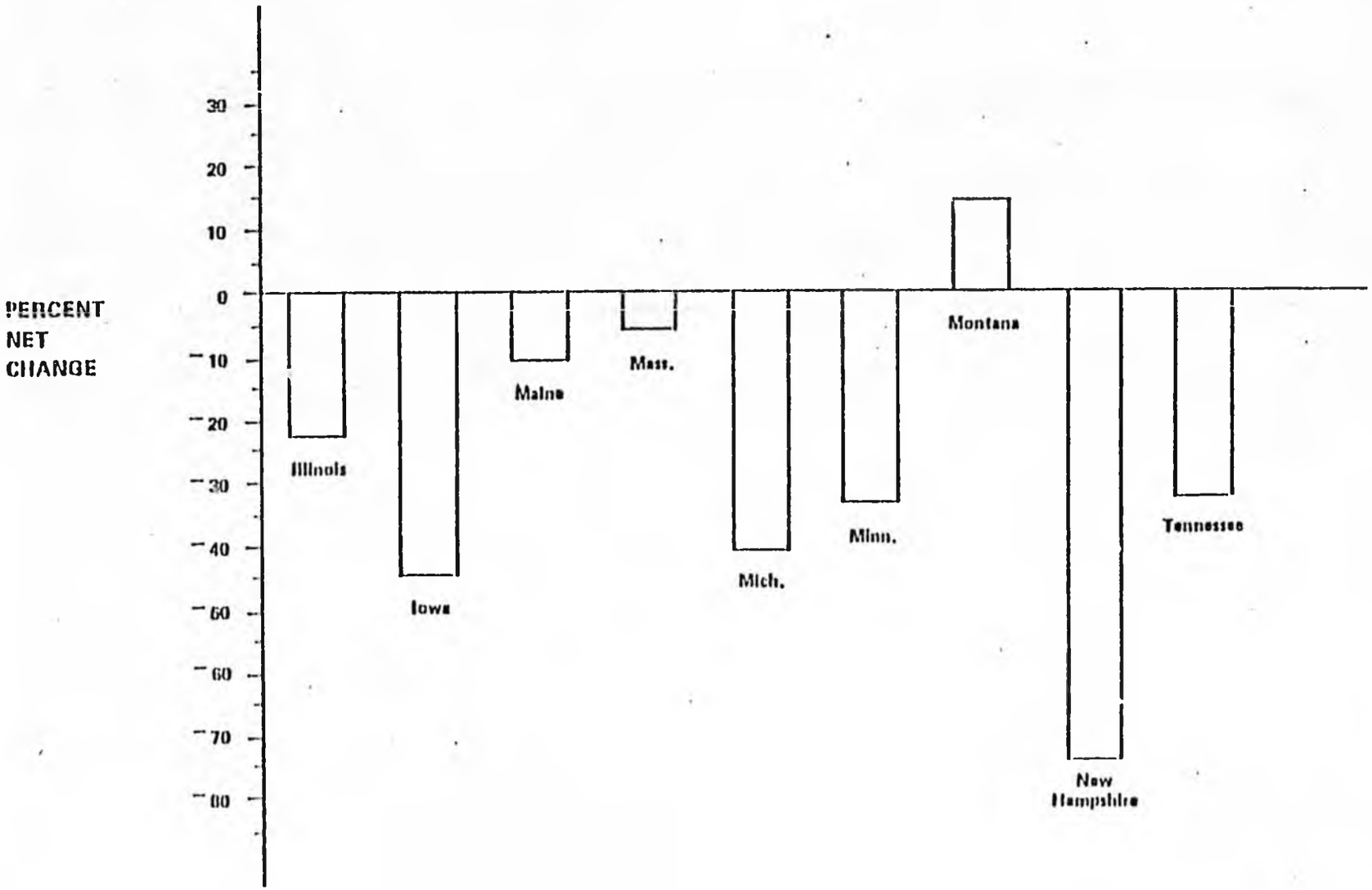
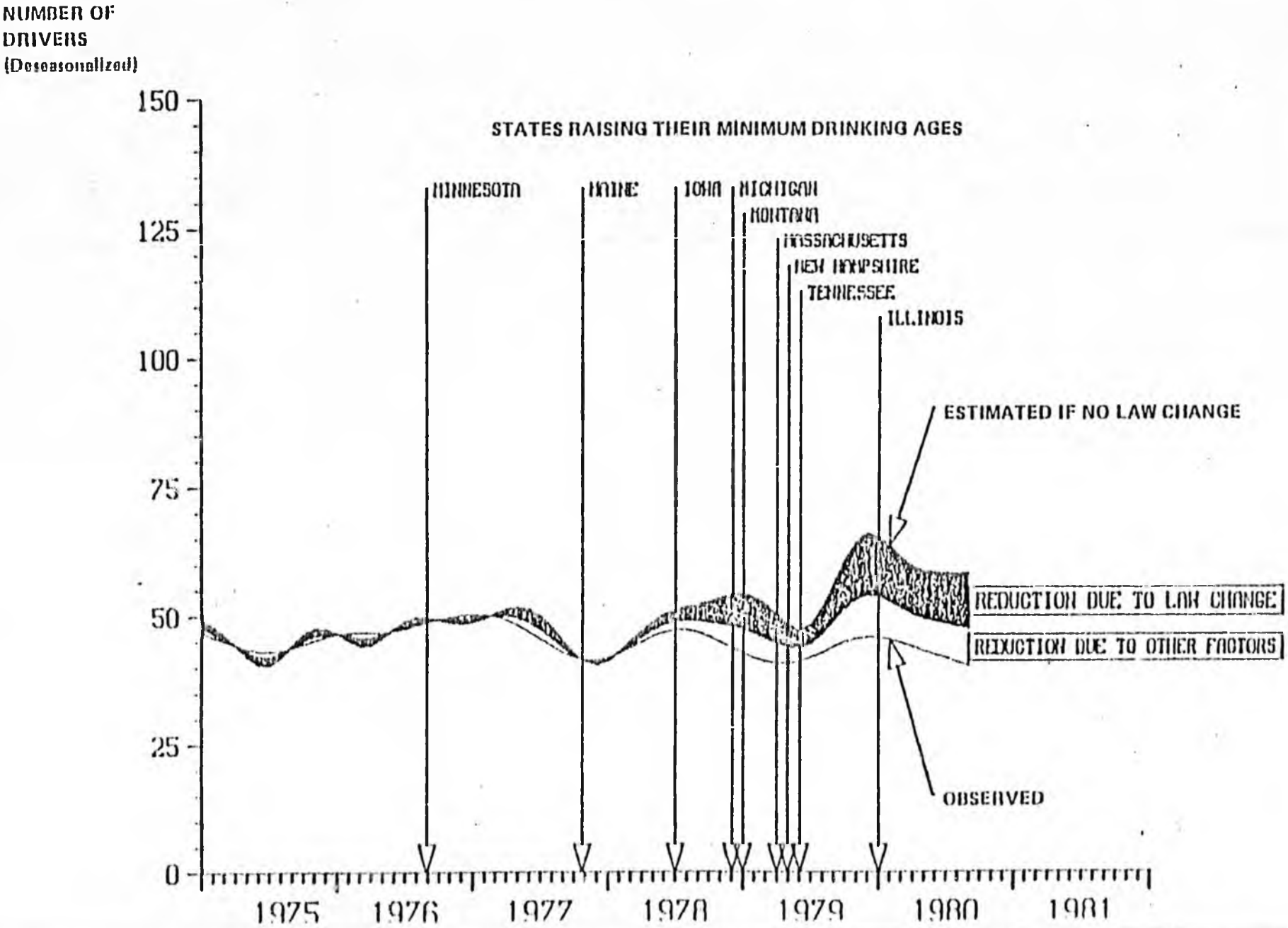


FIGURE 3

ESTIMATED NET REDUCTION IN NIGHTTIME FATAL CRASH INVOLVEMENT IN NINE STATES THAT RAISED THEIR LEGAL MINIMUM DRINKING AGES



House rejects higher drinking age...

The Associated Press

JUNEAU — House lawmakers on Monday soundly defeated a move to raise the legal drinking age in Alaska from 19 to 21.

Rep. Terry Martin, R-Anchorage, pushed the change in the form of an amendment to a bill revamping state liquor laws. After defeating Martin's amendment, and voting on several others, the House approved the 73-page revision of Alaska's alcohol laws on a 33-2 vote.

The bill passed the Senate earlier, but the House amended it so the legislation (HCSCSSSSB239 Finance) now returns to the Senate. It may end up in a House-Senate free conference committee.

Martin said the number of persons who die in auto accidents involving intoxicated drivers is on the increase. He said the combination of liquor and driving is "snuffing out the lives of many promising youths."

But opponents argued that persons who are old enough to go to war for their country are old enough to decide if they want to drink.

"I think it's ludicrous that we stand here trying to take away freedom," said Rep. Ray Metcalfe, R-Anchorage. "Pretty soon someone is going to propose that we lock ourselves in a rubber room to protect ourselves."

Reps. Nels Anderson, Ramona Barnes, Vern Hurlbert, Mike Miller and Martin voted in favor of raising the drinking age.

Another amendment, which was adopted on a 21-13 vote, would allow the Alcoholic Beverage Control Board, in certain situations, to approve a liquor license that exceeds the quota set for an area.

Rep. Joyce Munson, D-Anchorage, said there's a problem in Anchorage, especially in the Girdwood area. She said the value of liquor licenses has risen to the point where the natural location is downtown.

The legislation, which is the outgrowth of a special committee headed by Sen. Bill Ray, D-Juneau, makes numerous other changes in Alaska's liquor laws.

One change would expand the ABC Board to include one person who is knowledgeable about alcoholism and alcohol abuse.

Another would allow a bartender or liquor store owner to refuse to sell liquor to a person who has a serious drinking problem.

A major provision in the bill would allow communities to declare themselves "damp" rather than wet or dry. The bill provides for a local vote on several options beyond whether the community should be wet or dry.

The bill establishes seven options for first and second class cities and 6 options for unincorporated villages. Th options range from a total ba on liquor sales to a ban c importation and possession allowing sales and possessi just on holidays to communi liquor licenses (for cities) complete fre m in sales an possession.

The bill sets out penalties f violation of liquor laws in a d community:

- Selling liquor without license would be a felony pu ishable by a $50,000 fine an five years in jail for a secon conviction, sale to a minor, or large sale. A first convicti would be a misdemeanor pu ishable by a year in jail and $5,000 fine.
- Possession would be a mi demeanor punishable by days in jail and a $1,000 fine.
- Importation would be felony punishable by five yea in jail and a $50,000 fine for second conviction or a ca involving a large quantity alcohol. Other importation fenses would be misdemeanor

..But survey shows support for 21

By JEANNE ABBOTT
Daily News reporter

More Anchorage residents than not say the state's drinking age should be raised from 19 to 21, according to a telephone survey taken last week by the Daily News. But the difference of opinion between those who approve a change and those who don't is slight.

In a sample of 100 residents taken randomly from the telephone book, the newspaper found that 49 percent wanted the legal age of liquor consumption raised to 21 years while 43 percent thought it should remain at 19. Eight percent registered no opinion.

The state Senate voted last week to ask voters whether the drinking age should be raised. The Senate voted 12-5 to put the question to voters on the November general election ballot i the form of an advisory vote. However, the vote would not be binding but simply would be a recommendation to the legislature.The bill passed without debate and went to the House, where lawmakers amended the bill and sent it back to the Senate.

Of those surveyed, a number applauded any measure that would keep liquor from the hands of teenagers.

Said one: "I don't think people can handle it at 50, let alone when they're kids."

And another: "Kids at that age are incompetent to make such judgments. I know I was."

And another: "The way teenagers drive and drink, I don't think anybody should be drinking before they're 21."

Many who approved the change were parents who viewed it as a positive move for their own children. "I have a few teenage daughters, and I'd like to see them wait a few years," said a mother.

And several were non-drinkers who disapprove of any drinking, at any age, although one teetotaler said he didn't want to be in a position to dictate to those who drank.

Of those who thought the age should remain at 19, opinions fell into two basic patterns.

Many agreed with one man who said: "If they're old enough to be drafted and fight, they're old enough to buy a beer."

But more voted from this perspective. "I don't think it's going to make any difference. It just means more hassles for law enforcement, and I don't see the need."

Or, as this resident said: "They'll violate the law anyway. It's hard to give something, and then take it away. This will just make kids criminals."

Likewise, said another: "Liquor is readily available no matter what age you are. I just don't think raising the age limit would do any good."

ANCHORAGE DAILY NEWS
Published every morning exc Sundays by The Anchorage Da News Inc., 200 Potter Drive, A chorage, Alaska. All mail subscr tions $5.95 monthly including p tage. USPS #025040.

Offices are located at 200 Pot Drive, Anchorage. Mail should addressed to The Daily Ne Pouch 6616, Anchorage, Alas 99502. All contents Copyright 19 The Anchorage Daily News.

Business hours are 8 a.m. t p.m. daily.

Phone numbers are as follo
- Information, 274-2561.
- Newsroom, 274-2561.
- Display advertising, 274-2561
- Classified advertising, 277-14
- Circulation, 277-2411.

Home delivery problems sho be called in before 11 a.m. for sa day service.

The Daily News is represen nationally by Cresmer, Woodwa O'Mara and Ormsbee Inc.

Higher drinking age is proposed

By The Associated Press

Raisng Alaska's legal drinking age to 21 could make the state's highways safer, the director of the Alaska Council on Prevention of Alcohol and Drug Abuse told a House panel Thursday.

Drivers from 18 to 20 years old are "extraordinarily prone" to automobile accidents and "more apt to lose control" when they drink, Barbara Hoffman told the House Judiciary Committee.

The committee is considering a bill calling for an advisory vote on the issue. Voters would express their opinions at the first general election after passage of the bill.

Consultants on alcoholism testified both for and against the legislation. An expert hired by the alcohol council said figures show a variety of social problems involving youths are declining in states where the drinking age has been raised. An expert hired by bar and restaurant owners said the figures are inconclusive.

Frank Lee, who last year supported the bill but this year testified in opposition to it for an Anchorage bar and restaurant association, said data can be interpreted in many ways.

Bar and restaurant owners don't think the proposed advisory ballot offers the right question, he added, suggesting the Legislature consider a vote on raising the age of majority from 19 to 21.

The bill before the Judiciary Committee restricts the change in the legal age to "the purpose of regulation of the sale, consumption, service, furnishing, barter, purchase, gift or delivery of intoxicated liquor."

Rep. Charles Anderson, R-Anchorage, said he is bothered by the idea of "legislating against" 19 to 21 year olds.

Committee Chairwoman Ramona Barnes, R-Anchorage, and Rep. Randy Phillips said they have been getting cards on the issue saying "I'm 18. I vote."

Bill sponsor Rep. Terry Martin, R-Anchorage, admitted the bill has "political ramifications" that make some politicians nervous, but he argued polls show Alaskans strongly in favor of changing the drinking age.

99-year jail term upheld

ANCHORAGE (AP) — The maximum 99-year prison term handed out to a Fairbanks man convicted of the contract killing of a young woman on Nov. 9, 1980, has been approved by the state Court of Appeals.

Lawrence Hoover was convicted of first-degree murder in the death of 25-year-old Nancy Williams, who was killed when a shotgun was fired point-blank into her face during a hunting trip.

In approving the 99-year sentence, the Court of Appeals said it was justified.

Sheffield: hike drinking age

FAIRBANKS (AP) — Democratic gubernatorial candidate Bill Sheffield told a group of high school students Thursday that Alaska should raise its legal drinking age from 19 to 21.

The Anchorage businessman said the change would be a first step toward reducing alcohol abuse in the state.

"Other states in the Lower 48 have been increasing the legal drinking age — and with impressive results," Sheffield said in remarks prepared for an American government class at Lathrop High School, "the automobile accident rate has declined, thousands of lives have been saved and young people are leading more productive lives."

He said there were almost 2,900 fewer traffic fatalities in Michigan the first year after it raised its drinking age from 18 to 21, Sheffield said.

To illustrate the severity of the problem in Alaska, Sheffield said alcohol was a factor in:

—64 percent of the criminal homicides in 1980;
—80 percent of the suicides;
—70 percent of the traffic fatalities;
—48 percent of the violent crimes.

Juveniles account for about 52 percent of the arrests of liquor law violators and 64 percent of the arrests for non-aggravated assaults, he said.

Opposing Sheffield for the Democratic nomination are state Rep. Oral Freeman of Ketchikan, Fairbanks attorney Steve Cowper, former Lt. Gov. H.A. "Red" Boucher, and political newcomers Bruce Lemke of Anchorage and Edward Vincent of Fairbanks.

Running as Republicans in Alaska's open primary in August will be Lt. Gov. Terry Miller, Anchorage businessman Tom Fink and Rick Reakoff of Wiseman.

State Rep. Dick Randolph of Fairbanks says he will run in the November general election as a Libertarian.

Original sponsor: Martin

IN THE HOUSE BY THE JUDICIARY COMMI

CS FOR HOUSE BILL NO. 112 (Judiciary)

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWELFTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act authorizing an advisory vote by the qualifi voters of the state on raising the age of majority 21 for the purposes of regulation of alcoholic beve ages; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. The lieutenant governor shall place before the qualified voters of the state at the next general election a question advisory to th legislature as to whether the legislature should enact laws that would rais the age of majority from 19 to 21 years for the purpose of regulation of th sale, consumption, possession, furnishing, barter, purchase, gift, and delivery of alcoholic beverages. The question shall appear on the ballot i the following form:

Q U E S T I O N

Shall the Legislature of the State of Alaska enact laws raising the minimum legal age for the sale, consumption, possession, furnishing, barter, purchase, gift, and delivery of alcoholic beverages from 19 to 21 years?

No, leave at 19 [ ] Yes, raise to 21 [ ]

* Sec. 2. This Act takes effect immediately in accordance with AS 01.10.-070(c).

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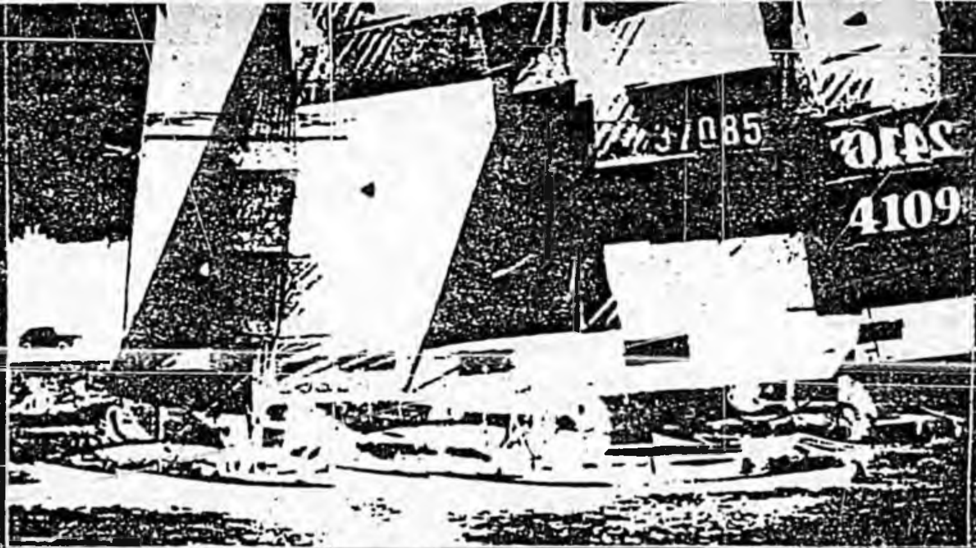

RACE TO THE FINISH

Five catamarans skim over the water Saturday as they vie for a ... victory in the last contest of the first Westchester Lagoon Regatta. The nautical event was open to just about all types of sea... worthy craft and was sponsored by the Municipality of Anchorage, Coca Cola and KENI radio.

Drinking age should go up, say Alaskans

THE ALASKA POLL

A majority of Alaskans questioned support raising the minimum drinking age from 19 to 21, according to The Alaska Poll.

The statewide poll, conducted July 19 through Thursday, showed [illegible] percent in support of raising the age, 45 percent for leaving the minimum age at 19 and 1 percent undecided.

The Dittman Research Corp. conducted the poll among 419 randomly selected individuals in [illegible] communities throughout Alaska.

Earlier this year, legislation to allow Alaskans to vote on the issue ... passed the Senate, but later died in the House. The original Senate bill would have raised the age to 21. But it was revised to authorize an advisory vote only.

[illegible]

(Statistical breakdown of results on Page A-3.)

EDITOR'S NOTE: [illegible]

TODAY'S QUESTION [illegible]

... may be election issue

[illegible]

(See ELECTION, Page A-4)

Organizers say Barbee benefit a suc...

[illegible]

JUL 27

...ded that if you *know* the drinking habits of teen-agers ... young adults, "you can make a pretty fair distinction ... the problem drinking among them when they reach mid- ... age," according to *Brewer's Digest* magazine. In an article ...ing the results of the study, the magazine said Ms. ...more's study began "with data collected by two other re- ...chers in 1949-52 on 17,000 students and in 27 colleges and ...sities. It continued in 1971-72 with her interviews 20 ... afterward on about 200 of the same people."

Trouble is, Ms. Fillmore classified as "drinkers" anyone ... had had one or more drinks over the past twelve months, ... would discourage most casual and many serious inves- ...tors from giving credibility to the study, inasmuch as under ...al circumstances every member of practically every fam- ... in America could be construed as a drinker. In any event, ... support of the survey ends with the strong implication that ... Fillmore wants more money for follow-up studies. What a ... that 17,000 students at 27 colleges had been contacted and ... more startling than the need for more follow-up ...dies resulted!

Nevertheless, the important thing in the continuing argu- ...ment about whether the lowering of the drinking age contri- ...butes to traffic deaths is to realize that teen-age drivers are ...telling us that they are drinking more. Not traffic records, not ...the reports of insurance companies or accident-investigation ...policemen, but the *kids behind the wheels* are revealing that ...more and more they had been drinking at the time of the ...accident. No amount of including the children under 10 years ...of age in the overall traffic survey can change that fact. Not ...even if everyone ever involved in a crash were surveyed and ...the actual percentage of driver-drinking was shown to drop ...drastically to only 10 percent, could the significance of the fact ...that more teen-agers are driving while drunk be ignored any ...longer.

A good example is a survey taken by the Los Angeles

County Alcohol Safety Action Project (A.S.A.P.), conducted in 1973 as an extensive roadside survey, in which more than 1,000 drivers were asked to volunteer information about their drinking habits. The results are quite interesting, as a California teen-ager can drive at 16, but cannot drink until he's 21.

The Los Angeles A.S.A.P. survey showed that 76.9 percent of the driving 15-20 age group said they drink. The largest percentage of drinking respondents was between 21 and 39 years of age (84.6 percent and 82.8 percent, respectively). Drinking increased between 16 and 39, then tapered off.

The survey also showed the greatest percentage (25 percent) of the respondents consuming five or more drinks at a single sitting was the 15-20 age group. And that group, the teen-agers, showed by far the greatest percentage of in-home drinkers—85.2 percent—probably because of the illegality of getting booze anywhere else.

Teen-agers in general saw themselves as very light-to-fairly light drinkers (79.5 percent, the highest). Given the idea that 99 out of 100 problem drinkers do not think they are problem drinkers, and that 99 out of 100 heavy drinkers do not think they are heavy drinkers; this statistic is interesting. Emanda Miller of the Los Angeles A.S.A.P. reported:

> Our findings were pretty much as expected, because we'd run the study before and it doesn't appear the drinking/driving problem among young people is going down. We *were* surprised to see no ethnic differences, however. The sad thing is that we run these surveys and nobody listens to us. We seem to be the only group following through to try and do something about it, but it's like whistling in the wind. If there are no bucks in it, public officials won't wake up.

3

Kids

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ability to make decisions has been highly developed at the end of the six weeks. Increased group involvement in activities and a confidence in overall scholastic and social achievement have been noted by evaluators of the course, and Aycock states that educators "are sharing in the learning experience along with the children," and that each new class develops new techniques and ideas that are usable in subsequent classes. A concerted program *with a specific structure* seems to work far better than a vague, mysterious recitation of facts and horror stories about traffic accidents.

If there is a Jaycees chapter in your home town, you might give them a call to see whether they have a program on teen-age drinking, or at least to get some literature. The Jaycees' newly conceived Operation THRESHOLD is an alcohol education program that is doing exceptional work in responsible drinking/youth action programs. The chief mission of Operation THRESHOLD is to *prevent* alcohol abuse. "Treating only the casualties of alcoholism will never eradicate the disease," said Joseph S. Dolan, Operation THRESHOLD's program manager, in a recent speech. "We want to focus this nation's attention on prevention, to stop having to put out forest fires and get back to the tinderbox." The organization will provide interested parents with very good material on responsible drinking guidelines and other action information without coming on like a temperance group. Contact Operation THRESHOLD, U.S. Jaycees, Box 7, Tulsa, Oklahoma 74102.

The state of Illinois made an elaborate study of the status of alcohol abuse education in the school system and came up with some interesting conclusions. Directed by Walter H. Gregg, Ed.D., and Dorothy J. Clapper, Ph.D., the 4,000 teacher-and-principal study concluded:

—that no school or school system alone should assume responsibility for developing a comprehensive program, but that a school-community coordinated effort is essential if a program is to embrace not only instructional components but also assistive measures for counseling, health services and rehabilitation.

—involvement of parents in any program strengthens it and enables it to meet students' needs more easily; this involvement by parents needn't be a stumbling block to getting a program off the ground, either, because opposition to alcohol abuse programs is practically nonexistent. P.T.A. groups are the logical choice for coordinated involvement.

—alcohol abuse education should be integrated into the total curriculum, with opportunities available in social studies, science, language arts and physical education. It is "doubtful" whether alcohol-abuse education can or should be carried out as a separate or special subject in the curriculum of elementary, junior or senior high schools.

—instructional approaches should focus on *affective* education; teachers at [illegible] grade levels agreed that the most useful methods involve students in the study of real-life problems through decision-making experiences.

—teachers should be specifically trained, during their own education, for alcohol-abuse instruction, and the means most commonly reported by the teachers in the survey was through a portion of a college health course. As always, credibility is heightened by knowledgeability, and in alcohol abuse education, credibility is 99 percent of effectiveness.

—schools should utilize community resources to the fullest, taking advantage of service groups, lecturers, local planning groups and committees, etc.

—informal small-group activities, self-directed, are effective in the personal problem-solving educational process;

peer groups and storefront agencies are highly efficacious in getting teen-agers to involve themselves in constructive endeavors.

The University of Massachusetts, long recognized as a "hotbed" of student drinking activities throughout the western portion of the state, several years ago instituted a Room to Move program to deal with rising alcoholism on campus. Room to Move is a drug drop-in type of center which offers counseling for U-Mass. students and works closely with health officials in trying to put together a national model for other schools with similar campus drinking problems. According to E.T. Mellor, who coordinates the Room to Move education team, the operation takes a "collaboration approach" to pull together various viewpoints from all segments of the campus community to formulate twenty-four-hour hotlines, workshops and seminars, and one-on-one group counseling and spiritual alternatives. Largely as a result of this group's work, and from a conference hosted by the school's Health Services Department, a three-year proposal for a comprehensive U-Mass community alcohol action program has been devised. The program intends not only to meet the needs of students on campus, according to Dr. David Kraft, staff psychiatrist, but also to reach out to the surrounding community. He feels it is imperative to go into the elementary school level so that "some youngsters will be able to figure out why Daddy comes home one night and beats up Mommy and then brings her roses the next night." One panel session reported that an intensive six-week one-on-one counseling program at Rutland Heights Hospital had a 25 percent success rate in rehabilitating alcoholics, and that a similar technique perhaps could be instituted as part of campus service.

Similarly, the Massachusetts State Division of Alcoholism and the Massachusetts Council on Alcoholism (re-

Teen-agers in that state used to drive to New York to buy their liquor before Connecticut lowered its own drinking age to 18 in October 1972.

The first and most common criticism of these surveys and statistical analyses is that statistics can prove anything. Very few statisticians will argue this point. In fact, most of us have heard the story about the statistician who drowned in a river whose average depth was only three feet!

In the interests of objectivity, it should be noted that many of the legal-drinking-age vs. drunk-driving traffic accidents and fatalities are somewhat skewed by certain facts and probabilities:

1. That such-and-such a statistic for teen-agers involved in alcohol-related traffic deaths in 1970, when the legal age for drinking was 21, may not account for (a) more drivers, and (b) more automobiles on the road, in a similar survey in 1974.

2. That a teen-age drunk-driving survey in 1974 cannot reflect in its tabular results the fact the policemen and other official recorders may not have recorded blood alcohol concentrations four years ago, nor might they have had the means to measure it accurately.

3. That terminology, semantics, and downright tricky phrasing can prove anything the surveyor wants to prove. In the words of Richard Zylman, a prominent and outspoken research specialist at the Center of Alcohol Studies at Rutgers University, "There is real danger that if we look for evil we will find it—even if it does not exist."

In a report presented at the National Alcoholism Forum of the Annual Conference of the National Council on Alcoholism in Denver in mid-1974, Mr. Zylman questions the validity of a Michigan report citing a 164 percent increase in "alcohol-involved fatal crashes" in the first quarter of 1973, immediately after the legal drinking age was lowered to 18, than

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Safety Research of June

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> safety crashes inv
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in a similar period in 1971. Zylman suggests quite convincingly that the Michigan report actually showed a change in police reporting, rather than a change in drinking behavior. Zylman does note, however, in a report to the *Journal of Safety Research* of June 1973;

> In spite of the less significant role of alcohol in highway safety crashes involving youth, alcohol is related to youthful collision involvement in a way that sharply differentiates the young from the other age categories up to age 69. This concerns the impact of amall amounts of alcohol. *Among teenagers, low concentrations of alcohol are an important factor in crashes whereas in the 25-69 age groups such concentrations are of no statistical significance at all.*

In other words, Zylman states that teen-age drinkers can't handle their booze in driving situations as well as older groups, thus are more likely to have a crash. This is far more important to a parent—and as a nationally crucial problem—than whether a state survey of "alcohol-involved crashes" is accurate.

Finally, to give Zylman his due, in an article entitled "Over Emphasis on Alcohol May Be Costing Lives," published in *Police Chief* magazine in January 1974, he states that inaccurate figures in reporting "alcohol-related" traffic deaths may be making researchers too complacent about identifying *the major cause of fatal car crashes:*

> If we continue the obsession with alcohol as *the* major cause of crashes, trying to attribute ever-increasing numbers of traffic deaths to alcohol when the actual figure is around 30 percent, we may be blinding ourselves to the possibility that there are other major causes of traffic

STATE OF ALASKA

DEPT. OF HEALTH AND SOCIAL SERVICES

OFFICE OF THE COMMISSIONER

JAY S. HAMMOND, GOVERNOR

POUCH H 01
JUNEAU, ALASKA 99811
PHONE: 465-3030

February 2, 1982

Document# 26-82

The Honorable Ramona L. Barnes
Representative
Alaska State Legislature
Pouch V
Juneau, AK 99811

Dear Representative Barnes:

Recently you requested statistics regarding:

(1) Summary of our Current Correctional Bed Capacity;

(2) Summary of our Funded and Requested Correctional Construction Projects; and,

(3) Projection of Inmate Population.

If you have questions, please do not hesitate to contact me.

Sincerely,

Helen D. Beirne

Helen D. Beirne
Commissioner

Enclosure

DIVISION OF ADULT CORRECTIONS
CAPACITY OF CORRECTIONAL CENTERS
FEBRUARY 1982

STATE INSTITUTIONS	NORMAL OPERATING CAPACITY	EMERGENCY OPERATING CAPACITY	01/27/82 PRISONER COUNTS
Anchorage - 3rd Ave.	70	80	81
Anchorage - 6th Ave.	100	115	133
Eagle River	80	100	112
Alaska Women's Fac/ER	28	30	21
Palmer	113	113	107
Ridgeview Post #6	50	50	46
Fairbanks	110	118	164
Juneau	90	100	111
Ketchikan	22	30	21
Nome	30	34	32
DAC Inst. Capacity * Totals In-State	693	770	828
Alaska Prisoners in Federal Institutions			190
Prisoners Housed in Contract Community Facilities (Halfway Houses)			63
Total Number of Prisoners In-State & Federal Institutions			1081

*In March 1982 additional beds will be available as follows:

Ridgeview Post #6 - 40 new beds for a 90 bed capacity
Palmer (existing facility) - 24 new beds for a 137 bed capacity
Palmer Addition (new facility) - 100 new beds

In-State confinement capacity by March 1982:

NORMAL OPERATING CAPACITY	EMERGENCY OPERATING CAPACITY
857	934

DIVISION OF ADULT CORRECTIONS

SUMMARY OF CAPITAL PROJECTS AFFECTING BED SPACE
(DOES NOT INCLUDE CORRECTIONAL INDUSTRIES, CODE UPGRADE OR RELATED PROJECTS)

FUNDED PROJECTS:

Bed Space Increase	Project
-0-	Ketchikan Correctional Center - Scheduled Completion 9-1-82. New Institution, 30 single rooms. Current Status - ahead of schedule - Contractor's estimated completion - 4-30-82. Staffing Available to operate 9-1-82. Since this is a replacement facility no system increase will result.
180	Anchorage Pre-Trial - Scheduled Completion - 12-31-82. New Institution, 180 single rooms. Current Status - ahead of schedule - Contractor's estimated completion 12-1-82.
60	Eagle River Correctional Center Expansion - Scheduled Completion 7-31-82. New single rooms = 80 - Post Construction Capacity = 180. Current Status - ahead of schedule - Contractor's estimated completion - 7-1-82. Upon completion of this project, it will be necessary to remove 20 inmates from 3rd Avenue in order to approach compliance. Therefore, the system capacity in August will only increase by 60, rather than by a full 80 beds.
100	Palmer Addition - Scheduled Completion - 3-1-82. New Institution, 100 single rooms. Current Status - nearly completed - Contractor's estimated completion date - 3-1-82.
40	Juneau Expansion - Scheduled Completion - October 1983. New single rooms = 56, Post Construction Capacity = 130 Current Status - on schedule - In design development stage.
67	Fairbanks Expansion - Scheduled Completion - October 1983. New single rooms = 77, Post Construction Capacity = 177.
Between 4 and 22	Nome Replacement - Scheduled Completion - Fall of 1983. New Institution, 32-50 single rooms, Post Construction Capacity = 32-50. Now in design phase. This project replaces 28 beds, so system increase will be minimal.
-0-	Bethel Jail - Scheduled Completion - Fall of 1983. New Institution, 40 single rooms, Post Construction Capacity = 40. Current Status - Now in design phase. While Bethel beds will be new to the DOAC system, we will also be assuming the current local jail function. No system increase will be realized.

FY'83 PROJECT REQUESTS AFFECTING BED SPACE:

Bed Space Increase	Project
300	Long-Term Facility - Secure institution for sentenced male felons to be located in Southcentral Alaska. $41 million has been requested for this 300 bed facility with a core capacity enabling future expansion to not more than 400 beds. Through P.F.P.F. funds, an architectural firm has been selected to begin planning and preliminary design. Completion is projected for early 1985.
80	Fairbanks Addition - Minimum to medium custody facility to be located adjacent to the existing Fairbanks Correctional Center. This facility would be similar to the new Palmer Addition and would permit those requiring less secure conditions of confinement to remain in the Northern Region.

SUMMARY OF BED SPACE INCREASES

451 Beds - Funded projects under design or construction

380 Beds - FY'83 Capital Request

831 Beds - Funded or Requested

INSTATE BED CAPACITY COMPARED WITH PROJECTED PRISONER POPULATION

Facility	1982	1983	1984	1985	1986
Ketchikan	30	30	30	30	50
Juneau Men's	90	130	130	130	130
Juneau Women's	3	3	3	3	3
Fairbanks	110	177	177	177	177
3rd Avenue	50	50	50	50	50
6th Ave. Men's & Women's	100	100	100	100	100
Ridgeview Men's	90	-0-	-0-	-0-	-0-
Eagle River Men's	160	160	160	160	160
Eagle River Women's	28	28	28	43	43
Palmer	237	237	237	237	237
Post Road	-0-	180	180	180	180
Nome	28	32	32	32	32
Bethel	-0-	40	40	40	40
Long Term Fac. Southcentral	-0-	-0-	-0-	300	300
Fairbanks Addition	-0-	-0-	-0-	80	80
INSTATE BED TOTAL	896	1,167	1,167	1,562	1,582
Projected Inmate Populations Range of Expected High/Low Counts	1,112 to 1,022	1,281 to 1,191	1,450 to 1,360	1,620 to 1,530	1,790 to 1,700

Summary: The difference between "Instate Bed Totals" and "Projected Inmate Populations" is that number that must be addressed through placement in the Federal Prison System, placement in contract community facilities, or by additional construction.

Frank P. Lee & Associates
Consultants To Industry
P.O. BOX 8341. ANCHORAGE. ALASKA 99508
907-276-2997

TESTIMONY HOUSE JUDICIARY 3-18-82

BY FRANK LEE

For the record, my name is Frank Lee and I represent the Anchorage Restaurant and Beverage Association. We are opposed to H.B. 112.

We have seen a number of surveys and statistics, and very few statisticians will argue that statistical analyses can prove anything. In the interest of objectivity, it should be noted that many of the legal drinking age vs. drunk driving traffic accidents and fatalities are somewhat skewed by certain facts and probabilities.

The main thrust of raising the MDA (minimum drinking age) has been to change the age because of high accident ratios related to young people and driving. This conclusion has been disputed by many reputable authorities, including Dr. Richard Zylman of Rutgers University's Center of Alcohol Studies. Zylman's view, expounded in several papers, is that the allegedly disproportionate number of such crashes can be otherwise interpreted. He argues that the drinking habits of youth were changing before the laws were enacted and that a dramatic upsurge in accidents among youth accidents was therefore inevitable.

Accordingly, the increased drinking and driving reported in Michigan and elsewhere would have occurred with or without the sanction of law. He also insists that one consequence of MDA legislation was stricter police reporting of alcohol involvement in accidents and that this distorted the picture of actual changes that were taking place.

The result was the creation of a "phantom" problem, which to Zylman is nowhere better exemplified than in the National Highway Traffic Safety administration report on alcohol involvement in fatal crashes among 18-20 year old drivers in Michigan between 1971-1973. His conclusion is that changing social norms, not MDA lowering or raising, are the real cause of the increase seen in alcohol-related collisions, and that withholding the right to drink at 18 or, even worse, rescinding it once it has been granted, runs the risk of criminalizing a normal youthful activity and thereby alienating a rather large segment of the nation's youth.

Indirect support of Zylman's position has come in the form of widespread recognition of: 1) the lack of uniform statistics

in accident reporting; 2) the revision of law enforcement procedures following legislation; and 3) the overriding significance of long-range behavioral patterns.

A good example is a survey taken by the Los Angeles County Alcohol Safety Action Project (A.S.A.P.), conducted in 1973 as an extensive roadside survey, in which more than 1,000 drivers were asked to volunteer information about their drinking habits. The results are quite interesting, as a California teenager can drive at 16, but cannot drink until he's 21.

The Los Angeles A.S.A.P. survey showed that 76.9 percent of the driving 15-20 age group said they drink. The largest percentage of drinking respondents was between 21 and 39 years of age (84.6 percent and 82.8 percent, respectively). Drinking increased between 16 and 39, then tapered off.

The survey also showed the greatest percentage (25 percent) of the respondents consuming five or more drinks at a single sitting was the 15-20 age group. And that group, the teenagers, showed by far the greatest percentage of in-home drinkers -- 85.2 percent -- probably because of the illegality of getting booze anywhere else.

The types of programs that we support are similar to Illinois' program. The state of Illinois made an elaborate study of the status of alcohol abuse education in the school system and came up with some interesting conclusions. Directed by Walter H. Gregg, Ed.D., and Dorothy J. Clapper, Ph.D., the 4,000 teacher-and-principal study concluded:

-- that no school or school system alone should assume responsibility for developing a comprehensive program, but that a school-community coordinated effort is essential if a program is to embrace not only instructional components but also assistive measures for counseling, health services and rehabilitation.

-- involvement of parents in any program strengthens it and enables it to meet students' needs more easily; this involvement by parents needn't be a stumbling block to getting a program off the grounds, either, because opposition to alcohol abuse programs is practically nonexistent. P.T.A. groups are the logical choice for coordinating involvement.

-- alcohol abuse education should be integrated into the total curriculum, with opportunities available in social studies, science, language arts and physical education. It is "doubtful" whether alcohol-abuse education can or should be carried out as a separate or special subject in the curriculum of elementary, junior or senior high schools.

-- instruction approaches should focus on affective education; teachers at all grade levels agreed that the most useful methods involve students in the study of real-life problems through decision-making experiences.

-- teachers should be specifically trained, during their own education, for alcohol-abuse instruction, and the means most commonly reported by the teachers in the survey was through a portion of a college health course. As always, credibility is heightened by knowledgeability, and in alcohol abuse education, credibility is 99 percent of effectiveness.

-- schools should utilize community resources to the fullest, taking advantage of service groups, lecturers, local planning groups and committees, etc.

-- informal small-group activities, self-directed, are effective in the personal problem-solving educational process; peer groups and storefront agencies are highly efficacious in getting teenagers to involve themselves in constructive endeavors.

THE LEGISLATURE OF THE STATE OF ALASKA
TWELFTH LEGISLATURE

FISCAL NOTE

I. REQUEST
Bill/Resolution No. House Bill 112
Title "An Act...vote...raising the age of majority to 21 for...liquor"
Requested by House Judiciary Committee Date March 15, 1982

II. FISCAL DETAIL
Agency Affected Department of Public Safety
Program Category Affected Administration of Justice
BRU, Program, Or Subprogram(s) Affected Alaska State Troopers
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS,CLAIMS,ETC.						
TOTAL		-0-	-0-	-0-	-0-	-0-

FUNDING (Thousands of Dollars)

GENERAL FUND		-0-	-0-	-0-	-0-	-0-
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS

FULL TIME						
PART TIME						
TEMPORARY						

III. ANALYSIS (See Fiscal Note Preparation Instruction, Section III)

No fiscal impact is anticipated.

IV. DATE March 15, 1982 PREPARED BY Marcia Lynn McKenzie
AGENCY Department of Public Safety
PHONE 465-4349

Original: Legislative Finance
cc: Budget and Management
Prime Sponsor (First Legislator Named)
33-001 (Rev. 12/81)

MULTI-QUEST

Volume XI

May -June 1981

Prepared for

ALASKA COUNCIL ON ALCOHOLISM

AND DRUG ABUSE

DITTMAN RESEARCH CORPORATION

Alaska Bank of Commerce Building

3230 "C" Street

Anchorage, Alaska

Alaska Analysts / Dittman Research

FINDINGS

Over-all throughout Alaska, over half of all respondents (54%) feel the drinking age should remain at 19, while over one-third (37%) feel the age should be increased to 21, and six percent (6%) support lowering the minimum age to 18...

> "Currently in Alaska, a person must be at least 19 years old to legally purchase and consume alcoholic beverages. Some people have said the drinking age should be raised to 21, others have said the drinking age should be lowered to 18, and still others have said the drinking age should remain at 19. What is your opinion?"
>
> Increase to 21.....37%
> Lowered to 18..... 6%
> Remain at 19.....54%

...Support for raising the minimum age to 21 is highest in rural areas of Alaska (55%), Southcentral (50%) and Southeast (46%), while 56% of Anchorage respondents and 64% of Fairbanks respondents were in favor of retaining the current age requirements.

Age-wise, younger respondents (18-24) were most in favor of retaining the current age requirements (71%), while older respondents (56 and over) were most in favor of increasing the minimum age to 21 (47%).

Females were slightly more in favor of an increase than males (39% to 36% respectively), and local government employees were more in favor of an increase (39%) than federal, state or private sector employees (28-34%).

Home-makers (52%), professional "white-collar" employees (37%) and skilled "blue-collar" craftsmen were most in favor of an increase, and upper income respondents were also in favor of raising the drinking age (45%).

Thirty-nine percent (39%) of registered voters favored an increase compared to 29% of non-registered respondents, and among registered voters. Republicans (46%) and Democrats (42%) were more in favor than non-partisans (35%).

Findings...(con't)

Support for 1:00-2:00 am closing is highest among white-collar workers (39%), while blue-collar workers tend to favor "current times" (22%) or 4:00-5:00 am (21-25%).

And support for earlier closing times increases linearly as family income increases (from 47% of 0-$20,000 to 65% of $60,000 and over).

Democrats are more in favor of later hours (22% 4:00-5:00 am and 17% "same as current"), while Republicans are more in favor of earlier hours (15% between midnight - 1:00 am, 37% between 1:00-2:00 am).

Solutions to underage drinking focuses on parental responsibility (18%) and new, stiffer penalties (13%), however over one-fourth (26%) said they didn't know what could or should be done...

"What do you think should be done about under-age drinking in your community?"

Parental discipline	18%
Make new stricter, stiffer laws	13%
Enforce current laws	9%
Educational programs	9%
Punish sellers	7%
Nothing--they'll get it anyway	5%
Peer pressure, peer example	5%
Counseling	3%
Prohibition--make it inaccessible	2%
Community work projects as punishment	1%
Not a problem	1%

...Rural respondents were the most undecided (30%), while Central Alaskan respondents supported a parental solution (27%). In Southcentral, approximately one-third (33%) didn't recommend a solution, while 15% said it was a parental-type problem and 12% supported stiffer penalties and restrictions. The Anchorage responses were similar to the other Southcentral communities, while Southeastern respondents were more in favor of educational programs (15%) as well as greater parental controls (21%), and stiffer penalties (18%).

Younger respondents (18-24 year-olds) recommended stiffer penalties (21%), "peer panels" (8%) made up of "judges" of other young people to assign penalties, and parental discipline (10%). As respondents became older,

Findings...(con't)

support for a parental-based solution increased (25% of 56 and over), and sentiment for punishment of suppliers also increased (12%).

Little major differences were noted based on age -- females were a little more undecided (30%) compared to males (22%).

Support for educational programs and "peer programs" were highest among white-collar workers (11% and 10% respectively), while blue-collar workers were most in favor of new restrictions-stiffer penalties (22%).

Parental discipline was the most common solution in all income groups with the exception of 0-$20,000 which supported stronger penalties (17%) and enforcement of existing laws (13%).

Republicans and non-partisan respondents were most supportive of parental discipline (22% and 20% respectively), while Democrats were more in favor of "enforce existing laws" (11%), "punish sellers" (9%), and "can't do anything, they'll get it anyway" (9%).

In total, approximately nine out of ten Alaskans (87%) feel alcoholism is one of the most serious problems in Alaska...

"Do you think alcoholism is or is not one of the most serious problems in Alaska?"

Is	87%
Is not	11%

...with concern highest in rural areas (94%) and Southeast (93%).

Younger people (18-24) feel it is a greater problem (88%) than older people (81%), and women consider it more serious than men (92% to 81% respectively).

Home-makers, at 96%, are most concerned with the problem of alcoholism, and white-collar respondents also register strong concern (93%). On the other hand blue-collar workers are slightly less likely to consider alcoholism one of the most serious Alaskan problems (75-85%).

Findings...(con't)

In terms of annual family income. all income ranges considered alcoholism serious -- with upper income concern the greatest (94%).

Eighty-eight percent (88%) of registered voters considered alcoholism one of the most serious problems, and the concern was virtually identical for partisan and non-partisan voters -- 88% Democrats, 88% Republicans and 87% non-partisan.

Analytically speaking, the perception of alcohol as a serious problem in Alaska is wide-spread (87%), and there consequently is substantial state-wide support for earlier closing times for cocktail lounges and bars (54% 3:00 am or earlier). There is also substantial support to raise the minimum age to 21 years old (37%), however the majority (54%) prefer retaining the current minimum age of 19. Over-all, in recognition of the seriousness of the alcohol issue, there is considerable support for measures related to limiting the availability of alcohol (hours and age). This approach extends to recommended solutions to under-age drinking -- while 3% recommended counseling and 9% recommended educational programs; 18% recommended parental discipline, 14% recommended new, stiffer penalties; 9% recommended stronger enforcement of existing laws; and 7% specifically recommended punishment of sellers who provide alcohol to under-age people.

Findings...(con't)

Regarding closing times, state-wide, 20% felt bars, lounges and night clubs should remain open until 4:00-5:00 am and 17% felt the closing times should remain as they are at the present time -- which may also be 5:00 am depending on the community -- in total, 37% could support a 5:00 am closing. Over half (55%) feel the closing time should be before 3:00 am, with the bulk of that percentage (33%) favoring a 1:00-2:00 am closing...

"In your opinion, what should be the closing time for cocktail lounges and bars in your community?"

12-1:00 am	11%
1-2:00 am	33%
2-3:00 am	10%
3-4:00 am	2%
4-5:00 am	20%
5-6:00 am	--
Same as now	17%

...Geographically, rural areas are most in favor of their current closing time (42%), however 27% favor a 1:00-2:00 am close.

Support for 4:00-5:00 am close is greatest in the Fairbanks area at 34% (52% favor a pre-3:00 am close), while only 4% in Southeast favor the late close. Most of Southeastern respondents favor 1:00-2:00 am (36%) or "same as now" (29%). In the Mat Valley and Kenai Peninsula region, 17% support 4:00-5:00 am and an additional 12% support the current closing time. A total of 56% favor a closing at or before 2:00 am. In Anchorage, 4:00-5:00 am or "current time" closing is favored by 37%, while a total of 57% favor 3:00 am or earlier (primarily 1:00-2:00 am).

Age-wise, younger respondents favor later hours (34% 4:00-5:00am), while older respondents favor current closing times (21-23%) or 1:00-2:00 am (31-32%).

Females favor earlier closing hours (13% between 12:00-1:00 am; 36% between 1:00-2:00; and 12% between 2:00-3:00 am), on the other hand males tend to prefer the current times (22%). Male/Female sentiment regarding 4:00-5:00 am closing is nearly identical (19-20%.)

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

POUCH Y · STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

M E M O R A N D U M

February 4, 1982

SUBJECT: Raising the age of majority for purposes of regulation of intoxicating liquor (CSHB 112)

TO: Representative M. F. Beirne
Chairman, House Health, Education and Social Services Committee

FROM: Tamara Brandt Cook
Legislative Counsel
TBC

Here is the CS for HB 112 you requested that would change the advisory vote to a ballot proposition. This approach is unconstitutional under Article II, Sec. 1 of the state constitution that provides:

> The legislative power of the State is vested in a legislature consisting of a senate with a membership of twenty and a house of representatives with a membership of forty.

The legislature may not delegate its legislative power to the people. While the voters have the power to enact laws by the initiative process, Article XI, Sec. 1 provides that the people must propose the law, not the legislature. Article XI, Secs. 2 and 3 set out the process whereby an initiative is proposed and an initiative petition is circulated and filed. The proposition is placed on the ballot only after these procedures have been followed.

TBC:ljb

Enclosure

AGE	MALE	%(1)	FEMALE	%(1)	TOTAL	%(2)
14-18	8,367	60.6	5,431	39.4	13,798	5.1
19-24	25,822	55.0	21,111	45.0	46,933	17.2
25-29	25,395	53.3	22,282	46.7	47,677	17.5
30-34	24,950	55.4	20,121	44.6	45,071	16.5
35-39	18,681	55.9	14,753	44.1	33,434	12.3
40-44	13,721	57.4	10,164	42.6	23,885	8.8
45-49	10,588	58.2	7,610	41.8	18,198	6.7
50-54	9,114	59.3	6,252	40.7	15,366	5.6
55-59	7,211	59.3	4,943	40.7	12,154	4.5
60-64	4,922	60.2	3,254	39.8	8,176	3.0
65-69	2,772	61.5	1,738	38.5	4,510	1.7
70 +	2,093	65.1	1,120	34.9	3,213	1.2
Unknown	34	59.6	23	40.4	57	
TOTAL	153,670	56.4	118,802	43.6	272,472	100.0

(1) Percentage of that age group.
(2) Percentage of total licensed drivers.

MOTOR VEHICLE TRAFFIC FATALITY ACCIDENTS

During the years 1976-1978 the rate of alcohol-related fatal accidents occurring in the state appears to have remained fairly constant: approximately one-half of all fatal accidents were alcohol-related. A departure from this trend was reported in 1979 when the rate of alcohol involvement increased to 70% in fatal accidents.

There is some indication that improved reporting of alcohol involvement contributed to this apparent increase. However, alcohol involvement in highway crashes is the state's most serious and enduring problem and has been assigned the highest priority for treatment in the 1982 highway safety program.

ALCOHOL

The following table reflects the distribution of alcohol/driver by age group. Accidents in which alcohol involvement was not stated or was unknown have been removed from the calculations.

AGE	NUMBER OF ALCOHOL ACCIDENTS	PERCENT INVOLVEMENT	PERCENTAGE OF LICENSED DRIVERS
15-18	220	11.3	3.4
19-29	922	47.2	36.5
30-39	407	20.9	27.8
40-49	238	12.2	15.2
50-59	134	6.9	10.3
60 +	31	1.6	2.5

March 8

HB112

Martin — as high as 86% won - low
it

Barbara Hoffman — AK. Council for Prevention of Alc. & Drug Abu
& Howard Scanevan

50% of AK under 17 — high risk population.
many people can lure to "take risks" — we place a high value on high risk behavior
— one way is by drinking — #1 state in avail ability & consumption

AK. was the 1st state to lower age.

2½ times no. of on-premise lic. than natl. avg.
lowest price
2½ X no of liq. stores
5 AM — latest in exc. of Nevada
— low price
— ineffective enforcement
— unrealistic advertising.
— license vs. monopoly
— 1970 drinking age.

AK. — #1 of 50 states on availability
N.C. — #50

absolute
4. 7 gal alcohol per person in the state

Phillips — unfair to compare w/ other states
↙

P- How does AK compare w/ other nations?

S- preponderance of ev. [illegible]

Since 1970

26 states lowered

17 raised age back up - why?

Coalition For A Safer AK

→ Initiative Process [illegible] - appears to wasting $ on an ~~and~~ advisory vote.

We don't need an advisory vote - pass a bill.

Alaska Council - wants it raised, however it's done -

B'Co. - how ~~[illegible]~~ was it done in 1970? *in ole.*

Phillips - legislature changed it

Anderson - the AK. figures do not reflect the exact age groups w/ which we are concerned.

A - what's so magic about 21? Why not 25?

- is it constitutional to set up a certain gp?

Scammon - why must an officer be 21?

Phillips - does this not conflict w/ 632?

Seems like inconsistency here.

25%. [illegible] Sum —

in 15-20 age gp. — in home drinks — 85.2% —

State of Illinois — study

no school [illegible] [illegible] responsibility —

Alaska → Dec 81 [illegible]

[illegible] are about the 2nd or 3rd highest

price booze in the state — —

Anderson —

Lee's amendment —

to give all teen who are eligible to vote in federal election can drink.

Bob Cramer — Pres. of CHAR

— operates hotel, bar in Delta Fare.

— Mich studies → a no. of people given $ to research and study certain things → they will find what they are [illegible] to find.

— Catholic Church study — Catholic University — total quantity per capita high

Kitchener — police — 60% of calls to bars were prior to 2 am — calls to bars were 6% of all calls.

Insurance Post — talked at [illegible] McKenna [illegible] — they said — "no change" — small incidents as far as overall no. — they had no facts, for specific age group.

Mar 18
HB112

Herb Adams — Dir of Juneau Natl. Council on Alc.
agrees w/ Scammon for most part.
supports raising age. — need to look at this in
context of all [illegible] on alcohol. —

If age is to be raised, also need:
1. Tougher DWI law
2. Reduce hrs.
NCA & JNCA supports raising age.

greatest no. — nighttime, single vehicle —

AK. has permissive attitude — "ok to get drunk as
long as you don't get in any trouble" —

Anderson — Juneau bar hours cut back
did lower the crime rate resulting from
alcohol

Glenn Mandell — HSS — supports HB112 as
a prevention strategy
— has DPS breakout — 1979 15-18 yo
rep. 3.4% drivers — had 11.3% accts are w/ alcohol.
— drives up insurance rates —

Frank Lee — Rep. Alaska Rest & Bev. Asso.
opposed to HB112 —

Factors skew drinking age statistics —
cites some expert who says that increases in youth
accidents was not nec. — caused by age lowering.
— Creation of phantom problem. —
— [illegible] of criminalizing youth activity —
— lack of uniform statistics
L.A. ASAP — roadside survey
76.9% 15-20 drink
21-39 largest - 89%

Older people have higher alcoholic rate than 15-19 year olds.
So need to preclude remission cutting from drinking.

Despite that Alc. is largest alcohol component in the diet.

beer 28 Hg
wine 12 Hg
distilled 4 Hg
} in the ratios / per capita

The Area a "people problem"

2 Personal Responsibility.

March 23, 1982

HB 112 —

Dr. Richard Douglas — Univ. of Michigan → —

10 year res. experience...
4th study since 1972

up until 1972 res. lit — 75% H.S. seniors were "self defined" drinkers — he set out to prove it was not law but something else that did it.

Mich, Mn. Vt. Jer. NY — 6.5 M traffic acc. in file

1976, 77 follow-up studies — problem consistent — draft beer was the problem — youths in bars where excluded before.
large increase in ~~[illegible]~~ casualties.

1978 — age raised to 19
vote in Nov. — raised to 21

52-54 p opin. Fed'l judge devoted 10 pgs to methodology

Dec '78 chg.
2 follow up since then
improvement of 28% — 22%, depending on figures.

~~State~~

Exactly reversed the net effect of lowering the age. — not as great as in Maine — beer reduced c̄ principal one.

all patterns of alterns

most other drugs of abuse are dealt w/ an availability model. — not alcohol
Double Std. — reinforced by alcohol industry

Dear Customers are worse customers

85% of traffic accts — passengers are girls

1. Should any sale sales be excluded? 65% in Michigan bought beer ~~at the~~ or tavern

2. Enforcement not effective.

Most young people cannot consume enough to get up to .10. You do not have to have chronic or large alc. consumption problem to get accid.

All alc. need help but not all people needing help are alcoholics.

Anderson — what is diff betw 19 & 21?
Enormous difference as to 18-20, 21-25, re casualty rates — — peer structure, norms, — —

Anderson — why not go to age 25?
alc. related casualties peak at 20.21 — decay in distribution after 23.
This is the highest risk for alco. casualties on hwy & at work because where they are in their life.

Hook — cont of age 19 fatality. A few consider uncommon reasons for lagging taxes.

2. 3-22-82

Anderson — none fall into that age group —

Anderson — if it does discriminate, what justification is there for that.

A: no other action of the ~~leg~~ any leg has lowered the death causality problem up to 5%

Meekins —

Buchholdt — are there arrests? ; no — accidents. — no police activity here.

after the law chg. the rest of drivers had more accts.

Freeman — at what pt is it justified for law to make distinction per age.

He does not believe that it is ethical to not take advantage of proven solutions.

I can't think of anything that is less intrusive, ~~mmm~~ still works. —

It's not a right — it's a privilege.

Meekins — ~~mmm~~ significant increase in cross enrollment.

Lowering drinking age did not create the problem. This will only reduce the problem

Buchwald — why not increase the age for driving?

It's a relatively legitimate question.

B: — Much does [illegible] mandatory car insurance.

Anderson — any distinction between type of beverage? — No, no.

It's a serious mistake to think beer is less a cause of accd. than other alcs bevs.

A: Recently read that it was good for your heart to drink

Anderson — what would 3 x 3 do in a small person — 3 hrs. — 6 hrs. after drink? — really good buzz —

Pgs 22-23 brain function slows down — older people can drink to legal extent.

Mellon — feels the brain functs? — the faster the liver function the quicker the effect.

Most accts occur w/in 45 min of last drink.

11:30 — 18% less measurable alc. in blood.

Study — new sophisticated tests for forensic analysis. —

Mr Martin — S.R.S.

What's the price of life →?

Phillips → per 48632? → Martin → age of responsibility?

Freeman — he's really bothered.

99% of the time when you send a vote to the people it's a legislative co-out. →

Meeks — When on advisory vote?

Carolyn Peters — Education Cty
ah Commission On the Prev. of Alc. & Drug Abuse.

The 19.70 drink affects the kids younger than him. — she had a 4th grader alcoholic. Jr. High student drunk before they got on the bus in the a.m. Laws keep you from getting data from this. A high incidence - Alcohol still the drug of choice. Any age in AA between 20.25 now. People starting to drink at a much younger age. Peer pressure against testifying.

Phillips — his life story again.

O'C. — only remember one drunk kid in school in 13 years — never came across alcohol in school. Schools are not hotbed of alcoholism.

Rep. Miller — supports the bill —
Choices: 1. bill
2. bill w/ contingency on referendum
3. ref. vote.
He's sorry he voted to lower the age limit.

Anderson ~~votes to~~ moves to move bill from committee.

Phillips's motion — Meskill's oppos.

Anderson opposes the amendment

O'C — any voter doesn't what's on the ballot before he gets in

Show the leg. of the State of Conn. recent laws raise the legal age for cemeteries, pool(?), firearms, lotteries,

Meskill — intransigency
— you really have to pick a no.
else, problem

March 19, 1982

~~HB838~~ HB 112

Phillips — wants to hold over to read info.

— held to 3rd Fri

HJR41

Rep Bierwe

— fiscal note ?

HP

C' Co. — "appropriates"?

C'C — How it affects and itself ->